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TNT Project Area Soil
Remedial Action Work Plan

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Prepared for

HERCULES

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K/J Project No. 1540001*57

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Executive Summary

On behalf of Hercules LLC (Hercules), Kennedy/Jenks Consultants Inc. (KJ) prepared this *TNT Project Area Soil Remedial Action Work Plan* (TNT RAWP) outlining a remedial action addressing energetic constituents in soil at Hercules' former Kenvil Works Facility, located in Kenvil, Roxbury Township, Morris County, New Jersey (Facility) (**Figure 1**). Specifically, this TNT RAWP focuses on an approximately 80-acre area in the southwestern portion of the Facility where 2,4,6-trinitrotoluene (TNT) was historically manufactured and is present in soils. **Figure 2** illustrates former Facility operational areas. **Figure 3** illustrates the TNT Project Area.

This TNT RAWP:

- Summarizes the results of previous environmental investigations performed in the TNT Project Area
- Presents pre-design, treatability study, and pilot study data supporting TNT Project Area soil remedy selection/design
- Outlines a remedy for target constituents in soil compliant with New Jersey Administrative Code (N.J.A.C.) 7:26E – New Jersey Department of Environmental Protection's (NJDEP's) *Technical Requirements for Site Remediation* (TRSR) and protective of human health and the environment
- Establishes remedial action objectives and success criteria for the TNT Project Area soil remedy

The remedy for target constituents[1] in TNT Project Area soil is a multi-phase process focused on degrading source mass in soil and mitigating ongoing impacts to underlying groundwater at the Facility.

Historically, TNT and DNT[2] were released to soil via process upsets in the TNT manufacturing area. TNT and DNT exist in soil as crystalline solids varying in size and shape that partition to groundwater. Studies have demonstrated that bioremediation of TNT and DNT source material can achieve complete degradation to inert organic acids (Serrano-Gonzalez et al. 2018, Spain 1995). Bioremediation is most effective when contact with the surface area of target constituents is maximized. As such, the presence of crystalline solids in Facility soil prolongs the overall timeline of a natural bioremediation remedy. The proposed remedy addresses the presence of crystalline solids via a physical processing phase focused on increasing the surface area to volume ratio of the crystalline solids and homogeneity of the soil mixture, facilitating degradation and reducing the bioremediation timeline. Specifically, this first phase of the remedy includes:

> *Excavation and Blending* – The physical process of excavating source material and blending it on the staging pad for processing reduces the physical and chemical variability of material and begins to break down the crystalline solids to increase surface area.

[1] Target constituents refers to TNT, 2,4-dinitrotoluene (2,4-DNT), 2,6-DNT, 2-amino-4,6-DNT (2-ADNT), and 4-amino-2,6-DNT (4-ADNT)

[2] Collective term referring to 2,4-DNT and 2,6-DNT

Soil Processing Plant – The soil processing plant relies on industry standard mining technologies to reduce the grain size of crystalline material, increasing the surface area available for microbial contact and degradation. The processing plant will reduce source mass to physical particle sizes less than 2 millimeters (mm) in diameter, while also segregating larger native rocks (oversize). The resulting material stream (less than 2 mm in diameter), referred to as biofeed and consisting of native material and target constituent source mass, moves on to the ex-situ bioremediation phase while the clean oversize material is stockpile for excavation backfill.

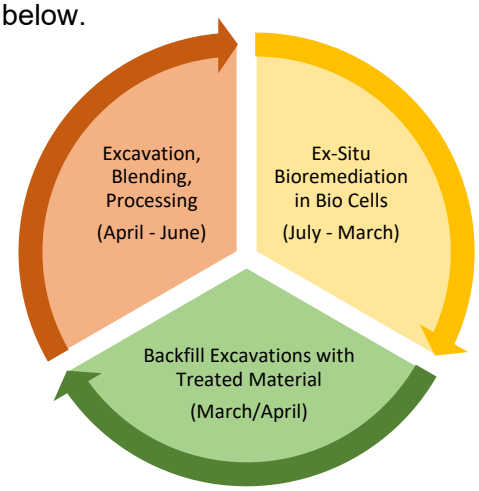
The next phase of the remedy involves the biological breakdown of target constituents in a controlled and monitored environment.

Ex-situ Bioremediation – The biofeed generated by the physical plant processes is amended with a commercially-available amendment (PeroxyChem's DARAMEND OE®) and pumped to containment areas (bio cells), where conditions are managed to facilitate and optimize biological degradation. Treatment in bio cells will achieve NJDEP's non-residential direct contact soil remediation standards (NRDCSRS) and yield a greater than 95 percent reduction in target constituent mass within a single field season (June through October).

The final phase of the remedy addresses in-situ biological degradation to address the remaining target constituent concentrations.

In-situ Biological Degradation – Following the period of management in the bio cells, treated biofeed will be removed and used to backfill the source excavation areas. Target constituent mass remaining in backfilled material will continue to biologically degrade until constituent mass is exhausted. In-situ processes will be monitored, with achievement of remedial goals expected over a 5-year period.

An estimated 70,000 cubic yards (cy) of material[3] requires treatment, approximately 70 percent of which will end up in the bio cells (the remaining 30 percent consists of oversize native aggregate that does not contain target constituent source mass). Treatment involving the first two phases of work (i.e., excavation/blending/processing and ex-situ bioremediation) will occur in a series of annual cycles. The project will require 5 cycles (years) to complete the ex-situ treatment phase. The annual cycle is illustrated below.



[3] Volume estimate is based on 56,000 bank cy of material, and a 1.25 multiplier to estimate loose (excavated) cy.

Target constituent mass will continue to undergo degradation once the treated material is backfilled to excavation areas. Remaining mass will benefit from the residual influences of DARAMEND OE® on in-situ soil conditions and will continue to degrade over approximately 5 years. Degradation will be monitored during both the ex-situ and in-situ phases of work to document the removal of E&E mass and attainment of interim and final remediation goals.

The TNT Project Area will be included in a Facility-wide restrictive covenant (i.e., deed notice) established by Hercules that limits the Facility future uses to industrial/commercial. This soil source mass remedy will address ongoing migration and influences on groundwater quality. Groundwater compliance and associated use restrictions will be addressed via a separate groundwater RAWP.

This TNT RAWP represents a component of ongoing environmental remediation activities at the Facility in fulfillment of a March 10, 1995 Remedial Agreement (RA) between the NJDEP and Hercules, and was prepared in accordance with N.J.A.C. 7:26E – NJDEP's TRSR, N.J.A.C. 7:26C – NJDEP's Administrative Requirements for the Remediation of Contaminated Sites (ARRCS), and NJDEP's Site Remediation Reform Act (SRRA). The Facility is subject to the Remedial Investigation Statutory Timeframe established by the SRRA at New Jersey Statues Annotated (N.J.S.A.) 58:10C-27a(3). A two-year extension of the May 7, 2014 remedial investigation report submission deadline was granted in accordance with P.L. 2013, c.238 (N.J.S.A. 58:10C-27.1), extending the deadline to May 7, 2016. Hercules submitted the Phase II RIR on May 5, 2016 and continues to make progress toward designing and implementing remedies onsite and obtaining associated remedial action permits (RAPs).

Section 1: Introduction

On behalf of Hercules LLC (Hercules), Kennedy/Jenks Consultants Inc. (KJ) prepared this *TNT Project Area Soil Remedial Action Work Plan* (TNT RAWP) outlining a remedial action addressing energetic constituents in soil at Hercules' former Kenvil Works Facility, located in Kenvil, Roxbury Township, Morris County, New Jersey (Facility) (**Figure 1**). Specifically, this TNT RAWP focuses on an approximately 80-acre area in the southwestern portion of the Facility where 2,4,6-trinitrotoluene (TNT) was historically manufactured and is present in soils (the TNT Project Area). **Figure 2** illustrates former Facility operational areas. **Figure 3** illustrates the TNT Project Area.

In May 2016, Hercules submitted the *Phase II Remedial Investigation Report* (Phase II RIR) (Hercules 2016) presenting the results of a multi-phase remedial investigation (RI). The RI identified TNT, associated manufacturing intermediaries (2,4-dinitrotoluene [2,4-DNT], 2,6-dinitrotoluene [2,6-DNT]), and breakdown products (2-amino-4,6-DNT [2ADNT], and 4-amino-2,6-DNT [4ADNT])[4] in soil and groundwater in the TNT Project Area. In response to these findings, Hercules has developed a remedy combining physical processes and enhanced biological degradation to destroy target constituent mass in soil that represents an ongoing source to groundwater.

This TNT RAWP focuses specifically on the soil remedy, outlining a remedy for target constituents in soil compliant with New Jersey Administrative Code (N.J.A.C.) 7:26E – New Jersey Department of Environmental Protection's (NJDEP's) Technical Requirements for Site Remediation (TRSR) and protective of human health and the environment. The results of previous environmental investigations, and pre-design, treatability, and pilot studies presented herein, as well as academic research, establish the technical foundation and basis for the remedy.

1.1 Remedy Overview & Objectives

The RI identified target constituents in soil as a result of various historical manufacturing and operational processes and process upsets. The conceptual site model for target constituents in the TNT Project Area, as established in the Phase II RIR, identifies mass transfer from solid phase source material (primarily crystalline TNT) in soil as a source to groundwater, and biological degradation of target constituents as a natural process occurring in both soil and groundwater at the Facility. Acknowledging the influence of these natural degradation processes on target constituent concentrations, Hercules studied the feasibility and effectiveness of enhanced bioremediation as a remedy for target constituents in TNT Project Area soil. Study results informed the design of a multi-phase process focused on degrading source mass in soil to mitigate ongoing impacts to underlying groundwater at the Facility.

[4] For the purpose of this TNT RAWP, TNT, 2,4-DNT, 2,6-DNT, 2ADNT and 4ADNT are collectively referred to as "target constituents"

The multi-phased remedy involves three primary processes with the following objectives:

- Soil processing (i.e., excavation, blending, and processing in a soil processing plant) to make target constituent source mass present in crystalline forms accessible and amenable to bioremediation (increased surface area-to-volume ratio)
- Ex-situ enhanced bioremediation in constructed treatment cells (bio cells) to degrade target constituent mass (greater than 95 percent reduction in concentrations) over a short period of time (8 to 12 months) to at or less than their respective NJDEP NRDCSRS
- In-situ biodegradation addresses residual target constituent mass (over approximately 5 years) to facilitate corresponding target constituent concentration reductions in groundwater to support a future monitored natural attenuation groundwater remedy

The TNT Project Area will be included in a Facility-wide restrictive covenant (i.e., deed notice) established by Hercules that limits the Facility future uses to industrial/ commercial. This soil source mass remedy will address ongoing migration and influences on groundwater quality. Groundwater compliance and associated use restrictions will be addressed via a separate groundwater RAWP.

The following documents supported development of the remedial strategy in this TNT RAWP:

- *Site Investigation Report – Kenvil Works Facility* (SI; Hercules 2004)
- *Phase I Remedial Investigation Report – Kenvil Works Facility* (Phase I RIR; Hercules 2007)
- *Phase II Remedial Investigation Report – Kenvil Works Facility* (Phase II RIR; Hercules 2016)
- *Technical Memorandum – Evaluation of Alternatives for Separation of TNT from Soil* (Treatability Study; Hercules 2013)
- *TNT Bioremediation Pilot Study Report* (Pilot Study Report; Hercules 2017a)
- *TNT Soil Plant Design Verification Study Report* (Design Verification Study; Hercules 2017b)
- *TNT Bioremediation Design – Bio Cell Engineering & Stormwater Management Memorandum* (Design Support Memo; Hercules 2017c)
- *TNT Refined Delineation Work Plan* (TRDWP; Hercules 2017d)

The remainder of this TNT RAWP and its associated technical appendices present the remedial design and support the design with pre-remedial studies and investigation results. The implementation of the technical remedy is presented in the context of remedial action objectives and associated success criteria. Data collection to support remedy effectiveness relative to success criteria will occur under the monitoring programs presented herein.

1.2 Regulatory & Administrative Compliance

This TNT RAWP represents a component of ongoing environmental remediation activities at the Facility in fulfillment of a March 10, 1995 Remedial Agreement (RA) between the NJDEP and Hercules, and was prepared in accordance with N.J.A.C. 7:26E – NJDEP's TRSR, N.J.A.C. 7:26C

– NJDEP's *Administrative Requirements for the Remediation of Contaminated Sites* (ARRCS), and NJDEP's *Site Remediation Reform Act* (SRRA). The Facility is subject to the Remedial Investigation Statutory Timeframe established by the SRRA at New Jersey Statues Annotated (N.J.S.A.) 58:10C-27a(3). A two-year extension of the May 7, 2014 remedial investigation report submission deadline was granted in accordance with P.L. 2013, c.238 (N.J.S.A. 58:10C-27.1), extending the deadline to May 7, 2016. Hercules submitted the Phase II RIR on May 5, 2016 and continues to make progress toward designing and implementing remedies onsite and obtaining associated remedial action permits (RAPs).

This TNT RAWP was prepared in accordance with requirements established in N.J.A.C. 7:26E - 1.6 – NJDEP's Reporting Requirements, with variances from the cited regulation related to data presentation at N.J.A.C. 7:26E – 1.6(b)8.(3). The following subsections provide justification of data presentation elements that have deviated from the cited regulation (variances).

1.2.1 Data Presentation Variances

This TNT RAWP presents soil sample results collected subsequent to the submission of the Phase II RIR that supported remedial design. These data are presented in tables and depicted on a series of figures summarizing the TNT Project Area refined delineation sample results specific to individual constituents, as well as a group of constituents. Given the size of the TNT Project Area, sample density, and volume of data generated at each sample location, Facility-specific data presentation schemes were developed to provide a useful visual tool for the reader while fulfilling the fundamental intent of NJDEP's TRSR. Similar to the data presentation approach used in the Phase II RIR, the TNT RAWP figures present the following information:

- Property and former operational area boundaries and labels. Individual area of concern (AOC) (e.g., buildings) boundaries are illustrated but not labeled to reduce congestion and maintain readability at a meaningful scale.

- Individual sample locations labeled with location IDs. Sample IDs (location IDs appended with sample interval depth information) were omitted to reduce congestion and maintain readability at a meaningful scale.

- A pillar of stacked boxes, with each box corresponding to a depth interval. When sample data are available for the specified depth interval, the corresponding box is color-coded based on a comparison of the constituent concentration (or lowest constituent concentration when multiple samples were collected from the interval represented by the box) to comparison criteria (e.g., NJDEP's soil remediation standards). When sample data are not available, the box is populated with an "x". The intervals corresponding to each box remain consistent across constituent figures. This approach provides a visual representation of semi-quantitative constituent concentration ranges relative to comparison criteria and was used in lieu of posting constituent data on the figures. Corresponding constituent data is presented in data tables.

- Isopleth maps were included in the Phase II RIR based on a macroscale delineation. Refined delineation efforts in the TNT Project Area reduced the isopleths to individual excavation areas proposed in this TNT RAWP and depicted on the TNT RAWP figures.

This Facility-specific data presentation scheme is consistent with that used in the Phase II RIR and provides a useful visual tool for the reader while fulfilling the fundamental intent of NJDEP's TRSR.

1.3 Organization

The remainder of this TNT RAWP is organized as follows:

- Section 2, *Background*, describes the operational history and physical setting of the Facility and the TNT Project Area.
- Section 3, *Environmental Chronicle*, summarizes environmental investigation and cleanup activities conducted in the TNT Project Area.
- Section 4, *Remedy Development*, presents a remedial alternatives evaluation and feasibility and design studies for the selected remedy.
- Section 5, *TNT Project Area Soil Remedy,* describes the proposed remedy, implementation activities, long-term monitoring, and permitting requirements.
- Section 6, *Implementation Schedule*, presents the implementation schedule for the proposed remedial action.
- Section 7, *References*, presents full citations for materials supporting the preparation of the TNT RAWP.

A series of technical appendices and NJDEP forms supplement this TNT RAWP. Technical appendices include:

- Appendix A, *TNT Project Area Soil Ecological Risk Assessment* (TNT Project Area ERA), evaluates ecological risk under existing TNT Project Area conditions and identifies a group of constituents of potential ecological concern (COPECs) requiring additional evaluation following remedy implementation.
- Appendix B, *TNT Refined Delineation Technical Memorandum*, summarizes the methods and results of field sampling activities focused on refining the macroscale delineation of target constituents from the Phase II RIR.
- Appendix C, *TNT Project Area Soil Secondary COCs*, evaluates non-target constituents in the TNT Project Area and identifies constituents of concern (COCs) that merit consideration as part of TNT Project Area remediation.
- Appendix D, *TNT Bioremediation Process Confirmation Sampling Plan* (PCSP), presents a sampling plan to monitor the ex-situ bioremediation process and provide data to facilitate treated material reuse.
- Appendix E, *Facility-wide Quality Assurance Project Plan*, provides a single and concise plan for the collection and management of environmental data and the data quality objectives for the Facility. This document is not specific to the TNT Project Area and/or associated soil bioremediation remedy.

- Appendix F, *TNT Project Area Soil Reuse Plan*, documents compliance with NJDEP's *Fill Material Guidance for SRP Sites* (2015) to facilitate the use of treated material as backfill where biodegradation will continue in-situ.
- Appendix G, *TNT Project Area Excavation, Blending, and Staging Plan Construction Drawings*, presents a series of excavation plans based on boundaries identified during the refined delineation of target constituents.
- Appendix H, *Technical Performance Information – PeroxyChem's DARAMEND OE® and EHC®*, provides empirical data from previous studies and projects related to the performance of DARAMEND OE® and EHC® that supports elements of the TNT Project Area remedy.
- Appendix I, *Project Implementation Timeline*, outlines the timeframes for remaining design, permitting, construction and implementation activities.
- Appendix J, *Waste Determination*, documents the assessment of project material streams in the context of Resource Conservation and Recovery Act (RCRA).

NJDEP Forms include:

- Cover/Certification Form
- CID Worksheet
- Authorization to Submit the Remedial Action Work Plan through NJDEP Online

Tables, figures, forms, appendices, attachments, and supporting documents are referenced where appropriate throughout the text.

Section 2: Background

2.1 Facility Overview

The Facility occupies 1,059 acres along the Route 80 corridor and is located approximately 0.5 miles northwest of the center of Kenvil, in Morris County, New Jersey. Regionally, the Facility is approximately 40 miles west of New York City and 30 miles east of the Delaware Water Gap. The Facility is located in the New Jersey Highlands physiographic province of north-central New Jersey amidst the characteristic broad, elevated ridges separated by long, narrow valleys. The Facility is situated on a valley floor between two forested ridgelines oriented in a southwest to northeast direction. Beyond these forested ridgelines, the Facility is flanked by transit routes (I-80, New Jersey Transit railroad), state and county roads (Route 46, Berkshire Valley Road, Howard Boulevard), and a mixture of commercial and residential development.

The Facility began operation in 1871, initially manufacturing dynamite to support the regional iron ore mining industry. The Facility was operated by various companies until 1912, when Hercules became the sole owner. Throughout its history, the Facility manufactured propellants and explosive and energetic (E&E) constituents such as TNT, nitroglycerin (NG), pentaerythritol tetranitrate (PETN), smokeless powder, ammonium nitrate fuel oil (ANFO), and various specialty products (e.g., initiating materials, ingredients for medical applications, and materials for actuating devices) for military and commercial applications. Through the latter years of Facility operation, production focused mainly on smokeless powders. Alliant Tech Systems produced smokeless powder under a Facility lease agreement from 1995 to 1996. The Facility ceased operation in December 1996, and Hercules re-acquired control of the Facility on January 1, 1997.

Approximately 800 acres of the Facility supported former manufacturing operations. The remaining acreage existed as an undeveloped buffer between former active manufacturing areas of the Facility and/or the surrounding community. The former Facility operational areas (**Figure 2**) remain vacant following decommissioning and demolition activities conducted between 1996 and 2003. The former TNT, PETN, and Dynamite manufacturing areas, and the TNT Project Area, are located in the southwestern corner of the Facility along the eastern slope of the western ridgeline and on the relatively flat valley floor to the east (**Figure 3**).

2.2 TNT Project Area

2.2.1 Description & History

The Facility produced TNT from 1917 until 1919, after which time the production area remained dormant until demolition in the early 1970s. Site investigation and remedial investigation (SI/RI) activities identified TNT, intermediary manufacturing products (e.g., 2,4-DNT) and degradation byproducts in soil and groundwater within areas that historically supported TNT manufacturing.

TNT production occurred as a batch process, and involved 38 separate storage, filter, processing, and manufacturing houses located throughout the TNT Project Area. Collectively, these structures made up the TNT production lines. In general, manufacturing (e.g., nitration) occurred in the area along the slope of the western ridge, while finishing (e.g., drying, pressing, packing, storage) and

ancillary functions (e.g., process liquid and spent acid recovery) occurred in structures to the south and east on the valley floor.

Processing and movement of raw materials, intermediaries, and finished product through the TNT line provided opportunities for the release of manufacturing-related constituents[5] to the Facility soil, as did process upsets (e.g., fires, explosions). At room temperature, both TNT and DNT occur as crystalline solids. When released to the ground during manufacturing process upsets, these materials were in a heated liquid form and capable of migrating short distances in soil before solidifying. Subsequent distribution, migration, and degradation has occurred over the last century, resulting in the presence of target constituents in soil and groundwater underlying the TNT Project Area. The presence of ADNTs[6] provides an indication that microbial (biological) degradation of TNT is naturally occurring in Facility soil and groundwater.

2.2.2 Geology & Hydrogeology

The TNT Project Area occupies approximately 80 acres that spans the eastern slope and terminus of the western ridge and a portion of the adjacent valley floor. Ground surface elevations range from 720 to 800 feet above mean sea level.

Soil types vary between the ridge and valley. Ridge soils are comprised of colluvium and weathered bedrock while valley floor soils are predominantly sand and gravel, with minimal to moderate silt and clay. Bedrock underlies the ridge at depths ranging from 10 to 50 feet, and dips to approximately 200 feet below ground surface (ft bgs) in the valley.

The unconfined upper valley fill aquifer underlies the TNT Project Area. Water table elevations generally follow the ground surface topography, with depth to water on the ridge averaging 20 ft bgs tapering to within a few feet of ground surface on the valley floor.

2.2.3 Ecology and Land Use

Former operational structures have been demolished in the TNT Project Area. The area currently exists as vacant land in various states of vegetative succession, primarily grass field and shrublands, interspersed with remnant building remains (e.g., concrete rubble piles) and ground surface infrastructure (e.g., unimproved roads, drainage ditches).

The upper slope of the western ridge immediately west of the TNT Project Area is a mature hardwood forest with sparse understory, and formerly functioned as a buffer between the Facility and surrounding community. Howard Boulevard, commercial development, and an undeveloped steep, terraced ridge occur immediately west of the TNT Project Area. An expansive wetland mosaic punctuated with upland areas constructed to support former operational structures or transportation corridors (railbeds and roads) lies to the east of the TNT Project Area.

[5] Target constituents represent the primary manufacturing-related constituents in the TNT Project Area. Lead-lined process vessels and piping were used in the TNT manufacturing process, and lead represents a secondary manufacturing-related constituent on the TNT Project Area.
[6] Collective term that includes 2-ADNT and 4-ADNT

Section 3: Environmental Chronicle

3.1 Overview

As part of the RA executed between Hercules and NJDEP in March 1995, a Facility-wide strategy was developed to guide the investigation, remediation, and closure of the Facility. The strategy employs a phased approach whereby the focus of subsequent phases is tailored based on interpretation of information obtained during previous phase(s). The strategic approach considers both areal extent (i.e., entire Facility, former operational areas, individual features) and media of interest (i.e., soil, groundwater, surface water, sediment) as appropriate.

A 1993 Preliminary Assessment (PA) of the Facility provided background information for the Facility and identified areas of potential concern. Upon cessation of operations at the Facility at the end of 1996, Hercules initiated the SI process, and reviewed the PA to develop the scope of the SI. The SI provided an initial Facility-wide characterization of environmental media based on soil (~1,900), groundwater (157), sediment (157), and surface water (120) samples. Ultimately the results of the SI sampling and analyses were used to develop the scope, sampling locations, and analytical suite for the Phase I RI. The SI identified areas of former operational influence within the TNT Project Area and reserved them for investigation as part of the RI.

Considering the SI results, and acknowledging the manufacturing processes, environmental influences, and constituents of concern common to each former manufacturing (operational) area at the Facility, the RI investigation strategy aggregated individual operational features (designated as AOCs in the SI) into 13 major AOCs that generally corresponded to former operational areas of the Facility. This investigation strategy aligned with the scale of the Facility and widespread use of batch processes[7] to produce E&E products, geographic segregation of production lines, and is commensurate with the scale at which remedies would be designed and implemented.

Building on the SI results, the Phase I RI sampling provided spatial coverage (grid sampling), additional sampling at select features (i.e., those requiring additional investigation after the SI or reserved entirely for the RI), and macroscale delineation at the major AOC and/or Facility boundaries. The Phase I RI defined the nature and extent of constituents present at concentrations exceeding applicable media-specific comparison criteria. The Phase II RI focused on filling data gaps and completing characterization of soil, sediment, surface water, and groundwater conditions onsite. The Phase II RIR presented a Case Inventory Document (CID) tracking 13 upland soil AOCs onsite based on the former operational area boundaries (**Figure 2**) and 3 AOCs based on other environmental media investigated onsite (e.g., groundwater, surface water, sediment), and a separate table tracking each of the ~1,200 AOCs identified during the SI. The Phase II RIR also included an ecological risk assessment.

Collectively, the SI/RI characterized and delineated the nature and extent of Facility-related influences and evaluated potential ecological risks. The cumulative findings of these investigations informed the development of a conceptual site model (CSM) and provide a sound foundation on which to base remedial decision making.

[7] The batch processes relied on a series of small houses (structures) where individual steps in the manufacturing process would occur. For example, TNT production occurred as a batch process involving 38 separate storage, filter, processing, and manufacturing houses located throughout the TNT Project Area. Collectively, these structures made up the TNT production lines.

3.2 TNT Project Area

3.2.1 Area of Concern

As discussed in Section 3.1, the environmental investigation strategy evolved as the SI/RI progressed to align with the scale at which Facility-related environmental influences and remediation will occur (e.g., across production areas formerly occupied by a series of manufacturing structures). Consistent with this approach, this RAWP defines the TNT Project Area as the AOC. This AOC contains the former TNT manufacturing line (38 unique structures) and associated drying, finishing, packing, and storage structures that supported TNT manufacturing operations.

The proposed remedy for this AOC achieves remedial action objectives for a contiguous geographic area with common constituents of concern attributable to a discrete historical operation at the Facility. For the purposes of administrative tracking, the TNT Project Area contains the former TNT operational area (AOC-11) and portions of the Dynamite (AOC-5), NG (AOC-9), and PETN (AOC-13) operational areas and the 108 unique features identified as individual AOCs during the SI. **Table 1** presents an updated CID illustrating the change in remedial phase to these areas. The CID has been submitted via NJDEP's online portal as part of submission of this TNT RAWP. **Table 2** provides a list of the individual features identified within the TNT Project Area.

3.2.2 SI/RI

SI planning efforts identified AOCs using a focused, infrastructure-driven approach (e.g., each building and process vessel was designated as its own AOC) consistent with NJDEP regulatory requirements at the time (circa 1998). During SI data evaluation, the information gathered from these AOCs indicated that groups of AOCs located in proximity to each other and supporting a single operation (e.g., TNT manufacturing) shared common practices, processes, and Facility-related influences. In areas of the Facility where former operations occupied a large footprint without substantial buffers or boundaries, delineation of AOCs proved problematic due to the extensive areas across which Facility-related influences exist.

Therefore, the RI strategy was modified to focus on defining the nature and extent of Facility-related COCs while accounting for individual AOCs requiring further investigation. AOC groups were developed based on geographic and process-related commonalities. This consolidated AOC approach met the intent of the applicable NJDEP regulations, to define the nature and extent of constituents present at concentrations exceeding a standard, Facility-wide. The approach leveraged findings of successive investigations to achieve a characterization and delineation that is both comprehensive and informative in the context of identification of areas in need of remediation.

The approach used throughout the RI contributed to defining the TNT Project Area presented in this TNT RAWP. Remedial planning has refined the characterization of the nature and extent of target constituents provided by the RI (Section 3.2.4) to inform remedial design (e.g., excavation planning).

3.2.3 Ecological Risk Assessment

The *Ecological Evaluation/Ecological Risk Assessment* (EE/ERA) submitted as part of the Phase II RIR identified several areas within the Remedial Area where remedial action is warranted irrespective of the outcome of the ERA. These "areas of presumed remedial action" were identified based on a review of the CSM, historical Facility information, and the SI/RI data; and ERA activities were to be incorporated into the remedial design to ensure that the proposed remedy for each area remained protective of ecological receptors.

An area of similar location and areal extent to the TNT Project Area was designated an area of presumed remedial action in the EE/ERA. As part of TNT RAWP preparation, an ERA was conducted using the TNT Project Area dataset to confirm that the proposed remedial design is protective of ecological receptors. The ERA was conducted consistent with the screening process outlined in the EE/ERA.

The TNT Project Area ERA (**Appendix A**) identifies the following:

- Potential unacceptable ecological risks attributable to E&E constituents and metals under existing (pre-remediation) conditions
- Acceptable potential risk estimates for target constituents (and E&E constituents in general) under post-remediation conditions, including the interim remedial condition immediately following excavation backfilling and prior to ongoing in-situ degradation of target constituents
- Consistent results (i.e., acceptable potential risk estimates) for E&E constituents under post-remediation conditions evaluated using ecological screening benchmarks released following preparation of the EE/ERA

Based on these results, the proposed remedy is protective of ecological receptors exposed to target constituents in TNT Project Area soil.

A suite of comingled metals drives unacceptable risk estimates based on pre-remediation conditions in the TNT Project Area. Remedy implementation will alter the nature and extent of comingled metals in soil and associated exposure conditions. As such, these constituents will be re-evaluated to assess potential exposures and risks following remedy implementation.

3.2.4 Refined Delineation

The SI/RI applied a macroscale approach to delineating TNT and its breakdown products in the TNT Project Area. Refined delineation sampling, as outlined in the TRDWP (Hercules 2017d), built upon the understanding of nature and extent of target constituents identified by the SI/RI with the purpose of more accurately defining the volume of soil requiring ex-situ treatment to remediate target constituents, and provide additional characterization data to support remedial planning (i.e., excavation planning, material handling, and regulatory compliance).

Refined delineation activities included:

- Excavating and screening 180 test pits within the TNT Project Area
- Collecting 565 soil samples
- Analyzing 486 soil samples for Nitroaromatics and Nitramines via United States Environmental Protection Agency SW-846 Method 8095
- Delineating 22 discrete areas with target constituent concentrations greater than their respective impact to groundwater soil remediation standards (IGWSRS) in the TNT Project Area

Appendix B presents a summary of refined delineation activities and sampling results.

Based on these efforts, a combined dataset totaling over 400 samples from the TNT Project Area (i.e., refined delineation and SI/RI data) supports remedial design and remedy implementation (e.g., excavation extents and sequencing).

As noted, refined delineation activities focused on areas within the TNT Project Area. The SI/RI identified isolated detections of target constituents at concentrations greater than NJDEP NRDCSRS beyond the TNT Project Area. Hercules acknowledges that these isolated, discrete areas may represent additional source mass, and is evaluating these areas to identify those that require further investigation to refine the nature and extent. The results of this evaluation will be summarized in a work plan that identifies data gaps and establishes a sampling plan. Data generated during this refined delineation event will be evaluated to identify appropriate remedial options.

3.3 Nature & Extent

The comprehensive TNT Project Area dataset delineates the nature and extent of target constituents to the most stringent of the NJDEP's default IGWSRS, residential direct contact soil remediation standards (RDCSRS), and NRDCSRS (**Appendix B**).

For this TNT RAWP, COCs are assessed as follows:

- *Primary COCs:* target constituents (TNT, 2,4-DNT, 2,6-DNT, 2ADNT, 4ADNT) that the proposed remedy is designed to remediate via biological degradation
- *Secondary/Comingled COCs:* constituents other than target constituents (i.e., nitroglycerin, nitrobenzene, 1,3-dinitrobenzene, arsenic, copper, lead, mercury, and nickel) that also merit remediation per NJDEP's TRSR and *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (Attainment Guidance) (2012)

The following sections address each group of COCs.

3.3.1 Constituents of Concern

3.3.1.1 Primary

This TNT RAWP presents a remedial design for a proposed remedy addressing target constituents; as these constituent, TNT in particular, are the most prevalent with respect to magnitude and extent in TNT Project Area soil and also present in underlying groundwater. The remedy has been developed to specifically degrade target constituents. Design studies have also assessed the presence of comingled constituents (secondary) and associated influences of soil preparation and bioremediation processes.

3.3.1.2 Secondary/Comingled

Hercules evaluated the comprehensive TNT Project Area dataset to identify constituents other than target constituents that, while less prevalent, also require remediation per NJDEP's TRSR. In brief, the evaluation stepped through the hierarchical process outlined in NJDEP's Attainment Guidance, using a combination of point-by-point comparisons, statistical evaluations (i.e., 95 percent upper confidence limit of the mean [95UCL]), and spatial weighting using Theisen polygons to identify constituents requiring remediation per NJDEP's TRSR. The evaluation assessed impact to groundwater and direct contact pathways, with the direct contact evaluation relying on NJDEP's NRDCSRS based on the future use of the Facility restricted to commercial/industrial. **Appendix C** presents the methods and results of the compliance evaluation.

Compliance evaluation results indicate the following:

- The TNT Project Area requires 29 functional areas to evaluate direct contact compliance and 23 functional areas to evaluate impact to groundwater compliance

- The direct contact compliance evaluation identified nitroglycerin, arsenic, and lead in the shallow (0 to 2 ft bgs) interval in multiple functional areas at spatially weighted concentrations greater than their respective NRDCSRS

- The impact to groundwater compliance evaluation identified seven constituents (1,3-dinitrobenzene, nitrobenzene, and five metals[8]) in shallow (greater than 2 ft above the water table) and deep (within 2 ft of the water table) intervals across 14 functional areas at spatially-weighted concentrations greater than their respective IGWSRS

- An evaluation of lead results for the impact to groundwater pathway in the context of NJDEP's Guidance for the Evaluation of Immobile Chemicals for the Impact to Groundwater Pathway (2008) reduced the number of shallow intervals in functional areas in which lead is retained as a secondary COC

Based on the compliance evaluation, the following constituents are retained as COCs that merit remedial action in at least one functional area within the TNT Project Area:

- *E&E:* nitroglycerin, 1,3-dinitrobenzene, and nitrobenzene

[8] Metals include arsenic, copper, lead, mercury, and nickel.

- *Metals:* arsenic, copper, lead, mercury, and nickel

E&E constituents are comingled with target constituents and will be addressed via the proposed remedy, as enhanced biodegradation using DARAMEND OE® has shown to be an effective remedial strategy for these organic constituents (**Appendix H**).

Metals occur both within and beyond excavation areas defined by target constituent concentrations. Samples at five locations within excavation areas contain lead and/or arsenic at concentrations exceeding their NJDEP NRDCSRS. Soil removed from the portion of the excavation area represented by these five samples will be segregated during processing and treatment, and returned to the excavation from which they were removed. Process confirmation and long-term monitoring sampling will assess the distribution of lead and arsenic following processing, and during both ex-situ and in-situ treatment. Remaining samples occurring beyond the excavation boundaries will be evaluated during final design such that grading activities do not redistribute constituents. If regrading is necessary in these areas, the grading plan will address the tracking of soil from these areas and post-remedy sampling will characterize disturbed areas. The need for additional remedial activities to address metals COCs will addressed once excavations are backfilled prior to initiating site restoration activities.

Appendix C provides additional information regarding the sample location(s) contributing to these results, their coincidence with areas to be disturbed (e.g., excavated or otherwise altered via grading or infrastructure improvement) during remedy implementation, and strategies to address them in support of TNT Project Area closure.

Section 4: Remedy Development

Hercules identified the need for active remediation of target constituents in the TNT Project Area early in the SI/RI process. Acknowledging the conditions in the TNT Project Area, Hercules initiated a series of studies in cooperation with academic and industry partners to assess Facility-specific soil and groundwater conditions, and their influence on microbial degradation pathways. These initial efforts led to a series of focused evaluations and studies to define, select, and refine the remedy outlined in Section 5. The remainder of this section summarizes remedial selection and design activities, including:

- An alternatives evaluation to assess remedial technologies and options
- Bench-scale treatability studies to evaluate the effectiveness of select alternatives
- Conceptual bioremediation design to develop a phased treatment approach
- A pilot study to test the effectiveness of the bioremediation design at field scale

Based on the outcome of these processes, Hercules initiated remedial design activities, and reviewed and refined the remedy based on technical reviews and interaction with NJDEP SRP feedback.

4.1 Alternatives Evaluation

Hercules' initial studies related to TNT and its breakdown products identified native microbial communities in soil and groundwater at the Facility degrading constituent mass. These studies identified source mass reduction in soil as a critical element of a comprehensive TNT Project Area remedy reliant upon biodegradation (e.g., monitored natural attenuation) to address residual mass in soil and groundwater.

TNT source mass in soil exists as crystalline solid TNT nodules heterogeneously entrained in the soil matrix. Hercules recognized that the presence of a solid within a solid matrix would be a critical factor in developing an effective remedy. A survey of publicly available literature, case studies, and regulatory documents was used to identify remedial technologies potentially applicable to TNT and the Facility setting.

The survey identified the following technology types and approaches for consideration:

- Excavation and Offsite Disposal
- In-situ Stabilization
- Ex-situ Thermal Treatment
- Ex-situ Composting (Biofarming)
- Ex-situ Physical and Density Separation

Based on a comparative analysis of effectiveness, cost, and feasibility, ex-situ physical and density separation was thought to provide a scalable, cost-effective solution to meet treatment objectives. Literature and ongoing biodegradation research by academic and industry partners

indicates that this method effectively minimizes the number and volume of waste streams requiring offsite disposal and recognizes the benefits of natural biodegradation of TNT[9] occurring onsite.

Attachment 1 presents Hercules' February 22, 2013 technical memorandum summarizing the alternatives evaluation and a conceptual physical and density separation approach.

4.2 Feasibility & Design Studies

A series of bench-scale studies were used to evaluate the ex-situ physical and density separation approach identified during the alternatives analysis (**Attachment 1**), identify process improvements, and develop the conceptual remedy that led to the remedial design presented in Section 5.

The stepwise process of testing and refining the technical approach occurred through a series of studies outlined in the following subsections.

4.2.1 Treatability Study

In follow-up to identifying physical and density separation as a potential component of the remedy for TNT in soil at the Facility, Hercules' conducted a treatability study to assess the feasibility of removing the crystalline TNT from Facility soils, and if feasible, evaluate potential remedial options for the remaining soil fraction(s). This study focused on multiple physical separation processes to develop a treatment process capable of achieving an 85 percent reduction in TNT mass. The 85 percent mass removal target was derived from some early academic studies performed on behalf of Hercules and assumed that the remaining 15 percent mass exists as residuals that are accessible for natural microbial degradation.

The study results, presented in **Attachment 2**, indicated that physical separation processes effectively:

- Segregated soil particles by grain size
- Facilitated removal of large crystalline TNT particles from gravel and larger sized soils (i.e., grain size greater than 2 mm in diameter)
- Concentrated residual energetic material in the finer grained fractions (grain size less than 2 mm in diameter)

The physical separation process generated a TNT concentrate waste stream requiring management and offsite disposal via thermal destruction. With the knowledge that physical processes alone could not achieve NJDEP soil remediation standards (SRS), and that offsite destruction would be very costly, the treatability study went on to evaluate chemical oxidation using Fenton's reagent to reduce concentrations of TNT and its breakdown products. Based on these findings, a series of back-end treatment concepts were developed to address the TNT mass in finer grain size fractions.

[9] Facility-specific studies indicate that the natural degradation process plateaus at formation of ADNTs and requires external stimulation or unreasonably long timeframes to achieve complete degradation to humic/fatty acids.

These options included:

- *Physical Separation*: including oversize grinding and treatment using attrition and flotation – requires additional treatment of sand and fines fractions

- *Physical Separation with Chemical Oxidation for sand fraction*: demonstrated to reduce target constituent concentrations below NJDEP NRDCSRS – requires additional treatment of fines fraction

- *Physical Separation with Chemical Oxidation for sand and fines fractions*: no additional treatment required to achieve target constituent NJDEP NRDCSRS

While chemical oxidation achieved the stated objectives at bench scale, further evaluation identified the following challenges associated with full-scale field implementation:

- Chemical oxidation would consume a substantial quantity of bulk chemicals (i.e., concentrated hydrogen peroxide), requiring an extensive regulatory permitting effort to authorize their storage and use at the Facility.

- Reagent contact occurred in a soil slurry (~15 percent solids), yielding a large volume of water requiring offsite disposal or additional onsite treatment.

Ultimately, treatability study results demonstrated that:

- Physical separation of TNT from soil yields a TNT concentrate waste stream that is costly to manage and dispose

- Supplemental chemical treatment to achieve NJDEP NRDCSRS is resource intensive and requires regulatory permits

Based on the findings of the treatability study, Hercules opted to further investigate bioremediation as a means of enhancing the natural degradation of TNT in soil. Bioremediation is an established remedial technology and has been used by the US Department of Defense (DoD) on a number of TNT remediation projects (i.e., Raritan Arsenal [NJ], Tooele Army Ammunition Depot [UT], Yorktown Naval Weapons Station [VA], Iowa Army Ammunition Plant [IA]) (**Appendix H**). A variety of techniques can be used to achieve and maintain soil conditions that facilitate bioremediation; land farming and/or composting represent low-tech options that require higher ratios of organic amendment in soil, while commercially-formulated mixtures enhance specific reactions in a low-bulking approach.

4.2.2 Bioremediation Conceptual Approach

Prior to the exploration of bioremediation, and specifically the evaluation of commercially-available amendments, conceptual remedies included two general steps – remove TNT nodules from soil and dispose of them offsite via incineration, and treat the residual mass in soil. The use of commercially available amendments to enhance biological degradation resulted in an evolutionary change to this two-step process. Specifically, rather than physically separating TNT nodules from soil, the soil would undergo a physical preparation process to reduce TNT particle size. Reducing the TNT particle size enhances the effectiveness of bioremediation and reduces

the time necessary to degrade the mass. This approach also eliminates the TNT concentrate waste stream, destroying mass onsite rather than moving mass offsite.

A two-step conceptual bioremediation remedy evolved to include physical preparation (grain size reduction, large aggregate removal) followed by bioremediation via a commercially available amendment.

To evaluate the feasibility and effectiveness of this conceptual approach, Hercules conducted a proof of concept pilot study using approaches scalable to full-scale implementation.

4.2.3 Pilot Study

The TNT bioremediation pilot study explored enhanced biodegradation techniques and assessed the influence of three key variables: amendment type, amendment dose, and dosing regime (incremental vs. one time). Pilot study activities began in spring 2015.

Pilot study activities occurred in two phases:

- *Phase I – Soil Preparation*: soil processing to generate the less than 2mm soil fraction containing TNT mass

- *Phase II – Management and Monitoring*: 84-day study period consisted of six 14-day cycles, weekly in-situ monitoring and moisture management, and bi-weekly analytical sampling

Attachment 3 presents the *TNT Bioremediation Pilot Study Report* summarizing pilot study procedures and monitoring results. **Attachment 4** presents a technical memorandum summarizing the results of supplemental post-study monitoring of pilot study soil that documents ongoing incremental reductions in target constituent concentrations following the initial study period. Collectively these documents present the results of the 84-day pilot study period during which active management of the soil occurred, and four monitoring events spanning the two years following the active management study period.

The results presented in these documents indicate that:

- TNT degradation occurs naturally in Facility soil, as demonstrated by the production of ADNTs during the study period in control trials. NJDEP SRS (NRDCSRS and RDCSRS) were not achieved in the control trials.

- Wood mulch composting using a low-bulking approach demonstrated an ability to degrade TNT. However, the trials did not achieve NJDEP SRS for target constituents during the study period.

- DARAMEND OE®, the commercially available amendment evaluated in the study, achieved NJDEP SRS for target constituents within the study period. The amendment dose and dosing regime influenced the amount of time needed to achieve these standards.

- Biodegradation of target constituents in soil in DARAMEND OE® trials continues to occur following active management.

Overall, the pilot study demonstrated that bioremediation using a commercially available amendment is a viable mass reduction component of a comprehensive remedy for target constituents in the TNT Project Area. Residual constituent mass (i.e., concentrations greater than IGWSSLs) will be addressed via the lasting effects of the amendment in soil (i.e., DARAMEND OE® continues to support biological breakdown for approximately 5 years) (**Appendix H**). Natural attenuation by native microbial communities will continue following the effective timeframe of DARAMEND OE® and will be the final remedy for soil and groundwater.

The pilot study also called attention to several additional considerations at full-scale implementation, beyond the effectiveness and efficiency of DARAMEND OE®. Considerations included:

- *Material handling and management:* The slurried feed material reduces mechanical handling effort and may prove to be an efficient means of transporting material from the processing area to the soil treatment cell.

- *Material processing*: Amendment distribution and feed material homogeneity are critical aspects of achieving expected results at full-scale. The heterogeneous mixture achieved in the pilot study via mechanical mixing was effective; however, improvements can be made at full scale that would result in more homogenous blending.

- *Non-target constituents*: Treatability and pilot work focused primarily on target constituents. The pilot study included a cursory evaluation of the fate of comingled non-target constituents (e.g., lead and pyrogenic polycyclic aromatic hydrocarbons). Remedial design should address soil containing non-target constituents exceeding NJDEP remedial standards and its potential effect on reuse of treated material to the excavation area.

4.2.4 Conceptual Process Design

Based on the results of the pilot study, Hercules initiated a conceptual process design for full-scale remediation of target constituents in TNT Project Area soil. The conceptual design included the following components:

- Particle size reduction and segregation of oversize aggregate using a physical soil processing plant to create biofeed

- Amendment of biofeed with DARAMEND OE®

- Delivery of amended biofeed to bio cells for engineered bioremediation

The design process identified several estimates and input parameters requiring confirmation to support process plant design and engineering. A series of field-based design verification studies refined estimates and design input parameters. **Attachment 5** presents the *TNT Soil Plant Design Verification Study Report* summarizing the findings of these studies.

Collectively, the initial design and supplemental verification study results were used to develop a preliminary design drawings package (**Attachment 6**). These drawings illustrate the process plant design and conceptual layout in the TNT Project Area. Actual plant process components and size,

location, and configuration of supporting structures (e.g., bio cells) will be identified during final design and engineering.

4.2.5 Water Budget & Engineering Evaluation

4.2.5.1 Water Budget

The bioremediation remedy outlined in the conceptual process design (Section 4.2.4) and more fully developed in Section 5 requires water to facilitate aggregate separation and grain size reduction, as well as to maintain optimal conditions for biological degradation in the bio cells. A water budget was developed to assist in the planning, design, and engineering of water supply and management systems associated with the process design.

The water budget considers the following:

- Process water managed via a closed loop system
- Makeup water originates from captured precipitation and/or the Facility's potable water supply
- Annual implementation occurring in cycles, with active and passive periods of the year
- Accumulated precipitation and associated stormwater runoff (i.e., plant process pad, water management basin, bio cells) represents a major contributory source of water requiring management
- Stormwater management strategies involve both capture and contain (for water potentially in contact with contaminants) and non-contact runoff. To the extent practicable, covering structures and surfaces will be considered to increase the fraction of stormwater managed as non-contact runoff
- Extreme (i.e., 100-year storm) precipitation events at various times throughout the duration of remedy implementation
- Local, state, and federal water management regulations, guidance, and best management practices.

Water management planning, including process demands, recycle rates, stormwater calculations, water storage basin engineering, and contingency planning, will be completed as part of final design.

4.2.5.2 Engineering Evaluation

The conceptual process design illustrates slurried amended biofeed delivered to bio cells for engineered bioremediation. The conceptual bio cell design considers use of conventional concrete bin blocks stacked three high to form the structural element of the bio cell (**Attachment 6**). The bio cell will be lined with high-density polyethylene (HDPE) liner material with leak detection capabilities. As it is pumped to the bio cells, the slurried amended biofeed will be mixed with a polymer to facilitate coagulation and dewatering.

A basic stability assessment evaluated the potential for sliding and overturning of the concrete bin block wall configuration of the bio cells. Assessment results indicated that sliding was possible, but unlikely (within the applied safety factor). Final design will consider methods to increase the

factor of safety, including passive soil placement along the outside of the concrete bin block system or "keying" the bin block system below the ground surface to provide added lateral stability, as well as the use of geotextile bags (e.g., geotubes) within the bio cell to alleviate lateral pressures. Analyses of potential settlement due to bio cell loading indicated that excessive settlement was not an issue.

4.3 Independent Technical Review

In 2017, Hercules compiled pilot study and conceptual design information and presented it to an independent technical review group consisting of industry peers, consultants, and other technical experts. The technical review involved a critical look at the conceptual design and identification of potential blind spots, design flaws, and/or value engineering opportunities. The review highlighted certain previously identified considerations (i.e., water management) as critical aspects of design, and demonstrated that the work to date was a suitable foundation on which to base the engineering design.

4.4 December 5, 2018 NJDEP Meeting

Following the successful technical review in 2017, Hercules collected field samples and evaluated analytical results in support of developing a TNT Project Area-specific impact to groundwater soil remediation standard (IGWSRS) in 2018. The synthetic precipitate leachate procedure (SPLP) dataset used in the evaluation had a high degree of variability, and presented challenges when following methods established in NJDEP's *Development of Site-Specific IGWSRS Using the SPLP* (2013). In response, Hercules requested a technical consultation with NJDEP.

Representatives from Hercules and NJDEP met in December 2018 to build consensus on the technical scope, regulatory approach, and site-specific cleanup goals associated with the proposed TNT Project Area remedy. Hercules provided an overview of the proposed remedy that included a summary of academic research, treatability studies, and field pilot studies that yielded Facility-specific data relative to the biodegradation of TNT and its metabolites. This data provided the technical basis for the proposed remedies for soil and groundwater.

NJDEP understood Hercules' proactive effort to address the impact to groundwater pathway and remediation standard and indicated that the involvement of their IGWSRS technical staff may be premature given where the project is in the remedial process. NJDEP also noted the reduced reliance on a site-specific IGWSRS in instances where groundwater contamination already exists, such as this case. The parties agreed that the study results to date justify the proposed remedy and are sufficient to support development of this TNT RAWP.

As per NJDEP guidance, Hercules will consult with NJDEP regarding development of a post-remediation site-specific impact to groundwater standard following active remediation of soil and monitoring of concentration trends in groundwater.

Attachment 7 presents the meeting minutes and NJDEP's acknowledgement from the December 5, 2018 meeting.

4.5 Regulated Waste Evaluation

Given the specific nature of wastes generated during the manufacturing of explosives, the USEPA has assigned K-series listing codes to certain waste materials related to the manufacturing of TNT. Specifically, these include:

- K044 - Wastewater treatment sludges from the manufacturing and processing of explosives
- K045 - Spent carbon from the treatment of wastewaters containing explosives
- K047 - Pink/red water from TNT operations

Hercules conducted an evaluation of the remedy in the context of these hazardous waste listing categories to identify potentially applicable regulations and permitting requirements. The evaluation identified that none of the three listing categories applied to the proposed remediation, based on the fact that the materials being remediated are neither wastewater treatment sludges, spent carbon, nor pink/red water from TNT operations. Hercules confirmed the results of their evaluation and obtained a formal waste classification from NJDEP in cooperation with NJDEP's RCRA Coordinator (**Appendix J**).

4.6 Sustainability

TNT Project Area remedial design considered socioeconomic, quality of life, and environmental influences of the project. These project considerations fall within the broader category of sustainable and/or green remediation. Recognizing that the surrounding community and environment as a whole are stakeholders in this process, Hercules evaluated guidance on sustainable remediation and associated best management practices published by a number of entities during the remedial design process, including:

- USEPA Region 2 Clean and Green Policy
- USEPA's Principles for Greener Cleanups
- Interstate Technology and Regulatory Council's Green and Sustainable Remediation guidance
- Sustainable Remediation Forum's resource library

The following list illustrates project elements designed to incorporate and/or aligned with sustainable remediation practices.

Resource Conservation

Energy – bioremediation onsite avoids fossil fuel consumption associated with offsite transportation (diesel) and thermal destruction (natural gas). Further, the reliance on utility-provided electricity to operate the plant in lieu of a diesel generator reduces net energy consumption. A diesel generator would rely solely on fossil fuels while the power provided from the electric grid is generated, in part, via renewable sources (i.e., wind, solar, pumped storage). FirstEnergy, the parent company of Jersey Central Power & Light that distributes

electricity at the Facility, generates more than 1/3 of its power from carbon-free sources. Contractors bidding on project implementation will be encouraged to use modern equipment with clean diesel technologies to further reduce the project's carbon footprint.

Water – the plant operates on a closed, recycled water loop. Captured stormwater serves as a source of make-up water and reduces the potable water make-up demand. The recycled process water serves as a source of irrigation water to maintain target soil moisture content in the bio cells. This closed loop system supplemented with stormwater will reduce the demand from the local aquifer by more than 5 million gallons over the course of the project.

Material Reuse – treated material will be used as backfill, eliminating the need for imported clean material to bring excavated areas to grade. Aggregate brought onsite to construct pads and roads will be removed at the end of the project, washed in the soil processing plant (with modifications) and certified for reuse elsewhere onsite.

Reliance on Natural Processes – the remedy leverages the natural microbial degradation of E&E in Facility soil that has been occurring for more than 100 years. The physical processing of the soil and addition of DARAMEND OE® simply optimize this ongoing natural process.

Land Reuse – the use of treated soil as backfill in excavated areas, and ongoing degradation of residual mass, facilitates reuse of the former TNT area for commercial/industrial uses. The remediation aligns with the overall Facility redevelopment plan focused on brownfields-type reuse of former industrial areas of the property.

Mass Destruction – bioremediation destroys target constituent mass, avoiding the physical transfer of mass from one location (the Facility) to another (a landfill) and eliminating a future environmental liability.

Community – the management and remediation of materials onsite reduce the heavy truck traffic in the surrounding community that would be necessary if material was excavated and sent offsite for treatment. Work will be conducted during normal working hours by a relatively small crew, avoiding lighting, noise, and traffic disruptions.

Waste – the processing, treatment, and in-situ monitoring of soil onsite eliminates off-site soil waste streams. Irrigation of the soil undergoing treatment with process water will reduce (or eliminate) the volume of water requiring management at the conclusion of the project. Aggregate used to create the pads and roadways will be removed at the conclusion of the project and washed using the soil processing plant (with modifications) to facilitate reuse elsewhere onsite.

Section 5: TNT Project Area Soil Remedy

5.1 Overview

The following sections discuss the technical approach, operational logistics, and schedule for the bioremediation remedy to provide the reader with a high-level overview. Section 5.2 and beyond expand upon this overview discussion and provide a detail account of pre-mobilization, site preparation, and field operation activities.

5.1.1 Technical Approach

The TNT bioremediation remedy is a multi-phase remediation project that relies on physical, chemical, and biological processes to destroy target constituent mass in soil. The remedy will occur in phases, as follows, with each phase having a specific objective.

The first phase includes:

Excavation and Blending – The physical process of excavating source material and blending it on the staging pad for processing reduces the physical and chemical variability of material and begins to break down and increase the surface area of crystalline solids.

Soil Processing Plant – The soil processing plant relies on industry standard mining technologies to reduce the grain size of crystalline material, increasing the surface area available for microbial contact and degradation. The processing plant will physically reduce source mass (i.e., crystalline TNT) particle sizes to less than 2 mm in diameter, and remove larger native aggregate (coarse [12.5 to 50 mm] and fine [2mm to 12.5 mm] oversize) from the material stream. The less than 2 mm in diameter material stream (biofeed) will undergo additional processing and be amended with a commercially available amendment (PeroxyChem's DARAMEND OE®) to stimulate bioremediation. The larger than 2mm material will be washed, verified to meet NRDCSRS, and returned to the excavation.

The next phase of the remedy involves the biological breakdown of target constituents in a controlled and monitored environment.

Ex-situ Bioremediation – The amended biofeed generated by the physical plant processes will be pumped to containment areas (bio cells), where conditions are managed to facilitate and optimize biological degradation over a 4- to 6-month period. Treatment in bio cells will achieve NJDEP's NRDCSRS for target constituents and yield a greater than 95 percent reduction in target constituent mass within a single field season.

The final phase of the remedy addresses in-situ biological degradation to address the remaining target constituent concentrations.

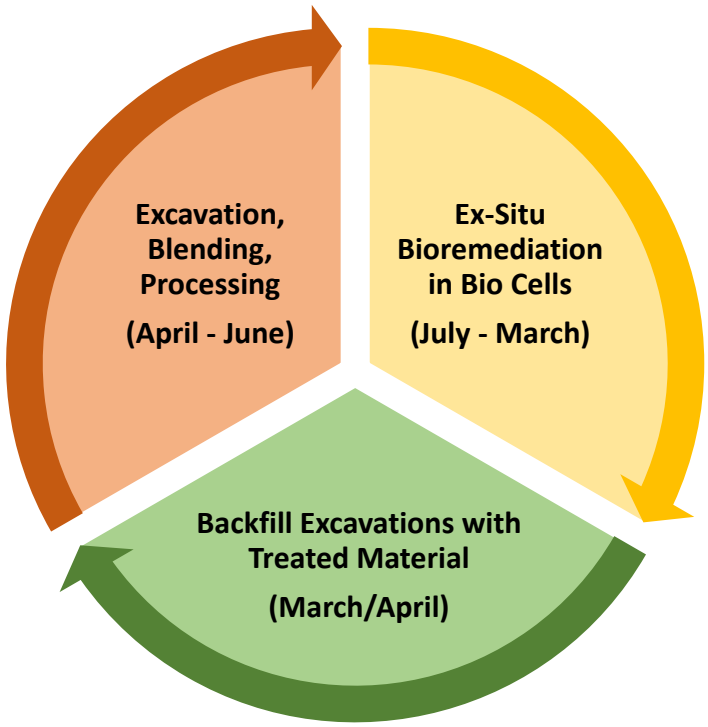
In-situ Biological Degradation – Following the period of management in the bio cells, treated biofeed will be removed and used to backfill the source excavation areas. Target constituent

mass remaining in backfilled material will continue to biologically degrade until constituent mass is exhausted. In-situ processes will be monitored, with achievement of remedial goals expected over a 5-year period.

5.1.2 Field Operations

An estimated 70,000 cubic yards (cy) of material[10] requires treatment, approximately 70 percent of which will end up in the bio cells (remaining 30 percent is oversize). The TNT Project Area layout (**Attachment 6**) contains five bio cells with a total capacity of approximately 15,000 cy. Hercules anticipates construction and processing to fill two bio cells during the first year of operations. This initial effort will focus on optimization of the field process and identifying design modifications (if any) to be incorporated into the construction of the remaining bio cells and subsequent years of field operations.

Treatment involving the first two phases of work (i.e., excavation/blending/processing and ex-situ bioremediation) will occur in a series of annual cycles and require the optimization year and 5 full cycles (years) to complete the ex-situ treatment phase of the project. The annual cycle is illustrated below.



[10] Volume estimate is based on 56,000 cy of bank material, and a 1.25 multiplier to estimate loose (excavated) cy.

Stormwater management, soil erosion and sediment control (SESC) maintenance, and other project area maintenance and monitoring activities will occur throughout the year independent of this cyclical schedule.

Excavation focuses on removing material to target constituents' RDCSRS based on the following:

- Soil concentrations associated with crystalline TNT source mass are greater than TNT's RDCSRS, and use of this conservative target maximizes the likelihood of excavating the crystalline TNT source mass.
- Source mass reduction to target constituents' NRDCSRS is achievable in a single season via ex-situ treatment, as demonstrated by the pilot study. Target constituent concentrations in treated material being used as backfill in excavation areas will be similar to the excavation margins.
- Ongoing reductions from target constituents' NRDCSRS occur following active treatment, as demonstrated in the pilot study, and are expected to deplete remaining source mass and mitigate mass transfer from soil to groundwater.

5.2 Remedy Implementation

This section outlines permitting, pre-mobilization planning, and field activities associated with remedy implementation. In the interest of clarity, the information is presented in chronological order at a consistent level of detail. Where needed, supplemental details are provided in latter sections and referenced accordingly during the sequential implementation sections that follow.

5.2.1 Preconstruction Activities

5.2.1.1 Permitting

Activities proposed in this RAWP will require local, state, and/or federal permitting prior to implementation. These permits may include:

- NJDEP – Division of Water Quality (DWQ) – Discharge to Groundwater Permit
- NJDEP – Division of Land Use Regulation (DLUR) – Freshwater Wetlands/Flood Hazard Area
- Morris County Soil Conservation District (MCSCD) – Soil Erosion and Sediment Control Certification
- Township/County – Site Plan Approval
- Township/County – Traffic Control: Howard Boulevard Entrance
- Township/County – Electrical Permit
- Jersey Central Power & Light (JCP&L) – Electrical Service Drop Authorization

Each of these permits, along with their specific requirements and purposes are addressed further in Section 5.4.

5.2.1.2 Construction Drawings & Specifications

The activities necessary to implement the proposed RA will include the preparation of construction plans and technical specifications in accordance with engineering standards and a level of detail commensurate with the scale and complexity of the project. The construction plans and technical specifications will be developed during final design and represent a component of the contract document package that will support bidding and contractor selection. Bidding will be targeted to qualified firms with demonstrable expertise and experience necessary to maximize the probability of success.

5.2.2 Site Preparation

5.2.2.1 Site Layout & Control

A site layout drawing will be a component of the construction plans to be completed as part of final design. The areas designated on the drawing will be established in the field as part of site preparation activities. These areas will include, but are not limited to, the following:

- TNT Project Area boundary
- Limits of disturbance associated with permits and regulatory approvals
- Excavation area boundaries
- Pads for soil processing plant and other supporting operations
- Staging areas for equipment, materials, and waste
- Locations for loading and unloading materials

Establishment of applicable work zones, as well as security, traffic, and site ingress/egress, are discussed further below.

5.2.2.2 Utility Clearance

A subsurface utility clearance survey will be conducted prior to intrusive site preparation or remedy implementation activities. The clearance will follow processes and procedures outlined in Hercules' Utility Location Policy and documented accordingly.

Multiple utility clearance surveys have been conducted as part of prior investigation work conducted in the TNT Project Area. This information, as well as other Facility-specific knowledge and history, will support the utility clearance survey.

Based on current knowledge, no active utilities exist in the TNT Project Area.

5.2.2.3 Surveying

A pre-construction survey will document pre-disturbance conditions in the TNT Project Area and identify critical infrastructure and/or topographic features of interest that may affect the remedy implementation. Survey work will be performed by a New Jersey-licensed surveyor and documented in an assigned/stamped existing conditions survey plan.

5.2.2.4 Soil Erosion & Sediment Controls

Remedy implementation in the TNT Project Area will disturb more than 5,000 square feet. As such, a Soil Erosion and Sediment Control Plan (SESCP) certification issued by the MCSCD is required. Hercules will apply for and obtain the SESCP certification prior to project implementation. The selected contractor will install controls to mitigate soil erosion and transport of soil or sediment in accordance with the SESCP.

5.2.2.5 Site Access

The primary entrance to the Facility for project staff and contractors will be from Hercules Road. Deliveries and large equipment will use one of the Howard Boulevard entrances to reduce heavy equipment traffic through the residential area of Hercules Road and to most efficiently access the TNT Project Area via existing roads at the Facility. Access routes will include stabilized construction entrances and other controls (e.g., decontamination pad) in accordance with the New Jersey Soil Erosion and Sediment Control (SESC) Standards.

The existing Facility perimeter fence will be relied upon for security. A secondary chain link fence may be installed around portions of the TNT Project Area to exclude wildlife, trespassers, and/or control access by project staff. Fencing may also be used to demarcate TNT Project Area boundaries and avoid disturbance to adjacent areas.

5.2.2.6 Decontamination Pad

Decontamination of equipment will be performed at a temporary decontamination pad constructed near ingress/egress roadways into the TNT Project Area. Excavation equipment and vehicles leaving the TNT Project Area that directly contact impacted material will be decontaminated on this pad. The decontamination area will consist of a stone covered pad, which will be bermed and lined to facilitate the flow of wash water to a sump that will be constructed at the lowest point. Water generated during decontamination procedures will be pumped to the water storage basin for recirculation through the processing plant. The decontamination pad location will be established as part of final design, will take into consideration traffic routes, and may be periodically relocated to accommodate the construction activity.

5.2.2.7 Clearing & Grubbing

Much of the TNT Project Area is vegetated, primarily as grasses and forbs interspersed with stands of shrubs and trees. Clearing and grubbing of vegetation will be necessary within the Project Area to facilitate ground surface grading and establishment of project-related infrastructure (e.g., traffic routes, pads, bio cells, water management basins), as well as access

to the soil surface in excavation areas. Cleared vegetation will be chipped and used as ground cover as necessary within the TNT Project Area.

5.2.2.8 Utilities

5.2.2.8.1 Electric

The soil processing plant will require a reliable power source to operate pumps, conveyor systems, screeners, and other supporting equipment. Worker support areas (e.g., parking lots, trailers) will also require a power source. Currently, there is not access to power in the TNT Project Area. Temporary power during site preparation may be provided by a diesel generator, but a semi-permanent source of power will be brought to the TNT Project Area via a power drop from the local power company (JCP&L) to support operations. A power drop provides a reliable source of power, has a lower potential to influence the surrounding community via noise and odor, has a smaller environmental footprint, and is likely more efficient and cost-effective than a generator.

The drop location and power demands will be identified during final design.

5.2.2.8.2 Water

As stated above in Section 4.2.4, water will be required for the process plant operation. To the extent practicable, captured and contained stormwater will be used as the primary source of make-up water. It is likely that contained stormwater volumes will be insufficient to meet the demands of startup during the first processing season. A number of options exist to meet this initial demand. Hercules maintains an operating water supply well network onsite capable of producing 1,700 gallons per minute. This onsite potable water source can supply the processing plant via an overland piping system (e.g., welded HDPE). Alternatively, water can be obtained from nearby Morris County Municipal Utilities Authority water supply lines and/or potable water deliveries via truck.

To reduce potential for freeze damage to the overland lines, all lines will be drained and pigged to ensure joints and line integrity are maintained throughout the winter non-working season. During initial spring start-up, pressure testing of lines will be completed with potable water and any leaking joints or lines will be replaced prior to beginning operations that season.

5.2.2.9 Civil Site Preparation and Grading

Existing Facility roadways require improvement to support remedy implementation, and new roads will need to be constructed to provide access and facilitate traffic flow within the TNT Project Area. Following clearing and grubbing, ground surface improvements will be required to support infrastructure associated with remedy implementation. Construction of access roads, processing plant equipment pads, soil blending/staging pads, reagent storage pad, bio cell pads, and water management tank pads will require grading to level uneven areas and develop positive drainage. In-situ soils may undergo physical compaction (if necessary) to enhance strength characteristics. Crushed stone pads and access roads will be constructed atop geotextile fabric placed on the graded ground surface.

The actual locations, specifications, and dimensions of the temporary access roads and crushed stone equipment pads, water management units and drainage features will be selected based upon equipment specifications and access/water management requirements developed during final design. Final design will occur under the direction of a New Jersey-licensed Professional Engineer (NJ PE), and the final construction drawings will contain a NJ PE signature and seal.

5.2.2.10 Bio Cell Construction

Bio cells will be constructed atop graded, crushed stone pads using conventional concrete bin blocks stacked three high (6 feet). Each bio cell will be lined with a dual-layer liner system that provides secondary containment/leak detection capabilities. A series of sumps will be installed to facilitate dewatering and moisture management.

The bin block wall is modeled as a standard gravity retaining wall, and internal stability related to the interaction between the stacked units of bin blocks is generally not considered. As indicated in Section 4.2.4, the bin block bio cell evaluation indicated stable conditions can be attained. The area between bio cells will likely be filled to create a stable working surface and buttress the bio cell wall against the lateral force of the biofeed within.

Once filled, precipitation at the bio cells will be managed as non-contact stormwater via a cover system that drains to the permeable working surface between bio cells.

Liner material selection, wall stability and buttressing, moisture management equipment, and a cover system will be addressed during final design. Final design will occur under the direction of a NJ PE and the final construction drawings will contain a NJ PE signature and seal.

5.2.2.11 Water Management Basin

Process water storage will be designed as an above ground modular basin(s) with dual layer liner for leak detection. Design drawings will include grading and ground surface preparations necessary to support construction of the basin(s). Based on capacity estimates (approximately 2.5 million gallons) from a preliminary water budget (Section 4.2.5.1), multiple basins may be constructed to more effectively manage sedimentation and solids settlement and maintain capacity to accommodate storm events.

Water management basin specifications and construction requirements will be developed during final design. Final design will occur under the direction of a NJ PE and the final construction drawings will contain a NJ PE signature and seal.

5.2.3 Soil Processing Plant

Following final process plant design and engineering, plant procurement and construction will begin. The plant consists of a combination of industrial mining equipment, custom fabricated structural elements, and common material management and plumbing supplies (e.g., valves, piping, pumps, gauges). **Attachment 6** illustrates the conceptual plant layout. Plant design will occur under the direction of a NJ PE and the final construction drawings will contain a NJ PE signature and seal.

The plant is being designed specifically for this project and will be constructed as a modular unit, with assembly, fit-out, and testing occurring offsite. Upon completion, the plant will be labeled, disassembled, and loaded onto a series of trucks for transport to the Facility.

At the Facility, the plant will be offloaded and assembled on the constructed pad under the direction of ART Engineering, LLC (plant designer and builder). Once assembled, the plumbing and electrical connections will be made and the plant will be wet tested prior to processing soil. Testing will assess the function of both plumbing and electrical systems.

The current schedule has site preparation and plant assembly occurring through summer and fall, and the initial soil processing effort beginning the following spring. As such, wet testing in the fall will require winterization of the plumbing before the winter.

5.2.4 Field Operations

Field operations will commence following permitting, site preparation, and process plant construction/delivery/assembly onsite. Field operations will occur on an annual schedule or cycle to achieve the following milestones:

March

- Begin field operations
- Remove bio cell covers (Years 2 and beyond)
- Empty bio cells, backfill previously excavated areas

April through June

- Excavate soil requiring treatment
- Blend excavated soil to create plant feed
- Process plant feed in soil processing plant
- Fill bio cells with biofeed
- Manage soil moisture in filled bio cells (incl. install covers)

July through November

- Process confirmation monitoring (to begin following filling of first bio cell each year)
- Manage soil moisture in bio cells

November through March

- Meet with NJDEP/LSRP to provide status update and review monitoring data
- No monitoring activities (soil microbes inactive when soil temperature is less than 50 degrees Fahrenheit [°F])

The following sections describe field operations in the general sequence outlined above.

5.2.4.1 Soil Preparation

Soil preparation consists of two primary steps: excavation, blending, and staging, and processing through a soil processing plant with the single objective of concentrating target constituent source mass in a biologically-accessible form (high surface area to volume ratio) in a physically- and chemically-homogenous biofeed material.

5.2.4.1.1 Excavation, Blending, and Staging

Excavation focuses on removing material to target constituents' RDCSRS based on the following:

- Soil concentrations associated with crystalline TNT source mass are greater than TNT's RDCSRS, and use of this conservative target maximizes the likelihood of excavating the crystalline TNT source mass.

- Source mass reduction to target constituents' NRDCSRS is achievable in a single season via ex-situ treatment, as demonstrated by the pilot study. Target constituent concentrations in treated material being used as backfill in excavation areas will be similar to soil at the excavation margins.

- Ongoing reductions from target constituents' NRDCSRS occur following active treatment, as demonstrated in the pilot study, and are expected to deplete remaining source mass and mitigate mass transfer from soil to groundwater.

Generating a feedstock for the soil processing plant requires a precise technical excavation, such that excavated and blended soil stockpiles have relatively consistent physical and chemical characteristics. Based on pilot and verification study results, an average feedstock concentration of approximately 2,000 milligrams per kilogram (mg/kg) TNT will be achieved by blending high concentration source area soil containing crystalline TNT with soil from adjacent areas with lower target constituent concentrations. An Excavation, Blending, and Staging (EBS) Plan, to be prepared as part of final design, will outline an excavation sequencing strategy to maintain a generally consistent feed concentration at the processing plant each processing year.

Soil excavation and blending will create a well-mixed feedstock with consistency in both physical (e.g., grain size distribution) and chemical (i.e., target constituent concentrations) characteristics. Consistency in feedstock at the front end of the soil processing plant will result in a predictable production rate of biofeed and oversize fractions. The EBS Plan will address excavation sequencing, blending procedures, and stockpile staging progressions to maintain a steady feedstock for plant operation. Elements to be expanded on and refined in the EBS Plan follow.

Secondary COCs (e.g., metals) were assessed during initial excavation planning, and are addressed in **Appendix C**. Where necessary, soil containing secondary COC concentrations requiring additional remediation that occur in excavation areas will be managed such that the treated soil can be returned to the source excavation area where remediation of secondary COCs

can occur. As indicated in **Appendix J**, certain soil containing lead will be managed via excavation and offsite disposal independently from the remedy outlined herein.

Excavation Process

- Concrete rubble stockpiles in excavation areas will be relocated to an appropriate area nearby in the TNT Project Area
- Soil will be removed via tracked excavator based on refined delineation characterization data; no post excavation sampling will occur
- Excavated soil will be stockpiled on the soil staging pad (an impervious surface with containment) with discrete stockpiles based on concentration and volume per the EBS Plan
- Stockpiled soil will be processed to remove large debris (greater than 50-mm diameter) via a trommel on the soil staging pad. Large debris stockpiles will be visually screened for TNT particles and residual adhered soil, once confirmed visibly free of TNT and adhered soil, the aggregate will be returned to the source excavation area.

Blending Process

- Multiple staged stockpiles will be blended together via excavator to create feed stockpile
- Blending procedures to be specified in EBS Plan
- Feed stockpile will be brought from the staging pad to the plant via front-end loader

Staging Process

- Blended stockpiles that equate to 3 days of processing will be staged and ready throughout the process
- Each stockpile will be sized to approximately 1 day of plant feed (~260 cy)
- Staged stockpiles for subsequent days will be maintained under plastic sheeting or in a moistened condition to avoid wind-blown dust

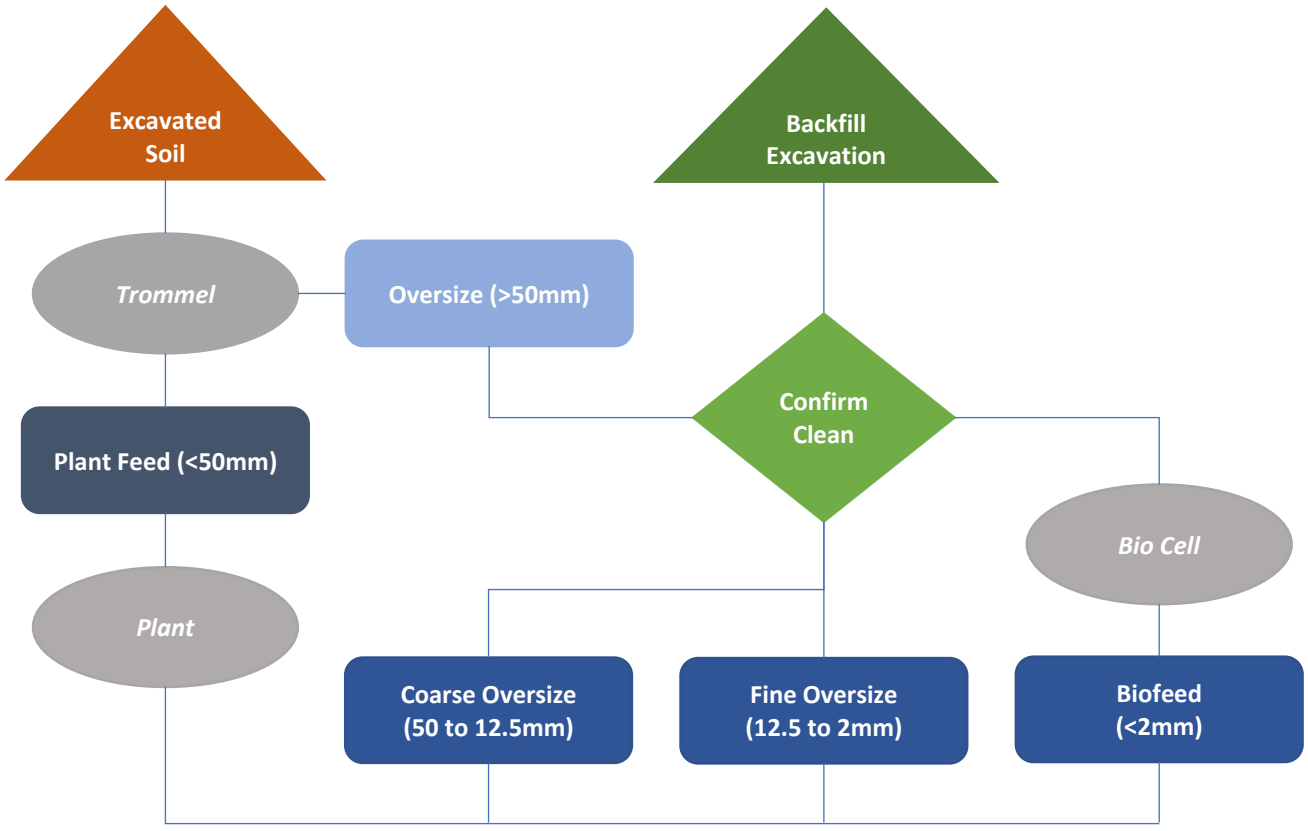
Each step of the excavation, blending, and staging process illustrated in the following graphic increases the homogeneity of the mixture and breaks down soil aggregates and crystalline TNT particles in the soil mixture.

5.2.4.2 Physical Soil Processing

The excavation and blending process begins the physical processing of the soil and breakdown of the TNT particles. Further grain size reduction and aggregate separation occurs in the soil processing plant.

The soil processing plant will physically segregate oversize material, reduce TNT particle grain size, and concentrate target constituent source mass in the biofeed fraction. The process relies on industry-standard mining and aggregate management processes and equipment. Based on source soil grain size distribution information, approximately 70 percent of the feedstock will emerge from the plant as biofeed, with the remaining 30 percent distributed between two oversize fractions (coarse oversize [greater than 12.5 mm in diameter] and fine oversize [between 12.5 and 2 mm in diameter]). The plant imparts sufficient physical energy into the feed material via a number of processes (e.g., attrition scrubber, drum scrubber, blade mill) to breakdown crystalline TNT nodules to less than 2 mm and entrain them in the biofeed; yielding oversize fractions visibly free of TNT (e.g., washed stone). Oversize fractions will be tested in accordance with the *TNT Bioremediation Process Confirmation Sampling Plan* (**Appendix D**) and *Quality Assurance Project Plan* (**Appendix E**) and evaluated for reuse as excavation backfill material under the *TNT Project Area Soil Reuse Plan* (**Appendix F**). The remaining fines fraction (biofeed) will be amended with DARAMEND OE® and conveyed to bio cells for ex-situ bioremediation.

The following illustration tracks the segregation and disposition of soil fractions during the process.



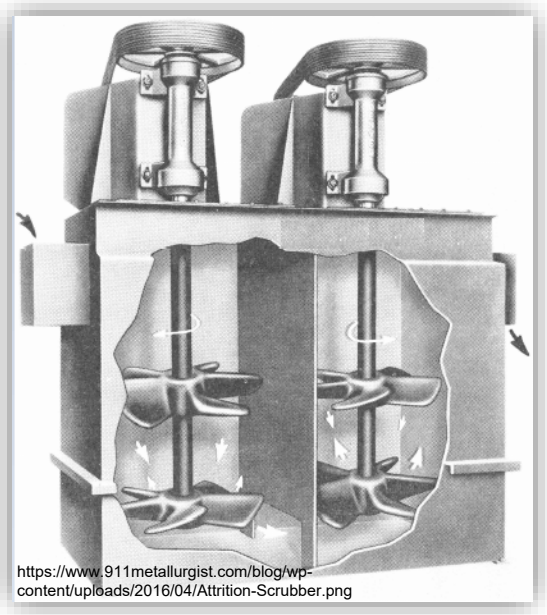
Attachment 6 provides process plant schematics and a process flow diagram of the conceptual treatment train. Specific elements of the plant include:

Wet screens – high pressure water wash as material passes over a vibratory screen deck. Undersized material passes through the deck while oversize material remains on top. Each material stream moves on to another treatment step per the process flow diagram.

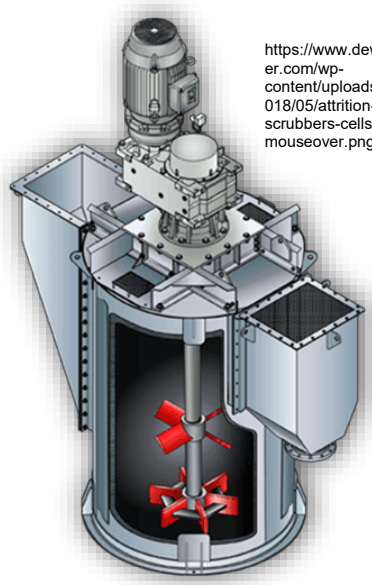
Aggregate conditioner (blade mill) – a rotating mechanical device that creates impact between aggregate particles and fixed or rotating components of the unit. Soft material adhered to harder aggregate is broken down, and the harder native material impacting the TNT particles will reduce TNT particle sizes. This mechanical wet process improves screening efficiency, reduces TNT particle sizes, and yields cleaner oversize fractions.

https://s3.amazonaws.com/mclanahan.com/images/Products/Wet/Aggregate-Conditioners/_resizeMedium/Aggregate-Conditioner-5.JPG?mtime=20180612101102

Attrition scrubbers – tanks containing a soil slurry and agitators that use the natural abrasive properties of the slurry to abrade entrained particles; the softer TNT material will be broken down as it contacts the harder native materials.



https://www.911metallurgist.com/blog/wp-content/uploads/2016/04/Attrition-Scrubber.png



https://www.dewater.com/wp-content/uploads/2018/05/attrition-scrubbers-cells-mouseover.png

Sand screw – an auger that separates sand from fines in a settling tank; the sand is coarse enough to be carried up the auger and discharges out one end, while fine material remains in the low end of the device.

https://i2.wp.com/www.diamondequip.com/wp-content/uploads/2016/06/TRIO_fmw4.jpg?resize=700%2C400&ssl=1

These primary treatment devices are connected via a series of conveyors, pumps, and pipes. Prior to leaving the plant, the biofeed is amended with DARAMEND OE®. The slurried, blended material is then pumped to the bio cells. A closed-cycle water loop will supply water to the plant. Process water is collected and recirculated to support continuous processing, with makeup water added as needed via the water source(s) described in Section 5.2.3.8. Ultimately, the process plant generates two oversize fractions free of TNT particles and concentrates target constituent source mass in the biofeed fraction. Oversize fractions will be managed and confirmed clean per the PCSP (**Appendix D**) prior to being returned to the excavation area.

The processing plant will be operated by a trained crew with discrete operational responsibilities. The plant design will include a basic programmed logic control system and motor interlocks to orchestrate the startup and shutdown of the plant and facilitate unplanned shutdowns without damaging equipment. ART Engineering, LLC, the designer and builder of the plant, will develop an Operations and Maintenance Manual (O&M Manual) and Plant Operator training program. Initial seasonal startup will occur under the guidance of ART Engineering, LLC, and they will remain available for troubleshooting once the plant is turned over to the operators.

5.2.4.2.1 Seasonal Shutdown & Startup Processes

The operation of the plant will occur in cycles, or seasons, with processing to fill bio cells occurring approximately from April 1 to June 30. Once the bio cells are filled, the process plant will undergo gross decontamination and winterization. Portable equipment will be stored in a secure, locked building onsite to prevent theft or vandalism. Winterization will include the de-energizing of the process plant equipment and the draining/purging of all process and water lines.

A cover system may be installed over the processing plant during the non-operational period between July and March such that precipitation can run to ground rather than be contained on the process pad (contaminated) and collected in the water management basin. The necessity for and specifications of a cover system will be addressed as part of final design.

The winterized and/or covered process plant will be inspected routinely during the non-operational period.

5.2.4.3 Ex-Situ Bioremediation

Biofeed arrives at the bio cells in a slurried state, pumped from the soil processing plant after being amended with DARAMEND OE®. The presence of DARAMEND OE® drives strongly reducing soil conditions and provides a carbon and nutrient source to stimulate the native microbial community in the soil and facilitate biological reduction of target constituents. The effectiveness of DARAMEND OE® has been demonstrated on E&E compounds across a number of DoD and private industry projects (**Appendix H**) and proven during the pilot study conducted at the Facility (**Attachment 3**). Greater than 95 percent reduction in target constituent mass is expected to occur during the ex-situ bioremediation phase of the remedy.

Ex-situ bioremediation is a generally passive phase of the project that occurs in the bio cells. While passive with respect to material processing and movement, the maintenance of optimal biologic conditions in the bio cells is critical to facilitating target constituent degradation.

5.2.4.3.1 Bio Cell Management

5.2.4.3.1.1 Filling

Amended biofeed leaves the plant in a slurried state and is pumped to the bio cells being filled. A series of valves allows plant operators to direct flow from the plant to the desired bio cells.

Upon arrival at the bio cells, the slurried biofeed receives a metered dose of flocculant polymer to facilitate solids settling and dewatering in the bio cell. At the bio cell, a biofeed discharge line attached to the boom of an excavator is used to sequentially fill the bio cell with biofeed beginning at one end and progressing to the other. As the biofeed is discharged to the bio cell, the polymer facilitates coagulation of solids, producing a flow of freely draining water in the bio cell. This water is contained in the bio cell and pumped out via a series of sumps around the perimeter of the bio cell. The water is recirculated to the water storage basin via a solids settling tank where it is drawn back into process plant operations.

The flocculent polymer is a cationic water-soluble acrylamide polymer used throughout the wastewater treatment industry in sludge and solids dewatering processes. The pilot study demonstrated that the polymer does not influence the performance characteristics of DARAMEND OE® or change the soil conditions (pH, moisture retention). The polymer's role is limited to the initial dewatering activities, after which it degrades in soil. Degradation occurs quickly via microbial, chemical, and mechanical means. Per the manufacturer, polymer concentrations in soil decrease by 70 percent over 28 days. As such, the polymer will be substantively degraded by the time the treated soil is ready to return to the excavation areas (approximately 300 days).

5.2.4.3.1.2 Cover

Once a bio cell is full, an arched span or low-profile cover will be installed over the cell to shed precipitation and avoid stormwater contact with biofeed/treated material containing target constituents. Hercules anticipates using commercially-available covers that are engineered and tested to withstand the environmental conditions at the Facility (e.g., wind, snow load, ultraviolet radiation).

5.2.4.3.1.3 Soil Moisture

Prior to discharge into the bio cells, the biofeed is dosed with a flocculating agent to facilitate rapid dewatering upon discharge. The biofeed will passively dewater and be maintained at a moisture content approximately 80 percent of the water-holding capacity of the material. This moisture content maximizes wetted interstitial pore space in the soil matrix where biological degradation occurs.

Soil moisture will be maintained using a mist/sprinkler system installed within the covered bio cell. Irrigation water will be pumped from the accumulated stormwater and recycled process water contained in the water storage basins.

Irrigation rates will be based on estimated evaporation rates and the soil's water holding capacity. These details will be addressed during final design and may be adjusted in the field to maintain optimal soil moisture.

5.2.4.3.1.4 Monitoring

Monitoring will occur in accordance with the *TNT Bioremediation Process Confirmation Sampling Plan* (**Appendix D**) and *Quality Assurance Project Plan* (**Appendix E**). Monitoring results will confirm target constituent concentrations less than NJDEP NRDCSRS to facilitate reuse in accordance with the *TNT Project Area Soil Reuse Plan* (**Appendix F**) as fill in excavated areas where ongoing in-situ biodegradation will occur.

Once filled, baseline monitoring data will be collected in accordance with the PCSP (**Appendix D**), and a cover will be installed over the bio cell to maintain a consistent soil moisture content and avoid capturing and containing precipitation runoff in the bio cell.

Monitoring of moisture content, pH, redox potential, and soil temperature (critical variables that facilitate bioremediation) will occur in accordance with the PCSP (**Appendix D**). Monitoring may occur manually in the field using probes/instruments or via in-situ probes with data logging and/or remote data transmission capabilities.

The pilot study demonstrated a rapid reduction in target constituent concentrations over the 12-week study period. Per the PCSP, bio cell monitoring of target constituent concentrations will occur upon filling (Day 0) and at 4-week intervals thereafter (Days 28, 56, 84). Soil temperature will continue to be monitored after Day 84, and if soil temperature is at or above 50°F at subsequent 4-week intervals (e.g., Day 112, 140), additional rounds of monitoring data will be collected.

In accordance with the PCSP, process confirmation monitoring will continue until data demonstrate attainment of ex-situ bioremediation success criteria for target constituents (i.e., NRDCSRS). Once success criteria are achieved, process confirmation monitoring will cease and the treated biofeed will be used as backfill (see Section 5.2.5.4.3). The final round of process confirmation sampling will assess treated biofeed for the full list of constituent classes present in excavation source material per the secondary COC evaluation provided in **Appendix C**.

5.2.4.3.1.5 Emptying

After process confirmation monitoring generates data indicating that the treated biofeed is suitable for use as backfill in excavation areas, the covers will be removed, and equipment mobilized to the empty the bio cells. Emptying will occur via long-reach excavators working from either side of the bio cell. Excavators will load treated material into articulating dump trucks for transportation to the excavations requiring backfill. Excavators will be equipped with wide grading buckets fitted with a rubber scraping edge to protect the integrity of the bio cell liner.

Process confirmation testing will occur in late summer and fall, such that analytical results are received and reviewed prior to the end of the calendar year. Results will be tabulated and presented to the NJDEP and LSRP in a progress status update meeting each winter prior to field teams remobilizing to the field to empty the bio cells. Concurrent with emptying the first bio cell in the spring, material will be excavated from source areas and blended on the processing pad. Once the first bio cell is empty, the processing plant will begin processing material and refilling the empty bio cell.

Equipment and labor will be available to empty the bio cells at a faster pace than the processing and filling, ensuring that there is always an empty bio cell and that the processing plant can operate without interruption.

5.2.4.3.2 Water Management

Water is critical to both the process plant operation and the establishing and maintenance of optimal soil conditions to support biological degradation in the bio cells.

5.2.4.3.2.1 Process Water

Process water demands are driven by the volume of water required to wash material on the wet screens and that are required to maintain the appropriate slurry density for attrition scrubbing and biofeed pumping to the bio cells. As biofeed is discharged to the bio cells, return water from dewatering will be pumped back to the water management basin to supply plant operations.

Initial startup water during the first year of operation may be provided by containing precipitation that falls in the bio cells (uncovered before first use) and water management basin. Additional water required to meet initial demand will be available from the water supply sources discussed in Section 5.2.2.8.2.

Process water from the water management basin will be used to irrigate the biofeed undergoing bioremediation in the bio cells. Bioremediation is most effective when soil is maintained between 80 and 90 percent of its water holding capacity. Irrigation will occur by placing a hose beneath the cover of the bio cell and pumping for a fixed duration of time (or known volume). Pumping duration and/or volume will be dictated by field measurements as outlined in the PCSP (**Appendix D**).

5.2.4.3.2.2 Stormwater

Precipitation represents an important component of the project. In general, the intent is to manage project infrastructure in a manner that minimizes the volume of precipitation that contacts contaminated material (or surfaces) and requires collection. To achieve this goal, cover systems will be used at much of the passive infrastructure (e.g., water management basin, filled bio cells). Where possible, other infrastructure will be covered once processing is completed for the season so that precipitation between July and April can be managed as non-contact stormwater and discharged to the ground surface. Stormwater runoff will be managed and discharged in accordance with applicable local, state, and federal regulations. Given the water demands of the project, at times precipitation may be deliberately contained as a source of makeup water.

The following elements related to precipitation will be considered during final design:

- Maintaining cover over bio cells unless actively being filled or emptied, resulting in no more than two bio cells open at any one time.
- Maintaining cover over the water management basin at all times
- Stockpiling covers in the blending and staging pad area that direct stormwater off the pad (a contaminated surface)

Section 4.2.5.1 summarizes a preliminary water budget that considers the elements above. This initial effort will be refined and assist in the development of best management practices (BMPs) pertaining to precipitation and stormwater that will be developed during final design. Project-specific BMPs will be documented in a stormwater management plan. The stormwater management plan will support obtaining the necessary permits and approvals related to stormwater management.

Final design will also explore the ability to beneficially reuse process water into the backfilled excavations to increase soil moisture and expedite the in-situ degradation of residual target constituents. Conceptual design activities to date indicate that:

- Recirculated process water in the water storage basins will be at/near saturation for target constituents and microbial communities at the conclusion of each processing season.

- Recirculation of the water within the water storage basin after the conclusion of the processing season will maintain colloidal material in the water column. This colloidal material will include soluble fractions of DARAMEND OE® and will facilitate degradation of aqueous phase target constituent mass within the basins. Degradation will occur rapidly under these conditions.

- Following a period of recirculation to facilitate degradation of target constituent dissolved phase mass, the microbial-rich process water could be surface applied and allowed to percolate into the treated material used to backfill the excavations.

- This approach could be permitted under a NJDEP Discharge to Groundwater Permit that will authorize adding DARAMEND OE® to the bottom of the excavation prior to backfilling.

5.2.4.4 In-Situ Biodegradation

In-situ biodegradation will occur in excavation areas backfilled with treated materials. DARAMEND OE® maintains its effectiveness in soil for approximately 5 to 7 years.

In-situ degradation will be monitored in accordance with a long-term monitoring plan (LTMP). The LTMP will be developed following review of the information generated by the PCSP (**Appendix D**) activities through the first process monitoring season and approved by the Facility's Licensed Site Remediation Professional (LSRP) prior to implementation.

5.2.4.4.1 Excavation Backfilling

Backfilling of excavation areas with treated biofeed from the bio cells will occur in accordance with the *TNT Project Area Soil Reuse Plan* (**Appendix F**). DARAMEND OE® will be blended into the native material at the base of the excavation prior to backfilling. Backfilled material will not be compacted to retain high moisture content in interstitial pore spaces and facilitate in-situ degradation. Interstitial pore space will be increased via the blending of clean oversize fractions at proportions similar to native material. Blending will occur via bucket mixing as the excavation is backfilled. This secondary polishing phase will continue until residual mass is depleted and no longer provides the food source needed to maintain a robust microbial community.

In anticipation of settling over time, the backfilled excavations will be mounded, with a shallow trough at the edge of excavation to assist in percolation of surface-water runoff. In-situ strength of the backfilled material will be somewhat low and will not be capable of supporting large construction equipment. Therefore, safety fencing and enhanced erosion control measures will be placed around the individual areas that have been backfilled until such time that soils have achieved remedial goals and natural consolidation has improved support capabilities.

Following ex-situ bioremediation and backfilling, sampling at backfilled excavations will monitor long-term biodegradation of residual target constituent mass in treated biofeed. Sampling strategy and procedures will be outlined in a long-term monitoring plan (LTMP). The LTMP will include monitoring and adaptive management strategies based on an assessment of biofeed homogeneity using data collected as part of process confirmation monitoring, as outlined in the PCSP (**Appendix D**).

5.2.4.4.2 Site Restoration

Disturbed areas not subject to long-term monitoring (e.g., areas adjacent to excavated areas) will be seeded with annual rye (*Festuca perennis*) to establish stabilizing cover and a native seed mixture to provide long-term vegetative cover of a diverse native plant community. Additional details regarding restoration of vegetative cover to portions of the TNT Project Area will be included in the SESCP and Restoration Plan approved as part of NJDEP – DLUR permits.

Project infrastructure will be managed as follows at the conclusion of the project.

Aggregate (temporary roadways and pads) will be removed from the ground surface and run through the soil processing plant, oversize fractions will be stockpiled for reuse following confirmatory testing in accordance with the PCSP. Fines will be handled as biofeed and sent to a bio cell for treatment. Once confirmed clean per the PCSP, the fines will be returned to the TNT Project Area in accordance with NJDEP's Fill Guidance.

Water management basins and bio cells will be deconstructed once emptied for the final time. Liner material, sumps, and other infrastructure in contact with biofeed will be either decontaminated or disposed of, concrete bin blocks will be staged for reuse or sold.

The soil processing plant will be decontaminated and broken down for transport and storage at the end of the final soil processing cycle and once treated material in the bio cells has been confirmed clean. As equipment is removed from the plant process pad, the underlying aggregate will be managed as noted above.

Upon completing the site restoration activities, equipment, excess materials, and other miscellaneous items will be demobilized from the Facility. Equipment used during the remedial action will be decontaminated, as necessary, prior to removal from the TNT Project Area.

Area of exposed ground surface will be seeded in accordance with the SESC Plan to establish vegetative cover. Areas regulated by NJDEP – DLUR will be addressed in a Restoration Plan submitted as part of the NJDEP – DLUR permit application.

5.2.5 Health & Safety

Activities outlined in this RAWP will be performed in accordance with the site-specific Health and Safety Plan (HASP) (or equivalent project-specific document) for the Facility. The HASP will comply with requirements set forth in accordance with Occupational Safety and Health Administration (OSHA) standards for hazardous waste operations (29 CFR 1910.120).

Additional health and safety controls will include the identification of designated zones onsite for specific activities including parking, eating, visitors, etc. Exclusion zones will be designated as needed to manage potential health and safety hazards regarding plant operation. Zones may be identified or altered as necessary by the Site Safety Officer (SSO). Prior to the start of each work day, the SSO will hold a meeting with all onsite personnel to discuss potential health and safety hazards for the tasks scheduled for that day.

Hercules will also coordinate with local police and fire departments prior to implementation to make them aware of implementation activities and related influences on risk and safety (i.e., increased Facility traffic, truck deliveries, heavy equipment operations).

5.2.5.1 Dust/Air/Noise/Odor

Environmental monitoring will be conducted throughout active implementation periods (e.g., April through June) to ensure the safety of field personnel as well as avoid or minimize impact on the surrounding community. Monitoring will include a combination of pre-implementation baseline perimeter and ambient monitoring for parameters including dust and project-related constituents in air, noise, and odors. Appropriate threshold values for monitored parameters and associated control measures, best management practices, and response actions will be outlined in the project-specific HASP.

The biodegradation process involves fermenting the carbon source(s) present in the bio feed, resulting in the production of carbon dioxide (CO_2), hydrogen, butyric acid and other gases commonly associated with fermentation processes. Odors associated with these gases will be monitored during the initial year of operation to assess the potential for nuisance impacts to the community. Design modifications for the bio cell cover systems can be made, if needed, to mitigate potential nuisance odors. The gases produced during biodegradation are not regulated as Hazardous Air Pollutants (HAPs) by the USEPA, and thus do not require Maximum Achievable Control Technology (MACT) compliance.

5.2.5.2 Gas

The biodegradation process generates CO_2 gas. Given the presence of lined walls extending above the surface of the treated material and a cover over the bio cells, the collection and concentration of CO_2 is possible, and could create conditions with insufficient oxygen in the breathing zone for workers monitoring the cells.

The potential for these conditions will be addressed in the HASP, and active breathing zone monitoring will occur when work is occurring in proximity to a covered bio cell. Covers will be pulled back prior to sampling and sufficient time waited before entering the area to sample such that the sampler's breathing zone contains ambient air (confirmed via instrument readings).

5.2.6 Contingency Plan

The remedial design presented in Sections 4 and 5 is grounded in prior science conducted by DoD and private industry, and proven effective under Facility-specific conditions during the TNT pilot study and post-study monitoring. While variables and outcomes have been studied and will continue to be managed through final design, contingency planning for unanticipated outcomes is warranted.

The following list provides potential outcomes related to operations and monitoring, each followed by a related response action.

Operations

- Excavation volume increases/decreases → increased/decreased number of cycles required to complete the remedy
- Process plant productivity increases → bio cells filled sooner, allowing for longer active degradation period before soil temperatures drop below 50°F.
- Process plant productivity decrease → process soil through the third week of July, allowing for approximately 90 days before soil temperatures drop below 50°F. Bio cell(s) may remain empty or partially filled based on productivity.
- TNT detonation during grain size reduction process → manage risk to personnel via restricted access to areas of potential detonation (e.g., blade mill) and equipment covers to contain ejected debris and process water.
- Process plant and/or equipment fire → suspend operations until equipment can be repaired and returned to service.
- Excess treated biofeed during excavation backfilling → stockpile on process pad until new/next excavation area is opened.
- Process equipment failure → suspend processing and make necessary repairs; process plant will be equipped with an emergency shutdown procedure initiated via a series of motor and pump interlocks to ensure safe and prompt plant shutdown. Backup equipment (e.g., pumps, valves) will be maintained onsite to expedite return to operation. Large fixed equipment (e.g., wet screens, conveyors) will be procured from reputable vendors that can provide emergency service and repairs if required. Heavy equipment (e.g., excavators, loaders) will be inspected daily and taken out of service for repairs as needed.
- Infrastructure (i.e., water management basin, bio cell) failure → features will be equipped with secondary containment, processing will be suspended, and the necessary repairs made;

redundancy (i.e., multiple basins and bio cells) will provide operational flexibility in the event of a failure.

- Major storm events → perform scheduled shutdown of operations and prepare work area for forecasted event; manage process water storage in bio cells as needed to provide excess capacity in water storage basins (design specifications accommodate 100-year storm event[s]).
- Vandalism → cease operations until the vandalized and/or damaged equipment is restored to operational status; improve TNT Project Area security to reduce the likelihood of recurring incidents.
- Force majeure/civil unrest/acts of God → cease operations and prepare TNT Project Area for pending events; if prior knowledge is not possible, manage the situation as an emergency in accordance with the project-specific HASP, ensure the safety of personnel, and shut down operations.
- Traffic/Closure of Public Roadways → identify alternate routes/access points, stockpile supplies onsite ahead of anticipated closures (e.g., construction); project sequencing does not require daily traffic of large trucks over public roadways, following initial mobilization at the beginning of the project (or season) routine deliveries will occur on a weekly or biweekly basis and be limited to one or two trucks. Traffic routes for vehicles other than employee/worker vehicles will avoid using the Hercules Road entrance to the extent practicable.
- Supply chain disruption (heavy equipment mobilization) → activities will be delayed until the specified equipment or a suitable alternative can be mobilized to the Facility.
- Supply chain disruption (DARAMEND OE®) → weekly deliveries are anticipated to meet plant demands, absent DARAMEND OE® processing will be suspended until an adequate and reliable supply is obtained.

Monitoring

- Oversize fractions sampling results greater than NRDCSRS → recirculate stockpiled fraction(s) through the plant and retest, associated plant modifications (wash screen retention time increase) will be addressed in the O&M Manual for the plant.
- Analytical data variability within or between bio cells → analyze discrete samples and evaluate data for sources of variability; evaluate process plant operations influencing biofeed homogeneity.
- Target constituent concentrations in biofeed/bio cells greater than NRDCSRS at end of cycle → leave biofeed in bio cell for another season, continue sampling program; will reduce productivity and may increase number of seasons required to complete the remedy; evaluate operational changes (e.g., increase amount of DARAMEND OE added).

- Target constituent concentrations in in-situ treated/backfilled biofeed not demonstrating reducing trend → assess soil conditions (e.g., moisture, oxidation-reduction potential) more frequently, address deficiencies (e.g., irrigate, in-situ mixing with DARAMEND OE®).

Hercules will notify the appropriate entities (e.g., LSRP, NJDEP, MCSCD, Roxbury Township) of unanticipated outcomes based on regulatory requirements and project approvals. The PCSP (**Appendix D**) addresses process adaptation(s) in response to monitoring results. The process plant O&M Manual will contain response procedures for atypical operating scenarios (e.g., emergency shutdown). These procedures will be addressed and trained on as part of the process plant operator training program and drilled during plant startup.

Overall, the process is robust and remains adaptable to accommodate unanticipated outcomes without compromising the ability to successfully implement the overall remedy and achieve remedial action objectives.

5.3 Permits & Approvals

Certain activities proposed in this RAWP will require local, state, and federal permits. Engineering design and construction documents will be prepared for the proposed activities, and certified, as required, by a NJ PE. These documents will be included with permit application submittals that will be required prior to and as part of implementing the scope of work proposed in this RAWP.

Potentially required permits identified as part of the remedial activities are described in detail below. The comprehensive evaluation of potentially regulated activities also identified regulations under which proposed activities do not require permits (i.e., air compliance).

5.3.1 NJDEP – DWQ – Discharge to Groundwater Permit

A Discharge to Groundwater (DGW) permit will be obtained in accordance with N.J.A.C. 7:14A-7. Discharge to groundwater activities will include:

- The one-time addition of solid phase DARAMEND OE® in the bottom of the excavation areas prior to backfill materials placed in the saturated zone.

- Seasonal surface application recycled process water to the backfilled excavations to increase soil moisture and expedite the in-situ degradation of residual target constituents (as discussed in Section 5.2.4.3.2.2.).

The DGW permit application will be submitted following LSRP certification of this RAWP.

5.3.2 NJDEP – DLUR – Freshwater Wetlands/Flood Hazard Area

Proposed remedial activities were compared to the known extent of areas regulated by NJDEP – DLUR (i.e., freshwater wetlands, freshwater wetland transition areas, flood hazard areas, riparian zones). In accordance with NJDEP Freshwater Wetlands Protection Act Rules and Flood Hazard Area Control Act Rules, N.J.A.C. 7:7A and 7:13, a Freshwater Wetlands General Permit 4 (FWW GP4) and Flood Hazard Area Individual Permit (FHAIP) will be required to conduct remedial activities in these regulated areas.

The DLUR permit application submitted to NJDEP will include a discussion of the potential presence of bog turtle (*Chlemys muhlenbergii*), a state endangered and federally threatened species, and propose BMPs (e.g., active work area monitoring, exclusion fencing) to address the potential for TNT Project Area disturbances to influence bog turtle habitat.

The DLUR application can be submitted following LSRP certification of this RAWP.

5.3.3 MCSCD – Soil Erosion and Sediment Control Certification

A SESC Certification was issued by MCSCD for the TNT pilot study work. The certification was effective through 2018. Based on the extent of the proposed activities and disturbance of more than 5,000 square feet of excavated soil, approval of a SESCP by MCSCD is required. The SESCP will define the measures to be taken during project implementation to mitigate soil erosion and transport of soil or sediment. In addition, stormwater management during temporary construction (excavation) activities requires a Request for Authorization (RFA) under NJDEP Construction Activity Stormwater General Permit (5G3) through the NJDEP Bureau of Nonpoint Pollution Control. As such, an SESCP certification application will be submitted to MCSCD and an RFA for the 5G3 will be submitted via NJDEP's online permit program.

The MCSCD certification application can be submitted following final design.

5.3.4 Local Permits

The project will require local permits to be obtained by the selected remediation contractor. Local permit approvals may include, but are not limited to the following:

- Township/County – Site Plan Approval
- Township/County – Traffic Control: Howard Boulevard Entrance
- Township/County – Electrical Permit
- JCP&L – Electrical Drop Authorization

Local permit applications can be submitted following final design and/or as part of the selected contractor's pre-mobilization activities.

5.4 Documentation & Reporting

Hercules will generate data throughout the soil processing and bioremediation components of the project. Monthly progress reports will be submitted throughout the project summarizing active season material movement and processing quantities, as well as analytical data received. During the inactive season, monthly reports will document site inspections and any maintenance activities conducted. Monthly progress reports will be submitted to the LSRP and NJDEP.

The PCSP (**Appendix D**) establishes an annual reporting frequency where data will be summarized and interpreted in the context of remedial progress and attainment of remedial action objectives established in Section 4.4. Annual reports will be submitted to the LSRP and NJDEP,

and serve as the basis for annual project progress update meetings each spring. Hercules, the LSRP, and NJDEP will meet to discuss results and address any process modifications as part of an adaptive management and optimization approach.

Following the completion of ex-situ bioremediation activities (i.e., attainment of the NRDCSRS remedial action objective), Hercules will prepare a remedial action report (RAR) presenting actual operational quantities (volumes excavated, processed, and backfilled), process confirmation dataset, as-built extents of excavation areas, and other information relevant to the preceding active phase of the remedy. The RAR will include an application for a remedial action permit (RAP) to facilitate the long-term monitoring program. A LTMP will be appended to the RAR.

Consistent with NJDEP recommendations, the RAR will facilitate a discussion of the need for and development of a TNT Project Area-specific impact to groundwater soil remediation standard.

A restrictive covenant (i.e., deed notice) is required for the LSRP to issue a response action outcome (RAO). The deed notice will be Facility-wide or area-specific depending on timing of other remedial actions onsite beyond the TNT Project Area.

Section 6: Implementation Schedule

Appendix I presents a project implementation timeline. Implementation along this timeline is contingent upon receipt of permits and approvals, and contractor selection and availability.

As previously noted, the current excavation volume will require four processing cycles to treat the material. Section 3.2.4 indicates that potential target constituent source mass exists elsewhere onsite that will be delineated and assessed for incorporation into the TNT Project Area remedy. Based on current information, those volumes are considered negligible in the context of the overall excavation volume and is not expected to extend the project beyond four processing years.

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Tables

Table 1. Case Inventory Document
TNT Project Area Soil Remedial Action Work Plan
Hercules LLC, Former Kenvil Works Facility
Kenvil, New Jersey

AOC ID	AOC Type	AOC Details	Confirmed Contamination	AOC Status	Status Date	Incident #	DEP AOC Number	Contaminated Media	Contaminants of Concern	Additional Contaminants of Concern	Additional Contaminants of Concern	Applicable Remediation Standard	Exposure Route	Additional Exposure Route	RA Type	Additional RA Type	Additional RA Type	Was an Order of Magnitude Evaluation Conducted?	Activity
AOC1	Environmental media - Media Soil, including soil vapor pore spaces	A-Line Area - Originally began operations as a storage area for dynamite products in the late 1800's. The area was repurposed in 1915 to produce smokeless gunpowder and maintained this usage until Facility closure in 1996.	Yes	RI	5/3/2016			Soil	Metals + PAHs	VO	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC2	Environmental media - Media Soil, including soil vapor pore spaces	Ammonium Nitrate Area - This area was established in the late 1940's for the production of ammonium nitrate prills used in commercial blasting. This usage continued until the early 1970's when the process was moved to another facility.	Yes	RI	5/3/2016			Soil	Metals	PAHs	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC3	Environmental media - Media Soil, including soil vapor pore spaces	B-Line Area - This area was established in 1915 to produce smokeless gunpowder and maintained this usage until Facility closure in 1996. This area also produced cast smokeless powder for use in small rockets during the cold war (circa mid 1950's through late 1980's)	Yes	RI	5/3/2016			Soil	Metals + PAHs	VO	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC4	Environmental media - Media Soil, including soil vapor pore spaces	Development Area - Established in 1915 for research and quality control for the development and improvement of propellants/explosives. This function was maintained until Facility closure in 1996.	Yes	RI	5/3/2016			Soil	Metals + PCBs	PAHs	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC5	Environmental media - Media Soil, including soil vapor pore spaces	Dynamite Area - Established in 1871 for the manufacture of dynamite. This usage continued until the production was phased out in 1971.	Yes	RAW	8/25/2020			Soil	Metals	PAHs	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal		Excavation	Bioremediation	Monitored Natural Attenuation		The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil. A portion of this AOC is being addressed as part of the TNT Project Area Soil Remedial Action Work Plan.
AOC6	Environmental media - Media Soil, including soil vapor pore spaces	Finishing Area - Established in 1915 for coating and packaging of smokeless powder. This usage was maintained until Facility closure in 1996.	Yes	RI	5/3/2016			Soil	Metals	PAHs	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC7	Environmental media - Media Soil, including soil vapor pore spaces	Maintenance Area - Established in the late 1800's as a Facility support and repair area. This area also served as a power generation area beginning in approximately 1940. The area usage remained the same until Facility closure in 1996.	Yes	RI	5/3/2016			Soil	Metals + PCBs	VO + PAHs	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC8	Environmental media - Media Soil, including soil vapor pore spaces	Miscellaneous Off-Site Areas - This area encompasses non utilized buffer zone property and activites not associated with manufacturing operations (i.e. groundwater supply, personnel housing, etc.)	Yes	RI	5/3/2016			Soil	PAHs	Metals	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC9	Environmental media - Media Soil, including soil vapor pore spaces	Nitroglycerin Area - Established in 1871 for the manufacture of nitroglycerin used originally in dynamite and later smokeless powder production. The area usage remained the same until Facility closure in 1996.	Yes	RAW	8/25/2020			Soil	PAHs	Metals	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal		Excavation	Bioremediation	Monitored Natural Attenuation		The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil. A portion of this AOC is being addressed as part of the TNT Project Area Soil Remedial Action Work Plan.
AOC10	Environmental media - Media Soil, including soil vapor pore spaces	Storage Area - Established in 1915 for the storage and shipping of propellants and explosives manufactured at the Facility. This usage was maintained until Facility closure in 1996.	Yes	RI	5/3/2016			Soil	PAHs	Metals	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC11	Environmental media - Media Soil, including soil vapor pore spaces	TNT Area - Established in 1917 to produce TNT for World War I. Production in this area ceased in approximately 1920 after World War I ended.	Yes	RAW	8/25/2020			Soil	PAHs	Metals	Other	AOC Specific ARS and Remediation Standards	Ingestion/Dermal		Excavation	Bioremediation	Monitored Natural Attenuation		The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil. This AOC is being addressed as part of the TNT Project Area Soil Remedial Action Work Plan.

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AOC ID	AOC Type	AOC Details	Confirmed Contamination	AOC Status	Status Date	Incident #	DEP AOC Number	Contaminated Media	Contaminants of Concern	Additional Contaminants of Concern	Additional Contaminants of Concern	Applicable Remediation Standard	Exposure Route	Additional Exposure Route	RA Type	Additional RA Type	Additional RA Type	Was an Order of Magnitude Evaluation Conducted?	Activity
AOC12	Environmental media - Media Soil, including soil vapor pore spaces	Diazo Area - Established in the mid 1950's to produce diazodinitrophenol for use in initiating devices. Production in this area ceased in 1984 with the sale of the high explosives division to Ireco.	Yes	RI	5/3/2016			Soil	Metals	Other		AOC Specific ARS and Remediation Standards	Ingestion/Dermal						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil.
AOC13	Environmental media - Media Soil, including soil vapor pore spaces	PETN Area - Established in the early 1960's to produce pentaerythritol for using in detonation cord. Production in this area ceased in 1984 with the sale of the high explosives division to Ireco.	Yes	RAW	8/25/2020			Soil	Metals + PAHs	Other		AOC Specific ARS and Remediation Standards	Ingestion/Dermal		Excavation	Bioremediation	Monitored Natural Attenuation		The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Results from this AOC were combined with the results from other AOCs to complete the delineation of constituents of concern in soil. A portion of this AOC is being addressed as part of the TNT Project Area Soil Remedial Action Work Plan.
AOC14	Environmental media - Media Ground water	Site Ground Water	Yes	RI	5/3/2016			Ground Water	Metals	Other		AOC Specific ARS and Remediation Standards	Ground Water						The SI was conducted between 1998 and 2005 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2009 and the Phase II RI was conducted in November 2013. Constituents of concern in groundwater have been delineated within the property boundaries.
AOC15	Environmental media - Media Sediment	Surface Water Drainage System - Sediments	Yes	RI	5/3/2016			Mixed Media	Metals + PAHs	VO	Other	AOC Specific ARS	Sediment						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2006 and the Phase II RI was conducted in November 2013. Constituents of concern in sediment have been delineated within the former operational areas.
AOC16	Environmental media - Media Surface water	Surface Water Drainage System - Surface Water	Yes	RI	5/3/2016			Surface Water	Metals + PAHs	VO	Other	AOC Specific ARS and Remediation Standards	Surface Water						The SI was conducted between 1998 and 2004 and approved by the NJDEP on June 27, 2005, Phase I RI was conducted between 2005 and 2007 and the Phase II RI was conducted in November 2013. Constituents of concern in surface water have been delineated within the former operational areas.

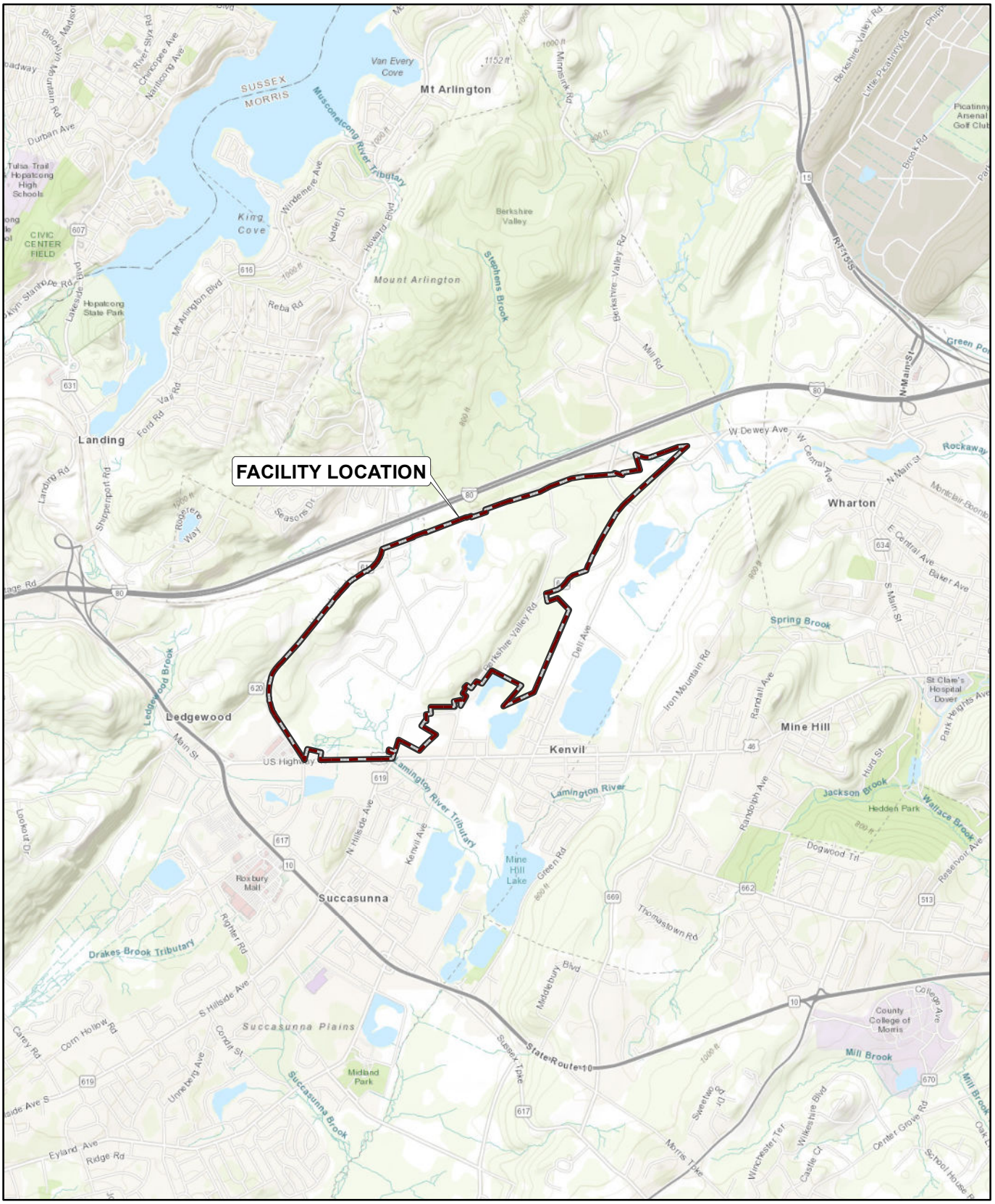
Table 2. Area of Attainment AOCs
TNT Project Area Soil Remedial Action Work Plan
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Former Operational Area	Grid Cell	Area of Concern	Description
Dynamite	B12	B12-422	Dynamite Mix Houses #5 & #6
Dynamite	B13	B13-262A	Gel Mix House #2
Dynamite	B13	B13-7	Motor House for Gel Mix House #2
Dynamite	C12	C12-1	Earthen Pits
Dynamite	C12	C12-274	Talley Gel Mix House #1
Dynamite	C12	C12-275	Unknown
Dynamite	C12	C12-3	Stressed Vegetation A
Dynamite	C12	C12-4	Stressed Vegetation B
Dynamite	C12	C12-418	Unknown
Dynamite	C12	C12-5	Stressed Vegetation C
Dynamite	C12	C12-8229	Change House
Dynamite	C13	C13-1	Thirty Acres Area
Dynamite	C13	C13-133	Triton Store
Dynamite	C13	C13-2	Spray Field A
Dynamite	C13	C13-262B	Gel Mix House #1
Dynamite	C13	C13-263C	Blower House for Gel Mix House #1
Dynamite	C13	C13-282B	Dynamite Mix House #2
Dynamite	C13	C13-3	Unknown
Dynamite	C13	C13-666	Refined Graining House
Dynamite	C13	C13-742	Gel Pack House
NG	B10	B10-511	Graining House #1
NG	B10	B10-7	TNT in Soil
NG	B11	B11-1	Acid Recovery Area
NG	B11	B11-11	Absorption Tower
NG	B11	B11-2044	Redford Paste House, Heater House Catch Tank
NG	B11	B11-2044C	Control House
NG	B11	B11-3	Electric Transformer
NG	B11	B11-4	Tank Saddle
NG	B11	B11-5	NG Gutter
NG	B11	B11-6	Tank Cradles
NG	B11	B11-9	Heater House
NG	C10	C10-1	Electric Transformer
NG	C11	C11-1	Former pond
NG	C11	C11-10	Coal Pile
NG	C11	C11-12	Name Unknown
NG	C11	C11-27	Unknown
NG	C11	C11-28	NG Gutter
NG	C11	C11-28A	NG Gutter
NG	C11	C11-29	NG Waste Gutter
NG	C11	C11-30	Acid Recovery Bldg
NG	C11	C11-4	Stressed Vegetation
NG	C11	C11-4A	Stressed Vegetation
NG	C11	C11-4B	Stressed Vegetation
NG	C11	C11-7	Stressed Vegetation
NG	C11	C11-8	Stressed Vegetation
NG	C11	C11-9	Unknown
NG	C11	C11-N3	Neutralizer # 3 Scrap Shed
PETN	B10	B10-2178	PETN Blender
PETN	C10	C10-15	Tank Saddles
PETN	C10	C10-2	PETN Crystallizer Tank Saddles
PETN	C10	C10-2176	PETN Crystallizer
PETN	C10	C10-2179	PETN Nitric Acid Store
PETN	C10	C10-3	PETN Crystallizer Tank Saddle
TNT	A11	A11-1	Mononitrator #2
TNT	A11	A11-2	Mixed Acid Storage #3
TNT	A11	A11-3	Absorption Tower #2
TNT	A11	A11-4	Acid Fortifier #2
TNT	A11	A11-5	Bi/Trinitrator #2
TNT	A11	A11-504	Weak Acid Storage Tanks
TNT	A11	A11-570	Change House
TNT	A11	A11-7	Nitric Acid Storage #2
TNT	A11	A11-8	Mixed Acid Storage Tanks #4
TNT	A11	A11-9	Rock Quarry
TNT	A12	A12-1	TNT in Soil
TNT	A12	A12-3	Heater House
TNT	A12	A12-4	Catch Tank

Table 2. Area of Attainment AOCs
TNT Project Area Soil Remedial Action Work Plan
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Former Operational Area	Grid Cell	Area of Concern	Description
TNT	A12	A12-426	Block Breaker
TNT	A12	A12-5	Former Tank Cradle
TNT	A12	A12-6	Glass Debris Area
TNT	A12	A12-7	Neutralizer/Pelletizer #2, associated Catch Tank
TNT	A12	A12-8	Debris Area
TNT	A13	A13-1	Filter House #3 Sump
TNT	A13	A13-625	Filter House #2
TNT	A13	A13-753	Filter House #3
TNT	B10	B10-2	TNT in Soil
TNT	B10	B10-20	Former Water Tank
TNT	B10	B10-3	Scrap Brine Coils
TNT	B10	B10-4	Scrap Brine Coils
TNT	B10	B10-5	Possible Catch Tank for B10-508/B10-509
TNT	B10	B10-501	Nitric Acid Storage #1
TNT	B10	B10-502	Mixed Acid Storage Tanks #1
TNT	B10	B10-503	Mononitrator #1
TNT	B10	B10-505	Acid Fortifier
TNT	B10	B10-506	Absorption Tower #1
TNT	B10	B10-508	Bi/Trinitrator #1
TNT	B10	B10-509	Neutralizer/Pelletizer #1
TNT	B10	B10-6	TNT in Soil
TNT	B10	B10-656	Nitric Acid Storage Tanks
TNT	B11	B11-2	Standpipe
TNT	B11	B11-513	Crude Screening House, associated sump
TNT	B11	B11-523	Change House
TNT	B11	B11-602C	Reservoir
TNT	B11	B11-663	Graining House #2, associated sump
TNT	B12	B12-1	Perchlorate Grinder
TNT	B12	B12-234	Filter House #1 Sump
TNT	B12	B12-237	Filter House #1
TNT	B12	B12-3	Culvert
TNT	B12	B12-450	Perchlorate Grinder
TNT	B13	B13-1	Settling Pond
TNT	B13	B13-682	Weak Liquor House
TNT	B13	B13-724	Ether Still House
TNT	B13	B13-757	Mother Liquor House
TNT	B13	B13-8	Filter House #2 Sump
TNT	C10	C10-432	Unknown
TNT	C10	C10-438	Mixed Acid Storage #2
TNT	C10	C10-439	Weak Acid Storage Tanks
TNT	C10	C10-440	Waste Acid Storage Tanks #2
TNT	C10	C10-466	Unknown

Figures



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New Jersey

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT AREA SOIL REMEDIAL ACTION WORK PLAN

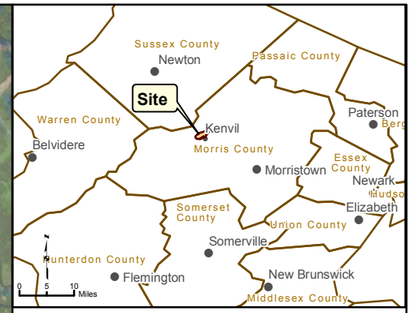
FACILITY LOCATION MAP

HERCULES

Kennedy Jenks

FIGURE
1

Development Area
Storage Area
Diazo Area
Finishing Area
B-Line Area
A-Line Area
Maintenance Area
NG Area
PETN
AN Area
TNT Area
Dynamite Area
Duck Pond
Lake Junction
Barnard Construction Company Pond
Marine Lake
Kenvil



Index Map

Legend

- Site Boundary
- Former Operational Area Boundary

Notes:
1. Basemap information from electronic file provided by Ashland, Inc. Titled: "Site Plan.dwg"

2. Operational areas digitized from MWH, Remedial Investigation Report, Hercules Incorporated Kenvil Works Facility, figure titled: "Sediment Sample Location Map", figure D-1.

N

0 100 200 400
Feet

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT AREA SOIL REMEDIAL ACTION WORK PLAN

FORMER OPERATIONAL AREAS

HERCULES
Kennedy Jenks

FIGURE
2

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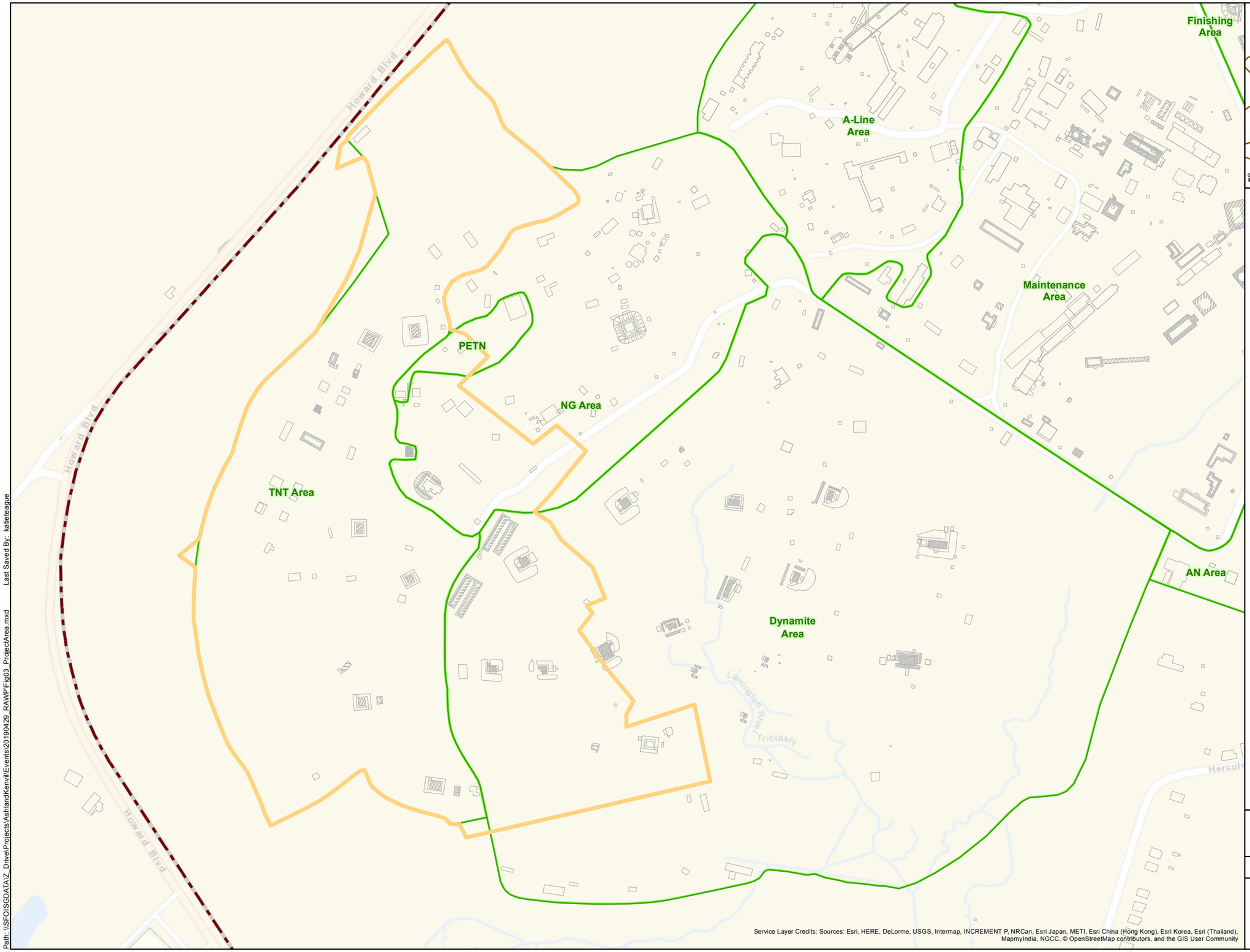

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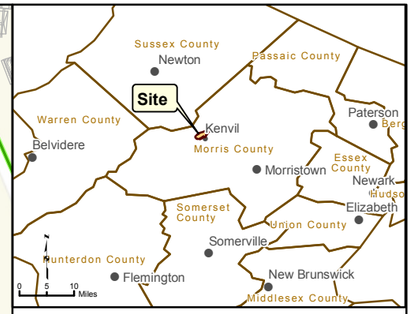

Index Map

Legend

- Site Boundary
- TNT Project Area Boundary
- Former Operational Area Boundary

Notes:
1. Basemap information from electronic file provided by Ashland, Inc. Titled: "Site Plan.dwg"

2. Operational areas digitized from MWH, Remedial Investigation Report, Hercules Incorporated Kenvil Works Facility, figure titled: "Sediment Sample Location Map", figure D-1.

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HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT AREA SOIL REMEDIAL ACTION WORK PLAN

TNT PROJECT AREA

HERCULES

KJ Kennedy Jenks

FIGURE
3

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Appendices

Appendix A

TNT Project Area Soil Ecological Risk Assessment

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TNT Project Area Soil Ecological Risk Assessment

August 2020

Prepared for

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K/J Project No. 1540001*57

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3 ProUCL Output Files – Sensitivity Analysis

Section 1: Introduction

1.1 Overview

On behalf of Hercules LLC (Hercules), Kennedy/Jenks Consultants Inc. (KJ) prepared this Ecological Risk Assessment (ERA) as a component of the TNT Project Area Soil Remedial Action Work Plan (TNT RAWP) for the former Hercules Kenvil Works Facility, located on Hercules Road in Kenvil, Morris County, New Jersey (the Facility) (**Figure 1**). This ERA evaluates potential risks attributable to constituents in soil within the TNT Project Area (**Figure 2**). The TNT Project Area was excluded from the Ecological Evaluation/Ecological Risk Assessment (EE/ERA) presented with the Phase II Remedial Investigation Report (Phase II RIR) (Hercules 2016) in anticipation of supplemental data collection and active remediation. This ERA provides a comparison of potential risks under current and post-remedy conditions.

The remedial program at the Facility is coordinated through a licensed site remediation professional and conducted in accordance with the New Jersey Department of Environmental Protection's (NJDEP) Technical Requirements for Site Remediation (TRSR), New Jersey Administrative Code (N.J.A.C.) 7:26E. Consistent with NJDEP's Ecological Evaluation Technical Guidance (2015), ecological risk assessment activities were conducted in accordance with United States Environmental Protection Agency (USEPA) and other federal guidance, including Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA 1997).

1.2 Background

The EE/ERA (Hercules 2016) separated the Facility into three general categories:

1. Areas where ecological risk is negligible.
2. Areas where ecological risk is uncertain and assessment is needed.
3. Areas where constituent concentrations and/or physical characteristics merit remediation (e.g., ecological risk likely), regardless of the outcome of the ecological risk assessment process (Areas of Presumed Remedial Action).

The EE/ERA included quantitative evaluation of areas in categories 1. and 2. Acknowledging the need for active remediation in the TNT Project Area (an area in category 3.), Hercules opted to address potential ecological risk in this area as a component of remedial design to ensure that the chosen remedy remained protective of both human health and the environment.

The EE/ERA relied on the site investigation/remedial investigation (SI/RI) dataset. Refined delineation data collection in the TNT Project Area supplements the SI/RI dataset, and is included in this evaluation to provide a comprehensive representation of existing conditions. The TNT Bioremediation Pilot Study (Pilot Study) (Hercules 2017) yielded data representative of post-remedy conditions in TNT Project Area soil and are used herein to assess potential exposure risks following remedy implementation.

Section 2: Hazard Identification

This ERA evaluates the comprehensive TNT Project Area characterization dataset (SI/RI and refined delineation) to identify constituents of potential ecological concern (COPECs). Consistent with the EE/ERA, the evaluation focuses on surface soil, considered to be 0 to 2 feet below ground surface (bgs) and includes any sample with all or a portion of its representative interval occurring above 2 feet bgs. **Exhibit 1** presents the TNT Project Area ERA dataset.

The proposed remedy outlined in the TNT RAWP focuses on the five nitroaromatic constituents listed below, collectively known as the target constituents.

- 2,4,6-Trinitrotoluene (TNT)
- 2-Amino-4,6-dinitrotoluene (2-ADNT)
- 4-Amino-2,6-dinitrotoluene (4-ADNT)
- 2,4-Dinitrotoluene (2,4-DNT)
- 2,6-Dinitrotoluene (2,6-DNT)

While these target constituents are the focus of the proposed remedy in the TNT Project Area, the ERA presented herein evaluates the full constituent suite included in the comprehensive TNT Project Area dataset.

2.1 Ecological Conceptual Site Model

Facility development, operations, and operational incidents served as historical sources and distributive processes by which constituents entered environmental media (primarily soil) at the Facility. Pre- and post-remedy exposure scenarios are similar, as the soil surface is currently accessible and is expected to remain as such following remediation.

2.1.1 Existing Conditions CSM

Process upsets and operational incidents released TNT and manufacturing intermediaries (i.e., 2,4-DNT and 2,6-DNT) to surface soil in the TNT Area. Reconstruction and renovation of the manufacturing area distributed TNT in surface soil beyond the location of initial release. TNT production ceased in 1919 and the TNT Area has remained inactive since 1923. Over time, erosion, dissolution, and degradation of TNT has occurred, resulting in the presence of TNT and its associated break down products (2-ADNT and 4-ADNT) in TNT Project Area soil and underlying groundwater.

2.1.2 Post-Remedy CSM

The overall remedial objective for TNT Project Area soil is target constituent source mass destruction to mitigate mass transfer from soil to groundwater. Remedial action aims to reduce target constituent concentrations to below their respective NJDEP non-residential direct contact soil remediation standards (NRDCSRS) via ex-situ bioremediation in engineered containment structures (i.e., biocells) prior to soil being returned to the excavations where additional biodegradation will occur. The TNT pilot study, on which the full-scale remedy is based, documented target constituent concentration reductions within treatment cells that achieved

greater than 95 percent target constituent mass reduction and attainment of NJDEP's residential direct contact soil remediation standards (RDCSRS). Post-study sampling documented additional reductions attributable to ongoing biodegradation after the active management study period. Pilot study results support the assessment of post-remediation conditions presented in this ERA.

Attachments 3 and 4 of the TNT RAWP present TNT pilot study and post-study results, respectively.

2.2 Identification of Constituents of Potential Ecological Concern

COPECs are identified via a comparison of generic ecological screening benchmarks (ESBs) to detected constituent concentrations in environmental media. Generic ESBs represent a threshold concentration that a majority of target organisms (e.g., plants, invertebrates) can tolerate and a concentration that may cause adverse effects in specific organism communities. Generally, ESBs were developed from various datasets that relate constituent concentrations in an environmental medium with occurrence of effects in sensitive species. Generic ESBs do not consider site-specific factors that may affect constituent bioavailability and toxicity (e.g., pH, organic carbon content).

Selection of ESBs for this ERA relied on those used in the EE/ERA (Hercules 2016). Consistent with the EE/ERA, preference was given to values presented in NJDEP's Ecological Screening Criteria table (2009). **Table 1** presents ESBs and associated sources.

Since the preparation of the EE/ERA, ESBs for target constituents have become available and/or been updated (USEPA 2018). The influence of these ESBs on the COPEC screen results are evaluated in a sensitivity analysis presented in Section 3.

2.2.1 Existing Conditions

Identification of COPECs under existing conditions relied on a sequential screening process using a conservative approach to avoid false negatives using risk-based EBSs and grounding the risk-based assessment of Facility conditions in the context of regional ambient soil characteristics.

First, the maximum concentration of each detected constituent was compared to its ESB to calculate a hazard quotient (HQ). All constituents with HQ_{max} greater than 1 or those lacking an ESB were retained for additional screening. Constituents were not retained if they were not detected (i.e., 0 detections), had a low frequency of detection (FoD) (i.e., less than 5 detections), or if the HQ_{max} was less than 1.

Retained constituents were evaluated via a comparison of a statistical representation (95 percent upper confidence limit of the mean [95UCL]) of the TNT Area dataset across the exposure area (i.e., TNT Area) to ESBs. ProUCL (Version 5.1.002) was used to calculate 95UCLs. Constituents with HQ_{95UCL} greater than one were retained as COPECs.

As noted in Section 2.2, ESBs are generic risk-based benchmarks. Metals identified as COPECs occur naturally in soil independent of Facility-related influences. New Jersey soils, including those in the Ridge and Valley physiographic province where the Facility is located, contain metals at ambient concentrations exceeding risk-based ESBs (Sanders 2003). As such, the 90th percentile concentration of TNT Project Area dataset metals was compared to the 90th percentile ambient metals concentrations in New Jersey (90AMCNJ) as reported by the Division of Science, Research & Technology (Sanders 2003) to differentiate between ambient conditions and Facility-related influences.

The following table summarizes constituents with HQ_{95UCL} greater than one retained as COPECs.

Chemical	FoD (%)	ESB	95UCL	HQ_{95UCL}	90th Percentile	90AMCNJ	COPEC (Y/N)	Rationale
Explosives (ug/kg)								
TNT	36	6,000	7,061,632	1,177	--	--	Y	HQ>1
2,4-DNT	13	1,280	493,049	385	--	--	Y	HQ>1
Nitrocellulose	40	65,000	1,624,355	25	--	--	N	See below
Metals (mg/kg)								
Aluminum	100	50	32317	646	35600	21080	N	See below
Antimony	30	0.27	1.52	6	3.15	0.42*	Y	HQ>1
Arsenic	98	9.9	21.05	2	17	7.32	Y	HQ>1
Chromium	100	0.4	19.47	49	23.02	21.2	N	See below
Cobalt	100	0.14	13.72	98	12.31	11.4	N	See below
Copper	100	5.4	1,634	303	46.56	26.04	Y	HQ>1
Lead	100	11	3,136	285	1547	54	Y	HQ>1
Manganese	100	220	499.4	2	578	1192	N	See below
Mercury	89	0.1	0.73	7	0.45	0.15	Y	HQ>1
Selenium	58	0.52	1.75	3	2.4	0.49*	Y	HQ>1
Vanadium	100	2	50.68	25	55.78	29.68	Y	HQ>1
Zinc	100	8.5	792.9	93	224.1	112.3	Y	HQ>1
SVOCs (ug/kg)								
2,4-DNT	31	1,280	11,556	9	--	--	Y	HQ>1
2,6-DNT	22	32.8	2,687	82	--	--	Y	HQ>1

* Value was reported non-detect; the listed value is the method detection limit (Sanders 2003)
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram

Chromium, cobalt and manganese concentrations (95UCL) found in the TNT Project Area are less than or similar to regional (i.e., Ridge and Valley Province, rural) ambient metals concentrations. As such, these constituents do not merit further evaluation.

Consistent with the EE/ERA, aluminum is not retained as a COPEC based on soil pH. Specifically, the soluble fraction of aluminum in soil can pose a potential risk to ecological receptors; however, it is understood that solubility, and therefore bioavailability, is based on the measured pH of onsite soil. Potential ecological risks associated with aluminum are only expected to occur when soil pH is less than 5.5 (USEPA 2003). Available data indicates the pH in soil is 6 (**Table 2**). As such, aluminum does not merit further evaluation.

Nitrocellulose is a fibrous insoluble solid produced via the nitration of cotton. An ESB for nitrocellulose is unavailable. For the purposes of the screen (and consistency with the EE/ERA), this ERA used the nitroglycerin ESB as a surrogate for nitrocellulose. Per Ellis et al. (1980) and Williams et al. (2015), toxicology studies on nitrocellulose found that test subjects (i.e., mice, rats, and dogs) showed no toxicological effects when ingesting nitrocellulose in varied doses at levels exceeding 5 percent of body weight. These no effects concentrations are two orders of magnitude greater than the surrogate ESB used in the EE/ERA. Per Williams et al. (2015) nitrocellulose is considered non-toxic, and toxicity reference values were unable to be developed. Given this documented lack of toxicity, nitrocellulose does not merit further evaluation.

Table 2 summarizes the maximum detect, 95UCL, and 90AMCNJ COPEC screen results based on existing conditions data. **Exhibit 2** presents the ProUCL output files.

TNT Project Area COPECs based on existing conditions include:

- TNT
- 2,4-DNT
- 2,6-DNT
- Antimony
- Arsenic
- Copper
- Lead
- Mercury
- Selenium
- Vanadium
- Zinc

The following section evaluates the influence of TNT Project Area soil remedy implementation on both target constituents and metals listed as secondary/comingled COPECs above.

2.2.2 Post-Remedy Conditions

The TNT Project Area remedy focuses on target constituent mass reduction in soil. The TNT RAWP (Section 3) also acknowledges the presence of metals at concentrations that merit consideration in the remedial process, and evaluates these secondary/comingled constituents separately. Consistent with the approach outlined in the TNT RAWP, this evaluation of post-remedy conditions provides a forward-looking qualitative assessment of metals COPECs and a quantitative evaluation of target constituents.

2.2.2.1 Metals

Many locations in which the secondary COPECs (**Section 2.2.1**) are detected under existing conditions also coincide with excavation areas that are identified in the TNT RAWP for the purposes of target constituent remediation. Implementation of the proposed remedy outlined in the TNT RAWP will not remediate the secondary COPECs, but it will alter the nature and extent of comingled metals in soil and associated exposure conditions.

There is also an area on the east bank of the TNT Project Area boundary, surrounding the acid recovery building, in which metals are geographically concentrated. This area will remain relatively undisturbed throughout the TNT remediation process as there is only one excavation area found within this area (Figure 3). This area will be considered an Area of Presumed Remedial Action due to the likelihood that the geographically concentrated secondary COPECs merit remediation even after the proposed remedy outlined in the TNT RAWP treats target constituents.

As such, post-scenario risk will be reevaluated within the TNT Project Area following remedy implementation and the secondary COPECs as well as the Area of Presumed Remedial Action will be targeted for remediation at that time, if necessary.

2.2.2.2 Target Constituents

Pilot study data indicates that bioremediation conducted in the treatment cells will reduce target constituent concentrations to their respective RDCSRS. This treated material will then be placed back into the excavations where ecological exposures could occur as long-term biodegradation further reduces target constituent concentrations. **Appendix G** to the TNT RAWP defines a series of excavation areas where target constituent concentrations in soil will be reduced to at or below RDCSRS.

To assess post-remedy conditions, target constituent RDCSRS (used to define excavation extents and consistent with pilot study results) were used as surrogate COPEC concentrations for samples within target excavation areas. Constituent concentrations beyond the excavation areas remain consistent with existing conditions. 95UCLs were calculated for target constituents retained as COPECs in Section 2.2.1. The 95UCL was then compared to ESB to calculate HQs for each of the three COPECs. **Table 3** summarizes the RDCSRS and 95UCL COPEC screen results based on post-remedy conditions data. **Exhibit 3** presents the ProUCL output files.

The following table summarizes this comparison.

Chemical	FoD (%)	Range of Detects (µg/kg)	Arithmetic Mean (µg/kg)	ESB (µg/kg)	95 UCL (µg/kg)	HQ_{95UCL}	COPEC (Y/N)	Rationale
Explosives								
TNT	36%	85 - 21000	2690	6000	4162	0.69	N	HQ<1
2,4-DNT	16%	110 - 700	112	1280	129.7	0.1	N	HQ<1
SVOCs								
2,4-DNT	33%	26 - 700	249	1280	246.1	0.19	N	HQ<1
2,6-DNT	25%	21 - 700	209	32.8	178.6	5	Y	HQ>1

Based on this assessment, potential risk to TNT and 2,4-DNT is unlikely, while risks attributable to 2,6-DNT is possible, but unlikely. The information below provides greater context related to potential risk associated with 2,6-DNT in post-remedy soil.

The post-study dataset relied on the RDCSRS (700 µg/kg) for 2,6-DNT surrogate data. Pilot study sampling results for 2,6-DNT at the conclusion of the study range from 235 to 300 µg/kg, indicating that the use of the RDCSRS is overly conservative (i.e., more than twice the highest detected 2,6-DNT concentration). Further reductions in 2,6-DNT concentrations were observed during post-study monitoring, where 2,6-DNT was detected in less than 17 percent of the samples at an average detected concentration less than 200 µg/kg.

Pilot study and post-study 2,6-DNT sample reporting limits (51 to 420 µg/kg) exceed its ESB (32.8 µg/kg). 2,6-DNT was not detected in the majority (67 percent) of samples collected from study trials representative of the proposed remedy during the last two pilot study sampling events and subsequent post-study events. Method detection limits for non-detect samples during these

events ranged from 23 to 140 µg/kg, demonstrating the laboratory's ability to detect and report 2,6-DNT at estimated concentrations at or below the ESB. The absence of 2,6-DNT in quantifiable concentrations provides an indication that potential risk (HQ) may be overestimated.

Section 3: Sensitivity Analysis

As noted, ESBs used in the evaluation presented in Section 2 are consistent with those used in the EE/ERA (Hercules 2016). Subsequent to EE/ERA preparation, USEPA Region 4 updated its ESBs, including values used in the EE/ERA (2003) specific to the target constituents evaluated herein. A sensitivity analysis was performed using the updated (2018) USEPA Region 4 ESBs to understand the influence of the updates on the COPEC selection process. This sensitivity analysis addresses TNT Project Area target constituents previously identified as COPECs under existing conditions and analyzes them under post-remedy conditions (**Section 2.2.1**).

The following table compares ESBs used in Section 2 to USEPA Region 4 (2018) benchmarks used in this sensitivity analysis.

CAS Number	Chemical	ESB (USEPA 2003) (µg/kg)	ESB (USEPA 2015) (µg/kg)
118-96-7	TNT	6,000	7,500
121-14-2	2,4-DNT	1,280	6,000
606-20-2	2,6-DNT	32.8	4,000

As shown in the table above, ESBs increased for all constituents addressed in this sensitivity analysis. A comparison of 2003 to 2018 USEPA Region 4 ESBs for explosive and energetic constituents identified order-of-magnitude decreases for four non-target constituents (1,3-dinitrobenzene, HMX, RDX, and tetryl). These changes do not alter the outcome of the existing conditions data screen.

This sensitivity analysis relies on the comprehensive TNT Project Area dataset and post-remedy surrogate data, screening process, and 95UCL calculation software detailed in Section 2. The following table summarizes target constituent post-remedy data screened against the USEPA (2018) ESBs.

Chemical	FoD (%)	Range of Detects (µg/kg)	Arithmetic Mean (µg/kg)	ESB (µg/kg)	95 UCL (µg/kg)	HQ_{95UCL}	COPEC (Y/N)	Rationale
Explosives								
TNT	36%	85 – 21,000	2690	7,500	4162	0.55	N	HQ<1
2,4-DNT	16%	110 - 700	112	6,000	129.7	0.1	N	HQ<1
SVOCs								
2,4-DNT	33%	26 – 700	249	6,000	246.1	0.19	N	HQ<1
2,6-DNT	25%	21 - 700	209	4,000	178.6	0.04	N	HQ<1

As illustrated in the preceding table, target constituents in the TNT Project Area do not pose unacceptable ecological risks to receptors following remedy implementation. These results are consistent with those presented for target constituents under post-remedy conditions, with the exception of 2,6-DNT (**Section 2.2.2**).

As noted, USEPA Region 4 (2003) provided the 2,6-DNT ESB used in the EE/ERA. The 2018 ESB used in this sensitivity analysis supersedes and replaces the 2003 value. The results of this evaluation indicate that potential risk attributable to target constituents is unlikely under post-remedy conditions. As such, no further ecological evaluation of target constituents is warranted.

Table 4 summarizes the COPEC screen results based on post-remedy conditions data. **Exhibit 3** presents the ProUCL output files.

Section 4: Risk Characterization and Conclusions

This ERA technical appendix evaluates existing and post-remedy conditions in the TNT Project Area and demonstrates that:

- The remedy outlined in the RAWP is protective of ecological receptors exposed to target constituents in TNT Project Area soil
- Potential risk attributable to a suite of metals present in the TNT Project Area remains uncertain, and remedy implementation will influence exposure scenarios and data distribution.

Based on these findings, no additional ecological evaluation is necessary for target constituents, and attaining remedial action objectives will result in conditions protective of ecological receptors.

Ecological risk attributable to metals will be reevaluated following remedy implementation. Evaluation results will be assessed in conjunction with the results of the re-evaluation of metals in TNT Project Area soil for human health endpoint discussed in the TNT RAWP (Section 3.3.1 and Appendix C) and future use of the Facility to identify the need for additional remediation in this area.

References

Ellis et al. 1980. Mammalian toxicity of munitions compound Phase III: Effects of Lifetime Exposure. Part III: Nitrocellulose. Kansas City (MO): Midwest Research Institute. January 1980.

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USEPA. 2018. Region 4 Ecological Risk Assessment Supplemental Guidance. Superfund Division. March 2018.

Williams et al. 2015. Wildlife Toxicity Assessments for Chemicals of Military Concern.

Table 1. Ecological Screening Benchmarks
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

CAS Number	Chemical	Ecological Screening Benchmark (ESB) (µg/kg)	Note
Explosives			
528-29-0	1,2-Dinitrobenzene	--	--
99-35-4	1,3,5-Trinitrobenzene	376	2
99-65-0	1,3-Dinitrobenzene	655	2
100-25-4	1,4-Dinitrobenzene	--	--
86-57-7	1-Nitrophthalene	--	--
118-96-7	2,4,6-Trinitrotoluene	6000	2
121-14-2	2,4-Dinitrotoluene	1280	2
606-20-2	2,6-Dinitrotoluene	32.8	2
35572-78-2	2-Amino-4,6-dinitrotoluene	80000	4
88-72-2	2-Nitrotoluene	--	--
99-08-1	3-Nitrotoluene	--	7
19406-51-0	4-Amino-2,6-dinitrotoluene	80000	4
99-99-0	4-Nitrotoluene	--	--
618-87-1	Benzemine, 3,5-dinitro-	--	--
98-95-3	Nitrobenzene	1310	2
9004-70-0	Nitrocellulose	65000	6
55-63-0	Nitroglycerin	65000	2
2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	600000	2
78-11-5	Pentaerythritol Tetranitrate	65000	6
121-82-4	RDX (Cyclonite)	98000	2
479-45-8	Tetryl	25000	6
Metals			
7429-90-5	Aluminum	50000	1
7440-36-0	Antimony	270	3
7440-38-2	Arsenic	9900	1
7440-39-3	Barium	283000	1
7440-41-7	Beryllium	10000	1
7440-43-9	Cadmium	360	3
7440-70-2	Calcium	--	5
7440-47-3	Chromium	400	1
7440-48-4	Cobalt	140	2
7440-50-8	Copper	5400	2
7439-89-6	Iron	--	5
7439-92-1	Lead	11000	3
7439-95-4	Magnesium	--	5
7439-96-5	Manganese	220000	3
7439-97-6	Mercury	100	2
7440-02-0	Nickel	38000	3
7440-09-7	Potassium	--	5
7782-49-2	Selenium	520	3
7440-22-4	Silver	2000	1
7440-23-5	Sodium	--	5
7440-28-0	Thallium	1000	1
7440-62-2	Vanadium	2000	1
7440-66-6	Zinc	8500	1
PCBs			
12674-11-2	Aroclor-1016	371	1
11104-28-2	Aroclor-1221	371	1
11141-16-5	Aroclor-1232	371	1
53469-21-9	Aroclor-1242	371	1
12672-29-6	Aroclor-1248	371	1
11097-69-1	Aroclor-1254	371	1
11096-82-5	Aroclor-1260	371	1
1336-36-3	Polychlorinated biphenyls	371	1

CAS Number	Chemical	Ecological Screening Benchmark (ESB) (µg/kg)	Note
SVOCs			
92-52-4	1,1'-Biphenyl	--	--
120-82-1	1,2,4-Trichlorobenzene	11100	2
95-50-1	1,2-Dichlorobenzene	2960	2
122-66-7	1,2-Diphenylhydrazine	--	--
541-73-1	1,3-Dichlorobenzene	37700	2
106-46-7	1,4-Dichlorobenzene	546	2
95-95-4	2,4,5-Trichlorophenol	--	--
88-06-2	2,4,6-Trichlorophenol	--	--
120-83-2	2,4-Dichlorophenol	--	--
105-67-9	2,4-Dimethylphenol	10	2
51-28-5	2,4-Dinitrophenol	60.9	2
121-14-2	2,4-Dinitrotoluene	1280	2
606-20-2	2,6-Dinitrotoluene	32.8	2
91-58-7	2-Chloronaphthalene	--	--
95-57-8	2-Chlorophenol	243	2
91-57-6	2-Methylnaphthalene	3240	1
95-48-7	2-Methylphenol	--	--
88-74-4	2-Nitroaniline	--	--
88-75-5	2-Nitrophenol	--	--
88-72-2	2-Nitrotoluene	--	--
106-44-5	3&4-Methylphenol	--	--
91-94-1	3,3-Dichlorobenzidine	646	2
99-09-2	3-Nitroaniline	--	--
534-52-1	4,6-Dinitro-2-methylphenol	--	--
101-55-3	4-Bromophenyl-phenylether	--	--
59-50-7	4-Chloro-3-methylphenol	--	--
106-47-8	4-Chloroaniline	--	--
7005-72-3	4-Chlorophenyl-phenylether	--	--
100-01-6	4-Nitroaniline	--	--
100-02-7	4-Nitrophenol	7000	1
99-99-0	4-Nitrotoluene	--	--
83-32-9	Acenaphthene	20000	1
208-96-8	Acenaphthylene	682000	2
98-86-2	Acetophenone	--	--
120-12-7	Anthracene	1480000	2
1912-24-9	Atrazine	--	--
100-52-7	Benzaldehyde	--	--
92-87-5	Benzidine	--	--
203-12-3	Benzo(g,h,i)fluoranthene	--	--
56-55-3	Benzo[a]anthracene	5210	2
50-32-8	Benzo[a]pyrene	1520	2
205-99-2	Benzo[b]fluoranthene	59800	2
191-24-2	Benzo[g,h,i]perylene	119000	2
207-08-9	Benzo[k]fluoranthene	148000	2
111-91-1	Bis(2-Chloroethoxy)methane	--	--
111-44-4	Bis(2-Chloroethyl)ether	--	--
108-60-1	Bis(2-Chloroisopropyl)ether	19900	1
117-81-7	Bis(2-Ethylhexyl)phthalate	925	2
85-68-7	Butylbenzylphthalate	239	2
105-60-2	Caprolactam	--	--
86-74-8	Carbazole	--	--
218-01-9	Chrysene	4730	2
53-70-3	Dibenzo[a,h]anthracene	18400	2
132-64-9	Dibenzofuran	--	--
84-66-2	Diethylphthalate	24800	2

Table 1. Ecological Screening Benchmarks
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

CAS Number	Chemical	Ecological Screening Benchmark (ESB) (µg/kg)	Note
131-11-3	Dimethylphthalate	734000	2
84-74-2	Di-n-butylphthalate	150	2
117-84-0	Di-n-octylphthalate	7090	2
206-44-0	Fluoranthene	122000	2
86-73-7	Fluorene	122000	2
118-74-1	Hexachlorobenzene	199	2
87-68-3	Hexachlorobutadiene	39.8	2
77-47-4	Hexachlorocyclopentadiene	--	--
67-72-1	Hexachloroethane	596	2
193-39-5	Indeno[1,2,3-cd]pyrene	109000	2
78-59-1	Isophorone	139000	2
91-20-3	Naphthalene	99.4	2
98-95-3	Nitrobenzene	1310	2
62-75-9	N-Nitrosodimethylamine	0.0321	2
621-64-7	N-Nitroso-Di-N-Propylamine	544	2
86-30-6	N-Nitrosodiphenylamine	545	2
87-86-5	Pentachlorophenol	2100	3
85-01-8	Phenanthrene	45700	2
108-95-2	Phenol	30000	1
129-00-0	Pyrene	78500	2
VOCs			
71-55-6	1,1,1-Trichloroethane	--	--
79-34-5	1,1,2,2-Tetrachloroethane	127	2
79-00-5	1,1,2-Trichloroethane	--	--
76-13-1	1,1,2-Trichloro-trifluoroethane (Freon)	--	--
75-34-3	1,1-Dichloroethane	--	--
75-35-4	1,1-Dichloroethene	8280	2
120-82-1	1,2,4-Trichlorobenzene	11100	2
96-12-8	1,2-Dibromo-3-chloropropane	--	--
106-93-4	1,2-Dibromoethane	--	--
95-50-1	1,2-Dichlorobenzene	2960	2
107-06-2	1,2-Dichloroethane	--	--
78-87-5	1,2-Dichloropropane	--	--
541-73-1	1,3-Dichlorobenzene	37700	2
106-46-7	1,4-Dichlorobenzene	546	2
78-93-3	2-Butanone	89600	2
110-75-8	2-Chloroethylvinylether	--	--
591-78-6	2-Hexanone	--	--

CAS Number	Chemical	Ecological Screening Benchmark (ESB) (µg/kg)	Note
108-10-1	4-Methyl-2-Pentanone	--	--
67-64-1	Acetone	2500	2
107-02-8	Acrolein	5270	2
107-13-1	Acrylonitrile	23.9	2
71-43-2	Benzene	255	2
75-27-4	Bromodichloromethane	540	2
75-25-2	Bromoform	--	--
74-83-9	Bromomethane	235	2
75-15-0	Carbon disulfide	94.1	2
56-23-5	Carbon Tetrachloride	2980	2
108-90-7	Chlorobenzene	13100	2
75-00-3	Chloroethane	--	--
67-66-3	Chloroform	1190	2
74-87-3	Chloromethane	10400	2
156-59-2	cis-1,2-Dichloroethene	--	--
10061-01-5	Cis-1,3-Dichloropropene	--	--
110-82-7	Cyclohexane	--	--
124-48-1	Dibromochloromethane	2050	2
75-71-8	Dichlorodifluoromethane	--	--
100-41-4	Ethylbenzene	5160	2
87-68-3	Hexachlorobutadiene	39.8	2
98-82-8	Isopropylbenzene	--	--
79-20-9	Methyl Acetate	--	--
108-87-2	Methylcyclohexane	--	--
75-09-2	Methylene Chloride	4050	2
1634-04-4	MTBE	--	--
91-20-3	Naphthalene	99.4	2
100-42-5	Styrene	--	--
127-18-4	Tetrachloroethene	9920	2
108-88-3	Toluene	200000	1
TIC_VOC	Total VOC TICs	--	--
156-60-5	trans-1,2-Dichloroethene	--	--
10061-02-6	Trans-1,3-Dichloropropene	--	--
79-01-6	Trichloroethene	12400	2
75-69-4	Trichlorofluoromethane	16400	2
75-01-4	Vinyl Chloride	--	--
1330-20-7	Xylenes (total)	--	--

Notes:

1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria (ESC) Table (NJDEP 2009)

2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environmental Protection Agency [USEPA] 2003)

3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)

4. Talmage et al. 1999

5. Analyte considered an essential nutrient; therefore, a screening level is not necessary.

6. Value used for Nitroglycerin used as a surrogate.

7. Analyte detected fewer than five times and screens out based on frequency of detection. Screening value not necessary.

-- = not applicable
CAS = Chemical Abstract Service
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
µg/kg = microgram per kilogram
VOC = volatile organic compound

Table 2. Summary Statistics and COPEC Screen - Existing Conditions in Soil
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Chemical	CAS Number	Units	ESB	Note	Detects/ Analyses	Frequency of Detections	Range of Detected Concentrations	Detection Limit Range	Max Concentration Location	Hazard Quotient (Max Detect/ESB)	95 UCL	Hazard Quotient (95 UCL/ESB)	Arithmetic Average	Hazard Quotient (Average/ESB)	90th Percentile	NJ Ambient Concentration (90th Percentile)*	90th Percentile/NJ Ambient Concentration	COPEC (Y/N)	Rationale
Explosives																			
1,2-Dinitrobenzene	528-29-0	µg/kg	--	--	0/7	0%	--	330 - 370		--	--	--	176	--	--	--	--	N	ND
1,3,5-Trinitrobenzene	99-35-4	µg/kg	376	2	8/249	3%	120-45000	90.9 - 1000000	A12-8-052N	120	70.87	≤ 1	5680	--	--	--	--	N	HQ≤1
1,3-Dinitrobenzene	99-55-0	µg/kg	655	2	34/348	10%	100-9850	90.9 - 1000000	B13-724-012FD	15	105.8	≤ 1	4030	--	--	--	--	N	HQ≤1
1,4-Dinitrobenzene	100-25-4	µg/kg	--	--	0/7	0%		330 - 370		--	--	--	176	--	--	--	--	N	ND
1-Nitrophthalene	85-57-7	µg/kg	--	--	0/7	0%		330 - 370		--	--	--	176	--	--	--	--	N	ND
2,4,6-Trinitrotoluene	**118-95-7**	**µg/kg**	**6000**	**4**	**126/348**	**36%**	**85-120000000**	**90.9 - 390**	**TP-R-A12-1-11.0N,TP-R-C13-666-21.5N**	**20000**	**7061632**	**1177**	**1420000**	**237**	**--**	**--**	**--**	**Y**	**HQ>1**
2,4-Dinitrotoluene	**121-14-2**	**µg/kg**	**1280**	**2**	**20/155**	**13%**	**110-14000000**	**100 - 120000**	**TP-RD-A11-03(01.0-01.5)**	**10938**	**493049**	**385**	**90900**	**71**	**--**	**--**	**--**	**Y**	**HQ>1**
2,6-Dinitrotoluene	505-20-2	µg/kg	32.8	2	3/164	2%	130-270000	100 - 120000	TP-RD-A11-03(01.0-01.5)	--	--	--	2160	--	--	--	--	N	LOW FOD
2-Amino-4,6-dinitrotoluene	35572-78-2	µg/kg	80000	5	95/348	27%	120-380000	90.9 - 1000000	TP-RD-A11-03(01.0-01.5)	5	7172	≤ 1	5880	--	--	--	--	N	HQ≤1
2-Nitrotoluene	88-72-2	µg/kg	--	--	4/249	2%	130-671	99 - 1401738	B10-506-042N	--	--	--	8100	--	--	--	--	N	LOW FOD
3-Nitrotoluene	99-08-1	µg/kg	--	6	1/249	0%	276-276	99 - 1401738	B10-506-042N	--	--	--	8100	--	--	--	--	N	LOW FOD
4-Amino-2,6-dinitrotoluene	19405-51-0	µg/kg	80000	5	97/348	28%	104-540000	90.9 - 1000000	TP-RD-A11-03(01.0-01.5)	7	9705	≤ 1	6410		--	--	--	N	HQ≤1
4-Nitrotoluene	99-99-0	µg/kg	--	--	2/249	1%	440-2310	99 - 1401738	B10-506-042N	--	--	--	8110	--	--	--	--	N	LOW FOD
Benzemine, 3,5-dinitro-	518-87-1	µg/kg	--	--	0/155	0%		100 - 120000		--	--	--	912	--	--	--	--	N	ND
Nitrobenzene	98-95-3	µg/kg	1310	2	6/249	2%	120-570	90.9 - 1000000	C11-27-030.5N	≤ 1	--	--	5350	--	--	--	--	N	HQ≤1
Nitrocellulose	9004-70-0	µg/kg	65000	8	61/152	40%	37600-28000000	41.5 - 150000	TP-R-C13-666-21.5N	431	1624355	25	599000	9	--	--	--	N	Nontoxic
Nitroglycerin	55-53-0	µg/kg	65000	4	44/350	13%	120-476000000	100 - 20000000	B13-724-012N	7323	971	≤ 1	1400000	--	--	--	--	N	HQ≤1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2591-41-0	µg/kg	600000	4	4/348	1%	360-3900	99 - 1401738	TP-R-C13-666-21.5N	--	--	--	5930	--	--	--	--	N	LOW FOD
Pentaerythritol Tetranitrate	78-11-5	µg/kg	65000	8	4/170	2%	1300-1200000	100 - 20000000	C10-3-021N	18	22537	≤ 1	69100		--	--	--	N	LOW FOD
RDX (Cyclonite)	121-82-4	µg/kg	98000	4	9/348	3%	140-3800	99 - 1401738	TP-R-B10-2/B10-509-32.0N	≤ 1	--	--	5860	--	--	--	--	N	HQ≤1
Tetryl	479-45-8	µg/kg	25000	5	3/249	1%	150-1600	99 - 1401738	B13-682-061N	--	--	--	8100	--	--	--	--	N	LOW FOD
pH																			
					35/35	100%	4.01-7.91		C11-30-061N				5.77						
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	7/7	100%	17600-46400	--	SO-R2-A-11-1_20131114	928	32317	646	24800	496	35600	21080	2	N	pH>5.5
Antimony	**7440-35-0**	**mg/kg**	**0.27**	**3**	**72/244**	**30%**	**0.21-27**	**0.32 - 28.8**	**C11-9-040.5N**	**100**	**1.52**	**6**	**1.19**	**4**	**3.15**	**0.42****	**--**	**Y**	**HQ>1**
Arsenic	**7440-38-2**	**mg/kg**	**9.9**	**1**	**240/244**	**98%**	**1.57-334**	**2.07 - 28.8**	**B10-2178-051FD**	**34**	**21.05**	**2**	**11.8**	≤ 1	**17**	**7.32**	**2**	**Y**	**HQ>1**
Barium	7440-39-3	mg/kg	283	1	7/7	**100%**	59.5-105	-	SO-R2-A-11-1_20131114	≤ 1	--	--	76	--	--	--	--	N	HQ≤1
Beryllium	7440-41-7	mg/kg	10	1	242/244	**99%**	0.07-1.85	0.518 - 30	SO-R2-A-11-1_20131114	≤ 1	--	--	1	--	--	--	--	N	HQ≤1
Cadmium	7440-43-9	mg/kg	0.36	3	105/244	**43%**	0.03-13.1	0.055 - 30	B11-602C-081N	36	0.39	≤ 1	1	--	--	--	--	N	HQ≤1
Calcium	7440-70-2	mg/kg	--	7	7/7	**100%**	193-3320	--	SO-R2-B-9-2_20131114	--	--	--	871	--	--	--	--	N	Nutrient
Chromium	7440-47-3	mg/kg	0.4	1	155/155	100%	4.4-76	--	C10-2176-021N	190	19.47	49	18.1	45	23.02	21.20	≤ 1	N	90th Percentile≈90AMCNJ
Cobalt	7440-48-4	mg/kg	0.14	2	7/7	100%	4.43-17.9	--	SO-R2-A-11-1_20131114	128	13.72	98	8.06	58	12.31	11.4	≤ 1	N	90th Percentile≈90AMCNJ
Copper	**7440-50-8**	**mg/kg**	**5.4**	**2**	**244/244**	**100%**	**3.09-48500**	**--**	**B10-2178-051N**	**8981**	**1634**	**303**	**430**	**80**	**46.56**	**26.04**	**2**	**Y**	**HQ>1**
Iron	7439-89-5	mg/kg	--	7	7/7	**100%**	25400-42900	--	SO-R2-A-11-1_20131114	--	--	--	30900	--	--	--	--	N	Nutrient
Lead	**7439-92-1**	**mg/kg**	**11**	**3**	**244/244**	**100%**	**1.9-93300**	**--**	**C12-3-032N**	**8482**	**3136**	**285**	**1260**	**115**	**1547**	**54**	**29**	**Y**	**HQ>1**
Magnesium	7439-95-4	mg/kg	--	7	7/7	**100%**	1640-4050	--	SO-R2-A-11-1_20131114	--	--	--	2590	--	--	--	--	N	Nutrient
Manganese	7439-95-5	mg/kg	220	3	7/7	100%	178-633	--	SO-R2-B-9-2_20131114	3	499.4	2	373	2	578	1192	≤ 1	N	90th Percentile < 90AMCNJ
Mercury	**7439-97-5**	**mg/kg**	**0.1**	**2**	**215/244**	**89%**	**0.01-10.3**	**0.03 - 0.114**	**C11-9-040.5N**	**103**	**0.73**	**7**	**0.241**	**2**	**0.45**	**0.15**	**3**	**Y**	**HQ>1**
Nickel	7440-02-0	mg/kg	38	3	244/244	**100%**	0.97-205	--	C12-5-022N	5	14.08	≤ 1	10	--	--	--	--	N	HQ≤1
Potassium	7440-09-7	mg/kg	--	7	7/7	**100%**	470-839	--	SO-R2-A-11-1_20131114	--	--	--	632	--	--	--	--	N	Nutrient
Selenium	**7782-49-2**	**mg/kg**	**0.52**	**3**	**141/244**	**58%**	**0.11-17.3**	**0.38 - 28.8**	**C11-30-051N**	**33**	**1.75**	**3**	**1.43**	**3**	**2.4**	**0.49****	**--**	**Y**	**HQ>1**
Silver	7440-22-4	mg/kg	2	1	54/244	**22%**	0.08-6.3	0.16 - 30	C12-5-022N	3	0.36	≤ 1	0	--	--	--	--	N	HQ≤1
Sodium	7440-23-5	mg/kg	--	7	7/7	**100%**	30.3-143	-	SO-R2-B-8-1_20131114	--	--	--	68	--	--	--	--	N	Nutrient
Thallium	7440-28-0	mg/kg	1	1	26/244	**11%**	0.5-3.4	0.65 - 100	C11-30-061N	3	0.53	≤ 1	1	--	--	--	--	N	HQ≤1
Vanadium	**7440-52-2**	**mg/kg**	**2**	**1**	**7/7**	**100%**	**34.8-58.3**	**--**	**SO-R2-A-11-1_20131114**	**29**	**50.68**	**25**	**44.2**	**22**	**55.78**	**29.68**	**2**	**Y**	**HQ>1**
Zinc	**7440-55-5**	**mg/kg**	**8.5**	**1**	**244/244**	**100%**	**3.22-27700**	**--**	**B10-2178-051N**	**3259**	**792.9**	**93**	**280**	**33**	**224.1**	**112.3**	**2**	**Y**	**HQ>1**

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Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Chemical	CAS Number	Units	ESB	Note	Detects/ Analyses	Frequency of Detections	Range of Detected Concentrations	Detection Limit Range	Max Concentration Location	Hazard Quotient (Max Detect/ESB)	95 UCL	Hazard Quotient (95 UCL/ESB)	Arithmetic Average	Hazard Quotient (Average/ESB)	90th Percentile	NJ Ambient Concentration (90th Percentile)*	90th Percentile/NJ Ambient Concentration	COPEC (Y/N)	Rationale
PCBs																			
Aroclor-1016	12574-11-2	µg/kg	371	1	0/59	0%	--	18 - 98		--	--	--	11	--	--	--	--	N	ND
Aroclor-1221	11104-28-2	µg/kg	371	1	0/59	0%	--	18 - 98		--	--	--	11	--	--	--	--	N	ND
Aroclor-1232	11141-15-5	µg/kg	371	1	0/59	0%	--	18 - 98		--	--	--	11	--	--	--	--	N	ND
Aroclor-1242	53459-21-9	µg/kg	371	1	0/59	0%	--	18 - 98		--	--	--	11	--	--	--	--	N	ND
Aroclor-1248	12572-29-5	µg/kg	371	1	0/59	0%	--	18 - 98		--	--	--	11	--	--	--	--	N	ND
Aroclor-1254	11097-59-1	µg/kg	371	1	8/59	14%	4.5-120	18 - 22	TP-R-B13-2-82.0N	≤ 1	--	--	15	--	--	--	--	N	HQ≤1
Aroclor-1260	11095-82-5	µg/kg	371	1	9/59	15%	4.3-53	18 - 41	SB-R-B11-021.0FD	≤ 1	--	--	12	--	--	--	--	N	HQ≤1
Polychlorinated biphenyls	1335-35-3	µg/kg	371	1	12/59	20%	4.3-153	18 - 39	TP-R-B13-2-82.0N	≤ 1	--	--	18	--	--	--	--	N	HQ≤1
SVOCs																			
1,1'-Biphenyl	92-52-4	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
1,2,4-Trichlorobenzene	120-82-1	µg/kg	11100	2	0/153	0%	--	33-880000		--	--	--	3120	--	--	--	--	N	ND
1,2-Dichlorobenzene	95-50-1	µg/kg	2960	2	0/153	0%	--	33-880000		--	--	--	3120	--	--	--	--	N	ND
1,2-Diphenylhydrazine	122-55-7	µg/kg	--	--	0/153	0%	--	33-880000		--	--	--	3120	--	--	--	--	N	ND
1,3-Dichlorobenzene	541-73-1	µg/kg	37700	2	0/153	0%	--	33-880000		--	--	--	3120	--	--	--	--	N	ND
1,4-Dichlorobenzene	105-45-7	µg/kg	546	2	0/250	0%	--	33-880000		--	--	--	2070	--	--	--	--	N	ND
2,4,5-Trichlorophenol	95-95-4	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
2,4,6-Trichlorophenol	88-05-2	µg/kg	--	--	0/150	0%	--	37-880000		--	--	--	2990	--	--	--	--	N	ND
2,4-Dichlorophenol	120-83-2	µg/kg	--	--	0/150	0%	--	37-880000		--	--	--	2990	--	--	--	--	N	ND
2,4-Dimethylphenol	105-57-9	µg/kg	10	2	0/150	0%	--	37-880000		--	--	--	2990	--	--	--	--	N	ND
2,4-Dinitrophenol	51-28-5	µg/kg	60.9	2	1/257	0%	16800-16800	78-4400000	B13-724-012N	--	--	--	11200	--	--	--	--	N	LOW FOD
2,4-Dinitrotoluene	**121-14-2**	**µg/kg**	**1280**	**2**	**79/257**	**31%**	**26-280000**	**67-880000**	**TP-R-C13-666-21.5N**	**219**	**11556**	**9**	**5680**	**4**	**--**	**--**	**--**	**Y**	**HQ>1**
2,6-Dinitrotoluene	**505-20-2**	**µg/kg**	**32.8**	**2**	**57/257**	**22%**	**21-73000**	**33-880000**	**TP-R-C13-666-21.5N**	**2226**	**2687**	**82**	**2730**	**83**	**--**	**--**	**--**	**Y**	**HQ>1**
2-Chloronaphthalene	91-58-7	µg/kg	--	--	0/160	0%	--	33-880000		--	--	--	2990	--	--	--	--	N	ND
2-Chlorophenol	95-57-8	µg/kg	243	2	0/160	0%	--	33-880000		--	--	--	2990	--	--	--	--	N	ND
2-Methylnaphthalene	91-57-5	µg/kg	3240	1	1/7	14%	5-5	19-210	SO-R2-C-8-2_20131114	≤ 1	--	--	23	--	--	--	--	N	HQ≤1
2-Methylphenol	95-48-7	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
2-Nitroaniline	88-74-4	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
2-Nitrophenol	88-75-5	µg/kg	--	--	0/147	0%	--	37-880000		--	--	--	3240	--	--	--	--	N	ND
2-Nitrotoluene	88-72-2	µg/kg	--	--	0/6	0%	--	383.229-442.204		--	--	--	206	--	--	--	--	N	ND
3&4-Methylphenol	105-44-5	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
3,3-Dichlorobenzidine	91-94-1	µg/kg	646	2	0/160	0%	--	67-1800000		--	--	--	6120	--	--	--	--	N	ND
3-Nitroaniline	99-09-2	µg/kg	--	--	0/7	0%	--	190-2000		--	--	--	226	--	--	--	--	N	ND
4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	--	--	1/160	1%	260-260	78-4400000	SD-B13-2-012N	--	--	--	14800	--	--	--	--	N	LOW FOD
4-Bromophenyl-phenylether	101-55-3	µg/kg	--	--	0/160	0%	--	37-880000		--	--	--	2990	--	--	--	--	N	ND
4-Chloro-3-methylphenol	59-50-7	µg/kg	--	--	0/160	0%	--	37-880000		--	--	--	2990	--	--	--	--	N	ND
4-Chloroaniline	105-47-8	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
4-Chlorophenyl-phenylether	7005-72-3	µg/kg	--	--	0/160	0%	--	33-880000		--	--	--	2990	--	--	--	--	N	ND
4-Nitroaniline	100-01-5	µg/kg	--	--	0/7	0%	--	190-2000		--	--	--	226	--	--	--	--	N	ND
4-Nitrophenol	100-02-7	µg/kg	7000	1	0/147	0%	--	78-4400000		--	--	--	16100	--	--	--	--	N	ND
4-Nitrotoluene	99-99-0	µg/kg	--	--	0/6	0%	--	766.458-884.408		--	--	--	412	--	--	--	--	N	ND
Acenaphthene	83-32-9	µg/kg	20000	1	10/160	6%	5-4000	19-880000	C11-1-171N	≤ 1	--	--	3000	--	--	--	--	N	HQ≤1
Acenaphthylene	208-95-8	µg/kg	682000	2	19/160	12%	16-300	19-880000	C11-9-040.5N	≤ 1	--	--	2970	--	--	--	--	N	HQ≤1
Acetophenone	98-85-2	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
Anthracene	120-12-7	µg/kg	1480000	2	29/160	18%	24-7200	19-880000	C11-1-171N	≤ 1	--	--	3010	--	--	--	--	N	HQ≤1
Atrazine	1912-24-9	µg/kg	--	--	0/7	0%	--	190-2000		--	--	--	226	--	--	--	--	N	ND
Benzaldehyde	100-52-7	µg/kg	--	--	1/7	14%	410-410	190-2000	SO-R2-B-9-3_20131111	--	--	--	271	--	--	--	--	N	LOW FOD
Benzidine	92-87-5	µg/kg	--	--	3/153	2%	40.7-177	39-880000	A12-6-022N	--	--	--	3150	--	--	--	--	N	LOW FOD
Benzo(g,h,i)fluoranthene	203-12-3	µg/kg	--	--	3/14	21%	880-4300	360-560	C11-1-171N	--	--	--	687	--	--	--	--	N	LOW FOD
Benzo[a]anthracene	55-55-3	µg/kg	5210	2	98/257	38%	4-9400	19-880000	C11-1-171N	2	234.7	≤ 1	2130	--	--	--	--	N	HQ≤1
Benzo[a]pyrene	50-32-8	µg/kg	1520	2	102/257	40%	2301181	19-880000	C11-1-171N	5	208.6	≤ 1	2120	--	--	--	--	N	HQ≤1
Benzo[b]fluoranthene	205-99-2	µg/kg	59800	2	91/257	35%	7-9700	19-880000	C11-1-171N	≤ 1	--	--	2170	--	--	--	--	N	HQ≤1
Benzo[g,h,i]perylene	191-24-2	µg/kg	119000	2	33/146	23%	4-2000	19-880000	B9-2-052N	≤ 1	--	--	3280	--	--	--	--	N	HQ≤1
Benzo[k]fluoranthene	207-08-9	µg/kg	148000	2	62/252	25%	4-3600	19-880000	C11-1-171N	≤ 1	--	--	2090	--	--	--	--	N	HQ≤1
Bis(2-Chloroethoxy)methane	111-91-1	µg/kg	--	--	0/160	0%	--	37-880000		--	--	--	2990	--	--	--	--	N	ND
Bis(2-Chloroethyl)ether	111-44-4	µg/kg	--	--	0/160	0%	--	33-880000		--	--	--	2990	--	--	--	--	N	ND
Bis(2-Chloroisopropyl)ether	108-50-1	µg/kg	19900	1	0/160	0%	--	33-880000		--	--	--	2990	--	--	--	--	N	ND
Bis(2-Ethylhexyl)phthalate	117-81-7	µg/kg	925	2	69/257	27%	18-1080	39-880000	B13-724-012N	≤ 1	--	--	2140	--	--	--	--	N	HQ≤1

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Butylbenzylphthalate	85-58-7	µg/kg	239	2	0/257	0%	--	39-880000		--	--	--	2020	--	--	--	--	N	ND
Caprolactam	105-50-2	µg/kg	--	--	0/7	0%	--	190-2000		--	--	--	226	--	--	--	--	N	ND
Carbazole	85-74-8	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
Chrysene	218-01-9	µg/kg	4730	2	101/257	39%	5-8700	19-880000	C11-1-171N	2	257.5	≤ 1	2130	--	--	--	--	N	HQ≤1
Dibenzo[a,h]anthracene	53-70-3	µg/kg	18400	2	30/257	12%	11-1200	19-880000	C11-1-171N	≤ 1	--	--	2020	--	--	--	--	N	HQ≤1
Dibenzofuran	132-54-9	µg/kg	--	--	0/7	0%	--	37-410		--	--	--	46	--	--	--	--	N	ND
Diethylphthalate	84-55-2	µg/kg	24800	2	18/257	7%	19-1100	39-880000	C13-2-102N	≤ 1	--	--	2010	--	--	--	--	N	HQ≤1
Dimethylphthalate	131-11-3	µg/kg	734000	2	1/160	1%	44-44	39-880000	B11-2044-060.7N	--	--	--	3000	--	--	--	--	N	LOW FOD
Di-n-butylphthalate	84-74-2	µg/kg	150	2	39/257	15%	34-500	39-880000	B10-2178-031N	3	67.75	≤ 1	2010	--	--	--	--	N	HQ≤1
Di-n-octylphthalate	117-84-0	µg/kg	7090	2	0/160	0%	--	39-880000		--	--	--	3000	--	--	--	--	N	ND
Fluoranthene	205-44-0	µg/kg	122000	2	62/160	39%	11-18000	19-880000	C11-1-171N	≤ 1	--	--	3270	--	--	--	--	N	HQ≤1
Fluorene	85-73-7	µg/kg	122000	2	13/160	8%	7-3100	19-880000	C11-1-171N	≤ 1	--	--	2990	--	--	--	--	N	HQ≤1
Hexachlorobenzene	118-74-1	µg/kg	199	2	0/147	0%	--	19-880000		--	--	--	3230	--	--	--	--	N	ND
Hexachlorobutadiene	87-58-3	µg/kg	39.8	2	0/160	0%	--	37-880000		--	--	--	2990	--	--	--	--	N	ND
Hexachlorocyclopentadiene	77-47-4	µg/kg	--	--	0/160	0%	--	39-880000		--	--	--	3020	--	--	--	--	N	ND
Hexachloroethane	57-72-1	µg/kg	596	2	0/160	0%	--	33-880000		--	--	--	3000	--	--	--	--	N	ND
Indeno[1,2,3-cd]pyrene	193-39-5	µg/kg	109000	2	60/257	23%	4-4100	19-880000	C11-1-171N	≤ 1	--	--	2060	--	--	--	--	N	HQ≤1
Isophorone	78-59-1	µg/kg	139000	2	1/160	1%	6200-6200	33-880000	C10-2176-021N	--	--	--	3030	--	--	--	--	N	LOW FOD
Naphthalene	91-20-3	µg/kg	99.4	2	9/160	6%	11-2700	19-880000	C11-1-171N	27	115.8	≤ 1	2990	--	--	--	--	N	HQ≤1
Nitrobenzene	98-95-3	µg/kg	1310	2	2/75	3%	85-5500	39-4000	C11-9-040.5N	--	--	--	274	--	--	--	--	N	LOW FOD
N-Nitrosodimethylamine	52-75-9	µg/kg	0.0321	2	0/153	0%	--	39-880000		--	--	--	3130	--	--	--	--	N	ND
N-Nitroso-Di-N-Propylamine	521-54-7	µg/kg	544	2	0/257	0%	--	33-880000		--	--	--	2020	--	--	--	--	N	ND
N-Nitrosodiphenylamine	85-30-5	µg/kg	545	2	17/256	7%	19-24000	33-880000	A11-570-051N	44	38.07	≤ 1	2120	--	--	--	--	N	HQ≤1
Pentachlorophenol	87-85-5	µg/kg	2100	3	0/160	0%	--	78-4400000		--	--	--	14800	--	--	--	--	N	ND
Phenanthrene	85-01-8	µg/kg	45700	2	59/160	37%	10-18000	19-880000	C11-1-171N	≤ 1	--	--	3140	--	--	--	--	N	HQ≤1
Phenol	108-95-2	µg/kg	30000	1	1/160	1%	24.88-24.88	37-880000	C10-432-021N	--	--	--	2990	--	--	--	--	N	LOW FOD
Pyrene	129-00-0	µg/kg	78500	2	53/160	33%	4-18000	19-880000	C11-1-171N	≤ 1	--	--	3260	--	--	--	--	N	HQ≤1
VOCs																			
1,1,1-Trichloroethane	71-55-5	µg/kg	--	--	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	127	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
1,1,2-Trichloroethane	79-00-5	µg/kg	--	--	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
1,1,2-Trichloro-trifluoroethane (Fre	75-13-1	µg/kg	--	--	0/7	0%	--	11-13		--	--	--	6	--	--	--	--	N	ND
1,1-Dichloroethane	75-34-3	µg/kg	--	--	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
1,1-Dichloroethene	75-35-4	µg/kg	8280	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
1,2,4-Trichlorobenzene	120-82-1	µg/kg	11100	2	0/21	0%	--	5-625		--	--	--	196	--	--	--	--	N	ND
1,2-Dibromo-3-chloropropane	95-12-8	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
1,2-Dibromoethane	105-93-4	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
1,2-Dichlorobenzene	95-50-1	µg/kg	2960	2	0/21	0%	--	5-625		--	--	--	196	--	--	--	--	N	ND
1,2-Dichloroethane	107-05-2	µg/kg	--	--	0/24	0%	--	5-625		--	--	--	162	--	--	--	--	N	ND
1,2-Dichloropropane	78-87-5	µg/kg	--	--	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
1,3-Dichlorobenzene	541-73-1	µg/kg	37700	2	0/21	0%	--	5-625		--	--	--	196	--	--	--	--	N	ND
1,4-Dichlorobenzene	105-45-7	µg/kg	546	2	0/21	0%	--	5-625		--	--	--	196	--	--	--	--	N	ND
2-Butanone	78-93-3	µg/kg	89600	2	1/7	14%	10-10	11-13	SO-R2-C-12-1_20131114	≤ 1	--	--	6	--	--	--	--	N	HQ≤1
2-Chloroethylvinylether	110-75-8	µg/kg	--	--	0/19	0%	--	240-1250		--	--	--	466	--	--	--	--	N	ND
2-Hexanone	591-78-5	µg/kg	--	--	0/7	0%	--	11-13		--	--	--	6	--	--	--	--	N	ND
4-Methyl-2-Pentanone	108-10-1	µg/kg	--	--	0/7	0%	--	11-13		--	--	--	6	--	--	--	--	N	ND
Acetone	57-54-1	µg/kg	2500	2	7/7	100%	19-130	--	SO-R2-B-8-1_20131114	≤ 1	--	--	62	--	--	--	--	N	HQ≤1
Acrolein	107-02-8	µg/kg	5270	2	0/19	0%	--	2100-2900		--	--	--	1220	--	--	--	--	N	ND
Acrylonitrile	107-13-1	µg/kg	23.9	2	0/75	0%	--	480-6250		--	--	--	1240	--	--	--	--	N	ND
Benzene	71-43-2	µg/kg	255	2	0/82	0%	--	5-1200		--	--	--	305	--	--	--	--	N	ND
Bromodichloromethane	75-27-4	µg/kg	540	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Bromoform	75-25-2	µg/kg	--	--	0/26	0%	--	5-625		--	--	--	174	--	--	--	--	N	ND
Bromomethane	74-83-9	µg/kg	235	2	0/26	0%	--	5-1250		--	--	--	341	--	--	--	--	N	ND

Table 2. Summary Statistics and COPEC Screen - Existing Conditions in Soil
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Chemical	CAS Number	Units	ESB	Note	Detects/ Analyses	Frequency of Detections	Range of Detected Concentrations	Detection Limit Range	Max Concentration Location	Hazard Quotient (Max Detect/ESB)	95 UCL	Hazard Quotient (95 UCL/ESB)	Arithmetic Average	Hazard Quotient (Average/ESB)	90th Percentile	NJ Ambient Concentration (90th Percentile)*	90th Percentile/NJ Ambient Concentration	COPEC (Y/N)	Rationale
Carbon disulfide	75-15-0	µg/kg	94.1	2	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
Carbon Tetrachloride	55-23-5	µg/kg	2980	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Chlorobenzene	108-90-7	µg/kg	13100	2	0/82	0%	--	5-1200		--	--	--	305	--	--	--	--	N	ND
Chloroethane	75-00-3	µg/kg	--	--	0/26	0%	--	5-1250		--	--	--	341	--	--	--	--	N	ND
Chloroform	57-55-3	µg/kg	1190	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Chloromethane	74-87-3	µg/kg	10400	2	6/26	23%	150-420	5-1250	B13-724-050.5N	≤ 1	--	--	271	--	--	--	--	N	HQ≤1
cis-1,2-Dichloroethene	155-59-2	µg/kg	--	--	0/12	0%	--	5-150		--	--	--	30	--	--	--	--	N	ND
Cis-1,3-Dichloropropene	10051-01-5	µg/kg	--	--	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Cyclohexane	110-82-7	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
Dibromochloromethane	124-48-1	µg/kg	2050	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Dichlorodifluoromethane	75-71-8	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
Ethylbenzene	100-41-4	µg/kg	5160	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Hexachlorobutadiene	87-58-3	µg/kg	39.8	2	0/14	0%	--	530-625		--	--	--	293	--	--	--	--	N	ND
Isopropylbenzene	98-82-8	µg/kg	--	--	1/7	14%	3-3	5-6	SO-R2-B-8-1_20131114	--	--	--	3	--	--	--	--	N	LOW FOD
Methyl Acetate	79-20-9	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
Methylcyclohexane	108-87-2	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
Methylene Chloride	75-09-2	µg/kg	4050	2	1/82	1%	560-560	5-2500	A12-5-030.5N	--	--	--	331	--	--	--	--	N	LOW FOD
MTBE	1534-04-4	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
Naphthalene	91-20-3	µg/kg	99.4	2	0/5	0%	--	539-625		--	--	--	302	--	--	--	--	N	ND
Styrene	100-42-5	µg/kg	--	--	0/7	0%	--	5-6		--	--	--	3	--	--	--	--	N	ND
Tetrachloroethene	127-18-4	µg/kg	9920	2	0/82	0%	--	5-1200		--	--	--	305	--	--	--	--	N	ND
Toluene	108-88-3	µg/kg	200000	1	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
trans-1,2-Dichloroethene	155-50-5	µg/kg	--	--	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Trans-1,3-Dichloropropene	10051-02-5	µg/kg	--	--	0/12	0%	--	5-150		--	--	--	30	--	--	--	--	N	ND
Trichloroethene	79-01-5	µg/kg	--	2	0/26	0%	--	5-625		--	--	--	171	--	--	--	--	N	ND
Trichlorofluoromethane	75-59-4	µg/kg	12400	2	0/12	0%	--	5-290		--	--	--	58	--	--	--	--	N	ND
Vinyl Chloride	75-01-4	µg/kg	16400	2	0/24	0%	--	5-1250		--	--	--	307	--	--	--	--	N	ND
Xylenes (total)	1330-20-7	µg/kg	--	--	0/12	0%	--	5-150		--	--	--	30	--	--	--	--	N	ND

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria (ESC) Table (NJDEP 2009)
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environmental Protection Agency [USEPA] 2003)
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening value not necessary.
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
* Sanders. 2003. Ambient Levels of Metals in New Jersey Soils. Division of Science, Research and Technology.
** Value was reported non detect; the listed value is the method detection limit
Bold indicates the constituent is retained as a COPEC
-- = not applicable
CAS = Chemical Abstract Service
ESB - Ecological Screening Benchmark
UCL = Upper Confidence Limit
90AMCNJ = 90th Percentile Ambient Metals Concentrations in New Jersey
COPEC = Constituent of Potential Ecological Concern
HQ = Hazard Quotient
ND = non detect value
FOD = Frequency of Detection
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
Y = yes
N = no
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
VOC = volatile organic compound

Table 3. Summary Statistics and COPEC Screen - Post-Remedy Conditions in Soil
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

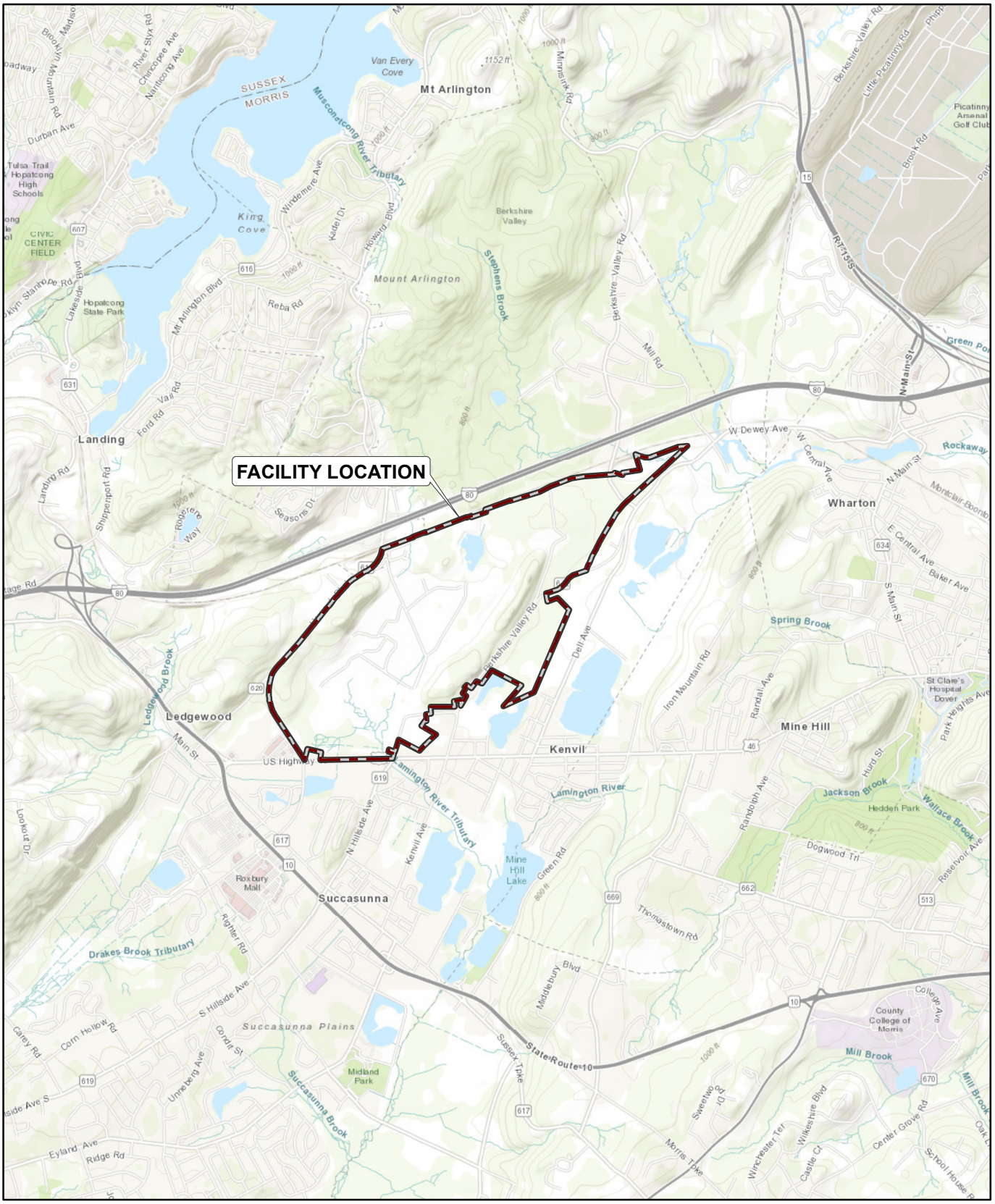
Chemical	CAS Number	Units	ESB	Note	Detects/ Analyses	Frequency of Detections	Range of Detected Concentrations	Detection Limit Range	Hazard Quotient (Max Detect/ESB)	95UCL	Hazard Quotient (95 UCL/ESB)	COPEC (Y/N)	Rationale
Explosives													
2,4,6-Trinitrotoluene	118-96-7	µg/kg	6000	2	126 / 347	36%	85 - 21000	90.9 - 390	4	4162	≤ 1	N	HQ ≤ 1
2,4-Dinitrotoluene	121-14-2	µg/kg	1280	1	25 / 155	16%	110 - 700	100 - 140	≤ 1	129.7	≤ 1	N	HQ ≤ 1
SVOCs													
2,4-Dinitrotoluene	121-14-2	µg/kg	1280	1	85 / 257	33%	26 - 700	67 - 560	≤ 1	246.1	≤ 1	N	HQ ≤ 1
2,6-Dinitrotoluene	**606-20-2**	**µg/kg**	**32.8**	**1**	**63 / 257**	**25%**	**21 - 700**	**33 - 560**	**21**	**178.6**	**5**	**Y**	**HQ > 1**

Notes:
1. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environmental Protection Agency [USEPA] 2003)
2. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
UCL = Upper Confidence Limit
COPEC = Constituent of Potential Ecological Concern
HQ = Hazard Quotient
µg/kg = microgram per kilogram
Y = yes
N = no
SVOC = semivolatile organic compound

Table 4. Summary Statistics and COPEC Screen - Sensitivity Analysis
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Chemical	CAS Number	Units	ESB	Note	Detects/Analyses	Frequency of Detections	Range of Detected Concentrations	Detection Limit Range	Hazard Quotient (Max Detect/ESB)	95 UCL	Hazard Quotient (95 UCL/ESB)	COPEC (Y/N)	Rationale
Explosives													
2,4,6-Trinitrotoluene	118-96-7	µg/kg	7600	2	126 / 347	36%	85 - 21000	90.9 - 390	3	4162	≤1	N	HQ≤1
2,4-Dinitrotoluene	121-14-2	µg/kg	1280	1	25 / 155	16%	110 - 700	100 - 140	≤1	129.7	≤1	N	HQ≤1
SVOCs													
2,4-Dinitrotoluene	121-14-2	µg/kg	1280	1	85 / 257	33%	26 - 700	67 - 560	≤1	246.1	≤1	N	HQ≤1
2,6-Dinitrotoluene	606-20-2	µg/kg	4100	2	63 / 257	25%	21 - 700	33 - 560	≤1	178.6	≤1	N	HQ≤1

Notes:
1. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environmental Protection Agency [USEPA] 2003)
2. Resource Conservation and Recovery Act Region 4 Ecological Risk Assessment Supplemental Guidance (USEPA 2015)
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
UCL = Upper Confidence Limit
COPEC = Constituent of Potential Ecological Concern
HQ = Hazard Quotient
µg/kg = microgram per kilogram
Y = yes
N = no
SVOC = semivolatile organic compound



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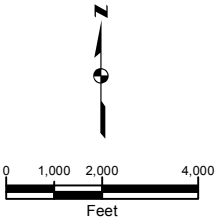
New Jersey



HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL ECOLOGICAL RISK ASSESSMENT

FACILITY LOCATION MAP

HERCULES

Kennedy Jenks

FIGURE 1

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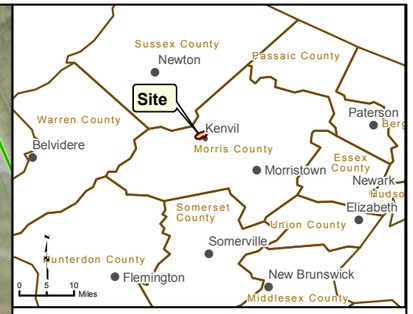

Index Map

Legend

- Site Boundary
- Project Area Boundary
- Former Operational Area Boundary

Notes:
1. Basemap information from electronic file provided by Ashland, Inc. Titled: "Site Plan.dwg"

2. Operational areas digitized from MWH, Remedial Investigation Report, Hercules Incorporated Kenvil Works Facility, figure titled: "Sediment Sample Location Map", figure D-1.

N

0 100 200 400
Feet

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL ECOLOGICAL RISK ASSESSMENT

PROJECT AREA MAP

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FIGURE
2

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Acid Recovery Building

Legend

- Project Area Boundary
- Excavation Boundary
- Approximate Area of Presumed Remedial Action

N

0 50 100

Scale: Feet

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL ECOLOGICAL RISK ASSESSMENT

APPROXIMATE AREA OF PRESUMED REMEDIAL ACTION

[redacted]

FIGURE

3

Exhibit 1

Exhibit 1. TNT Project Area Soil Ecological Risk Assessment Dataset
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03
				Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999
				Sample Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Explosives													
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	< 39000	< 44.3	60900	88500
Nitroglycerin	55-63-0	ug/kg	13000	4	NA	NA	NA	NA	NA	< 5368.6	< 6354	< 6000	< 7080
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480

				Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03
				Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999
				Sample Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Metals													
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	< 1	< 0.43	NA	< 0.52
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	10.1	4.3	NA	3.2
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	0.38	0.63	NA	0.36
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	0.34	< 0.26	NA	< 0.31
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	12.7	15.9	NA	10.5
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	19.8	13.1	NA	56
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	1250	679	NA	305
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	0.15	0.06	NA	0.05
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	10	9.3	NA	6.2
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	1.8	1	NA	0.67
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	0.48	< 0.26	NA	< 0.31
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	< 2	< 0.86	NA	< 1
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	424	157	NA	39.1
PCBs													
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03
				Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999
				Sample Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
SVOCs													
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	51	< 460	NA	< 490
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	21	< 460	NA	< 490
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	< 750	< 910	NA	< 980
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03
				Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999
				Sample Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	37	< 460	NA	< 490
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	35	< 460	NA	28
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	18	24	NA	< 490
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	19	< 460	NA	< 490
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	25	< 460	NA	< 490
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490

				Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03
				Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999
				Sample Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	< 620	NA	NA	< 620	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	< 1200	NA	NA	< 1200	< 1250	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	< 2500	NA	NA	< 2500	< 2500	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	< 620	NA	NA	< 620	< 6250	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	< 1200	NA	NA	< 1200	< 1250	NA	NA	NA	NA

				Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03
				Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999
				Sample Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	< 1200	NA	NA	< 1200	< 1250	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	< 1200	NA	NA	290	< 1250	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	< 490	NA	NA	< 620	< 2500	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	< 1200	NA	NA	< 1200	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria (ESC) Table (NJDEP 2009)
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environmental Protection Agency [USEPA] 2003)
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening value not necessary.
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
				Sample Date	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
				Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
				Sample ID	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 220	NA	NA	NA	< 250	740	NA	NA	NA	NA	NA	NA	NA	< 250	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	< 41.5	< 39903.09	NA	NA	< 40489.07	103000	NA	NA	NA	NA	NA	NA	NA	104000	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 5183	< 5690	NA	NA	< 5840	< 5537.1	NA	NA	NA	NA	NA	NA	NA	26200	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
Tetryl	479-45-8	ug/kg	1500	5	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA

					Location	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
					Sample Date	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
					Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
					Sample ID	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 0.54	NA	< 0.658053	0.52	< 0.6331	< 0.43	< 0.59	< 0.46	NA	NA	< 0.5	NA	< 0.62	< 0.773616	NA	
Arsenic	7440-38-2	mg/kg	9.9	1	2.1	NA	2.82	4.5	2.06	2.4	5.5	3	NA	NA	3	NA	4	3.43	NA	
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Beryllium	7440-41-7	mg/kg	10	1	0.39	NA	0.93	0.61	0.126	0.25	0.72	0.49	NA	NA	NA	1	0.22	0.189	NA	
Cadmium	7440-43-9	mg/kg	0.36	3	< 0.32	NA	0.693	< 0.28	< 0.31655	< 0.26	0.04	0.53	NA	NA	0.18	NA	0.22	0.252	NA	
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	7440-47-3	mg/kg	0.4	1	11.2	NA	11.5	14.8	9.08	12.8	20.4	12.5	NA	NA	15.5	NA	9.7	10.3	NA	
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	7440-50-8	mg/kg	5.4	2	7	NA	7.98	23.8	5.41	27.6	22	27.8	NA	NA	14.5	NA	9.2	7.65	NA	
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	7439-92-1	mg/kg	11	3	136	NA	36.7	227	13.9	14.1	1700	577	NA	NA	NA	5.4	57.9	37.8	NA	
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury	7439-97-6	mg/kg	0.1	2	0.03	NA	0.037	0.37	< 0.0376	0.04	0.06	0.07	NA	NA	NA	< 0.03	0.11	0.035	NA	
Nickel	7440-02-0	mg/kg	38	3	5.7	NA	4.69	10.8	2.49	4.3	10.2	8.4	NA	NA	6.6	NA	4.6	4.23	NA	
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Selenium	7782-49-2	mg/kg	0.52	3	0.59	NA	1.65	1	0.606	0.83	1.3	0.79	NA	NA	< 0.5	NA	0.57	0.767	NA	
Silver	7440-22-4	mg/kg	2	1	< 0.32	NA	0.316	< 0.28	< 0.31655	< 0.26	0.12	< 0.27	NA	NA	< 0.3	NA	0.12	< 0.386808	NA	
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Thallium	7440-28-0	mg/kg	1	1	0.68	NA	< 1.096755	< 0.94	< 1.055166	< 0.87	< 1.2	< 0.92	NA	NA	< 0.99	NA	< 1.2	< 1.289359	NA	
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	7440-66-6	mg/kg	8.5	1	30	NA	39.6	119	11.8	25.9	68.3	190	NA	NA	37.2	NA	49.6	18.2	NA	
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

				Location	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
				Sample Date	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
				Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
				Sample ID	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 1900	NA	< 855.182	< 2000	< 780.822	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	< 866.724	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 380	NA	< 428	55	< 390	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 380	NA	< 428	< 400	< 390	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 380	NA	NA	< 400	NA	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	< 427.591	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 760	NA	< 855.182	< 800	< 780.822	< 800	< 840	< 800	NA	< 900	NA	NA	< 860	< 866.724	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 1900	NA	< 855.182	< 2000	< 780.822	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	< 866.724	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 1900	NA	NA	< 2000	NA	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	< 855.182	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
					Sample Date	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
					Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
					Sample ID	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	40.7	NA	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	92	< 400	NA	< 450	NA	NA	70	50.7	NA	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 380	NA	< 427.591	37	< 390.411	< 400	98	< 400	NA	< 450	NA	NA	80	71.1	NA	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	110	< 400	NA	< 450	NA	NA	110	< 433.362	NA	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 380	NA	NA	< 400	NA	< 400	< 420	< 400	NA	< 450	NA	NA	84	NA	NA	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 380	NA	< 427.591	< 400	< 390.411	22	< 420	< 400	NA	< 450	NA	NA	43	< 433.362	NA	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	ug/kg	4730	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	97	< 400	NA	< 450	NA	NA	85	57.6	NA	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	84-66-2	ug/kg	24800	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	98	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Fluoranthene	206-44-0	ug/kg	122000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	170	< 400	NA	< 450	NA	NA	130	101	NA	
Fluorene	86-73-7	ug/kg	122000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 380	NA	NA	< 400	NA	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	NA	NA	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Hexachloroethane	67-72-1	ug/kg	596	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Isophorone	78-59-1	ug/kg	139000	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Naphthalene	91-20-3	ug/kg	99.4	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	< 427.591	< 400	NA	NA	< 420	< 400	NA	< 450	NA	NA	< 430	NA	NA	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 380	NA	< 427.591	24000	< 390.411	2200	< 420	500	NA	< 450	NA	NA	< 430	< 433.362	NA	
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 1900	NA	< 855.182	< 2000	< 780.822	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	< 866.724	NA	
Phenanthrene	85-01-8	ug/kg	45700	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	39	< 400	NA	< 450	NA	NA	97	78.4	NA	
Phenol	108-95-2	ug/kg	30000	1	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA	
Pyrene	129-00-0	ug/kg	78500	2	< 380	NA	< 427.591	< 400	< 390.411	< 400	150	< 400	NA	< 450	NA	NA	200	< 433.362	NA	

				Location	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
				Sample Date	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
				Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
				Sample ID	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	< 1100
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	< 2100	NA	NA	NA	NA	NA	< 2200
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	< 1100

				Location	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
				Sample Date	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
				Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
				Sample ID	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	< 1100
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	360	NA	NA	NA	NA	NA	150
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	560
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	< 1100
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01
					Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999
					Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft
					Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999
					Parent ID					A12-6-022N		A12-7-031N								
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2		NA	NA	NA	NA	< 217	< 227	< 200	< 220	NA	NA	< 240	45000	< 250	NA	< 240
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2		NA	NA	NA	NA	< 217	< 227	100	< 220	NA	NA	< 240	3100	< 250	NA	< 240
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4		NA	NA	NA	NA	< 217	< 227	440	390	NA	NA	3200	14600000	2200	NA	< 240
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 240
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5		NA	NA	NA	NA	< 217	< 227	990	1300	NA	NA	8100	< 220	1700	NA	< 240
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480
3-Nitrotoluene	99-08-1	ug/kg	130	6		NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5		NA	NA	NA	NA	< 217	< 227	840	980	NA	NA	5700	< 220	990	NA	< 240
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	< 217	< 227	< 200	< 220	NA	NA	< 240	< 220	< 250	NA	< 240
Nitrocellulose	9004-70-0	ug/kg	13000	8		NA	NA	NA	NA	< 40500	< 41957.96	102000	84100	NA	NA	NA	161000	97300	NA	72500
Nitroglycerin	55-63-0	ug/kg	13000	4		NA	NA	NA	NA	< 6010	< 5980	< 5279.4	< 5714.3	NA	NA	NA	< 6376.5	< 5463.3	NA	< 543.1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4		NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4		NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480
Tetryl	479-45-8	ug/kg	1500	5		NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480

					Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01
					Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999
					Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft
					Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999
					Parent ID					A12-6-022N		A12-7-031N								
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	< 0.58	< 0.651	< 0.640577	< 0.47	< 0.51	NA	< 0.58	NA	< 0.56	< 0.52	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	3.2	2.03	1.79	2	2.7	NA	5.2	NA	6.3	5.9	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	0.13	0.119	0.117	0.11	0.1	NA	0.85	NA	0.67	0.71	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	< 0.35	< 0.325548	< 0.320288	< 0.28	< 0.31	NA	< 0.35	NA	< 0.34	< 0.31	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	8.3	13.4	11.6	6.9	5.4	NA	22.7	NA	22.9	18.1	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	7.2	5.5	5.27	7.2	8	NA	16.8	NA	874	23.3	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	91.1	11.3	4.94	33.9	75.7	NA	26.9	NA	1290	417	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	1.8	1.32	0.849	0.05	0.03	0.08	NA	NA	0.21	0.06	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	2.1	3.6	2.97	3	2.2	NA	14.7	NA	17.2	10.7	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	0.73	0.447	0.383	0.62	1	NA	0.93	NA	1.1	1	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	< 0.35	< 0.326	< 0.320288	< 0.28	< 0.31	NA	< 0.35	NA	< 0.34	< 0.31	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	< 1.2	< 1.09	< 1.067628	< 0.93	< 1	NA	< 1.2	NA	< 1.1	< 1	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	12.6	11.2	11.2	16.9	9.9	NA	89.8	NA	211	59.6	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01
					Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999
					Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft
					Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999
					Parent ID					A12-6-022N		A12-7-031N								
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 1900	NA	< 2000	< 2200	< 803	< 797.162	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 380	NA	< 400	< 440	< 402	< 399	46	41	NA	< 400	NA	< 880000	< 400	NA	NA	
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 380	NA	< 400	< 440	< 402	< 399	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2-Chlorophenol	95-57-8	ug/kg	243	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitrophenol	88-75-5	ug/kg	--	--	< 380	NA	< 400	< 440	NA	NA	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 760	NA	< 800	< 880	< 803	< 797.162	< 760	< 760	NA	< 800	NA	< 1800000	< 800	NA	NA	
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 1900	NA	< 2000	< 2200	< 803	< 797.162	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 1900	NA	< 2000	< 2200	NA	NA	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	83-32-9	ug/kg	20000	1	< 380	NA	< 400	< 440	< 402	99.3	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	
Acenaphthylene	208-96-8	ug/kg	682000	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	19	NA	< 880000	41	NA	NA	
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	120-12-7	ug/kg	1480000	2	< 380	NA	< 400	< 440	< 402	112	< 380	< 380	NA	64	NA	< 880000	75	NA	NA	
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

					Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01
					Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999
					Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft
					Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999
					Parent ID					A12-6-022N		A12-7-031N								
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	177	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	48	NA	48	140	< 402	129	78	67	NA	240	NA	< 880000	650	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 380	NA	46	170	< 402	148	75	63	NA	200	NA	< 880000	580	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 380	NA	< 400	320	< 402	< 398.581	97	80	NA	280	NA	< 880000	740	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 380	NA	< 400	140	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	170	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 380	NA	94	110	NA	NA	< 380	< 380	NA	100	NA	< 880000	340	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	29	NA	33	67	< 402	35.5	140	< 380	NA	20	NA	< 880000	< 400	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	54	NA	78	130	< 402	155	72	61	NA	190	NA	< 880000	530	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 380	NA	< 400	< 440	< 402	< 398.581	74	< 380	NA	86	NA	< 880000	< 400	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	88	NA	120	200	< 402	370	120	98	NA	420	NA	< 880000	1000	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	< 380	NA	< 400	< 440	< 402	58.2	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 380	NA	< 400	< 440	NA	NA	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 380	NA	< 400	110	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	190	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 380	NA	< 400	< 440	NA	NA	NA	NA	NA	< 400	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 380	NA	< 400	< 440	< 402	< 398.581	19	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 1900	NA	< 2000	< 2200	< 803	< 797.162	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	48	NA	84	< 440	71.5	563	< 380	< 380	NA	150	NA	< 880000	190	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	130	NA	100	290	< 402	465	97	< 380	NA	320	NA	< 880000	740	NA	NA	NA

				Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01
				Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999
				Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft
				Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999
				Parent ID					A12-6-022N		A12-7-031N								
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	< 2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2200	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Benzene	71-43-2	ug/kg	255	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Bromoform	75-25-2	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA

					Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01
					Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999
					Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft
					Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999
					Parent ID					A12-6-022N		A12-7-031N								
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Toluene	108-88-3	ug/kg	200000	1	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	A13-753-01	A13-753-01	A13-753-01	)-2/B10-509-3(2	B10-20-01	B10-20-01	B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02
					Sample Date	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/15/1999	10/15/1999	11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	B10-20-011FD	B10-20-011N	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N
					Parent ID					B10-20-011N			B10-2178-051N							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	NA	< 120	NA	NA	< 230	1100	1200	NA	NA	NA	NA	< 220	< 230
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	NA	NA	NA	< 120	NA	NA	< 230	5200	3700	NA	NA	NA	NA	< 220	< 230
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	NA	NA	NA	280	NA	NA	< 230	710	4600	NA	NA	NA	NA	< 220	< 230
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	NA	NA	NA	280	NA	NA	< 230	< 220	< 250	NA	NA	NA	NA	150	< 230
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	< 120	NA	NA	< 450	270	210	NA	NA	NA	NA	< 430	< 450
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	NA	< 120	NA	NA	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	NA	NA	NA	720	NA	NA	< 230	210	800	NA	NA	NA	NA	150	< 230
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	< 120	NA	NA	< 450	650	440	NA	NA	NA	NA	< 430	< 450
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	< 120	NA	NA	< 230	410	250	NA	NA	NA	NA	< 220	< 230
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90100	37600
Nitroglycerin	55-63-0	ug/kg	13000	4	NA	NA	NA	< 120 J+	NA	NA	2000	4100	3300	NA	NA	NA	NA	< 6016.8	< 5386.8
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	NA	NA	NA	< 120 J+	NA	NA	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	< 120 J+	NA	NA	260000	1600	1300	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	NA	NA	NA	< 120	NA	NA	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	NA	< 120	NA	NA	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450

Exhibit 1. TNT Project Area Soil Ecological Risk Assessment Dataset
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A13-753-01	A13-753-01	A13-753-01	)-2/B10-509-3(2	B10-20-01	B10-20-01	B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02
					Sample Date	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/15/1999	10/15/1999	11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	B10-20-011FD	B10-20-011N	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N
					Parent ID					B10-20-011N			B10-2178-051N							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	< 0.54	NA	7.7	< 11.6	3.4	2.2	21.8	< 0.697	< 0.64	< 0.55	< 0.682	< 0.47	< 0.51
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	4.3	NA	37.6	41	14.6	334	274	4.7	4.5	3.6	3.49	4.3	2.3
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	0.73	NA	NA	0.51	0.54	0.57	0.33	< 30	0.642	0.77	0.69	0.314	0.84	0.54
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	0.32	NA	8.8	6.1	1.3	1	< 30	0.246	0.05	< 0.33	0.123	0.03	0.7
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	16.2	NA	39.6	27	42	13.3	16.6	16.2	19.1	18.8	16.1	21.2	9.5
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	17.3	NA	177	128	186	211	48500	18.6	18.8	20.6	14.7	15.7	12.2
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	334	NA	NA	8400	5570	17200	318	270	213	111	41.7	11.6	25.1	162
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	0.11	NA	0.53	0.49	2.3	0.15	0.13	0.097	0.05	0.04	0.034	0.03	0.03
Nickel	7440-02-0	mg/kg	38	3	NA	NA	9	NA	34.3	21.3	25.8	10.7	71.4	8.5	11.3	12.7	7.86	11.5	6.7
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	1.1	NA	< 12.5	< 11.6	0.85	1	15.8	1.23	0.57	< 0.55	1.07	0.41	< 0.51
Silver	7440-22-4	mg/kg	2	1	NA	NA	< 0.33	NA	3.4	< 7	0.87	< 0.22	< 30	< 0.348	< 0.38	< 0.33	< 0.341	< 0.28	< 0.31
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	< 1.1	NA	< 25	< 23.2	< 0.97	< 0.82	< 100	< 1.16	< 1.3	< 1.1	< 1.14	< 0.93	< 1
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	77.8	NA	4430	4810	1330	652	27700	35.4	41.8	37.7	27.5	80.4	366
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	A13-753-01	A13-753-01	A13-753-01	)-2/B10-509-3(2	B10-20-01	B10-20-01	B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02
					Sample Date	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/15/1999	10/15/1999	11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	B10-20-011FD	B10-20-011N	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N
					Parent ID					B10-20-011N			B10-2178-051N							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2000	NA	NA	NA	< 2700	< 2300	< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 400	NA	NA	NA	190	96	170	12000	9700	< 410	< 490	< 440	< 390	< 400	< 380	
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 400	NA	NA	NA	35	25	45	1300	1000	< 410	< 490	< 440	< 390	< 400	< 380	
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
2-Chlorophenol	95-57-8	ug/kg	243	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitrophenol	88-75-5	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 790	NA	NA	NA	< 1100	< 920	< 760	< 770	< 840	< 820	< 980	< 890	< 779	< 800	< 760	
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 2000	NA	NA	NA	< 2700	< 930	< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 2000	NA	NA	NA	< 2700	< 2300	< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	83-32-9	ug/kg	20000	1	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Acenaphthylene	208-96-8	ug/kg	682000	2	33	NA	NA	NA	43	26	< 380	92	110	21.3	< 490	< 440	< 390	< 400	< 380	
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	120-12-7	ug/kg	1480000	2	33	NA	NA	NA	67	31	< 380	120	130	48.8	< 490	< 440	< 390	< 400	< 380	
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

					Location	A13-753-01	A13-753-01	A13-753-01	)-2/B10-509-3(2	B10-20-01	B10-20-01	B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02
					Sample Date	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/15/1999	10/15/1999	11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	B10-20-011FD	B10-20-011N	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N
					Parent ID					B10-20-011N			B10-2178-051N							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	340	NA	NA	NA	410	190	58	570	530	261	69	< 440	< 390	< 400	< 380	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	300	NA	NA	NA	390	190	73	390	410	214	59	< 440	< 390	< 400	< 380	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	320	NA	NA	NA	670	380	250	1100	1200	285	< 490	< 440	< 390	< 400	< 380	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	180	NA	NA	NA	300	250	< 380	200	230	145	< 490	< 440	< 390	< 400	< 380	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	220	NA	NA	NA	320	170	100	380	410	< 410	< 490	< 440	< 390	< 400	< 380	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	31	NA	NA	NA	120	74	< 380	58	< 420	< 410	< 490	< 440	< 390	< 400	28	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	300	NA	NA	NA	440	280	120	810	800	240	68	< 440	< 390	< 400	< 380	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 400	NA	NA	NA	< 550	< 460	500	320	51	< 410	< 490	< 440	< 390	< 400	< 380	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Fluoranthene	206-44-0	ug/kg	122000	2	500	NA	NA	NA	550	360	120	1100	890	568	140	< 440	< 390	< 400	< 380	
Fluorene	86-73-7	ug/kg	122000	2	< 400	NA	NA	NA	< 550	23	< 380	< 380	20	< 410	< 490	< 440	< 390	< 400	< 380	
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Hexachloroethane	67-72-1	ug/kg	596	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	170	NA	NA	NA	300	210	< 380	220	230	110	< 490	< 440	< 390	< 400	< 380	
Isophorone	78-59-1	ug/kg	139000	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Naphthalene	91-20-3	ug/kg	99.4	2	< 400	NA	NA	NA	25	< 460	< 380	34	36	< 410	< 490	< 440	< 390	< 400	< 380	
Nitrobenzene	98-95-3	ug/kg	2200	2	< 400	NA	NA	NA	< 550	< 460	NA	NA	NA	< 410	< 490	< 440	< 390	NA	NA	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 2000	NA	NA	NA	< 2700	< 2300	< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	
Phenanthrene	85-01-8	ug/kg	45700	2	95	NA	NA	NA	320	200	51	300	240	285	50	< 440	< 390	< 400	< 380	
Phenol	108-95-2	ug/kg	30000	1	< 400	NA	NA	NA	< 550	< 460	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	
Pyrene	129-00-0	ug/kg	78500	2	400	NA	NA	NA	1000	480	< 380	1100	890	498	< 490	< 440	< 390	< 400	< 380	

					Location	A13-753-01	A13-753-01	A13-753-01	)-2/B10-509-3(2	B10-20-01	B10-20-01	B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02
					Sample Date	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/15/1999	10/15/1999	11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	B10-20-011FD	B10-20-011N	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N
					Parent ID					B10-20-011N			B10-2178-051N							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	A13-753-01	A13-753-01	A13-753-01	)-2/B10-509-3(2	B10-20-01	B10-20-01	B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02
					Sample Date	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/15/1999	10/15/1999	11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	B10-20-011FD	B10-20-011N	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N
					Parent ID					B10-20-011N			B10-2178-051N							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	B10-503-06	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04	B11-2044-04
				Sample Date	10/12/1999	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999	11/9/1999
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft	0.0-1.3 ft
				Sample ID	B10-503-062N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD	B11-2044-041.3N
				Parent ID														B11-2044-041.3N	
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 217.4	< 210	< 250	210	< 208.4	NA	< 643468	< 700869	< 250	< 210	< 220	NA	< 150	< 160	< 130
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 217.4	< 210	821	270	< 208.4	NA	< 643468	< 700869	< 250	< 210	< 220	NA	< 150	< 160	< 130
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 217.4	< 210	< 250	1900	< 208.4	NA	22600000	28900000	< 250	< 210	< 220	NA	85	< 160	< 130
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	1351.7	< 210	< 250	2500	508.3	NA	< 643468	< 700869	< 250	300	< 220	NA	270	< 160	< 130
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 434.8	< 420	671	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310	< 270
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 434.8	< 420	276	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310	< 270
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	1290	< 210	1830	1600	433.8	NA	< 643468	< 700869	< 250	150	< 220	NA	200	< 160	< 130
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 434.8	< 420	2310	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310	< 270
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 217.4	< 210	244	< 240	< 208.4	NA	< 643468	< 700869	< 250	120	< 220	NA	< 150	< 160	< 130
Nitrocellulose	9004-70-0	ug/kg	13000	8	109000	116000	< 46	NA	45500	NA	NA	NA	NA	NA	NA	NA	126000	108000	94300
Nitroglycerin	55-63-0	ug/kg	13000	4	< 5763.5	< 5814.1	< 6610	< 4900	< 5705.3	NA	< 1400000	< 1300000	< 4500	< 4800	< 4900	NA	2800	< 4500	< 4800
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 434.8	< 420	< 500	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310	< 270
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 434.8	< 420	< 500	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310	< 270
Tetryl	479-45-8	ug/kg	1500	5	< 434.8	< 420	< 500	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310	< 270

Exhibit 1. TNT Project Area Soil Ecological Risk Assessment Dataset
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	B10-503-06	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04	B11-2044-04
				Sample Date	10/12/1999	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999	11/9/1999
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft	0.0-1.3 ft
				Sample ID	B10-503-062N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD	B11-2044-041.3N
				Parent ID														B11-2044-041.3N	
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 0.47	< 0.51	< 0.496	< 0.44	< 0.5	NA	0.51	0.57	2	1.3	2.2	< 0.45	< 0.54	< 0.47	< 0.47
Arsenic	7440-38-2	mg/kg	9.9	1	4	4.8	5.92	6.2	4	NA	6.1	5.4	64.4	12.9	53.8	3.5	20	7	5
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.4	0.5	0.735	0.8	0.64	NA	0.76	0.45	0.51	0.21	0.22	0.44	0.68	0.69	0.6
Cadmium	7440-43-9	mg/kg	0.36	3	< 0.28	< 0.31	0.739	< 0.26	< 0.3	NA	0.44	0.05	< 0.25	0.08	< 0.26	< 0.27	< 0.33	< 0.28	< 0.28
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	18.4	17	17.9	20.4	18.8	NA	18.4	13	17.6	6.4	7.9	16.6	75.2	56	24
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	18	64.1	20.2	33.1	16.7	NA	22.1	37.9	46	12.7	17.8	13.6	19.9	16.4	13.5
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	244	250	21.7	1160	7.3	NA	1080	658	16900	7320	33800	26.6	63.8	39.4	27.3
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	0.11	0.09	0.436	0.17	0.02	NA	0.07	0.06	0.96	0.24	1.2	0.05	0.04	0.03	0.03
Nickel	7440-02-0	mg/kg	38	3	6.5	10.3	11.8	10.6	11.3	NA	10	7.5	7.8	3.8	2.8	5.9	7.8	7.7	6
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	1.1	1.2	1.12	0.72	0.74	NA	0.85	0.64	4.6	1.2	13.8	0.74	0.24	0.11	0.42
Silver	7440-22-4	mg/kg	2	1	< 0.28	< 0.31	< 0.248	< 0.26	< 0.3	NA	< 0.28	0.08	0.67	0.57	1.5	< 0.27	< 0.33	< 0.28	< 0.28
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 0.93	< 1	< 0.827	< 0.87	< 1	NA	< 0.98	< 0.82	3	< 1.2	1.3	0.53	< 1.1	< 0.94	< 0.93
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	79.4	50.6	65.4	57.5	46.6	NA	281	76.1	41.8	48.3	20.2	30.9	129	68.8	65
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	B10-503-06	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04	B11-2044-04
					Sample Date	10/12/1999	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999	11/9/1999
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft	0.0-1.3 ft
					Sample ID	B10-503-062N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD	B11-2044-041.3N
					Parent ID														B11-2044-041.3N	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2,4-Dichlorophenol	120-83-2	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2,4-Dimethylphenol	105-67-9	ug/kg	10	2		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2		< 2100	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200	< 1900
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		670	< 400	6400	480	< 390	NA	< 380	120	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		63	< 400	578	< 3900	< 390	NA	59	26	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2-Chloronaphthalene	91-58-7	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2-Chlorophenol	95-57-8	ug/kg	243	2		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2-Methylnaphthalene	91-57-6	ug/kg	3240	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2		< 820	< 800	< 876	< 7800	< 780	NA	< 760	< 770	< 970	< 870	< 880	< 810	< 820	< 880	< 750
3-Nitroaniline	99-09-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--		< 2100	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200	< 1900
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
4-Chloroaniline	106-47-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
4-Nitroaniline	100-01-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1		< 2100	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200	< 1900
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
Acenaphthylene	208-96-8	ug/kg	682000	2		< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370
Acetophenone	98-86-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2		< 410	< 400	< 438	< 3900	< 390	NA	100	< 380	< 480	71	< 440	< 410	< 410	< 440	< 370
Atrazine	1912-24-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	B10-503-06	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04	B11-2044-04
					Sample Date	10/12/1999	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999	11/9/1999
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft	0.0-1.3 ft
					Sample ID	B10-503-062N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD	B11-2044-041.3N
					Parent ID														B11-2044-041.3N	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 410	< 440	< 370
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	< 380	< 380	NA	NA	NA	NA	< 410	< 440	< 370	
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 410	< 400	< 438	< 3900	< 390	NA	120	< 380	100	410	190	< 410	< 410	< 440	< 370	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 410	23	< 438	< 3900	< 390	NA	< 380	< 380	390	360	150	< 410	< 410	< 440	< 370	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 410	< 400	< 438	< 3900	< 390	NA	160	< 380	320	350	190	< 410	< 410	< 440	< 370	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 410	< 400	< 438	< 3900	< 390	NA	NA	NA	1300	300	120	< 410	NA	NA	NA	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	160	< 440	< 410	< 410	< 440	< 370	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 410	< 400	68.3	< 3900	22	NA	< 380	< 380	< 480	< 430	< 440	24	200	< 440	18	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	ug/kg	4730	2	< 410	< 400	< 438	< 3900	< 390	NA	130	< 380	220	310	130	< 410	< 410	< 440	< 370	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	84-66-2	ug/kg	24800	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 410	< 400	< 438	< 3900	< 390	NA	120	< 380	< 480	< 430	< 440	< 410	93	< 440	< 370	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Fluoranthene	206-44-0	ug/kg	122000	2	< 410	< 400	< 438	< 3900	< 390	NA	92	< 380	89	550	250	< 410	< 410	< 440	< 370	
Fluorene	86-73-7	ug/kg	122000	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Hexachloroethane	67-72-1	ug/kg	596	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	630	220	99	< 410	< 410	< 440	< 370	
Isophorone	78-59-1	ug/kg	139000	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Naphthalene	91-20-3	ug/kg	99.4	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 410	NA	NA	NA	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 2100	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200	< 1900	
Phenanthrene	85-01-8	ug/kg	45700	2	< 410	< 400	< 438	< 3900	< 390	NA	100	< 380	50	320	120	< 410	< 410	< 440	< 370	
Phenol	108-95-2	ug/kg	30000	1	< 410	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440	< 370	
Pyrene	129-00-0	ug/kg	78500	2	< 410	< 400	< 438	< 3900	< 390	NA	260	< 380	< 480	850	360	< 410	< 410	< 440	< 370	

				Location	B10-503-06	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04	B11-2044-04
				Sample Date	10/12/1999	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999	11/9/1999
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft	0.0-1.3 ft
				Sample ID	B10-503-062N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD	B11-2044-041.3N
				Parent ID														B11-2044-041.3N	
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	B10-503-06	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04	B11-2044-04
				Sample Date	10/12/1999	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999	11/9/1999
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft	0.0-1.3 ft
				Sample ID	B10-503-062N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD	B11-2044-041.3N
				Parent ID														B11-2044-041.3N	
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03
				Sample Date	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999
				Sample Depths	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	11000	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 130	160	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	3400	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 130	120	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	4800	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	116000	407000	150000	NA	NA	NA	NA	NA	NA	NA	NA	NA	84400	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 4900	13000	< 4900	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5967.3	NA	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA
Tetryl	479-45-8	ug/kg	1500	5	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA

					Location	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03
					Sample Date	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999
					Sample Depths	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 0.32	< 0.48	< 0.39	< 0.53	< 0.54	NA	NA	NA	NA	NA	NA	< 0.53	NA	< 0.633152	0.29	
Arsenic	7440-38-2	mg/kg	9.9	1	3.7	10.4	3.4	6.1	4.5	NA	NA	NA	NA	NA	NA	4.3	NA	3	5.8	
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Beryllium	7440-41-7	mg/kg	10	1	0.41	0.81	0.51	0.63	0.79	NA	NA	NA	NA	NA	NA	0.48	NA	0.527	0.47	
Cadmium	7440-43-9	mg/kg	0.36	3	< 0.19	1	0.29	0.04	< 0.32	NA	NA	NA	NA	NA	NA	0.15	NA	0.283	< 0.31	
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	7440-47-3	mg/kg	0.4	1	16.6	15.2	18.9	14	16.2	NA	NA	NA	NA	NA	NA	17	NA	11.4	20.6	
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	7440-50-8	mg/kg	5.4	2	16.2	36	17.2	18.1	15.3	NA	NA	NA	NA	NA	NA	25.4	NA	10.3	35.5	
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	7439-92-1	mg/kg	11	3	74.5	489	37.5	30.6	24.5	NA	NA	NA	NA	NA	NA	90.3	NA	72.4	279	
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury	7439-97-6	mg/kg	0.1	2	0.06	0.47	0.07	0.03	0.05	NA	NA	NA	NA	NA	NA	0.11	NA	0.143	3.1	
Nickel	7440-02-0	mg/kg	38	3	5	9.1	7.5	7.6	6.7	NA	NA	NA	NA	NA	NA	8.3	NA	5.99	9.1	
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Selenium	7782-49-2	mg/kg	0.52	3	0.38	0.26	0.17	0.82	0.95	NA	NA	NA	NA	NA	NA	1.2	NA	0.717	0.72	
Silver	7440-22-4	mg/kg	2	1	< 0.19	< 0.29	< 0.24	< 0.32	< 0.32	NA	NA	NA	NA	NA	NA	< 0.32	NA	< 0.316576	< 0.31	
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Thallium	7440-28-0	mg/kg	1	1	< 0.65	< 0.97	< 0.78	< 1.1	< 1.1	NA	NA	NA	NA	NA	NA	< 1.1	NA	< 1.055253	< 1	
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	7440-66-6	mg/kg	8.5	1	68.3	340	239	123	79.5	NA	NA	NA	NA	NA	NA	79.1	NA	37.5	55	
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	< 41	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	

				Location	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03
				Sample Date	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999
				Sample Depths	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	< 843.64	< 2000
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 370	< 400	< 360	150	26	NA	NA	< 460	NA	< 560	NA	< 390	NA	347	130
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 370	< 400	< 360	57	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	33.3	< 410
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
2-Chlorophenol	95-57-8	ug/kg	243	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	NA	< 410
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 421.82	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 750	< 800	< 720	< 750	< 780	NA	NA	< 930	NA	< 1100	NA	< 780	NA	< 843.64	< 810
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	< 843.64	< 2000
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	NA	< 2000
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 843.64	NA
Acenaphthene	83-32-9	ug/kg	20000	1	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
Acenaphthylene	208-96-8	ug/kg	682000	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03
					Sample Date	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999
					Sample Depths	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	169	< 410	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	< 370	< 400	< 360	NA	NA	NA	NA	< 460	NA	< 560	NA	NA	NA	NA	NA	
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 370	< 400	< 360	< 370	45	NA	NA	< 460	NA	< 560	NA	< 390	NA	619	< 410	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 370	< 400	< 360	< 370	40	NA	NA	< 460	NA	< 560	NA	< 390	NA	1160	< 410	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	786	< 410	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	< 370	< 390	NA	NA	NA	NA	NA	NA	< 390	NA	< 421.82	< 410	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	NA	< 410	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	40	310	35	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	33	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	ug/kg	4730	2	< 370	< 400	< 360	< 370	36	NA	NA	< 460	NA	< 560	NA	< 390	NA	602	< 410	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	461	< 410	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	84-66-2	ug/kg	24800	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 370	44	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	92	180	100	< 370	< 390	NA	NA	63	NA	< 560	NA	< 390	NA	186	< 410	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Fluoranthene	206-44-0	ug/kg	122000	2	< 370	< 400	< 360	< 370	72	NA	NA	< 460	NA	< 560	NA	< 390	NA	98.7	< 410	
Fluorene	86-73-7	ug/kg	122000	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	NA	< 410	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Hexachloroethane	67-72-1	ug/kg	596	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	443	< 410	
Isophorone	78-59-1	ug/kg	139000	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Naphthalene	91-20-3	ug/kg	99.4	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 370	380	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	< 843.64	< 2000	
Phenanthrene	85-01-8	ug/kg	45700	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	75.5	< 410	
Phenol	108-95-2	ug/kg	30000	1	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	
Pyrene	129-00-0	ug/kg	78500	2	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	278	< 410	

					Location	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03
					Sample Date	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999
					Sample Depths	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	< 2269	NA	< 2361	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA

				Location	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03
				Sample Date	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999
				Sample Depths	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05
					Sample Date	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 240	NA	NA	NA	120	NA	NA	< 230	< 192.3	< 227.2	< 250	< 230	< 250	< 250	< 230	
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 240	NA	NA	NA	< 220	NA	NA	870	< 192.3	< 227.2	< 250	< 230	< 250	< 250	< 230	
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	120	NA	NA	NA	20000	NA	NA	1600	287.5	< 227.2	< 250	< 230	1700	< 250	< 230	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 240	NA	NA	NA	< 220	NA	NA	18000	3760.8	< 227.2	< 250	< 230	3100	< 250	< 230	
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 480	NA	NA	NA	< 430	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 480	NA	NA	NA	< 430	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 240	NA	NA	NA	2100	NA	NA	8500	1925.4	< 227.2	< 250	< 230	2600	< 250	< 230	
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 480	NA	NA	NA	< 430	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 240	NA	NA	NA	< 220	NA	NA	< 230	< 192.3	< 227.2	< 250	< 230	< 250	< 250	< 230	
Nitrocellulose	9004-70-0	ug/kg	13000	8	97100	NA	NA	NA	94500	NA	NA	124000	141000	< 44.7	NA	NA	1140000	NA	NA	
Nitroglycerin	55-63-0	ug/kg	13000	4	< 5224.7	NA	NA	NA	< 621.9	NA	NA	< 6973.5	< 6822.4	< 5967.3	< 5527.06	< 5000	2298.1	< 4700	< 4500	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 480	NA	NA	NA	< 430	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 480	NA	NA	NA	< 430	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	
Tetryl	479-45-8	ug/kg	1500	5	< 480	NA	NA	NA	< 430	NA	NA	870	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	

					Location	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05
					Sample Date	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	< 2.3	< 0.52	NA	< 0.52	0.23	< 0.478	< 5.7	NA	NA	< 0.588365	< 0.5	< 0.64	< 0.38	< 0.5	
Arsenic	7440-38-2	mg/kg	9.9	1	NA	7	5.1	NA	3.8	4.8	5.45	28.3	NA	NA	3.01	3.8	5.4	1.7	17	
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Beryllium	7440-41-7	mg/kg	10	1	NA	0.5	0.53	NA	0.24	0.68	0.536	0.46	NA	NA	0.574	0.75	0.8	0.52	0.55	
Cadmium	7440-43-9	mg/kg	0.36	3	NA	13.1	< 0.31	NA	0.08	0.07	2	1.6	NA	NA	< 0.294182	0.23	0.11	< 0.23	0.49	
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	7440-47-3	mg/kg	0.4	1	NA	12.8	32.7	NA	11.9	41.1	16.4	21.6	NA	NA	16.8	14.7	15	9.5	17	
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	7440-50-8	mg/kg	5.4	2	NA	34.7	24.5	NA	21.4	13.5	21.2	644	NA	NA	14.6	14.3	23.5	12.7	19.3	
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	7439-92-1	mg/kg	11	3	NA	858	450	NA	176	103	212	1540	NA	NA	13.5	8.5	158	3.6	47.3	
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury	7439-97-6	mg/kg	0.1	2	NA	0.11	0.05	NA	0.08	0.14	0.111	0.08	NA	NA	0.076	0.03	0.06	< 0.03	0.09	
Nickel	7440-02-0	mg/kg	38	3	NA	10.5	8.3	NA	6.2	18.2	9.47	50.2	NA	NA	9.43	7	10.2	6.7	10.1	
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Selenium	7782-49-2	mg/kg	0.52	3	NA	1.3	0.95	NA	0.64	1	1.1	6.3	NA	NA	0.334	0.95	0.5	< 0.38	1.2	
Silver	7440-22-4	mg/kg	2	1	NA	0.83	< 0.31	NA	0.13	< 0.3	< 0.239	1.4	NA	NA	< 0.294182	< 0.3	< 0.38	< 0.23	< 0.3	
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Thallium	7440-28-0	mg/kg	1	1	NA	< 4.5	< 1	NA	< 1	< 0.9	< 0.797	< 11.4	NA	NA	< 0.980608	< 1	< 1.3	< 0.75	< 0.99	
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	7440-66-6	mg/kg	8.5	1	NA	3990	54.5	NA	134	70.5	929	2720	NA	NA	45.2	48.4	77.1	32.3	75.5	
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

				Location	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05
				Sample Date	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999
				Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	< 1900	< 2000	NA	< 2100	< 2300	< 818	< 2300	< 2300	< 2100	< 810.634	< 2000	< 2400	< 1800	< 1900
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	1500	< 390	NA	230	< 460	< 409	1700	98	< 420	< 405	< 390	54	< 350	390
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	< 390	< 390	NA	62	< 460	< 409	1600	95	< 420	< 405	< 390	22	< 350	< 390
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	NA	< 460	< 460	< 420	NA	< 390	< 480	< 350	< 390
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	< 409	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	< 780	< 780	NA	< 830	< 910	< 818	< 920	< 920	< 830	< 810.634	< 780	< 970	< 700	< 780
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	< 1900	< 2000	NA	< 2100	< 2300	< 818	< 2300	< 2300	< 2100	< 810.634	< 2000	< 2400	< 1800	< 1900
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	< 1900	< 2000	NA	< 2100	< 2300	NA	< 2300	< 2300	< 2100	NA	< 2000	< 2400	< 1800	< 1900
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	< 818	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	19	< 390	NA	39	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	64	< 390	NA	58	65	< 409	170	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05
					Sample Date	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	< 390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	560	42	NA	540	420	178	1600	40	< 420	< 405.317	< 390	< 480	< 350	62	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	520	45	NA	580	320	154	1500	77	< 420	< 405.317	< 390	< 480	< 350	34	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	770	< 390	NA	870	430	152	2600	130	< 420	< 405.317	< 390	< 480	< 350	< 390	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	150	NA	NA	400	180	101	630	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	270	< 390	NA	210	< 460	< 409	760	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	22	< 390	NA	22	< 460	< 409	20	23	23	< 405.317	< 390	< 480	< 350	40	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	ug/kg	4730	2	NA	< 390	59	NA	500	290	124	1500	83	< 420	< 405.317	< 390	< 480	< 350	100	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	< 390	< 390	NA	150	< 460	< 409	230	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	46	< 390	
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	75.39	< 390	< 480	48	59	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Fluoranthene	206-44-0	ug/kg	122000	2	NA	700	110	NA	630	760	257	2600	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Fluorene	86-73-7	ug/kg	122000	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	< 390	< 390	NA	< 420	< 460	NA	< 460	< 460	< 420	NA	< 390	< 480	< 350	< 390	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Hexachloroethane	67-72-1	ug/kg	596	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	160	< 390	NA	330	180	96.1	640	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Isophorone	78-59-1	ug/kg	139000	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Naphthalene	91-20-3	ug/kg	99.4	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	< 390	< 390	NA	NA	< 460	< 409	NA	NA	NA	NA	NA	NA	NA	NA	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	78	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	< 1900	< 2000	NA	< 2100	< 2300	< 818	< 2300	< 2300	< 2100	< 810.634	< 2000	< 2400	< 1800	< 1900	
Phenanthrene	85-01-8	ug/kg	45700	2	NA	310	40	NA	120	270	75.3	380	35	< 420	< 405.317	< 390	< 480	< 350	48	
Phenol	108-95-2	ug/kg	30000	1	NA	< 390	< 390	NA	< 420	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	
Pyrene	129-00-0	ug/kg	78500	2	NA	< 390	110	NA	620	650	286	2400	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	

					Location	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05
					Sample Date	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	< 1223	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	< 2446	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	< 1223	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05
					Sample Date	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	< 1223	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	< 1223	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	< 612	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	< 1223	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	B13-682-03	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	B13-757-04	B13-757-04
				Sample Date	10/8/1999	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-0.8 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.2 ft	0.0-2.0 ft
				Sample ID	B13-682-030.8N	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	B13-757-040.2N	B13-757-042FD
				Parent ID						B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N			B13-757-040.2N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 230	< 210	< 250	NA	NA	36500	32900	NA	NA	NA	NA	< 240	< 250	< 210	< 200
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 230	3900	1000	NA	NA	9850	9110	NA	NA	NA	NA	< 240	< 250	1500	1700
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	490	570	9600	NA	NA	41650000	39568000	NA	NA	NA	NA	96	190	1600	720
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 230	< 210	3200	NA	NA	< 238	< 250	NA	NA	NA	NA	< 240	< 250	1500	860
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 450	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	< 420	< 400
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 450	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	< 420	< 400
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 230	< 210	< 250	NA	NA	< 238	< 250	NA	NA	NA	NA	< 240	< 250	< 210	< 200
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 450	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	< 420	< 400
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 230	< 210	< 250	NA	NA	< 238	< 250	NA	NA	NA	NA	< 240	< 250	< 210	< 200
Nitrocellulose	9004-70-0	ug/kg	13000	8	121000	258000	453000	NA	NA	1410000	1340000	NA	NA	NA	NA	< 41000	126000	140000	111000
Nitroglycerin	55-63-0	ug/kg	13000	4	< 5655.5	< 7739	< 6709.8	NA	NA	410000000	476000000	NA	NA	NA	NA	< 5530.7	< 5328.8	< 6030.5	< 5624.3
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 450	< 420	< 500	NA	NA	551	701	NA	NA	NA	NA	< 480	< 500	< 420	< 400
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 450	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	< 420	< 400
Tetryl	479-45-8	ug/kg	1500	5	< 450	< 420	1600	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	150	< 400

				Location	B13-682-03	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	B13-757-04	B13-757-04
				Sample Date	10/8/1999	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-0.8 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.2 ft	0.0-2.0 ft
				Sample ID	B13-682-030.8N	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	B13-757-040.2N	B13-757-042FD
				Parent ID						B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N			B13-757-040.2N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 0.53	< 0.69	< 0.38	< 0.44	1.5	< 0.493	< 0.671	NA	NA	NA	NA	< 0.48	< 0.54	< 0.4	< 0.45
Arsenic	7440-38-2	mg/kg	9.9	1	5.2	17	2.7	5	8.8	3.83	4.31	NA	NA	NA	NA	5.3	5.3	8.2	5.1
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.63	0.88	0.64	0.76	0.78	0.697	0.761	NA	NA	NA	NA	0.79	0.82	0.74	0.48
Cadmium	7440-43-9	mg/kg	0.36	3	0.99	< 0.41	< 0.23	< 0.26	2.5	1.13	1.36	NA	NA	NA	NA	< 0.29	< 0.32	< 0.24	< 0.27
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	20.8	20.4	13.7	22	19.7	13	14.1	NA	NA	NA	NA	18.8	19.1	11	12.7
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	33.6	43.1	122	10.6	34.2	17.9	31.3	NA	NA	NA	NA	15.9	17.4	14.6	14.9
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	156	82.5	74.5	13.7	355	43.9	67	NA	NA	NA	NA	24.4	21.4	69.2	110
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	3.8	0.49	0.02	0.04	0.14	0.158	0.21	NA	NA	NA	NA	0.05	0.06	0.03	0.03
Nickel	7440-02-0	mg/kg	38	3	11.7	15.5	7.5	9.9	12.2	7.11	7.97	NA	NA	NA	NA	9.2	9.1	9.1	8.8
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	1.1	1.7	0.53	0.44	1.2	1.1	1.07	NA	NA	NA	NA	1.1	1.5	1.2	0.8
Silver	7440-22-4	mg/kg	2	1	< 0.32	< 0.41	< 0.23	< 0.26	< 0.39	< 0.246	< 0.335	NA	NA	NA	NA	< 0.29	< 0.32	< 0.24	< 0.27
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 1.1	< 1.4	0.5	< 0.87	< 1.3	< 0.821	< 1.12	NA	NA	NA	NA	< 0.95	< 1.1	< 0.8	< 0.89
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	983	127	80.4	58.8	768	342	136	NA	NA	NA	NA	98.5	93.5	62.1	72.1
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	B13-682-03	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	B13-757-04	B13-757-04
				Sample Date	10/8/1999	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-0.8 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.2 ft	0.0-2.0 ft
				Sample ID	B13-682-030.8N	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	B13-757-040.2N	B13-757-042FD
				Parent ID						B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N			B13-757-040.2N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2000	< 2800	< 2300	< 2100	< 2500	< 80200	16800	NA	NA	NA	NA	< 1900	< 2000	< 2300	< 1900
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	150	800	940	< 410	< 500	196000	278000	NA	NA	NA	NA	39	< 390	510	830
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	130	200	63	< 410	< 500	41000	64900	NA	NA	NA	NA	21	< 390	23	36
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
2-Chlorophenol	95-57-8	ug/kg	243	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 790	< 1100	< 910	< 810	< 990	< 80200	< 8200	NA	NA	NA	NA	< 780	< 780	< 900	< 750
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 2000	< 2800	< 2300	< 2100	< 2500	< 80200	< 8200	NA	NA	NA	NA	< 1900	< 2000	< 2300	< 1900
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 2000	< 2800	< 2300	< 2100	< 2500	< 80200	< 8200	NA	NA	NA	NA	< 1900	< 2000	< 2300	< 1900
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Acenaphthylene	208-96-8	ug/kg	682000	2	19	< 560	< 460	< 410	70	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	23	16
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	28	< 560	< 460	< 410	71	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	51	< 370
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	B13-682-03	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	B13-757-04	B13-757-04
					Sample Date	10/8/1999	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999
					Sample Depths	0.0-0.8 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.2 ft	0.0-2.0 ft
					Sample ID	B13-682-030.8N	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	B13-757-040.2N	B13-757-042FD
					Parent ID						B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N			B13-757-040.2N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	140	< 560	< 460	< 410	99	< 40100	< 4100	NA	NA	NA	NA	29	< 390	180	95
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	150	57	< 460	< 410	110	< 40100	< 4100	NA	NA	NA	NA	25	< 390	170	110
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	180	< 560	< 460	< 410	520	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	250	170
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 400	< 560	< 460	< 410	320	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	140	< 560	< 460	< 410	88	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	66
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	34	56	< 460	29	< 500	< 40100	1080	NA	NA	NA	NA	19	< 390	< 450	< 370
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	140	52	< 460	< 410	340	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	200	140
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 400	< 560	< 460	45	130	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 400	< 560	< 460	47	120	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Fluoranthene	206-44-0	ug/kg	122000	2	260	< 560	< 460	< 410	330	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	280
Fluorene	86-73-7	ug/kg	122000	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	510	< 370
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Hexachloroethane	67-72-1	ug/kg	596	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 400	< 560	< 460	< 410	290	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Isophorone	78-59-1	ug/kg	139000	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Naphthalene	91-20-3	ug/kg	99.4	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	< 410	< 500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 2000	< 2800	< 2300	< 2100	< 2500	< 80200	< 8200	NA	NA	NA	NA	< 1900	< 2000	< 2300	< 1900
Phenanthrene	85-01-8	ug/kg	45700	2	98	< 560	< 460	< 410	90	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	240	170
Phenol	108-95-2	ug/kg	30000	1	< 400	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	< 450	< 370
Pyrene	129-00-0	ug/kg	78500	2	260	< 560	< 460	< 410	300	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390	370	220

				Location	B13-682-03	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	B13-757-04	B13-757-04
				Sample Date	10/8/1999	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-0.8 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.2 ft	0.0-2.0 ft
				Sample ID	B13-682-030.8N	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	B13-757-040.2N	B13-757-042FD
				Parent ID						B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N			B13-757-040.2N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 620	< 620	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	< 1200	< 1200	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	< 2160	< 2140	< 2500	< 2500	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	< 5390	< 5340	< 620	< 620	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	< 1200	< 1200	NA	NA	NA	NA

					Location	B13-682-03	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	B13-757-04	B13-757-04
					Sample Date	10/8/1999	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/8/1999
					Sample Depths	0.0-0.8 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.2 ft	0.0-2.0 ft
					Sample ID	B13-682-030.8N	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	B13-757-040.2N	B13-757-042FD
					Parent ID						B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N			B13-757-040.2N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	< 1200	< 1200	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	220	420	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	< 2160	< 2140	< 520	< 620	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	< 539	NA	< 620	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1200	< 1200	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02
				Sample Date	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 230	< 227	NA	NA	170	NA	NA	NA	< 140	< 90.9	< 250	NA	NA	< 200	< 210
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 230	< 227	NA	NA	< 250	NA	NA	NA	< 140	< 90.9	< 250	NA	NA	< 200	< 210
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 230	1450	NA	NA	12000	NA	NA	NA	680	< 90.9	2290	NA	NA	< 200	< 210
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	< 250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 230	217	NA	NA	8500	NA	NA	NA	150	< 90.9	< 250	NA	NA	< 200	< 210
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 230	125	NA	NA	6700	NA	NA	NA	180	< 90.9	< 250	NA	NA	< 200	< 210
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 230	< 227	NA	NA	< 250	NA	NA	NA	130	< 90.9	< 250	NA	NA	< 200	< 210
Nitrocellulose	9004-70-0	ug/kg	13000	8	80500	62700	NA	NA	NA	NA	NA	NA	NA	< 47.6	82300	NA	NA	48400	124000
Nitroglycerin	55-63-0	ug/kg	13000	4	< 5016.3	21700	NA	NA	< 4900	NA	NA	NA	< 5400	< 6680	< 5648.084	NA	NA	< 7177.7	< 5276.5
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	3800	NA	NA	NA	1200000	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420
Tetryl	479-45-8	ug/kg	1500	5	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420

					Location	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02
					Sample Date	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3		< 0.48	< 0.584	14.5	NA	NA	< 0.49	< 0.49	NA	0.29	0.91	< 0.684288	< 0.607	0.21	< 0.47	1
Arsenic	7440-38-2	mg/kg	9.9	1		3.8	4.16	24.1	NA	NA	207	274	NA	7.8	5.16	6.29	4.01	4.2	5.4	6.9
Barium	7440-39-3	mg/kg	283	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1		0.61	0.652	0.88	NA	NA	0.37	0.5	NA	0.26	0.791	0.685	0.933	0.92	0.85	0.3
Cadmium	7440-43-9	mg/kg	0.36	3		0.06	0.702	0.59	NA	NA	< 0.3	< 0.29	NA	0.13	0.204	0.3	0.632	< 0.32	< 0.28	< 0.28
Calcium	7440-70-2	mg/kg	0	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1		13.7	16.2	60.7	NA	NA	76	44	NA	19.4	10.3	16.2	14.4	13.6	20.6	16.7
Cobalt	7440-48-4	mg/kg	0.14	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2		12	57.4	171	NA	NA	28.5	56	NA	39.7	12.7	22.2	10.4	10.2	18.8	25
Iron	7439-89-6	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3		21.7	75.1	2190	NA	NA	377	603	NA	971	96.8	107	34.4	29.6	1550	3070
Magnesium	7439-95-4	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2		0.04	0.084	0.72	NA	NA	0.31	0.12	NA	0.32	0.1	0.097	0.047	0.04	0.07	0.26
Nickel	7440-02-0	mg/kg	38	3		7.9	9.94	25.9	NA	NA	8.9	11.1	NA	5.8	7.75	10.4	8.28	8.4	11	8.1
Potassium	7440-09-7	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3		0.78	1.08	3	NA	NA	0.85	0.9	NA	< 0.45	0.487	1.37	1.04	0.75	1.1	0.73
Silver	7440-22-4	mg/kg	2	1		< 0.29	< 0.292	1.4	NA	NA	< 0.3	< 0.29	NA	0.1	< 0.386	< 0.342144	< 0.303	< 0.32	< 0.28	0.2
Sodium	7440-23-5	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1		< 0.96	< 0.973	< 12.8	NA	NA	< 0.99	< 0.98	NA	< 0.9	< 1.29	< 1.14048	< 1.01	0.58	< 0.95	< 0.93
Vanadium	7440-62-2	mg/kg	2	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1		153	118	258	NA	NA	101	183	NA	69.2	54.7	59.9	53.8	54.4	83	159
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1		NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1		NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1		NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1		NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1		NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1		NA	NA	NA	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1		NA	NA	NA	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1		NA	NA	NA	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02
				Sample Date	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	< 789.942	< 796	< 2000	< 2600	< 2000
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 370	< 403	< 480	NA	NA	240	< 4000	NA	68	< 446	118	< 398	< 390	< 510	< 410
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 370	< 403	< 480	NA	NA	64	< 4000	NA	< 390	< 446	< 395	< 398	< 390	< 510	< 410
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
2-Chlorophenol	95-57-8	ug/kg	243	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	NA	< 398	< 390	< 510	< 410
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 750	< 805	< 950	NA	NA	< 790	< 8000	NA	< 780	< 891	< 789.942	< 796	< 780	< 1000	< 810
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	< 789.942	< 796	< 2000	< 2600	< 2000
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	NA	< 796	< 2000	< 2600	< 2000
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	< 370	< 403	90	NA	NA	33	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	42
Acenaphthylene	208-96-8	ug/kg	682000	2	< 370	< 403	280	NA	NA	230	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	< 370	< 403	810	NA	NA	360	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	120
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02
					Sample Date	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 370	75.7	4100	NA	NA	1900	< 4000	NA	82	135	212	< 398	< 390	< 510	390	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 370	124	3700	NA	NA	1100	< 4000	NA	99	130	188	< 398	< 390	< 510	360	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 370	329	3900	NA	NA	2300	< 4000	NA	190	143	270	< 398	< 390	< 510	580	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 370	138	2000	NA	NA	490	< 4000	NA	< 390	< 446	92.03	< 398	< 390	< 510	140	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 370	< 403	2300	NA	NA	920	< 4000	NA	68	< 446	90.05	< 398	< 390	< 510	160	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 370	80.9	< 480	NA	NA	170	< 4000	NA	86	25.9	26.46	39.4	< 390	26	24	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	< 370	233	3800	NA	NA	1900	< 4000	NA	220	139	204	< 398	< 390	< 510	400	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 370	71.3	540	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 370	< 403	< 480	NA	NA	46	< 4000	NA	62	< 446	< 394.971	< 398	< 390	< 510	< 410	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Fluoranthene	206-44-0	ug/kg	122000	2	< 370	128	7500	NA	NA	2400	< 4000	NA	260	266	497	< 398	< 390	< 510	970	
Fluorene	86-73-7	ug/kg	122000	2	< 370	< 403	210	NA	NA	62	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	43	
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	NA	< 398	< 390	< 510	< 410	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Hexachloroethane	67-72-1	ug/kg	596	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 370	107	1700	NA	NA	520	< 4000	NA	< 390	69.5	94	< 398	< 390	< 510	130	
Isophorone	78-59-1	ug/kg	139000	2	< 370	< 403	< 480	NA	NA	6200	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Naphthalene	91-20-3	ug/kg	99.4	2	< 370	< 403	86	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	< 480	NA	NA	< 400	< 4000	NA	NA	NA	NA	< 398	< 390	NA	NA	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 370	< 403	< 480	NA	NA	100	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	< 789.942	< 796	< 2000	< 2600	< 2000	
Phenanthrene	85-01-8	ug/kg	45700	2	< 370	< 403	3100	NA	NA	880	< 4000	NA	350	158	140	< 398	< 390	< 510	690	
Phenol	108-95-2	ug/kg	30000	1	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	24.88	< 398	< 390	< 510	< 410	
Pyrene	129-00-0	ug/kg	78500	2	< 370	141	7800	NA	NA	3400	< 4000	NA	450	263	245	< 398	< 390	< 510	790	

				Location	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02
				Sample Date	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	< 2286	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA

				Location	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02
				Sample Date	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02
				Sample Date	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	< 240	NA	< 210	< 150	< 150	< 220	< 240	< 230	< 240	NA	< 190	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	NA	NA	< 240	NA	240	< 150	< 150	< 220	510	< 230	< 240	NA	< 190	NA	NA
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	NA	NA	< 240	NA	< 210	< 150	< 150	< 220	< 240	< 230	< 240	NA	< 190	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	< 210	NA	NA	NA	< 240	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	NA	NA	< 240	NA	180	< 150	< 150	< 220	< 240	< 230	< 240	NA	< 190	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	< 480	NA	130	< 300	< 310	< 430	< 480	< 450	< 480	NA	< 380	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	< 480	NA	< 420	< 300	< 310	< 430	< 480	< 450	< 480	NA	< 380	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	NA	NA	< 220	NA	170	< 150	< 150	< 220	< 240	< 230	< 240	NA	< 190	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	< 480	NA	< 420	< 300	< 310	< 430	< 480	< 450	< 480	NA	< 380	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	< 240	NA	570	< 150	< 150	< 220	< 240	< 230	< 240	NA	< 190	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	NA	NA	< 5000	NA	< 4700	< 4700	< 4900	< 4900	< 4500	< 4800	< 4900	NA	< 4900	NA	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	NA	NA	< 480	NA	< 420	< 300	< 310	< 430	< 480	< 450	< 480	NA	< 380	NA	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	NA	NA	< 480	NA	< 420	< 300	< 310	< 430	< 480	< 450	< 480	NA	< 380	NA	NA
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	< 480	NA	< 420	< 300	< 310	< 430	< 480	< 450	< 480	NA	< 380	NA	NA

				Location	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02
				Sample Date	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 0.5	1.6	1.4	0.3	NA	< 0.48	< 0.49	< 0.52	NA	1.8	0.55	1.8	0.58	< 0.47	< 0.697
Arsenic	7440-38-2	mg/kg	9.9	1	69.4	38.6	20.2	7.3	NA	9.4	56.8	104	NA	11.5	11.9	11.8	10.8	2.9	7.96
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.38	0.49	0.14	0.27	NA	0.5	0.42	1.7	NA	0.49	0.21	0.32	0.28	0.2	0.104
Cadmium	7440-43-9	mg/kg	0.36	3	< 0.3	< 0.26	0.11	< 0.35	NA	< 0.29	< 0.29	1.4	NA	0.43	0.09	0.27	0.13	0.43	0.377
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	7.6	13.4	13.2	10.5	NA	16.4	16.2	17.5	NA	23.1	14.5	16.1	6.9	6.8	9.23
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	14.8	26.2	16.9	13.7	NA	18.6	20.7	38.9	NA	109	17.4	52.1	17.1	12.2	11.8
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	2090	10900	2470	319	NA	126	176	159	NA	662	492	2070	380	53.9	52
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	0.21	0.34	0.61	0.22	NA	0.12	0.05	0.26	NA	0.99	0.47	0.24	0.21	0.03	0.323
Nickel	7440-02-0	mg/kg	38	3	3.3	5.7	3.1	3.3	NA	7.9	5.9	13.6	NA	31.2	4.1	36.7	6.9	8.4	9.68
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	3.8	3	5	1	NA	1.8	17.3	9.5	NA	2.4	1.2	1.4	1.1	0.64	0.767
Silver	7440-22-4	mg/kg	2	1	0.25	0.23	0.47	0.13	NA	< 0.29	< 0.29	0.23	NA	0.6	0.12	0.46	0.28	< 0.28	< 0.349
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 0.99	< 0.86	< 1.1	< 1.2	NA	< 0.96	< 0.98	3.4	NA	< 1.2	< 1.1	< 1.1	< 1.2	< 0.94	< 1.16
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	22.7	215	32.6	26.5	NA	65	37.7	443	NA	235	67.8	142	42.9	123	101
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02
				Sample Date	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000	< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	< 782
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 390	< 1900	< 460	360	NA	< 400	< 410	< 420	NA	< 490	62	< 440	84	< 390	< 391
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 390	< 1900	< 460	60	NA	< 400	< 410	< 420	NA	< 490	24	< 440	73	< 390	< 391
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
2-Chlorophenol	95-57-8	ug/kg	243	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 391
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 780	< 3900	< 930	< 810	NA	< 800	< 810	< 830	NA	< 980	< 850	< 880	< 780	< 780	< 782
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000	< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	< 782
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000	< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 782
Acenaphthene	83-32-9	ug/kg	20000	1	< 390	4000	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
Acenaphthylene	208-96-8	ug/kg	682000	2	< 390	99	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	< 390	7200	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	28	< 390	< 391
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02
					Sample Date	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	< 390	4300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	94	9400	110	92	NA	110	< 410	85	NA	< 490	120	< 440	180	< 390	< 391	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	99	8200	2100	80	NA	95	< 410	47	NA	56	130	43	170	< 390	< 391	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	120	9700	300	150	NA	100	< 410	89	NA	< 490	300	< 440	210	< 390	< 391	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	890	< 410	NA	< 400	< 410	< 420	NA	< 490	140	< 440	200	< 390	< 391	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 390	3600	190	< 410	NA	< 400	< 410	< 420	NA	< 490	72	< 440	110	< 390	< 391	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 390	< 1900	< 460	63	NA	< 400	< 410	57	NA	36	27	30	35	< 390	< 391	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	110	8700	210	110	NA	96	< 410	78	NA	60	280	44	290	< 390	< 391	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 390	1200	550	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	140	< 390	< 391	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	34	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Fluoranthene	206-44-0	ug/kg	122000	2	170	18000	160	130	NA	170	< 410	74	NA	< 490	100	< 440	310	< 390	< 391	
Fluorene	86-73-7	ug/kg	122000	2	< 390	3100	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	NA	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Hexachloroethane	67-72-1	ug/kg	596	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 390	4100	< 440	< 410	NA	< 400	< 410	< 420	NA	< 490	120	< 440	160	< 390	< 391	
Isophorone	78-59-1	ug/kg	139000	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Naphthalene	91-20-3	ug/kg	99.4	2	< 390	2700	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	52	< 390	< 391	
Nitrobenzene	98-95-3	ug/kg	2200	2	< 390	< 1900	NA	85	NA	NA	NA	NA	NA	NA	NA	< 440	NA	< 390	< 391	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000	< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	< 782	
Phenanthrene	85-01-8	ug/kg	45700	2	100	18000	120	72	NA	86	< 410	32	NA	< 490	41	< 440	310	< 390	< 391	
Phenol	108-95-2	ug/kg	30000	1	< 390	< 1900	< 460	< 410	NA	< 400	< 410	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	
Pyrene	129-00-0	ug/kg	78500	2	170	18000	< 460	120	NA	160	< 410	< 420	NA	< 490	130	< 440	370	< 390	< 391	

					Location	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02
					Sample Date	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02
					Sample Date	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-3-03	C12-4-01	C12-418-01
				Sample Date	11/5/1999	11/12/1999	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/19/1999	10/19/1999	9/27/2000
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022FD	C12-275-022N	C12-3-032N	C12-4-012N	C12-418-012N
				Parent ID											C12-275-022N				
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	1300	< 110	NA	NA	NA	NA	< 220	< 200	< 238.1	< 230	< 220	NA	NA	< 100
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	NA	< 2500	< 110	NA	NA	NA	NA	< 220	< 200	< 238.1	< 230	< 220	NA	NA	< 100
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	NA	170000	2800	NA	NA	NA	NA	< 220	< 200	162	< 230	760	NA	NA	< 100
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	NA	1400	390	NA	NA	NA	NA	< 220	< 200	328	< 230	560	NA	NA	< 100
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	< 5000	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA	NA	< 200
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	< 5000	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA	NA	< 200
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	NA	< 2500	1000	NA	NA	NA	NA	< 220	< 200	104	< 230	< 180	NA	NA	< 100
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	< 5000	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA	NA	< 200
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	< 2500	< 110	NA	NA	NA	NA	< 220	< 200	< 238.1	< 230	< 220	NA	NA	< 100
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	NA	< 4500	< 110	NA	NA	NA	NA	< 4545.5	< 4878	< 6000.798	< 4444.4	< 4651.2	NA	NA	< 5700
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	NA	< 5000	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA	NA	< 200
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	NA	< 5000	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA	NA	< 200
Tetryl	479-45-8	ug/kg	1500	5	NA	< 5000	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA	NA	< 200

					Location	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-3-03	C12-4-01	C12-418-01
					Sample Date	11/5/1999	11/12/1999	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/19/1999	10/19/1999	9/27/2000
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022FD	C12-275-022N	C12-3-032N	C12-4-012N	C12-418-012N
					Parent ID											C12-275-022N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	0.85	< 0.45	NA	3.2	27	< 0.43	2.3	< 0.46	< 0.43	< 0.488807	< 0.53	< 0.57	< 28.8	< 0.52	< 0.704
Arsenic	7440-38-2	mg/kg	9.9	1	8.8	6.9	NA	61.4	115	1.8	8.9	3.5	4	3.51	4.5	4	< 28.8	2.4	5.63
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.24	0.26	NA	0.12	0.45	0.6	0.65	0.58	0.58	0.617	0.85	0.73	< 17.3	0.45	0.79
Cadmium	7440-43-9	mg/kg	0.36	3	0.2	< 0.27	NA	< 0.32	0.1	< 0.26	< 0.3	0.04	0.11	0.318	1.7	1.8	2.2	< 0.31	0.155
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	16.1	8	NA	4.4	14.7	8.9	13.8	17.6	12.6	13.3	14.7	19.9	13.3	11.8	24.5
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	39.2	9.3	NA	30.3	88.6	12.2	79.2	1930	19.3	23.2	17	16.6	130	10.3	16.6
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	379	57.2	NA	4930	11800	10.4	43.9	50.1	3770	61.2	70.5	42.8	93300	1360	56.1
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	0.17	0.03	NA	1.5	10.3	< 0.03	0.08	0.13	0.09	0.091	0.06	0.03	2.1	0.08	0.046
Nickel	7440-02-0	mg/kg	38	3	11.9	2.1	NA	2.6	6.3	7.3	12.5	7.7	15.7	7.51	6.3	8.1	11.3	5.4	7.73
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	1.7	< 0.45	NA	9.2	5.9	< 0.43	< 0.5	0.16	0.48	0.626	0.96	< 0.57	< 28.8	< 0.52	< 0.586
Silver	7440-22-4	mg/kg	2	1	< 0.33	< 0.27	NA	0.7	1.6	< 0.26	< 0.3	< 0.27	0.1	< 0.244403	< 0.32	< 0.34	< 17.3	< 0.31	< 0.352
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 1.1	< 0.91	NA	< 1.1	< 0.97	< 0.87	< 1	< 0.92	< 0.85	< 0.814678	< 1.1	< 1.1	< 57.7	< 1	< 1.17
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	117	24	NA	13.8	266	47.8	106	43.4	144	384	282	444	2880	109	139
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-3-03	C12-4-01	C12-418-01
				Sample Date	11/5/1999	11/12/1999	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/19/1999	10/19/1999	9/27/2000
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022FD	C12-275-022N	C12-3-032N	C12-4-012N	C12-418-012N
				Parent ID											C12-275-022N				
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2000	< 1900	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	< 820.108	< 2100	< 2200	< 2200	< 1900	< 792
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 410	230	NA	< 420	5100	< 370	< 420	< 450	60	56.59	53	< 440	< 430	< 390	< 396
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 410	97	NA	< 420	720	< 370	< 420	< 450	< 430	< 410	< 420	< 440	< 430	< 390	< 396
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
2-Chlorophenol	95-57-8	ug/kg	243	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	NA	< 420	< 440	< 430	< 390	< 396
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 810	< 750	NA	< 830	< 880	< 750	< 840	< 900	< 860	< 820.108	< 840	< 880	< 860	< 780	< 792
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 2000	< 1900	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	< 820.108	< 2100	< 2200	< 2200	< 1900	< 792
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 2000	< 1900	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	NA	< 2100	< 2200	< 2200	< 1900	< 792
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	< 410	< 370	NA	< 420	180	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	33	< 390	< 396
Acenaphthylene	208-96-8	ug/kg	682000	2	< 410	< 370	NA	22	300	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	< 410	< 370	NA	66	720	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	91	< 390	< 396
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-3-03	C12-4-01	C12-418-01
					Sample Date	11/5/1999	11/12/1999	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/19/1999	10/19/1999	9/27/2000
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022FD	C12-275-022N	C12-3-032N	C12-4-012N	C12-418-012N
					Parent ID											C12-275-022N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	880	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 410	< 370	NA	640	3200	< 370	< 420	53	120	< 410.054	< 420	< 440	440	< 390	< 396
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 410	< 370	NA	670	3200	< 370	< 420	55	120	< 410.054	< 420	< 440	380	< 390	< 396
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 410	< 370	NA	810	3900	< 370	< 420	110	230	< 410.054	< 420	< 440	530	< 390	< 396
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 410	< 370	NA	NA	NA	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	170	< 390	< 396
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 410	< 370	NA	260	1200	< 370	< 420	< 450	100	< 410.054	< 420	< 440	240	< 390	< 396
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	210	52	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	25.8
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	< 410	< 370	NA	710	2800	< 370	< 420	81	190	< 410.054	< 420	< 440	420	< 390	< 396
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 410	< 370	NA	400	560	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 410	< 370	NA	85	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Fluoranthene	206-44-0	ug/kg	122000	2	< 410	< 370	NA	720	8500	< 370	< 420	< 450	130	< 410.054	< 420	< 440	1000	< 390	< 396
Fluorene	86-73-7	ug/kg	122000	2	< 410	< 370	NA	< 420	190	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	52	< 390	< 396
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	NA	< 420	< 440	< 430	< 390	< 396
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Hexachloroethane	67-72-1	ug/kg	596	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 410	< 370	NA	530	1900	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	170	< 390	< 396
Isophorone	78-59-1	ug/kg	139000	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Naphthalene	91-20-3	ug/kg	99.4	2	< 410	< 370	NA	< 420	83	< 370	< 420	< 450	41	< 410.054	< 420	< 440	< 430	< 390	< 396
Nitrobenzene	98-95-3	ug/kg	2200	2	< 410	NA	NA	< 420	5500	< 370	< 420	NA	NA	NA	NA	NA	< 430	< 390	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 2000	< 1900	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	< 820.108	< 2100	< 2200	< 2200	< 1900	< 792
Phenanthrene	85-01-8	ug/kg	45700	2	< 410	< 370	NA	350	4800	< 370	< 420	< 450	56	< 410.054	< 420	< 440	740	< 390	< 396
Phenol	108-95-2	ug/kg	30000	1	< 410	< 370	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430	< 390	< 396
Pyrene	129-00-0	ug/kg	78500	2	< 410	< 370	NA	760	5800	< 370	< 420	< 450	370	< 410.054	< 420	< 440	830	< 390	< 396

					Location	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-3-03	C12-4-01	C12-418-01
					Sample Date	11/5/1999	11/12/1999	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/19/1999	10/19/1999	9/27/2000
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022FD	C12-275-022N	C12-3-032N	C12-4-012N	C12-418-012N
					Parent ID											C12-275-022N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-3-03	C12-4-01	C12-418-01
				Sample Date	11/5/1999	11/12/1999	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/19/1999	10/19/1999	9/27/2000
				Sample Depths	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022FD	C12-275-022N	C12-3-032N	C12-4-012N	C12-418-012N
				Parent ID											C12-275-022N				
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04
				Sample Date	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000
				Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
				Sample ID	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N
				Parent ID											C13-2-012N				
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 192.3	NA	NA	NA	NA	NA	NA	130000	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	150000	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 5294.479	NA	NA	NA	NA	NA	NA	< 5000	< 442.204	NA	NA	NA	NA	NA	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA
Tetryl	479-45-8	ug/kg	1500	5	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA

					Location	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04
					Sample Date	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000
					Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N
					Parent ID											C13-2-012N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3		< 0.650459	< 23.6	< 0.615905	< 0.52	< 0.46	< 0.51	< 0.5	< 0.43	< 0.737007	< 0.52	< 0.51	< 0.44	< 0.6	< 0.41	< 0.6
Arsenic	7440-38-2	mg/kg	9.9	1		5.1	< 23.6	4.68	3.3	4.9	5.1	5	4.8	4.39	3.3	4	4.1	3.7	4.1	4.7
Barium	7440-39-3	mg/kg	283	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1		0.614	0.86	0.513	0.62	0.68	0.84	0.81	0.86	0.571	0.74	0.83	0.79	0.89	0.89	0.8
Cadmium	7440-43-9	mg/kg	0.36	3		0.293	1.9	< 0.307953	< 0.31	1	0.56	1	0.56	0.902	< 0.31	0.38	0.4	0.7	0.44	0.91
Calcium	7440-70-2	mg/kg	0	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1		14.1	32	12.1	13.7	19	22	17.6	15.8	16.9	15.6	17.7	19.1	14	14.9	20
Cobalt	7440-48-4	mg/kg	0.14	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2		12.1	47000	16.4	10.9	438	54.3	13.3	13.2	16.1	12	17.1	19.7	9.9	11.6	17.2
Iron	7439-89-6	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3		17.3	1630	20.7	11.5	51.7	13.6	24	21.4	23	9.3	144	159	12.1	24.4	14.8
Magnesium	7439-95-4	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2		0.032	0.04	0.113	0.06	0.03	0.04	0.06	0.08	0.107	0.04	0.29	0.28	< 0	0.04	< 0
Nickel	7440-02-0	mg/kg	38	3		7.83	205	6.06	7.4	9.7	9.5	8	7.7	8.13	8.1	8.4	8.9	7.2	7.1	7.5
Potassium	7440-09-7	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3		1.42	7	< 0.513254	< 0.52	0.7	0.88	0.52	0.82	1.19	1	0.63	0.46	1	0.69	1.4
Silver	7440-22-4	mg/kg	2	1		< 0.32523	6.3	< 0.307953	< 0.31	< 0.28	< 0.3	< 0.3	< 0.26	< 0.368503	< 0.31	< 0.31	< 0.26	< 0.3	< 0.25	< 0.3
Sodium	7440-23-5	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1		< 1.084099	< 47.2	< 1.026509	< 1	< 0.93	< 1	< 1	< 0.85	< 1.228344	< 1	< 1	< 0.88	< 1	< 0.83	< 1
Vanadium	7440-62-2	mg/kg	2	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1		54.7	3000	49.5	48.6	960	189	196	59.7	62.9	48.5	204	196	54.1	54.7	72.3
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04
					Sample Date	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000
					Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N
					Parent ID											C13-2-012N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 758.11	< 2000	< 766.458	< 2000	< 1900	< 2000	< 2000	NA	< 884.408	< 2000	< 2000	< 2000	< 81	< 2500	< 79	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	94.38	< 390	< 383	< 400	< 390	< 400	< 410	NA	< 442	< 390	< 400	< 390	< 410	< 510	< 400	
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 379	< 390	< 383	< 400	< 390	< 400	< 410	NA	< 442	< 390	< 400	< 390	< 410	< 510	< 400	
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
2-Chlorophenol	95-57-8	ug/kg	243	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	< 390	NA	< 400	< 390	< 400	< 410	NA	NA	< 390	< 400	< 390	< 41	< 510	< 40	
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	< 383.229	NA	NA	NA	NA	NA	< 442.204	NA	NA	NA	NA	NA	NA	
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 758.11	< 790	< 766.458	< 800	< 770	< 790	< 810	NA	< 884.408	< 780	< 800	< 780	< 81	< 1000	< 79	
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 758.11	< 2000	< 766.458	< 2000	< 1900	< 2000	< 2000	NA	< 884.408	< 2000	< 2000	< 2000	< 81	< 2500	< 79	
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	< 2000	NA	< 2000	< 1900	< 2000	< 2000	NA	NA	< 2000	< 2000	< 2000	< 81	< 2500	< 79	
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	< 766.458	NA	NA	NA	NA	NA	< 884.408	NA	NA	NA	NA	NA	NA	
Acenaphthene	83-32-9	ug/kg	20000	1	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Acenaphthylene	208-96-8	ug/kg	682000	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	120-12-7	ug/kg	1480000	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	27	35	28	< 41	< 510	< 40	
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

					Location	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04
					Sample Date	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000
					Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N
					Parent ID											C13-2-012N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 379.055	< 390	262	< 400	< 390	< 400	< 410	NA	133	130	110	110	< 41	< 510	< 40	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 379.055	< 390	243	< 400	< 390	< 400	< 410	NA	136	98	120	130	< 41	< 510	< 40	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 379.055	< 390	626	< 400	< 390	< 400	< 410	NA	172	140	140	130	< 41	< 510	< 40	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 379.055	< 390	121	< 400	< 390	< 400	< 410	NA	99.5	87	< 400	< 390	< 41	< 510	< 40	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 379.055	< 390	169	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	47	46	< 41	< 510	< 40	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 379.055	< 390	< 383.229	< 400	150	30	< 410	NA	26.1	< 390	35	44	< 41	26	< 40	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	ug/kg	4730	2	< 379.055	< 390	506	< 400	< 390	< 400	< 410	NA	129	83	99	78	< 41	< 510	< 40	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	84-66-2	ug/kg	24800	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	37	NA	< 442.204	< 390	< 400	41	< 41	< 510	< 40	
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 379.055	< 390	< 383.229	< 400	45	57	85	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Fluoranthene	206-44-0	ug/kg	122000	2	< 379.055	< 390	399	< 400	< 390	< 400	< 410	NA	370	190	220	170	< 41	< 510	< 40	
Fluorene	86-73-7	ug/kg	122000	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	< 390	NA	< 400	< 390	< 400	< 410	NA	NA	< 390	< 400	< 390	< 41	< 510	< 40	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Hexachloroethane	67-72-1	ug/kg	596	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 379.055	< 390	117	< 400	< 390	< 400	< 410	NA	85.8	< 390	< 400	75	< 41	< 510	< 40	
Isophorone	78-59-1	ug/kg	139000	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Naphthalene	91-20-3	ug/kg	99.4	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	NA	< 390	< 400	< 390	< 41	< 510	< 40	
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 758.11	< 2000	< 766.458	< 2000	< 1900	< 2000	< 2000	NA	< 884.408	< 2000	< 2000	< 2000	< 81	< 2500	< 79	
Phenanthrene	85-01-8	ug/kg	45700	2	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	99.9	54	140	99	< 41	< 510	< 40	
Phenol	108-95-2	ug/kg	30000	1	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	
Pyrene	129-00-0	ug/kg	78500	2	< 379.055	< 390	427	< 400	< 390	< 400	< 410	NA	207	220	230	180	< 41	< 510	< 40	

					Location	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04
					Sample Date	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000
					Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N
					Parent ID											C13-2-012N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04
					Sample Date	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000
					Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N
					Parent ID											C13-2-012N				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19
				Sample Date	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 220	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 220	NA	NA	NA	NA	NA
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 220	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 220	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	< 480	NA	NA	NA	< 430	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	NA	NA	NA	< 480	NA	NA	NA	< 430	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 220	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	< 480	NA	NA	NA	< 430	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 220	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	3170000	NA	NA	NA	1100000	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	NA	NA	NA	NA	NA	12000	NA	NA	NA	15000	NA	NA	NA	NA	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	NA	NA	NA	NA	NA	< 480	NA	NA	NA	< 430	NA	NA	NA	NA	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	NA	NA	NA	NA	NA	< 480	NA	NA	NA	< 430	NA	NA	NA	NA	NA
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	NA	NA	NA	< 480	NA	NA	NA	< 430	NA	NA	NA	NA	NA

					Location	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19
					Sample Date	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 0.6	< 0.6	< 0.7	< 0.6	< 0.51	< 0.51	< 0.6	< 0.6	< 0.7	< 0.52	< 0.6	< 0.6	< 0.7	< 0.7	< 0.6
Arsenic	7440-38-2	mg/kg	9.9	1	4.7	3.1	4.4	4.3	3.8	3.7	4.3	4.2	3.5	4.5	4.5	3.6	4.5	2.9	3.9
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.81	0.59	0.79	0.63	0.78	0.81	0.89	0.81	0.79	0.75	0.71	0.7	0.81	0.76	0.68
Cadmium	7440-43-9	mg/kg	0.36	3	0.9	0.58	0.77	0.71	0.47	0.5	0.91	0.81	0.79	0.29	0.74	0.75	0.84	0.69	0.7
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	19.3	14.7	19.6	16.3	15	16.1	23.7	17.3	15.8	14.6	16.8	17.5	20.8	16	16.4
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	18.2	10.9	11.5	10.8	14.7	18	18.7	16.5	12.4	18.1	14.1	11.5	14.3	14.3	12.5
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	10.1	8.9	12.4	8.1	13	28.2	11.2	23.8	11	29.5	23.7	14.1	13.2	13.7	126
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	< 0	< 0	< 0	< 0	0.04	0.06	< 0	< 0	< 0	0.07	< 0	< 0	< 0	< 0	< 0
Nickel	7440-02-0	mg/kg	38	3	9.3	7.2	8.6	6.2	7	7.7	11.7	9.8	6.3	7.9	9.8	8.7	9.4	7.8	6.6
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	1.2	0.85	1.3	1.1	0.48	< 0.51	1.2	0.86	0.73	0.72	0.84	0.84	1	0.79	1.1
Silver	7440-22-4	mg/kg	2	1	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.31	< 0.3	< 0.3	< 0.3	< 0.31	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	64.2	40.7	61.3	39.8	54.4	78.3	64	83.3	48.3	73.3	69.6	48.6	63.7	67.7	50.8
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19
				Sample Date	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80	< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 400	< 410	< 420	< 410	< 400	< 4000	< 400	< 410	< 420	< 4100	< 410	< 400	< 410	< 410	< 390
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 400	< 410	< 420	< 410	< 400	< 4000	< 400	< 410	< 420	< 4100	< 410	< 400	< 410	< 410	< 390
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
2-Chlorophenol	95-57-8	ug/kg	243	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 80	< 81	< 83	< 81	< 790	< 7900	< 80	< 82	< 83	< 8100	< 81	< 79	< 81	< 81	< 78
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80	< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80	< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Acenaphthylene	208-96-8	ug/kg	682000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19
					Sample Date	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	59	< 40	< 41	< 41	38
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	61	< 40	< 41	< 41	31
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 40	< 41	20	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	43	< 40	< 41	24	< 39
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	41	< 40	< 41	< 41	< 39
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	51	48	< 42	55	< 400	1100	< 40	120	< 42	480	110	< 40	< 41	110	< 39
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 40	< 41	< 42	130	< 400	370	81	150	100	< 4100	160	< 40	< 41	78	< 39
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Fluoranthene	206-44-0	ug/kg	122000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	80	< 40	< 41	< 41	< 39
Fluorene	86-73-7	ug/kg	122000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Hexachloroethane	67-72-1	ug/kg	596	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Isophorone	78-59-1	ug/kg	139000	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Naphthalene	91-20-3	ug/kg	99.4	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Nitrobenzene	98-95-3	ug/kg	2200	2	< 40	< 41	< 42	< 41	< 400	NA	< 40	< 41	< 42	NA	< 41	< 40	< 41	< 41	< 39
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 40	< 41	< 42	< 41	< 400	910	< 40	220	< 42	890	100	< 40	< 41	210	< 39
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80	< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78
Phenanthrene	85-01-8	ug/kg	45700	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Phenol	108-95-2	ug/kg	30000	1	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39
Pyrene	129-00-0	ug/kg	78500	2	< 40	< 41	< 42	< 41	< 400	< 4000	< 40	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39

					Location	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19
					Sample Date	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19
				Sample Date	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
				Sample ID	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A12-01	SB-R-A12-02
				Sample Date	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	5/25/2006	5/24/2006	5/24/2006
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-021.0N	SB-R-A12-011.0N	SB-R-A12-021.0FD
				Parent ID					C13-742-012N						SB-R-A11-011.0N				SB-R-A12-021.0N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 350	< 330	< 330
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 350	< 330	< 330
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	< 240	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 350	< 330	< 330
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 350	< 330	< 330
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	230000	NA	NA	< 130000	< 120000	< 140000	< 130000	< 130000
Nitroglycerin	55-63-0	ug/kg	13000	4	NA	< 4878	< 4651.2	< 4900	< 4800	< 5000	< 5000	< 7905.1	NA	NA	< 6300	< 6300	< 6900	< 6600	< 6600
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	< 790	< 780	< 860	< 830	< 830
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	< 320	< 310	< 350	< 330	< 330
Tetryl	479-45-8	ug/kg	1500	5	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA

				Location	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A12-01	SB-R-A12-02
				Sample Date	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	5/25/2006	5/24/2006	5/24/2006
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-021.0N	SB-R-A12-011.0N	SB-R-A12-021.0FD
				Parent ID					C13-742-012N						SB-R-A11-011.0N				SB-R-A12-021.0N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 0.7	< 0.42	< 0.49	< 0.36	< 0.47	< 0.46	< 0.5	NA	1.3	NA	< 2.07	< 2.09	< 2.26	< 2.19	< 2.12
Arsenic	7440-38-2	mg/kg	9.9	1	4.3	22.7	2	3.8	4.3	4.3	3.8	NA	14.9	NA	< 2.07	< 2.09	2.73	1.74	3.32
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.73	0.39	0.77	0.69	0.81	0.8	0.78	NA	0.23	NA	< 0.518	< 0.522	0.681	0.203	0.22
Cadmium	7440-43-9	mg/kg	0.36	3	0.56	< 0.25	< 0.29	< 0.21	0.42	0.38	0.39	NA	0.41	NA	< 0.518	< 0.522	< 0.564	< 0.548	< 0.531
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	17.3	31.8	13.5	14.9	15.3	17.2	17.5	NA	17.3	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	11.1	24.8	24.6	11.2	11.2	10.7	11.7	NA	31.3	NA	3.31	3.2	11.7	7.45	7.47
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	11.3	51.9	13.2	14.5	16.1	11.2	18.2	NA	10200	NA	28.9	26.7	4.45	1.9	3.74
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	< 0	0.08	0.03	0.07	0.05	0.05	0.04	NA	1.1	NA	< 0.101	< 0.102	< 0.112	< 0.103	< 0.106
Nickel	7440-02-0	mg/kg	38	3	7.9	4.8	10.5	7.3	7.9	8.6	8.9	NA	7.2	NA	1.14	1.09	9.51	3.42	3.85
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	0.95	0.36	0.46	0.97	0.62	0.77	0.66	NA	2.8	NA	< 2.07	< 2.09	< 2.26	< 2.19	< 2.12
Silver	7440-22-4	mg/kg	2	1	< 0.3	< 0.25	< 0.29	< 0.21	< 0.28	< 0.27	< 0.3	NA	0.32	NA	< 0.518	< 0.522	< 0.564	< 0.548	< 0.531
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 1	< 0.84	< 0.97	< 0.71	< 0.93	< 0.91	< 0.99	NA	< 1.5	NA	< 2.07	< 2.09	< 2.26	< 2.19	< 2.12
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	56.1	132	77.9	54.8	53.6	51.1	54.3	NA	112	NA	3.77	3.22	34.4	12	13.7
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 20	< 19	< 19

					Location	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A12-01	SB-R-A12-02
					Sample Date	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	5/25/2006	5/24/2006	5/24/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-021.0N	SB-R-A12-011.0N	SB-R-A12-021.0FD
					Parent ID					C13-742-012N						SB-R-A11-011.0N				SB-R-A12-021.0N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180	
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	< 2100	< 2100	< 2300	< 2200	< 2200	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 400	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180	
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 400	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180	
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 80	< 690	< 710	< 900	< 820	< 800	< 780	NA	< 1100	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	30	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	50	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	68	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A12-01	SB-R-A12-02
					Sample Date	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	5/25/2006	5/24/2006	5/24/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-021.0N	SB-R-A12-011.0N	SB-R-A12-021.0FD
					Parent ID					C13-742-012N						SB-R-A11-011.0N				SB-R-A12-021.0N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	300	NA	< 180	< 170	< 190	< 180	< 180
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	280	NA	< 180	< 170	< 190	< 180	< 180
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	390	NA	< 180	< 170	< 190	< 180	< 180
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	330	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	100	NA	< 180	< 170	< 190	< 180	< 180
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 40	41	< 350	< 450	26	26	38	NA	90	NA	< 350	< 350	< 380	< 370	< 370
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	310	NA	< 180	< 170	< 190	< 180	< 180
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	120	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 40	110	110	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	570	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	35	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	210	NA	< 180	< 170	< 190	< 180	< 180
Isophorone	78-59-1	ug/kg	139000	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 40	NA	NA	NA	NA	NA	NA	NA	< 550	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 190	< 180	< 180
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	410	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	640	NA	NA	NA	NA	NA	NA

				Location	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A12-01	SB-R-A12-02
				Sample Date	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	5/25/2006	5/24/2006	5/24/2006
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-021.0N	SB-R-A12-011.0N	SB-R-A12-021.0FD
				Parent ID					C13-742-012N						SB-R-A11-011.0N				SB-R-A12-021.0N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2600	< 2600	< 3100	< 2700	< 2800
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 780	< 680	< 690
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A12-01	SB-R-A12-02
				Sample Date	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	5/25/2006	5/24/2006	5/24/2006
				Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-021.0N	SB-R-A12-011.0N	SB-R-A12-021.0FD
				Parent ID					C13-742-012N						SB-R-A11-011.0N				SB-R-A12-021.0N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 780	< 680	< 690
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 780	< 680	< 690
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 780	< 680	< 690
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	SB-R-A12-02	SB-R-A12-03	SB-R-A12-04	SB-R-A13-01	SB-R-A13-02	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-03	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02
					Sample Date	5/24/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	5/23/2006	5/25/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-A12-021.0N	SB-R-A12-031.0N	SB-R-A12-041.0N	SB-R-A13-011.5N	SB-R-A13-021.0N	SB-R-A13-031.0N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-021.0N	SB-R-B10-031.0N	SB-R-B11-011.0N	SB-R-B11-021.0FD	SB-R-B11-021.0N
					Parent ID							SB-R-A13-041.0N		SB-R-B10-011.0N					SB-R-B11-021.0N	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 330	< 320	< 340	< 350	< 360	< 350	< 340	< 340	< 350	< 350	< 380	< 360	220	< 340	< 350	
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 330	< 320	< 340	< 350	< 360	< 350	< 340	< 340	< 350	< 350	740	< 360	< 350	1100	570	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 330	< 320	< 340	< 350	< 360	< 350	< 340	< 340	< 350	< 350	630	< 360	< 350	1800	420	
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 330	< 320	< 340	< 350	< 360	< 350	< 340	< 340	< 350	< 350	640	< 360	< 350	1100	450	
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	< 130000	< 130000	< 140000	< 140000	< 140000	< 140000	< 130000	< 130000	< 140000	< 140000	< 150000	< 140000	< 140000	< 140000	< 140000	
Nitroglycerin	55-63-0	ug/kg	13000	4	< 6600	< 6400	< 6800	< 7000	< 7300	< 6900	< 6700	< 6700	< 7100	< 7000	< 7500	< 7200	< 7000	< 6900	< 6900	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 830	< 800	< 850	< 880	< 910	< 860	< 840	< 840	< 880	< 880	< 940	< 890	< 870	< 860	< 860	
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 330	< 320	< 340	< 350	< 360	< 350	< 340	< 340	< 350	< 350	< 380	< 360	< 350	< 340	< 350	
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	SB-R-A12-02	SB-R-A12-03	SB-R-A12-04	SB-R-A13-01	SB-R-A13-02	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-03	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02
				Sample Date	5/24/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	5/23/2006	5/25/2006	5/25/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	SB-R-A12-021.0N	SB-R-A12-031.0N	SB-R-A12-041.0N	SB-R-A13-011.5N	SB-R-A13-021.0N	SB-R-A13-031.0N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-021.0N	SB-R-B10-031.0N	SB-R-B11-011.0N	SB-R-B11-021.0FD	SB-R-B11-021.0N
				Parent ID							SB-R-A13-041.0N		SB-R-B10-011.0N					SB-R-B11-021.0N	
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 2.12	< 2.1	0.935	< 2.28	< 2.33	< 2.22	1.01	1.06	< 2.29	< 2.32	< 2.48	1.16	< 2.22	< 2.23	< 2.28
Arsenic	7440-38-2	mg/kg	9.9	1	2.98	2.25	2.63	3.18	3.24	4.22	2.69	3.25	3.39	3.98	3.89	3.27	3.09	3.06	3.15
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.218	0.197	0.194	0.857	0.613	0.443	0.378	0.423	0.967	0.902	0.688	0.8	0.318	0.455	0.407
Cadmium	7440-43-9	mg/kg	0.36	3	< 0.53	< 0.524	< 0.557	< 2.85	< 0.581	< 2.77	< 0.534	< 2.72	< 2.86	< 2.9	< 0.621	< 2.87	< 0.554	< 0.557	< 0.57
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	8.09	9.34	5.98	10.2	6.51	21.4	9.96	11.1	19.9	16.3	22.4	16.3	8.01	16	15.2
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	3.36	5.74	22	8.81	5.82	3.51	4.75	4.34	8.99	8.05	234	5.93	242	183	173
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	< 0.106	< 0.105	0.0473	0.0263	0.0203	0.0148	0.0192	0.0152	0.0343	0.0352	0.0963	0.0319	0.036	0.05	0.0523
Nickel	7440-02-0	mg/kg	38	3	4.18	3.23	3	8.5	8.32	9.73	7.19	17.4	13.4	13.3	14.3	11.2	5.22	6.89	7.04
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	< 2.12	< 2.1	< 2.23	< 2.28	< 2.33	< 2.22	< 2.14	< 2.18	< 2.29	< 2.32	< 2.48	< 2.29	< 2.22	< 2.23	< 2.28
Silver	7440-22-4	mg/kg	2	1	< 0.53	< 0.524	< 0.557	< 0.569	< 0.581	< 0.554	< 0.534	< 0.544	0.289	< 0.58	< 0.621	< 0.574	< 0.554	< 0.557	0.236
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	1.66	< 2.1	< 2.23	< 2.28	< 2.33	1.61	1.45	1.29	< 2.29	< 2.32	< 2.48	< 2.29	< 2.22	< 2.23	< 2.28
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	14.5	16.3	14.7	50.1	37.7	30.6	25.7	32.2	39.7	39.9	82.2	35.4	23.9	38.7	38
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	< 19	< 20
Aroclor-1221	11104-28-2	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	< 19	< 20
Aroclor-1232	11141-16-5	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	< 19	< 20
Aroclor-1242	53469-21-9	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	< 19	< 20
Aroclor-1248	12672-29-6	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	< 19	< 20
Aroclor-1254	11097-69-1	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	39	33
Aroclor-1260	11096-82-5	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	53	27
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	< 19	< 18	< 19	< 20	< 21	< 20	< 19	< 19	< 20	< 20	< 21	< 20	< 20	92	60

				Location	SB-R-A12-02	SB-R-A12-03	SB-R-A12-04	SB-R-A13-01	SB-R-A13-02	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-03	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02
				Sample Date	5/24/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	5/23/2006	5/25/2006	5/25/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	SB-R-A12-021.0N	SB-R-A12-031.0N	SB-R-A12-041.0N	SB-R-A13-011.5N	SB-R-A13-021.0N	SB-R-A13-031.0N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-021.0N	SB-R-B10-031.0N	SB-R-B11-011.0N	SB-R-B11-021.0FD	SB-R-B11-021.0N
				Parent ID							SB-R-A13-041.0N		SB-R-B10-011.0N					SB-R-B11-021.0N	
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	< 210	< 200	< 190	< 190	< 190
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2200	< 2100	< 2300	< 2300	< 2400	< 2300	< 2200	< 2200	< 2400	< 2300	< 2500	< 2400	< 2300	< 2300	< 2300
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	520	< 200	1900	480	4200
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	140	< 200	130	55	690
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-A12-02	SB-R-A12-03	SB-R-A12-04	SB-R-A13-01	SB-R-A13-02	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-03	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02
					Sample Date	5/24/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	5/23/2006	5/25/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-A12-021.0N	SB-R-A12-031.0N	SB-R-A12-041.0N	SB-R-A13-011.5N	SB-R-A13-021.0N	SB-R-A13-031.0N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-021.0N	SB-R-B10-031.0N	SB-R-B11-011.0N	SB-R-B11-021.0FD	SB-R-B11-021.0N
					Parent ID							SB-R-A13-041.0N		SB-R-B10-011.0N					SB-R-B11-021.0N	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	260	< 200	< 190	< 190	44
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	210	< 200	< 190	< 190	41
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 180	< 180	49	< 200	< 200	< 190	< 190	< 190	< 200	< 200	410	< 200	< 190	82	89
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	140	< 200	< 190	< 190	< 190
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 370	< 360	< 380	< 390	< 400	< 380	< 370	< 370	< 390	< 390	< 420	< 400	< 390	< 380	< 380
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	< 210	< 200	< 190	< 190	< 190
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	270	< 200	< 190	54	50
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	45	< 200	< 190	< 190	< 190
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	< 210	< 200	< 190	< 190	< 190
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	< 210	< 200	< 190	< 190	< 190
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	150	< 200	< 190	< 190	< 190
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	< 210	< 200	< 190	< 190	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 180	< 180	< 190	< 200	< 200	< 190	< 190	< 190	< 200	< 200	< 210	< 200	< 190	< 190	< 190
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-A12-02	SB-R-A12-03	SB-R-A12-04	SB-R-A13-01	SB-R-A13-02	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-03	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02
					Sample Date	5/24/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	5/23/2006	5/25/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-A12-021.0N	SB-R-A12-031.0N	SB-R-A12-041.0N	SB-R-A13-011.5N	SB-R-A13-021.0N	SB-R-A13-031.0N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-021.0N	SB-R-B10-031.0N	SB-R-B11-011.0N	SB-R-B11-021.0FD	SB-R-B11-021.0N
					Parent ID							SB-R-A13-041.0N		SB-R-B10-011.0N					SB-R-B11-021.0N	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	< 2800	< 2700	< 2800	< 2900	< 3200	< 3000	< 3000	< 3000	< 3000	< 3000	< 3300	< 3100	< 3100	< 2800	< 2900	
Benzene	71-43-2	ug/kg	255	2	< 710	< 660	< 700	< 740	< 800	< 750	< 740	< 760	< 750	< 760	< 810	< 770	< 770	< 710	< 730	
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-A12-02	SB-R-A12-03	SB-R-A12-04	SB-R-A13-01	SB-R-A13-02	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-03	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02
					Sample Date	5/24/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	5/23/2006	5/25/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-A12-021.0N	SB-R-A12-031.0N	SB-R-A12-041.0N	SB-R-A13-011.5N	SB-R-A13-021.0N	SB-R-A13-031.0N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-021.0N	SB-R-B10-031.0N	SB-R-B11-011.0N	SB-R-B11-021.0FD	SB-R-B11-021.0N
					Parent ID							SB-R-A13-041.0N		SB-R-B10-011.0N					SB-R-B11-021.0N	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2		< 710	< 660	< 700	< 740	< 800	< 750	< 740	< 760	< 750	< 760	< 810	< 770	< 770	< 710	< 730
Chloroethane	75-00-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2		< 710	< 660	< 700	< 740	< 800	< 750	< 740	< 760	< 750	< 760	< 810	< 770	< 770	< 710	< 730
MTBE	1634-04-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2		< 710	< 660	< 700	< 740	< 800	< 750	< 740	< 760	< 750	< 760	< 810	< 770	< 770	< 710	< 730
Toluene	108-88-3	ug/kg	200000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	SB-R-B11-03	SB-R-B11-04	SB-R-B12-01	SB-R-B12-02	SB-R-B12-03	SB-R-B12-04	SB-R-B13-01	SB-R-B13-02	SB-R-B13-03	SB-R-B13-04	SB-R-B14-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-04	SB-R-C11-01
					Sample Date	5/25/2006	5/31/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/19/2006	5/23/2006	5/18/2006	5/25/2006	6/7/2006	6/12/2006	5/31/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.2-1.7 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-B11-031.0N	SB-R-B11-041.0N	SB-R-B12-011.0N	SB-R-B12-021.0N	SB-R-B12-031.0N	SB-R-B12-041.0N	SB-R-B13-011.0N	SB-R-B13-021.67N	SB-R-B13-031.0N	SB-R-B13-041.0N	SB-R-B14-011.33N	SB-R-C10-011.0N	SB-R-C10-031.0N	SB-R-C10-041.0N	SB-R-C11-011.0FD
					Parent ID															SB-R-C11-011.0N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 390	< 350	< 320	< 350	< 350	< 350	< 360	< 340	< 350	< 370	< 360	< 330	< 360	< 360	< 390	
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 390	< 350	< 320	< 350	< 350	< 350	< 360	< 340	< 350	< 370	< 360	< 330	< 360	< 360	< 390	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 390	< 350	< 320	< 350	< 350	< 350	< 360	< 340	< 350	< 370	< 360	< 330	< 360	< 360	< 390	
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 390	130	< 320	< 350	< 350	< 350	< 360	< 340	< 350	< 370	< 360	< 330	< 360	< 360	< 390	
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	< 150000	< 140000	< 130000	< 140000	< 140000	< 140000	< 140000	< 140000	< 140000	< 150000	< 140000	< 130000	< 140000	< 140000	< 150000	
Nitroglycerin	55-63-0	ug/kg	13000	4	< 7700	< 7000	< 6400	< 6900	< 7000	< 7000	< 7200	< 6800	< 6900	< 7500	< 7200	< 6700	< 7200	< 7100	< 7700	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 960	< 880	< 800	< 870	< 880	< 880	< 900	< 850	< 870	< 930	< 910	< 840	< 900	< 890	< 960	
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 390	< 350	< 320	< 350	< 350	< 350	< 360	< 340	< 350	< 370	< 360	< 330	< 360	< 360	< 390	
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	SB-R-B11-03	SB-R-B11-04	SB-R-B12-01	SB-R-B12-02	SB-R-B12-03	SB-R-B12-04	SB-R-B13-01	SB-R-B13-02	SB-R-B13-03	SB-R-B13-04	SB-R-B14-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-04	SB-R-C11-01
				Sample Date	5/25/2006	5/31/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/19/2006	5/23/2006	5/18/2006	5/25/2006	6/7/2006	6/12/2006	5/31/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.2-1.7 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	SB-R-B11-031.0N	SB-R-B11-041.0N	SB-R-B12-011.0N	SB-R-B12-021.0N	SB-R-B12-031.0N	SB-R-B12-041.0N	SB-R-B13-011.0N	SB-R-B13-021.67N	SB-R-B13-031.0N	SB-R-B13-041.0N	SB-R-B14-011.33N	SB-R-C10-011.0N	SB-R-C10-031.0N	SB-R-C10-041.0N	SB-R-C11-011.0FD
				Parent ID															SB-R-C11-011.0N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 2.55	< 2.3	1.54	< 2.29	< 2.34	1.07	< 2.33	< 2.19	1.08	1.26	1.45	< 2.17	< 2.37	< 2.28	< 2.57
Arsenic	7440-38-2	mg/kg	9.9	1	4.36	4.41	1.87	1.74	3	4.25	3.21	3.46	3.75	23.1	4.52	2.86	3.15	3.2	26.3
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.69	0.593	0.484	0.169	0.247	0.384	0.729	0.51	0.759	0.648	0.803	0.569	0.521	0.93	0.349
Cadmium	7440-43-9	mg/kg	0.36	3	< 0.636	< 0.575	< 0.511	< 0.572	< 0.586	< 0.579	< 2.92	< 2.74	< 2.83	< 0.616	< 3.02	< 0.542	< 0.592	< 2.85	< 3.21
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	11	10.3	14.6	3.71	7.27	15.3	10.3	12	15.2	28.5	13.1	14.5	7.08	16.5	18.3
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	35.7	61	4.37	2.61	3.55	19.7	8.86	74.2	12	38.4	8.53	26.7	9.25	6.4	110
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	0.0724	0.0544	< 0.104	0.0174	< 0.114	0.0384	0.0453	0.064	0.0404	0.123	0.0363	0.0208	0.0391	0.029	0.119
Nickel	7440-02-0	mg/kg	38	3	9.44	6.43	8.09	2.56	3.94	5.12	9.59	6.96	9.28	11.4	9.32	9.66	5.77	12.4	7.41
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	1.29	< 2.3	< 2.05	< 2.29	< 2.34	< 2.32	< 2.33	< 2.19	< 2.27	< 2.46	< 2.42	< 2.17	< 2.37	< 2.28	2.02
Silver	7440-22-4	mg/kg	2	1	0.239	< 0.575	< 0.511	< 0.572	< 0.586	< 0.579	< 0.583	< 0.548	< 0.567	< 0.616	< 0.604	< 0.542	< 0.592	< 0.57	< 0.642
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 2.55	< 2.3	1.79	< 2.29	< 2.34	< 2.32	< 2.33	< 2.19	< 2.27	< 2.46	< 2.42	1.67	< 2.37	1.66	< 2.57
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	46.5	43.6	31.2	9.57	15.6	24.1	51.4	38	58.3	24.1	53.4	38.7	27	40.4	48.3
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	< 21	< 21	< 19	< 20	< 20	< 22
Aroclor-1221	11104-28-2	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	< 21	< 21	< 19	< 20	< 20	< 22
Aroclor-1232	11141-16-5	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	< 21	< 21	< 19	< 20	< 20	< 22
Aroclor-1242	53469-21-9	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	< 21	< 21	< 19	< 20	< 20	< 22
Aroclor-1248	12672-29-6	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	< 21	< 21	< 19	< 20	< 20	< 22
Aroclor-1254	11097-69-1	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	4.5	7.2	< 19	< 20	< 20	< 22
Aroclor-1260	11096-82-5	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	4.9	< 21	4.3	< 20	< 20	< 22
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	< 22	< 20	< 18	< 20	< 20	< 20	< 20	< 19	< 20	9.4	7.2	4.3	< 20	< 20	< 22

					Location	SB-R-B11-03	SB-R-B11-04	SB-R-B12-01	SB-R-B12-02	SB-R-B12-03	SB-R-B12-04	SB-R-B13-01	SB-R-B13-02	SB-R-B13-03	SB-R-B13-04	SB-R-B14-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-04	SB-R-C11-01
					Sample Date	5/25/2006	5/31/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/19/2006	5/23/2006	5/18/2006	5/25/2006	6/7/2006	6/12/2006	5/31/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.2-1.7 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-B11-031.0N	SB-R-B11-041.0N	SB-R-B12-011.0N	SB-R-B12-021.0N	SB-R-B12-031.0N	SB-R-B12-041.0N	SB-R-B13-011.0N	SB-R-B13-021.67N	SB-R-B13-031.0N	SB-R-B13-041.0N	SB-R-B14-011.33N	SB-R-C10-011.0N	SB-R-C10-031.0N	SB-R-C10-041.0N	SB-R-C11-011.0FD
					Parent ID															SB-R-C11-011.0N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	< 210	< 200	< 190	< 200	< 200	< 210
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2		< 2600	< 2300	< 2100	< 2300	< 2300	< 2300	< 2400	< 2300	< 2300	< 2500	< 2400	< 2200	< 2400	< 2400	< 2600
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	430	< 200	< 190	< 200	< 200	< 210
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	330	< 200	< 190	< 200	< 200	< 210
2-Chloronaphthalene	91-58-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-B11-03	SB-R-B11-04	SB-R-B12-01	SB-R-B12-02	SB-R-B12-03	SB-R-B12-04	SB-R-B13-01	SB-R-B13-02	SB-R-B13-03	SB-R-B13-04	SB-R-B14-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-04	SB-R-C11-01
					Sample Date	5/25/2006	5/31/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/19/2006	5/23/2006	5/18/2006	5/25/2006	6/7/2006	6/12/2006	5/31/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.2-1.7 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-B11-031.0N	SB-R-B11-041.0N	SB-R-B12-011.0N	SB-R-B12-021.0N	SB-R-B12-031.0N	SB-R-B12-041.0N	SB-R-B13-011.0N	SB-R-B13-021.67N	SB-R-B13-031.0N	SB-R-B13-041.0N	SB-R-B14-011.33N	SB-R-C10-011.0N	SB-R-C10-031.0N	SB-R-C10-041.0N	SB-R-C11-011.0FD
					Parent ID															SB-R-C11-011.0N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	170	< 200	45	< 200	< 200	580
Benzo[a]pyrene	50-32-8	ug/kg	1520	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	41	190	< 200	47	< 200	< 200	590
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2		48	< 200	< 180	< 190	< 200	< 190	< 200	< 190	53	320	< 200	72	< 200	< 200	870
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	99	< 200	< 190	< 200	< 200	340
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2		< 430	< 390	< 350	< 390	< 390	< 390	< 400	< 380	< 390	< 410	< 400	< 370	< 400	< 400	< 430
Butylbenzylphthalate	85-68-7	ug/kg	239	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	< 210	< 200	< 190	< 200	< 200	< 210
Caprolactam	105-60-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	280	< 200	47	< 200	< 200	660
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	100	< 200	< 190	< 200	< 200	46
Dibenzofuran	132-64-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	< 210	< 200	< 190	< 200	< 200	< 210
Dimethylphthalate	131-11-3	ug/kg	734000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	< 210	< 200	< 190	< 200	< 200	< 210
Di-n-octylphthalate	117-84-0	ug/kg	7090	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	130	< 200	< 190	< 200	< 200	380
Isophorone	78-59-1	ug/kg	139000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	< 210	< 200	< 190	< 200	< 200	< 210
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2		< 210	< 200	< 180	< 190	< 200	< 190	< 200	< 190	< 190	< 210	< 200	< 190	< 200	< 200	< 210
Pentachlorophenol	87-86-5	ug/kg	2100	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	SB-R-B11-03	SB-R-B11-04	SB-R-B12-01	SB-R-B12-02	SB-R-B12-03	SB-R-B12-04	SB-R-B13-01	SB-R-B13-02	SB-R-B13-03	SB-R-B13-04	SB-R-B14-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-04	SB-R-C11-01
				Sample Date	5/25/2006	5/31/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/19/2006	5/23/2006	5/18/2006	5/25/2006	6/7/2006	6/12/2006	5/31/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.2-1.7 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	SB-R-B11-031.0N	SB-R-B11-041.0N	SB-R-B12-011.0N	SB-R-B12-021.0N	SB-R-B12-031.0N	SB-R-B12-041.0N	SB-R-B13-011.0N	SB-R-B13-021.67N	SB-R-B13-031.0N	SB-R-B13-041.0N	SB-R-B14-011.33N	SB-R-C10-011.0N	SB-R-C10-031.0N	SB-R-C10-041.0N	SB-R-C11-011.0FD
				Parent ID															SB-R-C11-011.0N
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	< 3300	< 3000	< 2800	< 2900	< 3000	< 2900	< 3000	< 2700	< 3000	< 3600	< 3100	< 2800	< 4800	< 2900	< 3200
Benzene	71-43-2	ug/kg	255	2	< 830	< 740	< 690	< 720	< 750	< 730	< 740	< 680	< 750	< 900	< 770	< 710	< 1200	< 730	< 800
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-B11-03	SB-R-B11-04	SB-R-B12-01	SB-R-B12-02	SB-R-B12-03	SB-R-B12-04	SB-R-B13-01	SB-R-B13-02	SB-R-B13-03	SB-R-B13-04	SB-R-B14-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-04	SB-R-C11-01
					Sample Date	5/25/2006	5/31/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/19/2006	5/23/2006	5/18/2006	5/25/2006	6/7/2006	6/12/2006	5/31/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.2-1.7 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-B11-031.0N	SB-R-B11-041.0N	SB-R-B12-011.0N	SB-R-B12-021.0N	SB-R-B12-031.0N	SB-R-B12-041.0N	SB-R-B13-011.0N	SB-R-B13-021.67N	SB-R-B13-031.0N	SB-R-B13-041.0N	SB-R-B14-011.33N	SB-R-C10-011.0N	SB-R-C10-031.0N	SB-R-C10-041.0N	SB-R-C11-011.0FD
					Parent ID															SB-R-C11-011.0N
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2		< 830	< 740	< 690	< 720	< 750	< 730	< 740	< 680	< 750	< 900	< 770	< 710	< 1200	< 730	< 800
Chloroethane	75-00-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2		< 830	< 740	< 690	< 720	< 750	< 730	< 740	< 680	< 750	< 900	< 770	< 710	< 1200	< 730	< 800
MTBE	1634-04-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2		< 830	< 740	< 690	< 720	< 750	< 730	< 740	< 680	< 750	< 900	< 770	< 710	< 1200	< 730	< 800
Toluene	108-88-3	ug/kg	200000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	SB-R-C11-01	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02	SB-R-C12-04	SB-R-C13-01	SB-R-C13-02	SB-R-C13-04	SB-R-C14-01	SB-R-C14-02	SB-R-C9-01	SB-R-C9-02	SB-R-C9-03	SB-R-C9-04
					Sample Date	5/31/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	6/6/2006	5/18/2006	5/19/2006	6/2/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C11-011.0N	SB-R-C11-031.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-021.0N	SB-R-C12-041.0N	SB-R-C13-011.33N	SB-R-C13-021.0N	SB-R-C13-041.0N	SB-R-C14-011.0N	SB-R-C14-021.25N	SB-R-C9-011.0N	SB-R-C9-021.0N	SB-R-C9-031.0N	SB-R-C9-041.0N
					Parent ID			SB-R-C12-011.0N												
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 360	< 350	< 330	< 330	< 320	< 350	< 340	< 380	< 340	< 330	< 360	< 360	< 370	< 350	< 350	
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 360	< 350	< 330	< 330	< 320	< 350	< 340	< 380	< 340	< 330	< 360	< 360	< 370	< 350	< 350	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 360	< 350	< 330	< 330	< 320	< 350	< 340	< 380	< 340	< 330	< 360	< 360	< 370	< 350	< 350	
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 360	< 350	< 330	< 330	< 320	< 350	< 340	< 380	< 340	< 330	< 360	< 360	< 370	< 350	< 350	
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	< 150000	< 140000	< 130000	< 130000	< 130000	< 140000	110000	< 150000	< 140000	< 130000	< 140000	< 140000	< 150000	< 140000	< 140000	
Nitroglycerin	55-63-0	ug/kg	13000	4	< 7300	< 6900	< 6600	< 6500	< 6400	< 6900	< 6700	< 7600	< 6800	< 6700	< 7200	< 7200	< 7400	< 7100	< 6900	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 910	< 870	< 820	< 820	< 800	< 860	< 840	< 950	< 860	< 840	< 890	< 910	< 920	< 890	< 870	
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 360	< 350	< 330	< 330	< 320	< 350	< 340	< 380	< 340	< 330	< 360	< 360	< 370	< 350	< 350	
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. TNT Project Area Soil Ecological Risk Assessment Dataset
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C11-01	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02	SB-R-C12-04	SB-R-C13-01	SB-R-C13-02	SB-R-C13-04	SB-R-C14-01	SB-R-C14-02	SB-R-C9-01	SB-R-C9-02	SB-R-C9-03	SB-R-C9-04
					Sample Date	5/31/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	6/6/2006	5/18/2006	5/19/2006	6/2/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C11-011.0N	SB-R-C11-031.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-021.0N	SB-R-C12-041.0N	SB-R-C13-011.33N	SB-R-C13-021.0N	SB-R-C13-041.0N	SB-R-C14-011.0N	SB-R-C14-021.25N	SB-R-C9-011.0N	SB-R-C9-021.0N	SB-R-C9-031.0N	SB-R-C9-041.0N
					Parent ID			SB-R-C12-011.0N												
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 2.35	1.18	1.4	1.22	1.09	1.88	1.02	< 2.47	1.56	1.54	1.11	< 2.35	< 2.44	< 2.31	< 2.31
Arsenic	7440-38-2	mg/kg	9.9	1	22.6	6.27	4.65	2.83	3.71	133	2.62	3.52	4.19	2.66	3.68	5.3	2.84	2.86	3.64
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.361	0.749	0.68	0.626	0.472	0.542	0.631	0.81	0.704	0.654	0.698	0.359	0.585	0.857	0.724
Cadmium	7440-43-9	mg/kg	0.36	3	< 2.94	< 0.571	< 2.64	< 2.67	< 0.513	< 2.85	< 0.542	0.643	< 2.77	< 2.79	< 2.87	0.515	1.07	0.891	< 2.89
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	14.8	18.4	16.8	14.7	14.3	15.5	12.7	9.5	13.9	14.2	10.9	7.7	18.4	16	12.5
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	102	473	6.12	5.48	16.1	15.5	9.43	17.7	6.06	4.87	6.15	4.52	6.27	6.51	5.52
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	0.098	0.137	0.0228	0.0273	< 0.104	0.0459	0.0213	0.0319	0.0315	0.0175	0.026	0.0176	0.0079	0.0229	0.0205
Nickel	7440-02-0	mg/kg	38	3	7.05	8.23	8.06	7.6	6.48	8.71	8.14	7.03	8	11.7	9.12	4.93	15.3	14.1	10.9
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	1.73	1.57	< 2.11	< 2.13	< 2.05	< 2.28	< 2.17	< 2.47	< 2.21	< 2.23	< 2.29	< 2.35	< 2.44	< 2.31	< 2.31
Silver	7440-22-4	mg/kg	2	1	< 0.588	< 0.571	< 0.528	< 0.533	< 0.513	< 0.57	< 0.542	< 0.618	< 0.554	< 0.557	< 0.573	< 0.586	0.293	0.293	0.249
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	1.63	< 2.28	< 2.11	< 2.13	< 2.05	< 2.28	< 2.17	< 2.47	< 2.21	< 2.23	< 2.29	< 2.35	< 2.44	< 2.31	< 2.31
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	44.5	40.1	37.1	39.2	82.6	42.7	51.6	53	46.9	50.5	42	28.8	39	48.5	29.1
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	< 21	< 20	< 19	< 18	< 18	< 20	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20
Aroclor-1221	11104-28-2	ug/kg	371	1	< 21	< 20	< 19	< 18	< 18	< 20	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20
Aroclor-1232	11141-16-5	ug/kg	371	1	< 21	< 20	< 19	< 18	< 18	< 20	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20
Aroclor-1242	53469-21-9	ug/kg	371	1	< 21	< 20	< 19	< 18	< 18	< 20	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20
Aroclor-1248	12672-29-6	ug/kg	371	1	< 21	< 20	< 19	< 18	< 18	< 20	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20
Aroclor-1254	11097-69-1	ug/kg	371	1	< 21	< 20	< 19	< 18	< 18	< 20	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20
Aroclor-1260	11096-82-5	ug/kg	371	1	< 21	< 20	< 19	< 18	42	6.9	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	< 21	< 20	< 19	< 18	42	6.9	< 19	< 21	< 19	< 19	< 20	< 21	< 21	< 20	< 20

					Location	SB-R-C11-01	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02	SB-R-C12-04	SB-R-C13-01	SB-R-C13-02	SB-R-C13-04	SB-R-C14-01	SB-R-C14-02	SB-R-C9-01	SB-R-C9-02	SB-R-C9-03	SB-R-C9-04
					Sample Date	5/31/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	6/6/2006	5/18/2006	5/19/2006	6/2/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C11-011.0N	SB-R-C11-031.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-021.0N	SB-R-C12-041.0N	SB-R-C13-011.33N	SB-R-C13-021.0N	SB-R-C13-041.0N	SB-R-C14-011.0N	SB-R-C14-021.25N	SB-R-C9-011.0N	SB-R-C9-021.0N	SB-R-C9-031.0N	SB-R-C9-041.0N
					Parent ID			SB-R-C12-011.0N												
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2		< 2400	< 2300	< 2200	< 2200	< 2100	< 2300	< 2200	< 2500	< 2300	< 2200	< 2400	< 2400	< 2500	< 2400	< 2300
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		< 200	< 190	< 180	< 180	160	220	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		< 200	< 190	< 180	< 180	120	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
2-Chloronaphthalene	91-58-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-C11-01	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02	SB-R-C12-04	SB-R-C13-01	SB-R-C13-02	SB-R-C13-04	SB-R-C14-01	SB-R-C14-02	SB-R-C9-01	SB-R-C9-02	SB-R-C9-03	SB-R-C9-04
					Sample Date	5/31/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	6/6/2006	5/18/2006	5/19/2006	6/2/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C11-011.0N	SB-R-C11-031.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-021.0N	SB-R-C12-041.0N	SB-R-C13-011.33N	SB-R-C13-021.0N	SB-R-C13-041.0N	SB-R-C14-011.0N	SB-R-C14-021.25N	SB-R-C9-011.0N	SB-R-C9-021.0N	SB-R-C9-031.0N	SB-R-C9-041.0N
					Parent ID			SB-R-C12-011.0N												
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	350	1000	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	390	970	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	690	1400	< 180	< 180	< 180	85	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	190	520	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 400	< 380	< 370	< 360	73	< 380	< 370	< 420	< 380	< 370	< 400	< 400	< 410	< 390	< 380
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	400	970	< 180	< 180	< 180	70	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	89	150	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 200	< 190	< 180	< 180	< 180	< 190	170	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 200	< 190	< 180	< 180	< 180	< 190	77	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	230	590	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 200	< 190	< 180	< 180	< 180	< 190	100	< 210	< 190	< 190	< 200	< 200	< 210	< 200	< 190
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-C11-01	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02	SB-R-C12-04	SB-R-C13-01	SB-R-C13-02	SB-R-C13-04	SB-R-C14-01	SB-R-C14-02	SB-R-C9-01	SB-R-C9-02	SB-R-C9-03	SB-R-C9-04
					Sample Date	5/31/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	6/6/2006	5/18/2006	5/19/2006	6/2/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C11-011.0N	SB-R-C11-031.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-021.0N	SB-R-C12-041.0N	SB-R-C13-011.33N	SB-R-C13-021.0N	SB-R-C13-041.0N	SB-R-C14-011.0N	SB-R-C14-021.25N	SB-R-C9-011.0N	SB-R-C9-021.0N	SB-R-C9-031.0N	SB-R-C9-041.0N
					Parent ID			SB-R-C12-011.0N												
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	< 3200	< 3000	< 2800	< 2700	< 2700	< 2600	< 2900	< 3300	< 2900	< 2900	< 3100	< 3000	< 3100	< 3100	< 3000
Benzene	71-43-2	ug/kg	255	2	< 800	< 740	< 700	< 680	< 660	< 660	< 710	< 830	< 720	< 720	< 770	< 750	< 780	< 780	< 750
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-C11-01	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02	SB-R-C12-04	SB-R-C13-01	SB-R-C13-02	SB-R-C13-04	SB-R-C14-01	SB-R-C14-02	SB-R-C9-01	SB-R-C9-02	SB-R-C9-03	SB-R-C9-04
					Sample Date	5/31/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	6/6/2006	5/18/2006	5/19/2006	6/2/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.8-1.3 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C11-011.0N	SB-R-C11-031.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-021.0N	SB-R-C12-041.0N	SB-R-C13-011.33N	SB-R-C13-021.0N	SB-R-C13-041.0N	SB-R-C14-011.0N	SB-R-C14-021.25N	SB-R-C9-011.0N	SB-R-C9-021.0N	SB-R-C9-031.0N	SB-R-C9-041.0N
					Parent ID			SB-R-C12-011.0N												
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2		< 800	< 740	< 700	< 680	< 660	< 660	< 710	< 830	< 720	< 720	< 770	< 750	< 780	< 780	< 750
Chloroethane	75-00-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2		< 800	< 740	< 700	< 680	< 660	< 660	< 710	< 830	< 720	< 720	< 770	< 750	< 780	< 780	< 750
MTBE	1634-04-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2		< 800	< 740	< 700	< 680	< 660	< 660	< 710	< 830	< 720	< 720	< 770	< 750	< 780	< 780	< 750
Toluene	108-88-3	ug/kg	200000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-C-12-1
					Sample Date	8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/14/2013
					Sample Depths	1.5-2.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.2-0.7 ft	0.2-0.7 ft	0.3-0.8 ft	0.5-1.0 ft	0.3-0.8 ft	0.5-1.0 ft
					Sample ID	SB-R-D14-012.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-B-12-1_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-3_20131111	SO-R2-C-12-1_20131114
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 360	< 330	< 370	< 340	< 360
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 370	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 360	< 330	< 370	< 340	< 360
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 360	< 330	< 370	< 340	< 360
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	130000	NA	660	NA	91000	21000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	5200	NA	330	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	4800	NA	450	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360
Nitrocellulose	9004-70-0	ug/kg	13000	8	< 150000	NA	< 72000	NA	134000	8000000	NA	NA	< 60000	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 7500	NA	< 2400	NA	< 230000	< 20000000	NA	NA	< 2000	< 6900	< 7100	< 6700	< 7400	< 6800	< 7300
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 930	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 860	< 890	< 840	< 930	< 850	< 910
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	< 2400	NA	< 230000	< 20000000	NA	NA	< 2000	< 6900	< 7100	< 6700	< 7400	< 6800	< 7300
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 370	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	370	< 330	< 370	< 340	< 360
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 99	< 340	< 360	< 330	< 370	< 340	< 360

				Location	SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-C-12-1
				Sample Date	8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/14/2013
				Sample Depths	1.5-2.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.2-0.7 ft	0.2-0.7 ft	0.3-0.8 ft	0.5-1.0 ft	0.3-0.8 ft	0.5-1.0 ft
				Sample ID	SB-R-D14-012.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-B-12-1_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-3_20131111	SO-R2-C-12-1_20131114
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	46400	22700	28400	17600	21500	18300
Antimony	7440-36-0	mg/kg	0.27	3	1.31	NA	< 0.76	NA	1	0.94	NA	NA	< 0.91	< 2.25	< 2.3	< 2.23	< 2.47	< 2.22	< 2.39
Arsenic	7440-38-2	mg/kg	9.9	1	3.64	NA	5.7	NA	4.3	4.9	NA	NA	2.7	5.98	7.58	6.29	7.31	5.6	6.6
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	105	71.3	68.8	94.1	69	63.9
Beryllium	7440-41-7	mg/kg	10	1	0.681	NA	0.65	NA	0.89	0.21	NA	NA	0.52	1.85	0.801	0.833	1.04	1.01	0.709
Cadmium	7440-43-9	mg/kg	0.36	3	< 3.08	NA	< 0.064	NA	< 0.063	< 0.055	NA	NA	< 0.077	< 0.563	< 0.575	< 2.79	0.326	< 0.554	< 0.599
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	193	279	517	3320	411	795
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	21.9	NA	19.5	7.3	NA	NA	14.6	32	21.5	29.8	21.2	18.1	17
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.9	5.41	8.58	8.07	5.81	4.43
Copper	7440-50-8	mg/kg	5.4	2	59.9	NA	21.7	NA	17.5	9.3	NA	NA	18.1	45	11.5	31.8	25.7	14.6	12.5
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	42900	25700	37900	25400	25400	32600
Lead	7439-92-1	mg/kg	11	3	59.4	NA	44.4	NA	12.4	3260	NA	NA	68.8	5.48	11.7	8.98	62.9	25.3	19.1
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	4050	2120	3310	3430	1820	1640
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	541	412	178	633	366	301
Mercury	7439-97-6	mg/kg	0.1	2	0.0499	NA	0.03	NA	0.052	0.13	NA	NA	0.029	0.034	0.0264	0.0545	0.0723	0.0227	0.0399
Nickel	7440-02-0	mg/kg	38	3	8.59	NA	11.8	NA	10.1	3	NA	NA	8.8	19	11.3	19.3	15.5	10.3	7.02
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	839	704	831	557	470	544
Selenium	7782-49-2	mg/kg	0.52	3	< 2.46	NA	2.1	NA	< 0.55	< 0.48	NA	NA	< 0.67	1.14	1.37	1.43	1.12	< 2.22	1.24
Silver	7440-22-4	mg/kg	2	1	< 0.616	NA	< 0.16	NA	0.19	0.61	NA	NA	< 0.2	< 0.563	< 0.575	< 0.557	< 0.618	0.455	< 0.599
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.6	30.3	143	133	40.1	48.4
Thallium	7440-28-0	mg/kg	1	1	< 2.46	NA	2	NA	< 0.97	< 0.85	NA	NA	< 1.2	0.805	< 3.45	0.761	< 3.71	< 3.32	< 3.59
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	58.3	43.1	54.1	42.6	36.6	40
Zinc	7440-66-6	mg/kg	8.5	1	76.1	NA	62.6	NA	92	21.9	NA	NA	80.5	49.5	56.5	55.6	137	46.5	48.1
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-C-12-1
					Sample Date	8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/14/2013
					Sample Depths	1.5-2.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.2-0.7 ft	0.2-0.7 ft	0.3-0.8 ft	0.5-1.0 ft	0.3-0.8 ft	0.5-1.0 ft
					Sample ID	SB-R-D14-012.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-B-12-1_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-3_20131111	SO-R2-C-12-1_20131114
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 33	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2500	NA	< 800	NA	< 770	< 6700	NA	NA	< 670	< 1100	< 1200	< 1100	< 12000	< 1100	< 1200
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	1400	NA	160	NA	1000	27000	NA	NA	< 67	< 190	< 200	< 190	< 2000	< 190	< 200
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	130	NA	< 40	NA	1700	29000	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 400	< 37	< 40
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 19	< 20	< 19	< 210	< 19	< 20
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 380	< 390	< 370	< 4100	< 380	< 400
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 2000	< 190	< 200
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	< 200	NA	260	< 1700	NA	NA	< 170	< 570	< 590	< 560	< 6100	< 560	< 600
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 2000	< 190	< 200
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	< 200	NA	< 200	< 1700	NA	NA	< 170	< 570	< 590	< 560	< 6100	< 560	< 600
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 19	< 20	< 19	43	< 19	< 20
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 19	< 20	< 19	110	< 19	< 20
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 19	< 20	< 19	110	< 19	< 20
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 2000	< 190	< 200

					Location	SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-C-12-1
					Sample Date	8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/14/2013
					Sample Depths	1.5-2.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.2-0.7 ft	0.2-0.7 ft	0.3-0.8 ft	0.5-1.0 ft	0.3-0.8 ft	0.5-1.0 ft
					Sample ID	SB-R-D14-012.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-B-12-1_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-3_20131111	SO-R2-C-12-1_20131114
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 2000	410	< 200
Benzidine	92-87-5	ug/kg	--	--	NA	NA	< 800	NA	< 770	< 6700	NA	NA	< 670	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	230	NA	< 40	NA	< 38	< 330	NA	NA	120	< 19	< 20	4	310	9	< 20
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	240	NA	< 40	NA	< 38	< 330	NA	NA	150	< 19	< 20	6	370	14	< 20
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	290	NA	< 40	NA	< 38	< 330	NA	NA	210	< 19	< 20	7	520	19	< 20
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	110	< 19	< 20	4	250	9	< 20
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	170	NA	< 40	NA	< 38	< 330	NA	NA	76	< 19	< 20	4	280	8	< 20
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 410	NA	120	NA	< 77	< 670	NA	NA	320	< 190	< 200	< 190	< 2100	< 190	< 200
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 210	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 190	< 200	< 190	< 2000	< 190	< 200
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 2000	< 190	< 200
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
Chrysene	218-01-9	ug/kg	4730	2	260	NA	< 40	NA	< 38	< 330	NA	NA	170	< 19	< 20	6	430	15	5
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 19	< 20	< 19	< 210	< 19	< 20
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 39	< 37	< 410	< 38	< 40
Diethylphthalate	84-66-2	ug/kg	24800	2	< 210	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 190	< 200	< 190	< 2000	< 190	< 200
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 190	< 200	< 190	< 2000	< 190	< 200
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 210	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 190	< 200	< 190	< 2000	< 190	< 200
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 190	< 200	< 190	< 2000	< 190	< 200
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	< 40	NA	< 38	420	NA	NA	240	< 19	< 20	11	850	19	< 20
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 19	< 20	< 19	50	< 19	< 20
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 19	< 20	< 19	< 210	< 19	< 20
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	< 200	NA	< 200	< 1700	NA	NA	< 170	< 570	< 590	< 560	< 6100	< 560	< 600
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 190	< 200	< 190	< 2000	< 190	< 200
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	210	NA	< 40	NA	< 38	< 330	NA	NA	110	< 19	< 20	4	210	11	< 20
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 19	< 20	< 19	44	< 19	< 20
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	< 200	NA	< 77	< 670	NA	NA	< 67	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 33	< 38	< 39	< 37	< 410	< 38	< 40
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	< 200	NA	< 200	< 1700	NA	NA	< 170	< 190	< 200	< 190	< 2100	< 190	< 200
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	< 40	NA	< 38	530	NA	NA	140	< 19	< 20	10	560	15	< 20
Phenol	108-95-2	ug/kg	30000	1	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 67	< 38	< 39	< 37	< 410	< 38	< 40
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	< 40	NA	< 38	< 330	NA	NA	280	< 19	4	12	820	20	< 20

				Location	SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-C-12-1
				Sample Date	8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/14/2013
				Sample Depths	1.5-2.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.2-0.7 ft	0.2-0.7 ft	0.3-0.8 ft	0.5-1.0 ft	0.3-0.8 ft	0.5-1.0 ft
				Sample ID	SB-R-D14-012.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-B-12-1_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-3_20131111	SO-R2-C-12-1_20131114
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 12	< 11	< 13	< 12
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 12	< 11	< 13	10
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	< 290	NA	< 280	NA	NA	< 240	< 270	< 270	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 12	< 11	< 13	< 12
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 12	< 11	< 13	< 12
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	48	130	66	28	110
Acrolein	107-02-8	ug/kg	5270	2	NA	< 2900	NA	< 2800	NA	NA	< 2400	< 2700	< 2700	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	< 3100	< 590	NA	< 570	NA	NA	< 480	< 540	< 540	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	< 790	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Bromoform	75-25-2	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 270	< 6	< 6	< 6	< 5	< 6	< 6
Bromomethane	74-83-9	ug/kg	235	2	NA	< 290	NA	< 280	NA	NA	< 240	< 270	< 270	< 6	< 6	< 6	< 5	< 6	< 6

					Location	SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-C-12-1
					Sample Date	8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/14/2013
					Sample Depths	1.5-2.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.2-0.7 ft	0.2-0.7 ft	0.3-0.8 ft	0.5-1.0 ft	0.3-0.8 ft	0.5-1.0 ft
					Sample ID	SB-R-D14-012.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-B-12-1_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-3_20131111	SO-R2-C-12-1_20131114
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Chlorobenzene	108-90-7	ug/kg	13100	2	< 790	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Chloroethane	75-00-3	ug/kg	--	--	NA	< 290	NA	< 280	NA	NA	< 240	< 270	< 270	< 6	< 6	< 6	< 5	< 6	< 6
Chloroform	67-66-3	ug/kg	1190	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Chloromethane	74-87-3	ug/kg	10400	2	NA	< 290	NA	< 280	NA	NA	< 240	< 270	< 270	< 6	< 6	< 6	< 5	< 6	< 6
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	3	< 5	< 6	< 6
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
Methylene Chloride	75-09-2	ug/kg	4050	2	< 790	< 290	NA	< 280	NA	NA	< 240	< 270	< 270	< 6	< 6	< 6	< 5	< 6	< 6
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 6	< 6	< 5	< 6	< 6
Tetrachloroethene	127-18-4	ug/kg	9920	2	< 790	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Toluene	108-88-3	ug/kg	200000	1	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Trichloroethene	79-01-6	ug/kg	12400	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	< 290	NA	< 280	NA	NA	< 240	< 270	< 270	< 6	< 6	< 6	< 5	< 6	< 6
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	< 150	NA	< 140	NA	NA	< 120	< 140	< 130	< 6	< 6	< 6	< 5	< 6	< 6

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	SO-R2-C-8-2	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-426-1	TP-R-A12-426-2
					Sample Date	11/14/2013	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/15/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SO-R2-C-8-2_20131114	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-4-12.0N	TP-R-A11-4-22.0N	TP-R-A11-504-12.0N	TP-R-A11-504-22.0N	TP-R-A11-504-32.0N	TP-R-A11-5-12.0N	TP-R-A11-5-22.0N	TP-R-A11-7-12.0N	TP-R-A11-7-22.0N	TP-R-A12-1-11.0N	TP-R-A12-426-11.0N	TP-R-A12-426-21.0N
					Parent ID		TP-R-A11-2-12.0N													
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 360	NA	NA	NA	1300	720	< 350	< 360	< 330	520	< 330	NA	9000	< 350	< 350	
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 360	NA	NA	NA	5800000	910	490	460	7100	1400000	480000	NA	120000000	< 350	1100	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 360	NA	NA	NA	20000	880	1200	520	2300	1900	14000	NA	63000	< 350	< 350	
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 360	NA	NA	NA	29000	940	1600	950	3000	1700	11000	NA	86000	< 690	< 700	
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	2500000	< 130000	< 140000	< 140000	< 130000	2000000	140000	NA	22000000	95000	< 140000	
Nitroglycerin	55-63-0	ug/kg	13000	4	< 7200	NA	NA	NA	< 6700	7300	< 6900	12000	< 6500	< 6600	< 6700	NA	< 670000	< 6900	< 7000	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 900	NA	NA	NA	< 830	< 850	< 860	< 900	< 820	< 820	< 840	NA	< 840	< 870	< 870	
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 7200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 360	NA	NA	NA	< 330	< 340	< 350	< 360	< 330	< 330	< 330	NA	< 340	< 350	< 350	
Tetryl	479-45-8	ug/kg	1500	5	< 360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SO-R2-C-8-2	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-426-1	TP-R-A12-426-2
					Sample Date	11/14/2013	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/15/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SO-R2-C-8-2_20131114	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-4-12.0N	TP-R-A11-4-22.0N	TP-R-A11-504-12.0N	TP-R-A11-504-22.0N	TP-R-A11-504-32.0N	TP-R-A11-5-12.0N	TP-R-A11-5-22.0N	TP-R-A11-7-12.0N	TP-R-A11-7-22.0N	TP-R-A12-1-11.0N	TP-R-A12-426-11.0N	TP-R-A12-426-21.0N
					Parent ID		TP-R-A11-2-12.0N													
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	18900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	< 2.4	< 2.09	1.9	< 2.28	< 2.13	1.74	< 2.23	< 2.32	1.16	< 2.13	< 2.19	< 2.23	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	5.68	2.23	3.4	2.17	2.29	5.62	3.14	3.98	1.8	< 2.13	3.3	3.77	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	59.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	0.812	0.292	0.233	0.598	0.352	0.328	0.18	0.636	0.703	0.0736	0.174	0.186	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	< 0.6	0.411	0.328	0.541	0.49	< 0.543	< 0.559	< 0.58	0.585	0.214	0.319	0.163	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	583	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	17.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	6.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	14.1	12.3	17.3	14.1	13.2	12.2	13.1	15.2	13.7	3.09	40	7.74	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	26500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	15.7	16.5	15.4	6.68	3790	1350	88.1	587	411	77.9	13300	1510	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	1770	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	179	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	0.0285	0.0688	0.0773	0.0159	0.046	0.177	0.0459	0.0537	0.0313	< 0.106	0.0723	0.0875	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	11.8	5.21	4.19	10.4	4.85	8.72	3.14	10.3	8.92	0.971	4.66	4.2	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	479	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	1.24	1.49	< 2.24	< 2.28	< 2.13	1.24	< 2.23	< 2.32	1.72	< 2.13	< 2.19	< 2.23	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	< 0.6	0.185	< 0.559	< 0.571	0.559	0.238	< 0.559	0.267	0.271	< 0.533	1.65	0.365	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	< 3.6	< 10.5	< 11.2	< 11.4	< 10.7	< 2.17	< 2.23	< 2.32	< 10.8	< 2.13	< 10.9	< 11.2	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	34.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	54.4	24.5	20.6	35.7	46.3	42.8	17.9	66.7	123	7.62	49.8	9.32	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SO-R2-C-8-2	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-426-1	TP-R-A12-426-2
					Sample Date	11/14/2013	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/15/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SO-R2-C-8-2_20131114	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-4-12.0N	TP-R-A11-4-22.0N	TP-R-A11-504-12.0N	TP-R-A11-504-22.0N	TP-R-A11-504-32.0N	TP-R-A11-5-12.0N	TP-R-A11-5-22.0N	TP-R-A11-7-12.0N	TP-R-A11-7-22.0N	TP-R-A12-1-11.0N	TP-R-A12-426-11.0N	TP-R-A12-426-21.0N
					Parent ID		TP-R-A11-2-12.0N													
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190	
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 1200	NA	NA	NA	NA	< 2300	< 2300	< 2400	< 2200	< 2200	NA	NA	< 220000	< 2300	< 2300	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 200	NA	NA	NA	NA	5700	200	450	78	2800	NA	NA	210000	< 190	< 190	
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 40	NA	NA	NA	NA	260	86	< 200	< 180	3700	NA	NA	25000	< 190	< 190	
2-Chloronaphthalene	91-58-7	ug/kg	--	--	< 39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	< 400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	< 600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	< 600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SO-R2-C-8-2	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-426-1	TP-R-A12-426-2
					Sample Date	11/14/2013	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/15/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SO-R2-C-8-2_20131114	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-4-12.0N	TP-R-A11-4-22.0N	TP-R-A11-504-12.0N	TP-R-A11-504-22.0N	TP-R-A11-504-32.0N	TP-R-A11-5-12.0N	TP-R-A11-5-22.0N	TP-R-A11-7-12.0N	TP-R-A11-7-22.0N	TP-R-A12-1-11.0N	TP-R-A12-426-11.0N	TP-R-A12-426-21.0N
					Parent ID		TP-R-A11-2-12.0N													
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	58	NA	NA	NA	NA	79	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	72	NA	NA	NA	NA	160	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	110	NA	NA	NA	NA	320	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	52	NA	NA	NA	NA	82	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 200	NA	NA	NA	NA	< 380	< 380	< 400	< 360	< 370	NA	NA	< 37000	< 390	< 390
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 200	NA	NA	NA	NA	< 190	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Caprolactam	105-60-2	ug/kg	--	--	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	91	NA	NA	NA	NA	280	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	11	NA	NA	NA	NA	200	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Dibenzofuran	132-64-9	ug/kg	--	--	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 200	NA	NA	NA	NA	< 190	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Dimethylphthalate	131-11-3	ug/kg	734000	2	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 200	NA	NA	NA	NA	< 190	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	< 20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	< 600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	51	NA	NA	NA	NA	170	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Isophorone	78-59-1	ug/kg	139000	2	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 40	NA	NA	NA	NA	< 190	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 40	NA	NA	NA	NA	210	< 190	< 200	< 180	< 180	NA	NA	< 19000	< 190	< 190
Pentachlorophenol	87-86-5	ug/kg	2100	3	< 200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	SO-R2-C-8-2	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-426-1	TP-R-A12-426-2
					Sample Date	11/14/2013	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/15/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SO-R2-C-8-2_20131114	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-4-12.0N	TP-R-A11-4-22.0N	TP-R-A11-504-12.0N	TP-R-A11-504-22.0N	TP-R-A11-504-32.0N	TP-R-A11-5-12.0N	TP-R-A11-5-22.0N	TP-R-A11-7-12.0N	TP-R-A11-7-22.0N	TP-R-A12-1-11.0N	TP-R-A12-426-11.0N	TP-R-A12-426-21.0N
					Parent ID		TP-R-A11-2-12.0N													
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	< 11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	< 11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	< 11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	< 11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	SO-R2-C-8-2	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-426-1	TP-R-A12-426-2
				Sample Date	11/14/2013	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/15/2006	8/16/2006
				Sample Depths	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
				Sample ID	SO-R2-C-8-2_20131114	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-4-12.0N	TP-R-A11-4-22.0N	TP-R-A11-504-12.0N	TP-R-A11-504-22.0N	TP-R-A11-504-32.0N	TP-R-A11-5-12.0N	TP-R-A11-5-22.0N	TP-R-A11-7-12.0N	TP-R-A11-7-22.0N	TP-R-A12-1-11.0N	TP-R-A12-426-11.0N	TP-R-A12-426-21.0N
				Parent ID		TP-R-A11-2-12.0N													
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-5	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
					Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-A13-625-11.0N	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-41.5N	TP-R-A13-625-51.0N	TP-R-A13-625-61.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-82.0N
					Parent ID												TP-R-B10-2/B10-509-62.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2		< 340	< 350	< 350	< 350	< 330	4800	< 330	< 340	1000	160	< 330	< 330	140	840	840
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4		1800	180	260	100000	200	2800000	420	1400	6100000	5200	1900	880	850	150000	150000
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5		410	< 350	< 350	700	< 330	14000	480	780	12000	1600	510	430	630	12000	12000
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5		360	< 710	< 700	620	< 660	< 640	< 670	670	8200	2800	< 670	350	910	8500	8800
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8		< 130000	< 140000	< 140000	< 140000	< 130000	2100000	< 130000	< 140000	< 130000	< 140000	< 130000	< 130000	< 130000	< 130000	< 130000
Nitroglycerin	55-63-0	ug/kg	13000	4		3300	< 7100	< 7000	5400	< 6600	69000	6300	6400	68000	< 7200	8300	4000	5300	71000	71000
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4		< 840	< 890	< 880	< 870	< 820	360	< 830	< 860	< 840	< 890	< 830	< 830	< 830	< 840	430
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4		< 340	< 350	< 350	< 350	< 330	< 320	< 330	230	3800	< 360	< 330	< 330	< 330	< 340	< 340
Tetryl	479-45-8	ug/kg	1500	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-5	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
					Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-A13-625-11.0N	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-41.5N	TP-R-A13-625-51.0N	TP-R-A13-625-61.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-82.0N
					Parent ID												TP-R-B10-2/B10-509-62.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	< 2.15	3.61	1.25	< 2.39	< 2.16	2.69	2.23	< 2.25	< 2.21
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	5.06	6.14	5.36	2.99	4.36	3.62	3.97	3.91	3.1
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	0.45	0.714	0.73	0.557	0.759	1.22	1.05	0.664	0.584
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	< 0.538	< 0.547	< 0.542	< 0.597	< 0.54	< 0.539	< 0.536	< 0.562	< 0.554
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	15.3	16.4	31	17.3	20.7	39.5	36.4	13.1	16.3
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	60.5	770	199	209	137	617	561	78.3	337
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	0.0416	0.0511	0.497	0.051	0.0553	0.0245	0.0238	0.0425	0.229
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	9.12	10.4	11.5	8.38	12.1	9.98	11	8.77	7.88
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	< 2.15	< 2.19	< 2.17	< 2.39	< 2.16	< 2.16	< 2.14	< 2.25	< 2.21
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	< 0.538	< 0.547	< 0.542	< 0.597	< 0.54	< 0.539	< 0.536	< 0.562	< 0.554
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	< 2.15	< 2.19	1.55	< 2.39	< 2.16	1.45	< 2.14	< 2.25	< 2.21
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	37.9	80.3	86.7	56.7	59.2	76.6	72.5	34.1	47.2
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-5	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
				Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
				Sample ID	TP-R-A13-625-11.0N	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-41.5N	TP-R-A13-625-51.0N	TP-R-A13-625-61.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-82.0N
				Parent ID												TP-R-B10-2/B10-509-62.0N			
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 190	< 200	< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 180	< 180	< 190	< 190
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2200	< 2400	< 2300	< 2300	< 2200	< 2100	< 2200	< 2300	< 2200	< 2400	< 2200	< 2200	< 2200	< 2200	< 2200
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 190	< 200	< 200	< 190	< 180	16000	< 180	< 190	< 190	600	98	< 180	< 180	290	410
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 190	< 200	< 200	< 190	< 180	930	< 180	< 190	< 190	110	< 190	< 180	< 180	220	230
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-5	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
					Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-A13-625-11.0N	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-41.5N	TP-R-A13-625-51.0N	TP-R-A13-625-61.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-82.0N
					Parent ID												TP-R-B10-2/B10-509-62.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	< 190	< 200	< 200	< 190	72	59	< 180	44	290	56	89	< 180	650	< 190	160
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	< 190	< 200	< 200	< 190	48	49	< 180	42	230	49	68	< 180	570	< 190	130
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	< 190	< 200	< 200	< 190	74	110	< 180	75	280	69	88	< 180	650	< 190	150
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	< 190	< 200	< 200	< 190	< 180	41	< 180	42	160	< 200	50	< 180	330	< 190	91
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 370	< 390	< 390	< 380	< 370	< 360	< 370	< 380	< 370	< 400	< 370	< 370	< 370	< 370	< 370
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 190	< 200	< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 180	< 180	< 190	< 190
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	< 190	< 200	< 200	< 190	72	71	< 180	65	280	67	89	< 180	680	< 190	160
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	< 190	< 200	< 200	< 190	< 180	< 180	< 180	< 190	43	< 200	< 190	< 180	82	< 190	< 190
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	< 190	< 200	< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 180	< 180	< 190	< 190
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 190	< 200	< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 180	< 180	< 190	< 190
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	< 190	< 200	< 200	< 190	< 180	50	< 180	< 190	120	< 200	< 190	< 180	330	< 190	70
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 190	< 200	< 200	< 190	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 180	< 180	< 190	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 190	< 200	< 200	< 190	< 180	< 180	< 180	410	< 190	< 200	< 190	< 180	< 180	< 190	< 190
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-5	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
				Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
				Sample ID	TP-R-A13-625-11.0N	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-41.5N	TP-R-A13-625-51.0N	TP-R-A13-625-61.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-82.0N
				Parent ID												TP-R-B10-2/B10-509-62.0N			
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-5	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
				Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
				Sample ID	TP-R-A13-625-11.0N	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-41.5N	TP-R-A13-625-51.0N	TP-R-A13-625-61.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-82.0N
				Parent ID												TP-R-B10-2/B10-509-62.0N			
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-6-1
					Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-501-12.0N	TP-R-B10-502-12.0N	TP-R-B10-502-22.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-22.0N	TP-R-B10-505-32.0N	TP-R-B10-505-42.0N	TP-R-B10-505-52.0N	TP-R-B10-508-12.0N	TP-R-B10-508-32.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-5-12.0N	TP-R-B10-6-12.0N
					Parent ID				TP-R-B10-505-12.0N								TP-R-B10-508-42.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2		NA	NA	NA	NA	NA	< 340	< 360	< 340	< 360	330	120	1900	1200	640	< 310
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4		NA	NA	NA	NA	NA	570000	230	1100000	40000	470000	340	11000	10000	1200000	2400
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5		NA	NA	NA	NA	NA	22000	1100	5100	25000	4500	< 310	5400	3800	4700	630
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5		NA	NA	NA	NA	NA	35000	1300	16000	20000	12000	< 610	5100	4000	5400	680
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	< 140000	140000	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8		NA	NA	NA	NA	NA	730000	< 140000	1200000	< 140000	140000	< 120000	< 140000	< 140000	480000	< 120000
Nitroglycerin	55-63-0	ug/kg	13000	4		NA	NA	NA	NA	NA	< 6800	< 7100	< 6700	< 7100	100000	< 6100	35000	25000	28000	< 6100
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4		NA	NA	NA	NA	NA	< 860	< 890	< 840	< 890	< 820	< 770	< 890	< 870	< 870	< 770
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4		NA	NA	NA	NA	NA	< 340	< 360	< 340	< 360	140	< 310	< 360	< 350	1800	< 310
Tetryl	479-45-8	ug/kg	1500	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-6-1
					Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-501-12.0N	TP-R-B10-502-12.0N	TP-R-B10-502-22.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-22.0N	TP-R-B10-505-32.0N	TP-R-B10-505-42.0N	TP-R-B10-505-52.0N	TP-R-B10-508-12.0N	TP-R-B10-508-32.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-5-12.0N	TP-R-B10-6-12.0N
					Parent ID				TP-R-B10-505-12.0N								TP-R-B10-508-42.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3		< 2.22	< 2.15	< 2.24	2.02	1.05	1.21	< 2.31	1.19	< 2.35	< 2.12	< 1.98	1.52	1.27	NA	1.18
Arsenic	7440-38-2	mg/kg	9.9	1		5.42	2.93	3.54	7.01	6.39	3.36	3.37	3.61	3.62	1.65	3.25	4.67	3.99	NA	2.86
Barium	7440-39-3	mg/kg	283	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1		0.527	0.427	0.184	0.273	0.242	0.408	0.934	0.484	0.455	0.345	0.804	0.785	0.781	NA	0.388
Cadmium	7440-43-9	mg/kg	0.36	3		< 2.78	< 2.69	< 0.56	< 0.582	< 0.565	< 0.57	< 0.577	< 0.557	< 0.588	0.0924	< 0.496	0.139	0.148	NA	< 0.502
Calcium	7440-70-2	mg/kg	0	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2		18.6	16.5	14.2	8.93	7.72	126	11.1	23.2	48.7	12.1	12.7	178	116	NA	37
Iron	7439-89-6	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3		1040	8.31	216	276	232	802	69.3	527	281	269	16.5	6820	4090	NA	330
Magnesium	7439-95-4	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2		0.0665	0.0296	0.0606	0.0584	0.064	0.0717	0.0643	0.058	0.053	0.135	0.0347	0.362	0.41	NA	0.0574
Nickel	7440-02-0	mg/kg	38	3		8.71	9	4.55	6.2	5.41	8.42	8.31	8.12	7.26	3.24	10.1	12.2	13.7	NA	5.51
Potassium	7440-09-7	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3		< 2.22	< 2.15	< 2.24	< 2.33	< 2.26	< 2.28	< 2.31	< 2.23	< 2.35	< 2.12	< 1.98	< 2.28	< 2.25	NA	< 2.01
Silver	7440-22-4	mg/kg	2	1		0.354	< 0.538	0.292	0.328	0.287	< 0.57	< 0.577	< 0.557	< 0.588	< 0.531	< 0.496	0.319	< 0.563	NA	< 0.502
Sodium	7440-23-5	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1		< 2.22	< 2.15	< 2.24	< 2.33	< 2.26	2.16	< 2.31	< 2.23	< 2.35	< 2.12	< 1.98	< 2.28	< 2.25	NA	1.39
Vanadium	7440-62-2	mg/kg	2	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1		38.8	28.7	17	28.9	23.2	48.1	52.6	59.8	41.2	77.7	37.3	228	226	NA	124
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-6-1
					Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-501-12.0N	TP-R-B10-502-12.0N	TP-R-B10-502-22.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-22.0N	TP-R-B10-505-32.0N	TP-R-B10-505-42.0N	TP-R-B10-505-52.0N	TP-R-B10-508-12.0N	TP-R-B10-508-32.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-5-12.0N	TP-R-B10-6-12.0N
					Parent ID				TP-R-B10-505-12.0N								TP-R-B10-508-42.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 200	< 180	< 170	< 200	< 190	< 190	< 170	
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	< 2300	< 2400	< 2200	< 2400	< 2200	< 2000	< 2400	< 2300	< 2300	< 2000	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	2700	250	19000	2600	780	< 170	1500	1200	42000	110	
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	2100	< 200	2400	1000	340	< 170	490	410	3000	< 170	
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-6-1
					Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-501-12.0N	TP-R-B10-502-12.0N	TP-R-B10-502-22.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-22.0N	TP-R-B10-505-32.0N	TP-R-B10-505-42.0N	TP-R-B10-505-52.0N	TP-R-B10-508-12.0N	TP-R-B10-508-32.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-5-12.0N	TP-R-B10-6-12.0N
					Parent ID				TP-R-B10-505-12.0N								TP-R-B10-508-42.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	88	< 200	430	< 200	40	96	480	180	460	360	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	53	< 200	370	< 200	< 180	83	300	140	350	310	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	140	< 200	540	46	48	110	450	190	460	380	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	< 190	< 200	230	< 200	< 180	44	200	83	150	160	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	< 380	< 400	< 370	< 400	< 360	< 340	< 390	< 390	< 390	< 340	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 200	< 180	< 170	< 200	< 190	< 190	< 170	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	260	< 200	480	64	54	100	470	180	440	370	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	55	< 200	91	< 200	< 180	< 170	74	< 190	60	78	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 200	< 180	< 170	< 200	< 190	< 190	< 170	
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	100	< 200	86	< 200	< 180	< 170	< 200	< 190	< 190	< 170	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	< 190	< 200	240	< 200	< 180	44	210	72	210	190	
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 200	< 180	< 170	< 200	< 190	< 190	< 170	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	< 190	< 200	< 190	< 200	< 180	< 170	< 200	< 190	< 190	< 170	
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-6-1
					Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-501-12.0N	TP-R-B10-502-12.0N	TP-R-B10-502-22.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-22.0N	TP-R-B10-505-32.0N	TP-R-B10-505-42.0N	TP-R-B10-505-52.0N	TP-R-B10-508-12.0N	TP-R-B10-508-32.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-5-12.0N	TP-R-B10-6-12.0N
					Parent ID				TP-R-B10-505-12.0N								TP-R-B10-508-42.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-6-1
					Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-501-12.0N	TP-R-B10-502-12.0N	TP-R-B10-502-22.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-22.0N	TP-R-B10-505-32.0N	TP-R-B10-505-42.0N	TP-R-B10-505-52.0N	TP-R-B10-508-12.0N	TP-R-B10-508-32.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-5-12.0N	TP-R-B10-6-12.0N
					Parent ID				TP-R-B10-505-12.0N								TP-R-B10-508-42.0N			
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-7
					Sample Date	8/14/2006	8/14/2006	8/14/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B12-1-11.0N	TP-R-B12-1-21.0N	TP-R-B12-1-31.0N	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-R-B13-1-12.0N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N	TP-R-B13-2-12.0N	TP-R-B13-2-22.0N	TP-R-B13-2-32.0N	TP-R-B13-2-42.0N	TP-R-B13-2-52.0N	TP-R-B13-2-62.0N	TP-R-B13-2-72.0N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 340	< 330	< 340	< 350	< 340	180	220	< 320	< 320	< 340	< 340	< 330	< 340	5400	< 340	
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	25000	970	< 340	240	650	400000	110000	970	< 320	130	< 340	< 330	< 340	56000	< 340	
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 340	< 330	< 340	< 350	390	2200	2800	600	< 320	< 340	< 340	< 330	< 340	29000	230	
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg	130	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 680	< 660	< 690	< 700	280	3200	4100	970	< 630	< 680	< 690	< 660	< 680	< 690	< 680	
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg	13000	8	< 140000	< 130000	< 140000	< 140000	< 140000	190000	< 130000	< 130000	< 130000	< 140000	< 140000	< 130000	< 140000	1300000	120000	
Nitroglycerin	55-63-0	ug/kg	13000	4	< 6800	< 6600	< 6900	< 7000	< 6800	13000	17000	< 6400	< 6300	< 6800	< 6900	< 6600	< 6800	130000	16000	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 850	< 830	< 860	< 870	< 850	< 800	< 810	< 800	< 790	< 850	< 860	< 820	< 840	< 860	< 850	
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 340	< 330	< 340	< 350	< 340	< 320	< 330	< 320	< 320	< 340	< 340	< 330	< 340	580	< 340	
Tetryl	479-45-8	ug/kg	1500	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. TNT Project Area Soil Ecological Risk Assessment Dataset
TNT Project Area Soil Ecological Risk Assessment
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-7
				Sample Date	8/14/2006	8/14/2006	8/14/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
				Sample ID	TP-R-B12-1-11.0N	TP-R-B12-1-21.0N	TP-R-B12-1-31.0N	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-R-B13-1-12.0N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N	TP-R-B13-2-12.0N	TP-R-B13-2-22.0N	TP-R-B13-2-32.0N	TP-R-B13-2-42.0N	TP-R-B13-2-52.0N	TP-R-B13-2-62.0N	TP-R-B13-2-72.0N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	1.57	1.27	1.59	1.35	< 2.25	1.58	< 2.15	1.19	1.02	1.35
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	1.9	4.21	3.93	1.57	5.5	4.6	2.65	3.52	2.39	20.8
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	0.293	0.236	0.71	0.681	0.755	0.852	0.802	0.853	0.537	0.832
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	< 0.513	< 0.542	< 0.525	< 0.522	< 0.563	< 0.556	< 0.537	< 0.541	< 0.563	< 0.548
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	5.24	9.55	20.5	15.1	18.6	14.4	16	15.1	46.8	36
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	352	243	47.4	4.7	42.9	8.49	6.15	6.99	16.1	121
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	0.0305	0.013	0.0312	0.0126	2.44	0.0307	0.0354	0.0669	0.0328	0.303
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	2.32	3.97	9.65	9.47	10.9	11.1	10.4	9.51	7.16	12.1
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	< 2.05	< 2.17	< 2.1	< 2.09	< 2.25	< 2.22	< 2.15	< 2.17	< 2.25	< 2.19
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	< 0.513	< 0.542	< 0.525	< 0.522	0.231	< 0.556	< 0.537	< 0.541	< 0.563	0.217
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	< 2.05	< 2.17	1.42	< 2.09	< 2.25	1.52	1.92	< 2.17	< 2.25	< 2.19
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	20.9	23.9	61.1	44.7	85.6	72.6	106	49.7	76.7	109
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	< 19	< 19	< 19	< 19	< 20	< 19
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	< 19	< 19	< 19	< 19	< 20	< 19
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	< 19	< 19	< 19	< 19	< 20	< 19
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	< 19	< 19	< 19	< 19	< 20	< 19
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	< 19	< 19	< 19	< 19	< 20	< 19
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	< 19	< 19	< 19	< 19	< 20	45
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	9	< 19	< 19	< 19	< 20	26
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 18	9	< 19	< 19	< 19	< 20	71

				Location	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-7
				Sample Date	8/14/2006	8/14/2006	8/14/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
				Sample ID	TP-R-B12-1-11.0N	TP-R-B12-1-21.0N	TP-R-B12-1-31.0N	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-R-B13-1-12.0N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N	TP-R-B13-2-12.0N	TP-R-B13-2-22.0N	TP-R-B13-2-32.0N	TP-R-B13-2-42.0N	TP-R-B13-2-52.0N	TP-R-B13-2-62.0N	TP-R-B13-2-72.0N
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 190	< 180	< 190	< 190	< 190	< 180	< 180	< 180	< 180	< 190	< 190	< 180	< 190	< 960	< 190
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2300	< 2200	< 2300	< 2300	< 2300	< 2100	< 2200	< 2100	< 2100	< 2300	< 2300	< 2200	< 2300	< 11000	< 2300
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	2400	10000	2200	99	110	290	330	< 180	< 180	< 190	< 190	< 180	< 190	23000	< 190
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	84	350	160	< 190	< 190	640	280	< 180	< 180	< 190	< 190	< 180	< 190	830	< 190
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-7
					Sample Date	8/14/2006	8/14/2006	8/14/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B12-1-11.0N	TP-R-B12-1-21.0N	TP-R-B12-1-31.0N	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-R-B13-1-12.0N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N	TP-R-B13-2-12.0N	TP-R-B13-2-22.0N	TP-R-B13-2-32.0N	TP-R-B13-2-42.0N	TP-R-B13-2-52.0N	TP-R-B13-2-62.0N	TP-R-B13-2-72.0N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	2600	2300	< 190	< 190	< 190	< 180	< 180	< 180	< 180	260	< 190	< 180	< 190	< 960	510	
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	2000	2000	< 190	< 190	< 190	< 180	< 180	< 180	< 180	280	< 190	< 180	< 190	< 960	470	
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	2700	2400	< 190	< 190	< 190	< 180	< 180	< 180	< 180	380	< 190	< 180	< 190	< 960	880	
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	1000	1300	< 190	< 190	< 190	< 180	< 180	< 180	< 180	170	< 190	< 180	< 190	< 960	310	
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	< 380	< 370	< 380	< 390	< 380	< 360	< 360	< 350	< 350	< 380	< 380	< 370	< 380	< 1900	95	
Butylbenzylphthalate	85-68-7	ug/kg	239	2	< 190	< 180	< 190	< 190	< 190	< 180	< 180	< 180	< 180	< 190	< 190	< 180	< 190	< 960	< 190	
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	ug/kg	4730	2	2700	2400	< 190	39	< 190	< 180	< 180	< 180	< 180	380	< 190	< 180	< 190	< 960	620	
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	370	320	< 190	< 190	< 190	< 180	< 180	< 180	< 180	< 190	< 190	< 180	< 190	< 960	89	
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	84-66-2	ug/kg	24800	2	< 190	< 180	< 190	< 190	< 190	< 180	< 180	< 180	< 180	< 190	< 190	< 180	< 190	< 960	200	
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Di-n-butylphthalate	84-74-2	ug/kg	150	2	< 190	< 180	< 190	< 190	< 190	< 180	< 180	< 180	< 180	< 190	< 190	< 180	< 190	< 960	240	
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	1200	1200	< 190	< 190	< 190	< 180	< 180	< 180	< 180	190	< 190	< 180	< 190	< 960	300	
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	< 190	< 180	< 190	< 190	< 190	< 180	< 180	< 180	< 180	< 190	< 190	< 180	< 190	< 960	< 190	
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	< 190	< 180	< 190	< 190	< 190	< 180	< 180	< 180	< 180	< 190	< 190	< 180	< 190	< 960	530	
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

					Location	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-7
					Sample Date	8/14/2006	8/14/2006	8/14/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B12-1-11.0N	TP-R-B12-1-21.0N	TP-R-B12-1-31.0N	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-R-B13-1-12.0N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N	TP-R-B13-2-12.0N	TP-R-B13-2-22.0N	TP-R-B13-2-32.0N	TP-R-B13-2-42.0N	TP-R-B13-2-52.0N	TP-R-B13-2-62.0N	TP-R-B13-2-72.0N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	< 2500	< 2500	< 2600	< 3000	< 2700	< 2700	< 2500	< 2900	< 3000	< 2600
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	< 620	< 640	< 650	< 760	< 670	< 680	< 630	< 710	< 760	< 640
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-7
					Sample Date	8/14/2006	8/14/2006	8/14/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B12-1-11.0N	TP-R-B12-1-21.0N	TP-R-B12-1-31.0N	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-R-B13-1-12.0N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N	TP-R-B13-2-12.0N	TP-R-B13-2-22.0N	TP-R-B13-2-32.0N	TP-R-B13-2-42.0N	TP-R-B13-2-52.0N	TP-R-B13-2-62.0N	TP-R-B13-2-72.0N
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	< 620	< 640	< 650	< 760	< 670	< 680	< 630	< 710	< 760	< 640	
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	< 620	< 640	< 650	< 760	< 670	< 680	< 630	< 710	< 760	< 640	
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	< 620	< 640	< 650	< 760	< 670	< 680	< 630	< 710	< 760	< 640	
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-R-B13-2-8	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-06
					Sample Date	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	8/16/2006	8/17/2006	8/17/2006	10/4/2017	10/20/2017	10/6/2017	10/6/2017	10/12/2017
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B13-2-82.0N	TP-R-B13-2-92.0N	TP-R-C10-439-12.0N	TP-R-C10-439-22.0N	TP-R-C10-439-32.0N	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N	TP-R-C13-666-51.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-04(01.0-01.5)	BD10122017
					Parent ID															TP-RD-A11-06(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2		< 350	< 330	NA	NA	NA	980	< 300	< 340	180	2300	< 120	< 110	< 120000	< 100	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4		200	< 330	NA	NA	NA	4000000	120000000	350	15000	20000000	< 120	< 110	79000000	< 100	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	240	< 110	14000000	< 100	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	270000	< 100	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5		< 350	< 330	NA	NA	NA	24000	2100	< 340	1700	8200	< 120	< 110	380000	< 100	< 120
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120
3-Nitrotoluene	99-08-1	ug/kg	130	6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5		< 700	< 660	NA	NA	NA	29000	630	< 670	1700	6700	< 120	< 110	540000	< 100	< 120
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120
Nitrocellulose	9004-70-0	ug/kg	13000	8		250000	140000	NA	NA	NA	1100000	28000000	< 130000	< 130000	3300000	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4		7400	< 6600	NA	NA	NA	130000	10000	< 6700	11000	48000	< 120	< 110	< 120000	< 100	< 120 J+
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4		< 870	< 820	NA	NA	NA	< 900	3900	< 840	< 830	< 750	< 120	< 110	< 120000	< 100	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120 J+
RDX (Cyclonite)	121-82-4	ug/kg	2300	4		< 350	< 330	NA	NA	NA	150	190	< 340	< 330	570	< 120	< 110	< 120000	< 100	< 120
Tetryl	479-45-8	ug/kg	1500	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	< 120000	< 100	< 120

					Location	TP-R-B13-2-8	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-06
					Sample Date	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	8/16/2006	8/17/2006	8/17/2006	10/4/2017	10/20/2017	10/6/2017	10/6/2017	10/12/2017
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B13-2-82.0N	TP-R-B13-2-92.0N	TP-R-C10-439-12.0N	TP-R-C10-439-22.0N	TP-R-C10-439-32.0N	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N	TP-R-C13-666-51.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-04(01.0-01.5)	BD10122017
					Parent ID															TP-RD-A11-06(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3		2.09	1.17	4.36	1.14	1.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1		36.1	11.1	47.2	3.67	4.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1		0.65	0.608	0.23	0.347	0.456	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3		0.0787	< 0.542	< 0.526	< 0.528	< 0.567	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2		33.9	24.9	33.7	12	14.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3		104	59.4	7510	160	1610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2		1.47	0.744	0.103	0.0463	0.112	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3		9.38	32.1	4.63	5.31	7.24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3		< 2.25	< 2.17	< 2.1	< 2.11	< 2.27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1		< 0.562	< 0.542	1.02	< 0.528	0.204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1		< 2.25	< 2.17	2.58	< 2.11	2.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1		425	142	37.1	21.7	57.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1		< 98	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1		< 98	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1		< 98	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1		< 98	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1		< 98	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1		120	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1		33	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1		153	48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B13-2-8	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-06
					Sample Date	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	8/16/2006	8/17/2006	8/17/2006	10/4/2017	10/20/2017	10/6/2017	10/6/2017	10/12/2017
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B13-2-82.0N	TP-R-B13-2-92.0N	TP-R-C10-439-12.0N	TP-R-C10-439-22.0N	TP-R-C10-439-32.0N	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N	TP-R-C13-666-51.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-04(01.0-01.5)	BD10122017
					Parent ID															TP-RD-A11-06(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	< 190	< 180	NA	NA	NA	< 200	< 42000	< 190	< 180	< 170	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	< 2300	< 2200	NA	NA	NA	< 2400	< 500000	< 2200	< 2200	< 2000	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	120	< 180	NA	NA	NA	3200	280000	< 190	< 180	8400	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 190	< 180	NA	NA	NA	1200	73000	< 190	< 180	1700	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B13-2-8	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-06
					Sample Date	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	8/16/2006	8/17/2006	8/17/2006	10/4/2017	10/20/2017	10/6/2017	10/6/2017	10/12/2017
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B13-2-82.0N	TP-R-B13-2-92.0N	TP-R-C10-439-12.0N	TP-R-C10-439-22.0N	TP-R-C10-439-32.0N	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N	TP-R-C13-666-51.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-04(01.0-01.5)	BD10122017
					Parent ID															TP-RD-A11-06(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2		590	390	NA	NA	NA	270	< 42000	< 190	< 180	290	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2		620	400	NA	NA	NA	300	< 42000	< 190	< 180	420	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2		1200	590	NA	NA	NA	390	< 42000	< 190	< 180	650	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2		600	280	NA	NA	NA	190	< 42000	< 190	< 180	200	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2		670	< 360	NA	NA	NA	< 400	< 83000	< 370	< 370	< 330	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2		< 190	< 180	NA	NA	NA	< 200	< 42000	< 190	< 180	< 170	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2		730	490	NA	NA	NA	310	< 42000	< 190	< 180	360	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2		100	74	NA	NA	NA	50	< 42000	< 190	< 180	74	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2		350	< 180	NA	NA	NA	< 200	< 42000	< 190	< 180	< 170	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2		300	< 180	NA	NA	NA	< 200	< 42000	< 190	< 180	< 170	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2		360	260	NA	NA	NA	210	< 42000	< 190	< 180	310	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2		< 190	< 180	NA	NA	NA	< 200	< 42000	< 190	< 180	< 170	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2		220	< 180	NA	NA	NA	< 200	< 42000	< 190	< 180	< 170	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-R-B13-2-8	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-06
				Sample Date	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	8/16/2006	8/17/2006	8/17/2006	10/4/2017	10/20/2017	10/6/2017	10/6/2017	10/12/2017
				Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-R-B13-2-82.0N	TP-R-B13-2-92.0N	TP-R-C10-439-12.0N	TP-R-C10-439-22.0N	TP-R-C10-439-32.0N	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N	TP-R-C13-666-51.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-04(01.0-01.5)	BD10122017
				Parent ID															TP-RD-A11-06(01.0-01.5)
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	< 2800	< 2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	< 690	< 540	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-R-B13-2-8	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-06
					Sample Date	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	8/16/2006	8/17/2006	8/17/2006	10/4/2017	10/20/2017	10/6/2017	10/6/2017	10/12/2017
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B13-2-82.0N	TP-R-B13-2-92.0N	TP-R-C10-439-12.0N	TP-R-C10-439-22.0N	TP-R-C10-439-32.0N	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N	TP-R-C13-666-51.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-04(01.0-01.5)	BD10122017
					Parent ID															TP-RD-A11-06(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	< 690	< 540	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	< 690	< 540	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	< 690	< 540	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-18
					Sample Date	10/12/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/27/2017	10/26/2017	10/26/2017	11/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-08(01.0-01.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-10(01.0-01.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-17(01.0-01.5)	BD110317
					Parent ID			TP-RD-A11-09(01.0-01.5)			TP-RD-A11-11(01.0-01.5)									TP-RD-A11-18(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 120	< 110	< 110	< 110	< 110	430	310	< 110	< 110	270	150	< 110	< 120	7600	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 120	< 110	< 110	< 110	< 110	290	230 J	< 110	< 110	120	160	< 110	< 120	< 1200	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 120	< 110	< 110	< 110	< 110	140	150	< 110	< 110	250	170	< 110	< 120	1800	140
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 120	< 110	< 110	< 110	< 110	180	160	< 110	< 110	360	290	< 110	< 120	3000	320
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200 J-	< 110
Nitrobenzene	98-95-3	ug/kg	2200	2	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 120	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110 J+	< 110 J+	< 120	< 110	< 120	< 1200 J-	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110
Tetryl	479-45-8	ug/kg	1500	5	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 1200	< 110

					Location	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-18
					Sample Date	10/12/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/27/2017	10/26/2017	10/26/2017	11/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-08(01.0-01.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-10(01.0-01.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-17(01.0-01.5)	BD110317
					Parent ID			TP-RD-A11-09(01.0-01.5)			TP-RD-A11-11(01.0-01.5)									TP-RD-A11-18(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-18
					Sample Date	10/12/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/27/2017	10/26/2017	10/26/2017	11/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-08(01.0-01.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-10(01.0-01.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-17(01.0-01.5)	BD110317
					Parent ID			TP-RD-A11-09(01.0-01.5)			TP-RD-A11-11(01.0-01.5)									TP-RD-A11-18(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-18
					Sample Date	10/12/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/27/2017	10/26/2017	10/26/2017	11/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-08(01.0-01.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-10(01.0-01.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-17(01.0-01.5)	BD110317
					Parent ID			TP-RD-A11-09(01.0-01.5)			TP-RD-A11-11(01.0-01.5)									TP-RD-A11-18(01.0-01.5)
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-18
				Sample Date	10/12/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/27/2017	10/26/2017	10/26/2017	11/3/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-08(01.0-01.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-10(01.0-01.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-17(01.0-01.5)	BD110317
				Parent ID			TP-RD-A11-09(01.0-01.5)			TP-RD-A11-11(01.0-01.5)									TP-RD-A11-18(01.0-01.5)
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-18
				Sample Date	10/12/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/27/2017	10/26/2017	10/26/2017	11/3/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-08(01.0-01.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-10(01.0-01.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-17(01.0-01.5)	BD110317
				Parent ID			TP-RD-A11-09(01.0-01.5)			TP-RD-A11-11(01.0-01.5)									TP-RD-A11-18(01.0-01.5)
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02A
				Sample Date	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/11/2017	10/6/2017	10/11/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft
				Sample ID	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-7A(01.0-01.5)	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02A(00.5-01.0)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	1600 J	< 110	1600	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	460	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	120	< 110	980	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	520	< 110
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	300	< 110	1100	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	650	< 110
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	2200	2	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 110 J	< 110 J-	< 110	< 110 J-	< 120	< 110 J-	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg	1500	5	< 110	< 110	< 110	< 110	< 120	< 110	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110

					Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02A
					Sample Date	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/11/2017	10/6/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft
					Sample ID	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-7A(01.0-01.5)	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02A(00.5-01.0)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02A
					Sample Date	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/11/2017	10/6/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft
					Sample ID	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-7A(01.0-01.5)	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02A(00.5-01.0)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02A
					Sample Date	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/11/2017	10/6/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft
					Sample ID	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-7A(01.0-01.5)	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02A(00.5-01.0)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02A
				Sample Date	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/11/2017	10/6/2017	10/11/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft
				Sample ID	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-7A(01.0-01.5)	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02A(00.5-01.0)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02A
				Sample Date	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/6/2017	11/3/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/11/2017	10/6/2017	10/11/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft
				Sample ID	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-7A(01.0-01.5)	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02A(00.5-01.0)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-05
					Sample Date	10/11/2017	10/18/2017	10/26/2017	10/26/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-05(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 120	< 110	< 120	< 110	< 120	< 140	< 110	300	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 120	< 110	< 120	< 110	< 120	< 140	< 110	120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110 J+	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	2200	2	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 120	< 110	< 120	< 110	< 120 J-	< 140 J-	< 110	< 110	< 120	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+
Tetryl	479-45-8	ug/kg	1500	5	< 120	< 110	< 120	< 110	< 120	< 140	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110

				Location	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-05
				Sample Date	10/11/2017	10/18/2017	10/26/2017	10/26/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-05(01.0-01.5)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-05
					Sample Date	10/11/2017	10/18/2017	10/26/2017	10/26/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-05(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-05
					Sample Date	10/11/2017	10/18/2017	10/26/2017	10/26/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-05(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-05
					Sample Date	10/11/2017	10/18/2017	10/26/2017	10/26/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-05(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-05
					Sample Date	10/11/2017	10/18/2017	10/26/2017	10/26/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-05(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-16
					Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/10/2017	10/4/2017	10/3/2017	10/10/2017	10/13/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-09(01.0-01.5)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-16(01.0-01.5)
					Parent ID					TP-RD-B10-10(01.0-01.5)										
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 110	< 120	< 120	< 110	< 110	< 110 J	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 110	< 120	< 120	< 110	1400	1200 J	< 120	< 110	860	1700000	< 110	260	< 110	< 120	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 110	< 120	< 120	< 110	480	180 J	160	< 110	< 110	< 120000	< 110	500	< 110	< 120	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 110	< 120	< 120	150	650	350 J	< 120	< 110	370	< 120000	< 110	120	< 110	< 120	< 120
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 110	< 120	160	150	1000	590 J	< 120	< 110	310	< 120000	< 110	250	< 110	< 120	< 120
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	2200	2	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 110	< 120	< 120	< 110 J+	< 110 J+	< 110 J+	< 120	< 110	< 110 J+	< 120000	< 110	< 120 J+	< 110	< 120	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 110	< 120	< 120	< 110 J+	< 110 J+	< 110 J	< 120	< 110	< 110 J+	< 120000	< 110	< 120 J+	< 110	< 120 J-	< 120 J
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 110	< 120	< 120	< 110 J+	< 110 J+	< 110 J	< 120	< 110	< 110 J+	< 120000	< 110	< 120 J+	< 110	< 120	< 120
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120
Tetryl	479-45-8	ug/kg	1500	5	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 120000	< 110	< 120	< 110	< 120	< 120

					Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-16
					Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/10/2017	10/4/2017	10/3/2017	10/10/2017	10/13/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-09(01.0-01.5)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-16(01.0-01.5)
					Parent ID					TP-RD-B10-10(01.0-01.5)										
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-16
					Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/10/2017	10/4/2017	10/3/2017	10/10/2017	10/13/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-09(01.0-01.5)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-16(01.0-01.5)
					Parent ID					TP-RD-B10-10(01.0-01.5)										
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-16
					Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/10/2017	10/4/2017	10/3/2017	10/10/2017	10/13/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-09(01.0-01.5)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-16(01.0-01.5)
					Parent ID					TP-RD-B10-10(01.0-01.5)										
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-16
					Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/10/2017	10/4/2017	10/3/2017	10/10/2017	10/13/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-09(01.0-01.5)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-16(01.0-01.5)
					Parent ID					TP-RD-B10-10(01.0-01.5)										
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-16
					Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/10/2017	10/4/2017	10/3/2017	10/10/2017	10/13/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-09(01.0-01.5)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-16(01.0-01.5)
					Parent ID					TP-RD-B10-10(01.0-01.5)										
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-09
					Sample Date	10/6/2017	10/12/2017	10/16/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/18/2017	10/23/2017	11/3/2017	11/6/2017	11/7/2017	11/29/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-07(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-09(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	1100	1600	< 110	140	< 120	< 110	1400	830	340	170	< 120	< 110 J	< 110	< 120	< 120	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 120	470	< 110	< 120	< 120	< 110	< 120	< 110	< 120	150	< 120	< 110	< 110	< 120	< 120	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 120	900	< 110	< 120	< 120	< 110	340	220	6300	410	< 120	< 110	< 110	< 120	< 120	< 120
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	150	1200	< 110	< 120	< 120	< 110	440	290	12000	680	< 120	< 110	< 110	< 120	< 120	< 120
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	2200	2	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 120	< 120 J+	< 110	< 120	< 120	< 110	< 120 J+	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 120	< 120 J+	< 110	< 120	< 120 J	< 110	< 120 J+	< 110	< 120	< 110	< 120	< 110 J	< 110 J-	< 120	< 120	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 120	< 120 J+	< 110	< 120	< 120	< 110 J+	< 120 J+	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120
Tetryl	479-45-8	ug/kg	1500	5	< 120	< 120	< 110	< 120	< 120	< 110	< 120	< 110	< 120	< 110	< 120	< 110	< 110	< 120	< 120	< 120

					Location	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-09
					Sample Date	10/6/2017	10/12/2017	10/16/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/18/2017	10/23/2017	11/3/2017	11/6/2017	11/7/2017	11/29/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-07(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-09(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-09
					Sample Date	10/6/2017	10/12/2017	10/16/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/18/2017	10/23/2017	11/3/2017	11/6/2017	11/7/2017	11/29/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-07(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-09(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-09
				Sample Date	10/6/2017	10/12/2017	10/16/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/18/2017	10/23/2017	11/3/2017	11/6/2017	11/7/2017	11/29/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-07(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-09(01.0-01.5)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01E	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-09
					Sample Date	10/6/2017	10/12/2017	10/16/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/18/2017	10/23/2017	11/3/2017	11/6/2017	11/7/2017	11/29/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-07(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-09(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-09
					Sample Date	10/6/2017	10/12/2017	10/16/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/18/2017	10/23/2017	11/3/2017	11/6/2017	11/7/2017	11/29/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-07(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-09(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23	TP-RD-B11-24
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-19(01.0-01.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)
					Parent ID										TP-RD-B11-20(01.0-01.5)					
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	2200	2	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 110	< 110	180	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg	1500	5	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110	< 110

					Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23	TP-RD-B11-24
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-19(01.0-01.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)
					Parent ID										TP-RD-B11-20(01.0-01.5)					
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23	TP-RD-B11-24
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-19(01.0-01.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)
					Parent ID										TP-RD-B11-20(01.0-01.5)					
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23	TP-RD-B11-24
				Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-19(01.0-01.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)
				Parent ID										TP-RD-B11-20(01.0-01.5)					
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23	TP-RD-B11-24
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-19(01.0-01.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)
					Parent ID										TP-RD-B11-20(01.0-01.5)					
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23	TP-RD-B11-24
				Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-19(01.0-01.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)
				Parent ID										TP-RD-B11-20(01.0-01.5)					
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14
					Sample Date	12/4/2017	12/5/2017	10/18/2017	10/18/2017	11/2/2017	11/2/2017	11/30/2017	11/2/2017	11/7/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)
					Parent ID														TP-RD-B12-14(01.0-01.5)	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4		< 120	< 120	160	< 110	< 120	< 120	190	< 110	120	< 120	< 120	< 130	< 120	180	220 J
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		< 120	< 120	< 110	< 110	< 120	< 120	140	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5		< 120	< 120	120	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
2-Nitrotoluene	88-72-2	ug/kg	190	--		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg	130	6		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5		< 120	< 120	140	< 110	150	< 120	160	< 110	< 120	< 120	< 120	< 130	< 120	170	< 120 J
4-Nitrotoluene	99-99-0	ug/kg	140	--		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
Nitrobenzene	98-95-3	ug/kg	2200	2		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg	13000	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4		< 120	< 120	< 110	< 110	550	150	< 130	< 110	< 120	< 120	< 120	< 130	< 120	1000	650 J
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4		< 120	< 120	< 110	< 110	< 120 J-	< 120 J-	< 130	< 110 J-	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
RDX (Cyclonite)	121-82-4	ug/kg	2300	4		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J
Tetryl	479-45-8	ug/kg	1500	5		< 120	< 120	< 110	< 110	< 120	< 120	< 130	< 110	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J

					Location	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14
					Sample Date	12/4/2017	12/5/2017	10/18/2017	10/18/2017	11/2/2017	11/2/2017	11/30/2017	11/2/2017	11/7/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)
					Parent ID														TP-RD-B12-14(01.0-01.5)	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14
					Sample Date	12/4/2017	12/5/2017	10/18/2017	10/18/2017	11/2/2017	11/2/2017	11/30/2017	11/2/2017	11/7/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)
					Parent ID														TP-RD-B12-14(01.0-01.5)	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14
					Sample Date	12/4/2017	12/5/2017	10/18/2017	10/18/2017	11/2/2017	11/2/2017	11/30/2017	11/2/2017	11/7/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)
					Parent ID														TP-RD-B12-14(01.0-01.5)	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14
					Sample Date	12/4/2017	12/5/2017	10/18/2017	10/18/2017	11/2/2017	11/2/2017	11/30/2017	11/2/2017	11/7/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)
					Parent ID														TP-RD-B12-14(01.0-01.5)	
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14
				Sample Date	12/4/2017	12/5/2017	10/18/2017	10/18/2017	11/2/2017	11/2/2017	11/30/2017	11/2/2017	11/7/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)
				Parent ID														TP-RD-B12-14(01.0-01.5)	
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-14
				Sample Date	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	12/1/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Explosives																			
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	1000	310	< 110	< 120	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	160	110	< 110	< 120	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	310	160	< 110	< 110	< 120	< 120
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	380	480	< 110	< 110	< 120	< 120
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	2200	2	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	160	630
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 110	< 130 J-	< 130 J-	< 120 J	< 120 J-	< 120	< 120	< 120 J-	< 120	< 120	< 110 J-	< 110	< 110	< 120	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120
Tetryl	479-45-8	ug/kg	1500	5	< 110	< 130	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120

				Location	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-14
				Sample Date	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	12/1/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Metals																			
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																			
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-14
				Sample Date	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	12/1/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
SVOCs																			
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-14
					Sample Date	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	12/1/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
					Parent ID															
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-14
				Sample Date	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	12/1/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
VOCs																			
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-14
				Sample Date	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	12/1/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
				Parent ID															
				Notes															
Chemical	CAS Number	Units	ESB	Note															
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017	10/16/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/23/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-15(01.0-01.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)
					Parent ID											TP-RD-C11-01C(01.0-01.5)				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	370	< 110	< 120	< 120	< 120	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	280	< 110	< 120	< 120	< 120	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 120	< 120	< 120	< 130	< 110	< 110	62000	280000	3300	< 110	290	280 J	< 120	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	3600	< 110	420	310	< 120	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	210	< 110	< 120	< 120	< 120	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	2200 J-	< 110	340	370	< 120	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	160	< 110	< 120	< 120	< 120	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	16000	4600	< 110	450	490	< 120	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	2200	2	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	3300	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 120	< 120 J-	< 120 J-	< 130	< 110 J+	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120 J-	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110
Tetryl	479-45-8	ug/kg	1500	5	< 120	< 120	< 120	< 130	< 110	< 110	< 12000	< 11000	< 130	< 110	< 120	< 120	< 120	< 110	< 110

					Location	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017	10/16/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/23/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-15(01.0-01.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)
					Parent ID											TP-RD-C11-01C(01.0-01.5)				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017	10/16/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/23/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-15(01.0-01.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)
					Parent ID											TP-RD-C11-01C(01.0-01.5)					
					Notes																
Chemical	CAS Number	Units	ESB	Note																	
SVOCs																					
1,1'-Biphenyl	92-52-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017	10/16/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/23/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-15(01.0-01.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)
					Parent ID											TP-RD-C11-01C(01.0-01.5)				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017	10/16/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/23/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-15(01.0-01.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)
					Parent ID											TP-RD-C11-01C(01.0-01.5)				
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017	10/16/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/23/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-15(01.0-01.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)
					Parent ID											TP-RD-C11-01C(01.0-01.5)					
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

					Location	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID								TP-RD-C11-07(01.0-01.5)							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Explosives																				
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120 J	< 130	< 120	< 130	< 120	< 130	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120 J	< 130	< 120	< 130	< 120	< 130	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	< 120	110	< 110	< 100	210	< 120	1300	390	270 J	500	< 120	< 130	< 120	< 130	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 120	< 110	< 110	< 100	< 110	< 120	400	< 120	< 120 J	510	210	< 130	< 120	< 130	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120 J	130	< 120	< 130	< 120	< 130	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 120	< 110	< 110	< 100	< 110	< 120	890	220	180 J	1000	< 120	< 130	< 120	< 130	< 120
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120	< 130	< 120	< 130	< 120	< 130	< 120
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120	< 130	< 120	< 130	< 120	< 130	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 120	< 110	< 110	< 100	< 110	< 120	820	460	380 J	1200	< 120	< 130	< 120	< 130	< 120
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120	< 130	< 120	< 130	< 120	< 130	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120 J	< 130	< 120	< 130	< 120	< 130	< 120
Nitrobenzene	98-95-3	ug/kg	2200	2	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120	240	< 120	< 130	< 120	< 130	< 120
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg	13000	4	< 120	130	< 110	< 100	120	< 120	< 130	< 120	< 120 J	< 130	< 120	210	< 120	< 130	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 120	< 110 J-	< 110	< 100	< 110	< 120 J-	< 130	< 120	< 120 J	< 130	< 120	< 130	< 120	< 130	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120 J	< 130	< 120	< 130	< 120	< 130	< 120
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120 J	< 130	< 120	< 130	< 120	< 130	< 120
Tetryl	479-45-8	ug/kg	1500	5	< 120	< 110	< 110	< 100	< 110	< 120	< 130	< 120	< 120 J	< 130	< 120	< 130	< 120	< 130	< 120

					Location	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID								TP-RD-C11-07(01.0-01.5)							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Metals																				
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID								TP-RD-C11-07(01.0-01.5)							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
SVOCs																				
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID								TP-RD-C11-07(01.0-01.5)							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID								TP-RD-C11-07(01.0-01.5)							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
VOCs																				
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

					Location	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID								TP-RD-C11-07(01.0-01.5)							
					Notes															
Chemical	CAS Number	Units	ESB	Note																
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

				Location	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D14-01	UD-06	UD-06
				Sample Date	11/8/2017	11/7/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	9/15/1999	9/15/1999
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.0-0.7 ft	0.0-1.0 ft
				Sample ID	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)	UD-060.67N	UD-061N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Explosives													
1,2-Dinitrobenzene	528-29-0	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg	10000	2	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 190
1,3-Dinitrobenzene	99-65-0	ug/kg	73	2	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 190
1,4-Dinitrobenzene	100-25-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	7600	4	13000	15000	420	1100	< 120	< 130	200	NA	< 190
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	< 1200	190	< 120	< 130	< 120	< 130	< 120	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	14000	5	< 1200	1000	150	230	350	< 130	< 120	NA	< 190
2-Nitrotoluene	88-72-2	ug/kg	190	--	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 380
3-Nitrotoluene	99-08-1	ug/kg	130	6	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 380
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	12000	5	< 1200	8300	220	320	340	< 130	< 120	NA	< 190
4-Nitrotoluene	99-99-0	ug/kg	140	--	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 380
Benzemine, 3,5-dinitro-	618-87-1	ug/kg	--	--	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	NA
Nitrobenzene	98-95-3	ug/kg	2200	2	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 190
Nitrocellulose	9004-70-0	ug/kg	13000	8	NA	NA	NA	NA	NA	NA	NA	NA	67700
Nitroglycerin	55-63-0	ug/kg	13000	4	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 5000
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	16000	4	< 1200	< 130 J-	< 120 J-	< 130	< 120	< 130	< 120	NA	< 380
Pentaerythritol Tetranitrate	78-11-5	ug/kg	100000	8	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg	2300	4	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 380
Tetryl	479-45-8	ug/kg	1500	5	< 1200	< 130	< 120	< 130	< 120	< 130	< 120	NA	< 380

				Location	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D14-01	UD-06	UD-06
				Sample Date	11/8/2017	11/7/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	9/15/1999	9/15/1999
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.0-0.7 ft	0.0-1.0 ft
				Sample ID	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)	UD-060.67N	UD-061N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Metals													
Aluminum	7429-90-5	mg/kg	50	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	0.27	3	NA	NA	NA	NA	NA	NA	NA	NA	< 1.1
Arsenic	7440-38-2	mg/kg	9.9	1	NA	NA	NA	NA	NA	NA	NA	NA	5.9
Barium	7440-39-3	mg/kg	283	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	10	1	NA	NA	NA	NA	NA	NA	NA	NA	0.69
Cadmium	7440-43-9	mg/kg	0.36	3	NA	NA	NA	NA	NA	NA	NA	NA	0.17
Calcium	7440-70-2	mg/kg	0	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	0.4	1	NA	NA	NA	NA	NA	NA	NA	NA	17.3
Cobalt	7440-48-4	mg/kg	0.14	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	5.4	2	NA	NA	NA	NA	NA	NA	NA	NA	11.7
Iron	7439-89-6	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	11	3	NA	NA	NA	NA	NA	NA	NA	NA	37.5
Magnesium	7439-95-4	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	220	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.1	2	NA	NA	NA	NA	NA	NA	NA	NA	0.05
Nickel	7440-02-0	mg/kg	38	3	NA	NA	NA	NA	NA	NA	NA	NA	7.2
Potassium	7440-09-7	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	0.52	3	NA	NA	NA	NA	NA	NA	NA	NA	< 1.5
Silver	7440-22-4	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	< 0.66
Sodium	7440-23-5	mg/kg	--	7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	1	1	NA	NA	NA	NA	NA	NA	NA	NA	< 2.2
Vanadium	7440-62-2	mg/kg	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	8.5	1	NA	NA	NA	NA	NA	NA	NA	NA	41
PCBs													
Aroclor-1016	12674-11-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 20
Aroclor-1221	11104-28-2	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 20
Aroclor-1232	11141-16-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 20
Aroclor-1242	53469-21-9	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 20
Aroclor-1248	12672-29-6	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 20
Aroclor-1254	11097-69-1	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 20
Aroclor-1260	11096-82-5	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 39
Polychlorinated biphenyls	1336-36-3	ug/kg	371	1	NA	NA	NA	NA	NA	NA	NA	NA	< 39

				Location	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D14-01	UD-06	UD-06
				Sample Date	11/8/2017	11/7/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	9/15/1999	9/15/1999
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.0-0.7 ft	0.0-1.0 ft
				Sample ID	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)	UD-060.67N	UD-061N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
SVOCs													
1,1'-Biphenyl	92-52-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
1,2-Diphenylhydrazine	122-66-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2,4-Dimethylphenol	105-67-9	ug/kg	10	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2,4-Dinitrophenol	51-28-5	ug/kg	60.9	2	NA	NA	NA	NA	NA	NA	NA	NA	< 1900
2,4-Dinitrotoluene	121-14-2	ug/kg	1280	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2,6-Dinitrotoluene	606-20-2	ug/kg	4100	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2-Chloronaphthalene	91-58-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2-Chlorophenol	95-57-8	ug/kg	243	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2-Methylnaphthalene	91-57-6	ug/kg	3240	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
2-Nitrotoluene	88-72-2	ug/kg	190	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	NA	< 780
3-Nitroaniline	99-09-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 1900
4-Bromophenyl-phenylether	101-55-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
4-Chloro-3-methylphenol	59-50-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
4-Chloroaniline	106-47-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
4-Nitroaniline	100-01-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg	7000	1	NA	NA	NA	NA	NA	NA	NA	NA	< 1900
4-Nitrotoluene	99-99-0	ug/kg	140	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	20000	1	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Acenaphthylene	208-96-8	ug/kg	682000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Acetophenone	98-86-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	1480000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Atrazine	1912-24-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Location	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D14-01	UD-06	UD-06
				Sample Date	11/8/2017	11/7/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	9/15/1999	9/15/1999
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.0-0.7 ft	0.0-1.0 ft
				Sample ID	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)	UD-060.67N	UD-061N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Benzaldehyde	100-52-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	5210	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Benzo[a]pyrene	50-32-8	ug/kg	1520	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Benzo[b]fluoranthene	205-99-2	ug/kg	59800	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Benzo[g,h,i]perylene	191-24-2	ug/kg	119000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Benzo[k]fluoranthene	207-08-9	ug/kg	148000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	19900	1	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	925	2	NA	NA	NA	NA	NA	NA	NA	NA	100
Butylbenzylphthalate	85-68-7	ug/kg	239	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Caprolactam	105-60-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	4730	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Dibenzo[a,h]anthracene	53-70-3	ug/kg	18400	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Dibenzofuran	132-64-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	24800	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Dimethylphthalate	131-11-3	ug/kg	734000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Di-n-butylphthalate	84-74-2	ug/kg	150	2	NA	NA	NA	NA	NA	NA	NA	NA	72
Di-n-octylphthalate	117-84-0	ug/kg	7090	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Fluoranthene	206-44-0	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Fluorene	86-73-7	ug/kg	122000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Hexachlorobenzene	118-74-1	ug/kg	199	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Hexachloroethane	67-72-1	ug/kg	596	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	109000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Isophorone	78-59-1	ug/kg	139000	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Nitrobenzene	98-95-3	ug/kg	2200	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	0.0321	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	544	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
N-Nitrosodiphenylamine	86-30-6	ug/kg	545	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Pentachlorophenol	87-86-5	ug/kg	2100	3	NA	NA	NA	NA	NA	NA	NA	NA	< 1900
Phenanthrene	85-01-8	ug/kg	45700	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Phenol	108-95-2	ug/kg	30000	1	NA	NA	NA	NA	NA	NA	NA	NA	< 390
Pyrene	129-00-0	ug/kg	78500	2	NA	NA	NA	NA	NA	NA	NA	NA	< 390

				Location	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D14-01	UD-06	UD-06
				Sample Date	11/8/2017	11/7/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	9/15/1999	9/15/1999
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.0-0.7 ft	0.0-1.0 ft
				Sample ID	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)	UD-060.67N	UD-061N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	127	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,1,2-Trichloro-trifluoroethane (Freon)	76-13-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,1-Dichloroethene	75-35-4	ug/kg	8280	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	11100	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	2960	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,2-Dichloroethane	107-06-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,2-Dichloropropane	78-87-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	37700	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	546	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
2-Butanone	78-93-3	ug/kg	89600	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 1250	NA
2-Hexanone	591-78-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	2500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	5270	2	NA	NA	NA	NA	NA	NA	NA	< 2500	NA
Acrylonitrile	107-13-1	ug/kg	23.9	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Benzene	71-43-2	ug/kg	255	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Bromodichloromethane	75-27-4	ug/kg	540	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Bromoform	75-25-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Bromomethane	74-83-9	ug/kg	235	2	NA	NA	NA	NA	NA	NA	NA	< 1250	NA

				Location	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D14-01	UD-06	UD-06
				Sample Date	11/8/2017	11/7/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	9/15/1999	9/15/1999
				Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.0-0.7 ft	0.0-1.0 ft
				Sample ID	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)	UD-060.67N	UD-061N
				Parent ID									
				Notes									
Chemical	CAS Number	Units	ESB	Note									
Carbon disulfide	75-15-0	ug/kg	94.1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	2980	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Chlorobenzene	108-90-7	ug/kg	13100	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Chloroethane	75-00-3	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 1250	NA
Chloroform	67-66-3	ug/kg	1190	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Chloromethane	74-87-3	ug/kg	10400	2	NA	NA	NA	NA	NA	NA	NA	< 1250	NA
cis-1,2-Dichloroethene	156-59-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Cyclohexane	110-82-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	2050	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Dichlorodifluoromethane	75-71-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	5160	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Hexachlorobutadiene	87-68-3	ug/kg	39.8	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Isopropylbenzene	98-82-8	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	4050	2	NA	NA	NA	NA	NA	NA	NA	< 430	NA
MTBE	1634-04-4	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	99.4	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	9920	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Toluene	108-88-3	ug/kg	200000	1	NA	NA	NA	NA	NA	NA	NA	< 625	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	12400	2	NA	NA	NA	NA	NA	NA	NA	< 625	NA
Trichlorofluoromethane	75-69-4	ug/kg	16400	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	646	2	NA	NA	NA	NA	NA	NA	NA	< 1250	NA
Xylenes (total)	1330-20-7	ug/kg	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. New Jersey Department of Environmental Protection (NJDEP) value from Ecological Screening Criteria
2. Resource Conservation and Recovery Act Region 5 Ecological Screening Level (United States Environm
3. Ecological Soil Screening Value (EcoSSL) (USEPA 2007)
4. Kuperman et al. 2009. In Ecotoxicology of Explosives. Sunahara et al. (eds). CRC Press.
5. Talmage et al. 1999
6. Analyte detected fewer than five times and screens out based on frequency of detection. Screening valu
7. Analyte considered an essential nutrient; therefore, a screening level is not necessary.
8. Value for nitroglycerin used as a surrogate.
-- = not applicable
CAS = Chemical Abstract Service
ESB = Ecological Screening Benchmark
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
NA = not available
PCB = polychlorinated biphenyl
VOC = volatile organic compound
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon

Exhibit 2

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/9/2019 10:49:53 AM
From File	proucl input_e&e combined_oldESBs.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,3,5-Trinitrobenzene

General Statistics

Total Number of Observations	249	Number of Distinct Observations	40
		Number of Missing Observations	249
Number of Detects	8	Number of Non-Detects	241
Number of Distinct Detects	8	Number of Distinct Non-Detects	34
Minimum Detect	120	Minimum Non-Detect	45.45
Maximum Detect	45000	Maximum Non-Detect	500000
Variance Detects	3.515E+8	Percent Non-Detects	96.79%
Mean Detects	10609	SD Detects	18747
Median Detects	785	CV Detects	1.767
Skewness Detects	1.5	Kurtosis Detects	0.402
Mean of Logged Detects	7.083	SD of Logged Detects	2.341

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.615	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.44	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	392.1	KM Standard Error of Mean	252.6
KM SD	3691	95% KM (BCA) UCL	912.7
95% KM (t) UCL	809.1	95% KM (Percentile Bootstrap) UCL	821.4
95% KM (z) UCL	807.5	95% KM Bootstrap t UCL	13790
90% KM Chebyshev UCL	1150	95% KM Chebyshev UCL	1493
97.5% KM Chebyshev UCL	1969	99% KM Chebyshev UCL	2905

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.981	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.795	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.351	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.316	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.313	k star (bias corrected MLE)	0.279
Theta hat (MLE)	33875	Theta star (bias corrected MLE)	38015
nu hat (MLE)	5.011	nu star (bias corrected)	4.465
Mean (detects)	10609		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	340.9
Maximum	45000	Median	0.01
SD	3665	CV	10.75
k hat (MLE)	0.0826	k star (bias corrected MLE)	0.0843
Theta hat (MLE)	4126	Theta star (bias corrected MLE)	4044
nu hat (MLE)	41.14	nu star (bias corrected)	41.97
Adjusted Level of Significance (β)	0.049		
Approximate Chi Square Value (41.97, α)	28.12	Adjusted Chi Square Value (41.97, β)	28.06
95% Gamma Approximate UCL (use when n>=50)	508.7	95% Gamma Adjusted UCL (use when n<50)	509.9

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	392.1	SD (KM)	3691
Variance (KM)	13621499	SE of Mean (KM)	252.6
k hat (KM)	0.0113	k star (KM)	0.0138
nu hat (KM)	5.62	nu star (KM)	6.885
theta hat (KM)	34743	theta star (KM)	28357
80% gamma percentile (KM)	0.00158	90% gamma percentile (KM)	7.897
95% gamma percentile (KM)	399.7	99% gamma percentile (KM)	11053

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.89, α)	2.108	Adjusted Chi Square Value (6.89, β)	2.093
95% Gamma Approximate KM-UCL (use when n>=50)	1281	95% Gamma Adjusted KM-UCL (use when n<50)	1290

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.838	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.235	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	341.2	Mean in Log Scale	-8.774
SD in Original Scale	3665	SD in Log Scale	6.302
95% t UCL (assumes normality of ROS data)	724.7	95% Percentile Bootstrap UCL	805.2
95% BCA Bootstrap UCL	991.5	95% Bootstrap t UCL	13967
95% H-UCL (Log ROS)	2099480		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.925	KM Geo Mean	50.66
KM SD (logged)	0.706	95% Critical H Value (KM-Log)	1.933
KM Standard Error of Mean (logged)	0.0484	95% H-UCL (KM -Log)	70.87
KM SD (logged)	0.706	95% Critical H Value (KM-Log)	1.933
KM Standard Error of Mean (logged)	0.0484		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	3012	Mean in Log Scale	3.94
SD in Original Scale	22180	SD in Log Scale	1.448
95% t UCL (Assumes normality)	5333	95% H-Stat UCL	186.1

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	70.87

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

1,3-Dinitrobenzene

General Statistics

Total Number of Observations	348	Number of Distinct Observations	67
		Number of Missing Observations	150
Number of Detects	34	Number of Non-Detects	314
Number of Distinct Detects	30	Number of Distinct Non-Detects	41
Minimum Detect	100	Minimum Non-Detect	45.45
Maximum Detect	9850	Maximum Non-Detect	500000
Variance Detects	6023895	Percent Non-Detects	90.23%
Mean Detects	1754	SD Detects	2454
Median Detects	830.5	CV Detects	1.399
Skewness Detects	2.146	Kurtosis Detects	4.283
Mean of Logged Detects	6.659	SD of Logged Detects	1.302

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.68	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.297	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	216.6	KM Standard Error of Mean	50.42
KM SD	918.1	95% KM (BCA) UCL	307.3
95% KM (t) UCL	299.7	95% KM (Percentile Bootstrap) UCL	304.5
95% KM (z) UCL	299.5	95% KM Bootstrap t UCL	347.8
90% KM Chebyshev UCL	367.8	95% KM Chebyshev UCL	436.3
97.5% KM Chebyshev UCL	531.4	99% KM Chebyshev UCL	718.2

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.169	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.789	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.191	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.157	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.74	k star (bias corrected MLE)	0.694
Theta hat (MLE)	2370	Theta star (bias corrected MLE)	2526
nu hat (MLE)	50.32	nu star (bias corrected)	47.21
Mean (detects)	1754		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	171.4
Maximum	9850	Median	0.01
SD	919.1	CV	5.364
k hat (MLE)	0.0946	k star (bias corrected MLE)	0.0957
Theta hat (MLE)	1812	Theta star (bias corrected MLE)	1791
nu hat (MLE)	65.81	nu star (bias corrected)	66.58
Adjusted Level of Significance (β)	0.0493		
Approximate Chi Square Value (66.58, α)	48.8	Adjusted Chi Square Value (66.58, β)	48.74
95% Gamma Approximate UCL (use when n>=50)	233.8	95% Gamma Adjusted UCL (use when n<50)	234.1

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	216.6	SD (KM)	918.1
Variance (KM)	842987	SE of Mean (KM)	50.42
k hat (KM)	0.0556	k star (KM)	0.0571
nu hat (KM)	38.72	nu star (KM)	39.72
theta hat (KM)	3893	theta star (KM)	3795
80% gamma percentile (KM)	45.2	90% gamma percentile (KM)	386.8
95% gamma percentile (KM)	1199	99% gamma percentile (KM)	4463

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (39.72, α)	26.28	Adjusted Chi Square Value (39.72, β)	26.24
95% Gamma Approximate KM-UCL (use when n>=50)	327.3	95% Gamma Adjusted KM-UCL (use when n<50)	327.9

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.933	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.108	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.15	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	181.8	Mean in Log Scale	1.24
SD in Original Scale	917.4	SD in Log Scale	2.822
95% t UCL (assumes normality of ROS data)	262.9	95% Percentile Bootstrap UCL	267.7
95% BCA Bootstrap UCL	290.4	95% Bootstrap t UCL	313.4
95% H-UCL (Log ROS)	341.2		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.108	KM Geo Mean	60.82
KM SD (logged)	0.946	95% Critical H Value (KM-Log)	2.082
KM Standard Error of Mean (logged)	0.0524	95% H-UCL (KM -Log)	105.8
KM SD (logged)	0.946	95% Critical H Value (KM-Log)	2.082
KM Standard Error of Mean (logged)	0.0524		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2103	Mean in Log Scale	4.255

SD in Original Scale	18571	SD in Log Scale	1.423
95% t UCL (Assumes normality)	3745	95% H-Stat UCL	234.7

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	105.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2,4,6-Trinitrotoluene

General Statistics

Total Number of Observations	348	Number of Distinct Observations	122
		Number of Missing Observations	150
Number of Detects	126	Number of Non-Detects	222
Number of Distinct Detects	99	Number of Distinct Non-Detects	29
Minimum Detect	85	Minimum Non-Detect	45.45
Maximum Detect	1.200E+8	Maximum Non-Detect	195
Variance Detects	2.986E+14	Percent Non-Detects	63.79%
Mean Detects	3932226	SD Detects	17281422
Median Detects	1400	CV Detects	4.395
Skewness Detects	5.717	Kurtosis Detects	34.33
Mean of Logged Detects	8.645	SD of Logged Detects	3.707

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.258	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.448	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0793	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	1423767	KM Standard Error of Mean	566627
KM SD	10528256	95% KM (BCA) UCL	2516960
95% KM (t) UCL	2358280	95% KM (Percentile Bootstrap) UCL	2425235
95% KM (z) UCL	2355785	95% KM Bootstrap t UCL	3050806
90% KM Chebyshev UCL	3123647	95% KM Chebyshev UCL	3893636
97.5% KM Chebyshev UCL	4962350	99% KM Chebyshev UCL	7061632

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	19.64	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.996	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.304	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.0944	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.121	k star (bias corrected MLE)	0.124

Theta hat (MLE)	32467316	Theta star (bias corrected MLE)	31834545
nu hat (MLE)	30.52	nu star (bias corrected)	31.13
Mean (detects)	3932226		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1423737
Maximum	1.200E+8	Median	0.01
SD	10543419	CV	7.405
k hat (MLE)	0.0614	k star (bias corrected MLE)	0.0628
Theta hat (MLE)	23187351	Theta star (bias corrected MLE)	22675363
nu hat (MLE)	42.74	nu star (bias corrected)	43.7
Adjusted Level of Significance (β)	0.0493		
Approximate Chi Square Value (43.70, α)	29.54	Adjusted Chi Square Value (43.70, β)	29.49
95% Gamma Approximate UCL (use when n>=50)	2106166	95% Gamma Adjusted UCL (use when n<50)	2109612

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1423767	SD (KM)	10528256
Variance (KM)	1.108E+14	SE of Mean (KM)	566627
k hat (KM)	0.0183	k star (KM)	0.02
nu hat (KM)	12.73	nu star (KM)	13.95
theta hat (KM)	77852750	theta star (KM)	71024987
80% gamma percentile (KM)	593.5	90% gamma percentile (KM)	212064
95% gamma percentile (KM)	3281004	99% gamma percentile (KM)	39775576

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (13.95, α)	6.538	Adjusted Chi Square Value (13.95, β)	6.517
95% Gamma Approximate KM-UCL (use when n>=50)	3038070	95% Gamma Adjusted KM-UCL (use when n<50)	3047918

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.832	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.204	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0793	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1423739	Mean in Log Scale	1.663
SD in Original Scale	10543419	SD in Log Scale	6.503
95% t UCL (assumes normality of ROS data)	2355877	95% Percentile Bootstrap UCL	2427263
95% BCA Bootstrap UCL	2710610	95% Bootstrap t UCL	3472323
95% H-UCL (Log ROS)	1.654E+11		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	5.577	KM Geo Mean	264.2
KM SD (logged)	3.208	95% Critical H Value (KM-Log)	4.52
KM Standard Error of Mean (logged)	0.173	95% H-UCL (KM -Log)	98813
KM SD (logged)	3.208	95% Critical H Value (KM-Log)	4.52
KM Standard Error of Mean (logged)	0.173		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1423768	Mean in Log Scale	5.541
SD in Original Scale	10543415	SD in Log Scale	3.253
95% t UCL (Assumes normality)	2355906	95% H-Stat UCL	112394

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	7061632

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2,4-Dinitrotoluene

General Statistics

Total Number of Observations	155	Number of Distinct Observations	27
		Number of Missing Observations	341
Number of Detects	20	Number of Non-Detects	135
Number of Distinct Detects	18	Number of Distinct Non-Detects	9
Minimum Detect	110	Minimum Non-Detect	50
Maximum Detect	14000000	Maximum Non-Detect	60000
Variance Detects	9.799E+12	Percent Non-Detects	87.1%
Mean Detects	700427	SD Detects	3130395
Median Detects	230	CV Detects	4.469
Skewness Detects	4.472	Kurtosis Detects	20
Mean of Logged Detects	6.163	SD of Logged Detects	2.547

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.236	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.538	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.192	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	90422	KM Standard Error of Mean	92369
KM SD	1120866	95% KM (BCA) UCL	271075
95% KM (t) UCL	243275	95% KM (Percentile Bootstrap) UCL	271056
95% KM (z) UCL	242356	95% KM Bootstrap t UCL	1.204E+9
90% KM Chebyshev UCL	367529	95% KM Chebyshev UCL	493049
97.5% KM Chebyshev UCL	667266	99% KM Chebyshev UCL	1009482

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	6.649	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.976	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.526	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.221	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.11	k star (bias corrected MLE)	0.127
Theta hat (MLE)	6370269	Theta star (bias corrected MLE)	5524178
nu hat (MLE)	4.398	nu star (bias corrected)	5.072
Mean (detects)	700427		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	90378
Maximum	14000000	Median	0.01
SD	1124503	CV	12.44
k hat (MLE)	0.0589	k star (bias corrected MLE)	0.0621
Theta hat (MLE)	1534159	Theta star (bias corrected MLE)	1456034
nu hat (MLE)	18.26	nu star (bias corrected)	19.24
Adjusted Level of Significance (β)	0.0485		
Approximate Chi Square Value (19.24, α)	10.29	Adjusted Chi Square Value (19.24, β)	10.23
95% Gamma Approximate UCL (use when n>=50)	168933	95% Gamma Adjusted UCL (use when n<50)	169948

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	90422	SD (KM)	1120866
Variance (KM)	1.256E+12	SE of Mean (KM)	92369
k hat (KM)	0.00651	k star (KM)	0.0107
nu hat (KM)	2.017	nu star (KM)	3.312
theta hat (KM)	13894110	theta star (KM)	8464078
80% gamma percentile (KM)	0.00407	90% gamma percentile (KM)	249.8
95% gamma percentile (KM)	39582	99% gamma percentile (KM)	2442560

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (3.31, α)	0.47	Adjusted Chi Square Value (3.31, β)	0.462
95% Gamma Approximate KM-UCL (use when n>=50)	636505	95% Gamma Adjusted KM-UCL (use when n<50)	648775

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.485	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.389	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.192	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	90379	Mean in Log Scale	-1.962
SD in Original Scale	1124503	SD in Log Scale	4.838
95% t UCL (assumes normality of ROS data)	239845	95% Percentile Bootstrap UCL	271017
95% BCA Bootstrap UCL	451667	95% Bootstrap t UCL	1.080E+9
95% H-UCL (Log ROS)	268067		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.209	KM Geo Mean	67.3
KM SD (logged)	1.172	95% Critical H Value (KM-Log)	2.371
KM Standard Error of Mean (logged)	0.097	95% H-UCL (KM -Log)	167.3

KM SD (logged)	1.172	95% Critical H Value (KM-Log)	2.371
KM Standard Error of Mean (logged)	0.097		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	90636	Mean in Log Scale	3.86
SD in Original Scale	1124484	SD in Log Scale	1.494
95% t UCL (Assumes normality)	240100	95% H-Stat UCL	200.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	493049

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-Amino-4,6-dinitrotoluene

General Statistics

Total Number of Observations	348	Number of Distinct Observations	104
		Number of Missing Observations	150
Number of Detects	95	Number of Non-Detects	253
Number of Distinct Detects	74	Number of Distinct Non-Detects	36
Minimum Detect	120	Minimum Non-Detect	45.45
Maximum Detect	380000	Maximum Non-Detect	500000
Variance Detects	1.561E+9	Percent Non-Detects	72.7%
Mean Detects	8087	SD Detects	39507
Median Detects	900	CV Detects	4.885
Skewness Detects	9.094	Kurtosis Detects	86
Mean of Logged Detects	7.104	SD of Logged Detects	1.661

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.202	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.42	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0911	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	2260	KM Standard Error of Mean	1127
KM SD	20876	95% KM (BCA) UCL	4536
95% KM (t) UCL	4119	95% KM (Percentile Bootstrap) UCL	4402
95% KM (z) UCL	4114	95% KM Bootstrap t UCL	10970
90% KM Chebyshev UCL	5641	95% KM Chebyshev UCL	7172
97.5% KM Chebyshev UCL	9297	99% KM Chebyshev UCL	13472

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	8.302	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.854	Detected Data Not Gamma Distributed at 5% Significance Level	

K-S Test Statistic	0.22	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.099	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.354	k star (bias corrected MLE)	0.35
Theta hat (MLE)	22823	Theta star (bias corrected MLE)	23095
nu hat (MLE)	67.33	nu star (bias corrected)	66.53
Mean (detects)	8087		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2208
Maximum	380000	Median	0.01
SD	20877	CV	9.456
k hat (MLE)	0.0903	k star (bias corrected MLE)	0.0914
Theta hat (MLE)	24452	Theta star (bias corrected MLE)	24147
nu hat (MLE)	62.84	nu star (bias corrected)	63.63
Adjusted Level of Significance (β)	0.0493		
Approximate Chi Square Value (63.63, α)	46.28	Adjusted Chi Square Value (63.63, β)	46.22
95% Gamma Approximate UCL (use when n>=50)	3035	95% Gamma Adjusted UCL (use when n<50)	3039

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	2260	SD (KM)	20876
Variance (KM)	4.358E+8	SE of Mean (KM)	1127
k hat (KM)	0.0117	k star (KM)	0.0135
nu hat (KM)	8.158	nu star (KM)	9.421
theta hat (KM)	192818	theta star (KM)	166970
80% gamma percentile (KM)	0.00657	90% gamma percentile (KM)	39.5
95% gamma percentile (KM)	2171	99% gamma percentile (KM)	63603

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (9.42, α)	3.584	Adjusted Chi Square Value (9.42, β)	3.569
95% Gamma Approximate KM-UCL (use when n>=50)	5942	95% Gamma Adjusted KM-UCL (use when n<50)	5967

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.935	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	1.1444E-4	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0998	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0911	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2223	Mean in Log Scale	3.236
SD in Original Scale	20875	SD in Log Scale	3.038
95% t UCL (assumes normality of ROS data)	4069	95% Percentile Bootstrap UCL	4432
95% BCA Bootstrap UCL	5931	95% Bootstrap t UCL	10612
95% H-UCL (Log ROS)	5180		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.745	KM Geo Mean	115
KM SD (logged)	1.706	95% Critical H Value (KM-Log)	2.788
KM Standard Error of Mean (logged)	0.0931	95% H-UCL (KM -Log)	636.5
KM SD (logged)	1.706	95% Critical H Value (KM-Log)	2.788
KM Standard Error of Mean (logged)	0.0931		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4042	Mean in Log Scale	4.844
SD in Original Scale	27752	SD in Log Scale	1.929
95% t UCL (Assumes normality)	6495	95% H-Stat UCL	1116

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	7172

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

4-Amino-2,6-dinitrotoluene

General Statistics

Total Number of Observations	348	Number of Distinct Observations	112
		Number of Missing Observations	150
Number of Detects	97	Number of Non-Detects	251
Number of Distinct Detects	73	Number of Distinct Non-Detects	47
Minimum Detect	104	Minimum Non-Detect	45.45
Maximum Detect	540000	Maximum Non-Detect	500000
Variance Detects	3.068E+9	Percent Non-Detects	72.13%
Mean Detects	9838	SD Detects	55391
Median Detects	950	CV Detects	5.63
Skewness Detects	9.352	Kurtosis Detects	90
Mean of Logged Detects	7.07	SD of Logged Detects	1.704

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.176	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.43	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0902	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	2792	KM Standard Error of Mean	1586
KM SD	29427	95% KM (BCA) UCL	6001
95% KM (t) UCL	5408	95% KM (Percentile Bootstrap) UCL	5780
95% KM (z) UCL	5401	95% KM Bootstrap t UCL	19916
90% KM Chebyshev UCL	7550	95% KM Chebyshev UCL	9705
97.5% KM Chebyshev UCL	12697	99% KM Chebyshev UCL	18572

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	9.712	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.863	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.228	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.0984	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.321	k star (bias corrected MLE)	0.318
Theta hat (MLE)	30636	Theta star (bias corrected MLE)	30930
nu hat (MLE)	62.3	nu star (bias corrected)	61.71
Mean (detects)	9838		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2742
Maximum	540000	Median	0.01
SD	29468	CV	10.75
k hat (MLE)	0.0889	k star (bias corrected MLE)	0.0901
Theta hat (MLE)	30843	Theta star (bias corrected MLE)	30450
nu hat (MLE)	61.88	nu star (bias corrected)	62.68
Adjusted Level of Significance (β)	0.0493		
Approximate Chi Square Value (62.68, α)	45.47	Adjusted Chi Square Value (62.68, β)	45.41
95% Gamma Approximate UCL (use when n>=50)	3780	95% Gamma Adjusted UCL (use when n<50)	3785

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	2792	SD (KM)	29427
Variance (KM)	8.659E+8	SE of Mean (KM)	1586
k hat (KM)	0.00901	k star (KM)	0.0108
nu hat (KM)	6.268	nu star (KM)	7.547
theta hat (KM)	310092	theta star (KM)	257528
80% gamma percentile (KM)	1.6858E-4	90% gamma percentile (KM)	8.794
95% gamma percentile (KM)	1294	99% gamma percentile (KM)	75719

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (7.55, α)	2.476	Adjusted Chi Square Value (7.55, β)	2.464
95% Gamma Approximate KM-UCL (use when n>=50)	8513	95% Gamma Adjusted KM-UCL (use when n<50)	8555

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.937	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	1.6627E-4	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0952	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0902	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2756	Mean in Log Scale	3.22
SD in Original Scale	29466	SD in Log Scale	3.032
95% t UCL (assumes normality of ROS data)	5361	95% Percentile Bootstrap UCL	5889
95% BCA Bootstrap UCL	8119	95% Bootstrap t UCL	19157

95% H-UCL (Log ROS)	4999

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.765	KM Geo Mean	117.3
KM SD (logged)	1.715	95% Critical H Value (KM-Log)	2.797
KM Standard Error of Mean (logged)	0.0938	95% H-UCL (KM -Log)	661.3
KM SD (logged)	1.715	95% Critical H Value (KM-Log)	2.797
KM Standard Error of Mean (logged)	0.0938		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4576	Mean in Log Scale	4.908
SD in Original Scale	34651	SD in Log Scale	1.924
95% t UCL (Assumes normality)	7639	95% H-Stat UCL	1178

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	9705

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nitrocellulose

General Statistics

Total Number of Observations	152	Number of Distinct Observations	68
		Number of Missing Observations	346
Number of Detects	61	Number of Non-Detects	91
Number of Distinct Detects	53	Number of Distinct Non-Detects	15
Minimum Detect	37600	Minimum Non-Detect	20.75
Maximum Detect	28000000	Maximum Non-Detect	75000
Variance Detects	2.098E+13	Percent Non-Detects	59.87%
Mean Detects	1400459	SD Detects	4580065
Median Detects	134000	CV Detects	3.27
Skewness Detects	4.98	Kurtosis Detects	25.42
Mean of Logged Detects	12.44	SD of Logged Detects	1.505

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.323	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.383	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.113	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	570187	KM Standard Error of Mean	241843
KM SD	2956824	95% KM (BCA) UCL	1062987
95% KM (t) UCL	970439	95% KM (Percentile Bootstrap) UCL	991732
95% KM (z) UCL	967983	95% KM Bootstrap t UCL	2037961

90% KM Chebyshev UCL	1295715	95% KM Chebyshev UCL	1624355
97.5% KM Chebyshev UCL	2080494	99% KM Chebyshev UCL	2976492

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	8.451	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.843	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.307	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.122	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.386	k star (bias corrected MLE)	0.378
Theta hat (MLE)	3628560	Theta star (bias corrected MLE)	3705878
nu hat (MLE)	47.09	nu star (bias corrected)	46.1
Mean (detects)	1400459		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	562026
Maximum	28000000	Median	0.01
SD	2968093	CV	5.281
k hat (MLE)	0.0762	k star (bias corrected MLE)	0.0791
Theta hat (MLE)	7374237	Theta star (bias corrected MLE)	7105572
nu hat (MLE)	23.17	nu star (bias corrected)	24.05
Adjusted Level of Significance (β)	0.0484		
Approximate Chi Square Value (24.05, α)	13.88	Adjusted Chi Square Value (24.05, β)	13.81
95% Gamma Approximate UCL (use when n>=50)	973419	95% Gamma Adjusted UCL (use when n<50)	978632

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	570187	SD (KM)	2956824
Variance (KM)	8.743E+12	SE of Mean (KM)	241843
k hat (KM)	0.0372	k star (KM)	0.0408
nu hat (KM)	11.3	nu star (KM)	12.41
theta hat (KM)	15333221	theta star (KM)	13962030
80% gamma percentile (KM)	34402	90% gamma percentile (KM)	641328
95% gamma percentile (KM)	2767540	99% gamma percentile (KM)	13377869

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (12.41, α)	5.502	Adjusted Chi Square Value (12.41, β)	5.457
95% Gamma Approximate KM-UCL (use when n>=50)	1286701	95% Gamma Adjusted KM-UCL (use when n<50)	1297097

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.823	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	1.1765E-9	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.258	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.113	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	568268	Mean in Log Scale	10.04

SD in Original Scale	2966922	SD in Log Scale	2.466
95% t UCL (assumes normality of ROS data)	966544	95% Percentile Bootstrap UCL	965672
95% BCA Bootstrap UCL	1202015	95% Bootstrap t UCL	2075572
95% H-UCL (Log ROS)	1044604		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	8.054	KM Geo Mean	3146
KM SD (logged)	4.571	95% Critical H Value (KM-Log)	6.693
KM Standard Error of Mean (logged)	0.627	95% H-UCL (KM -Log)	1.306E+9
KM SD (logged)	4.571	95% Critical H Value (KM-Log)	6.693
KM Standard Error of Mean (logged)	0.627		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	580517	Mean in Log Scale	10.94
SD in Original Scale	2964614	SD in Log Scale	2.109
95% t UCL (Assumes normality)	978483	95% H-Stat UCL	933665

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1624355

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nitroglycerin

General Statistics

Total Number of Observations	350	Number of Distinct Observations	119
		Number of Missing Observations	148
Number of Detects	44	Number of Non-Detects	306
Number of Distinct Detects	39	Number of Distinct Non-Detects	82
Minimum Detect	120	Minimum Non-Detect	50
Maximum Detect	4.760E+8	Maximum Non-Detect	10000000
Variance Detects	5.149E+15	Percent Non-Detects	87.43%
Mean Detects	10840551	SD Detects	71756257
Median Detects	9150	CV Detects	6.619
Skewness Detects	6.633	Kurtosis Detects	44
Mean of Logged Detects	8.996	SD of Logged Detects	2.604

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.154	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.944	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.537	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.132	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	1362930	KM Standard Error of Mean	1373748

KM SD	25406744	95% KM (BCA) UCL	4083786
95% KM (t) UCL	3628558	95% KM (Percentile Bootstrap) UCL	4082787
95% KM (z) UCL	3622545	95% KM Bootstrap t UCL	3.217E+9
90% KM Chebyshev UCL	5484174	95% KM Chebyshev UCL	7350959
97.5% KM Chebyshev UCL	9941984	99% KM Chebyshev UCL	15031551

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	11.54	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.995	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.472	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.153	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.111	k star (bias corrected MLE)	0.119
Theta hat (MLE)	97467508	Theta star (bias corrected MLE)	91257814
nu hat (MLE)	9.788	nu star (bias corrected)	10.45
Mean (detects)	10840551		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1362812
Maximum	4.760E+8	Median	0.01
SD	25443123	CV	18.67
k hat (MLE)	0.0513	k star (bias corrected MLE)	0.0528
Theta hat (MLE)	26567502	Theta star (bias corrected MLE)	25829773
nu hat (MLE)	35.91	nu star (bias corrected)	36.93
Adjusted Level of Significance (β)	0.0493		
Approximate Chi Square Value (36.93, α)	24.02	Adjusted Chi Square Value (36.93, β)	23.98
95% Gamma Approximate UCL (use when n>=50)	2095372	95% Gamma Adjusted UCL (use when n<50)	2099125

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1362930	SD (KM)	25406744
Variance (KM)	6.455E+14	SE of Mean (KM)	1373748
k hat (KM)	0.00288	k star (KM)	0.00476
nu hat (KM)	2.014	nu star (KM)	3.33
theta hat (KM)	4.736E+8	theta star (KM)	2.865E+8
80% gamma percentile (KM)	6.910E-13	90% gamma percentile (KM)	0.039
95% gamma percentile (KM)	3358	99% gamma percentile (KM)	20978341

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (3.33, α)	0.477	Adjusted Chi Square Value (3.33, β)	0.473
95% Gamma Approximate KM-UCL (use when n>=50)	9522098	95% Gamma Adjusted KM-UCL (use when n<50)	9602113

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.874	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.944	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.12	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1362824	Mean in Log Scale	0.448
SD in Original Scale	25443123	SD in Log Scale	4.641
95% t UCL (assumes normality of ROS data)	3605766	95% Percentile Bootstrap UCL	4082738
95% BCA Bootstrap UCL	5443732	95% Bootstrap t UCL	3.147E+9
95% H-UCL (Log ROS)	355853		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.641	KM Geo Mean	103.6
KM SD (logged)	1.958	95% Critical H Value (KM-Log)	3.059
KM Standard Error of Mean (logged)	0.112	95% H-UCL (KM -Log)	971
KM SD (logged)	1.958	95% Critical H Value (KM-Log)	3.059
KM Standard Error of Mean (logged)	0.112		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1380546	Mean in Log Scale	6.031
SD in Original Scale	25443587	SD in Log Scale	2.519
95% t UCL (Assumes normality)	3623529	95% H-Stat UCL	16236

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 971

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Pentaerythritol Tetranitrate

General Statistics

Total Number of Observations	170	Number of Distinct Observations	24
		Number of Missing Observations	326
Number of Detects	4	Number of Non-Detects	166
Number of Distinct Detects	4	Number of Distinct Non-Detects	20
Minimum Detect	1600	Minimum Non-Detect	50
Maximum Detect	1200000	Maximum Non-Detect	10000000
Variance Detects	3.236E+11	Percent Non-Detects	97.65%
Mean Detects	366350	SD Detects	568849
Median Detects	131900	CV Detects	1.553
Skewness Detects	1.746	Kurtosis Detects	2.993
Mean of Logged Detects	10.52	SD of Logged Detects	3.212

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.773	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.324	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	8721	KM Standard Error of Mean	8354
KM SD	94047	95% KM (BCA) UCL	N/A
95% KM (t) UCL	22537	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	22462	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	33782	95% KM Chebyshev UCL	45133
97.5% KM Chebyshev UCL	60889	99% KM Chebyshev UCL	91838

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.355	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.704	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.304	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.418	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.301	k star (bias corrected MLE)	0.242
Theta hat (MLE)	1217099	Theta star (bias corrected MLE)	1514360
nu hat (MLE)	2.408	nu star (bias corrected)	1.935
Mean (detects)	366350		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	8620
Maximum	1200000	Median	0.01
SD	94054	CV	10.91
k hat (MLE)	0.0642	k star (bias corrected MLE)	0.067
Theta hat (MLE)	134307	Theta star (bias corrected MLE)	128714
nu hat (MLE)	21.82	nu star (bias corrected)	22.77
Adjusted Level of Significance (β)	0.0486		
Approximate Chi Square Value (22.77, α)	12.92	Adjusted Chi Square Value (22.77, β)	12.85
95% Gamma Approximate UCL (use when n>=50)	15195	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	8721	SD (KM)	94047
Variance (KM)	8.845E+9	SE of Mean (KM)	8354
k hat (KM)	0.0086	k star (KM)	0.0124
nu hat (KM)	2.924	nu star (KM)	4.206
theta hat (KM)	1014165	theta star (KM)	705074
80% gamma percentile (KM)	0.00585	90% gamma percentile (KM)	79.93
95% gamma percentile (KM)	6381	99% gamma percentile (KM)	242749

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (4.21, α)	0.805	Adjusted Chi Square Value (4.21, β)	0.793
95% Gamma Approximate KM-UCL (use when n>=50)	45588	95% Gamma Adjusted KM-UCL (use when n<50)	46279

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level

Lilliefors Test Statistic	0.261	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	8621	Mean in Log Scale	-15.89
SD in Original Scale	94053	SD in Log Scale	10.35
95% t UCL (assumes normality of ROS data)	20552	95% Percentile Bootstrap UCL	22716
95% BCA Bootstrap UCL	35367	95% Bootstrap t UCL	4681357
95% H-UCL (Log ROS)	N/A		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.071	KM Geo Mean	58.61
KM SD (logged)	1.096	95% Critical H Value (KM-Log)	2.248
KM Standard Error of Mean (logged)	0.0977	95% H-UCL (KM -Log)	129.1
KM SD (logged)	1.096	95% Critical H Value (KM-Log)	2.248
KM Standard Error of Mean (logged)	0.0977		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	38865	Mean in Log Scale	4.019
SD in Original Scale	394158	SD in Log Scale	1.964
95% t UCL (Assumes normality)	88864	95% H-Stat UCL	616.9

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	22537

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Aluminum

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	258
Minimum	17600	Mean	24829
Maximum	46400	Median	21500
SD	10196	Std. Error of Mean	3854
Coefficient of Variation	0.411	Skewness	2.019

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.744	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Data Not Normal at 5% Significance Level	

Lilliefors Test Statistic	0.297	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32317	95% Adjusted-CLT UCL (Chen-1995)	34310
		95% Modified-t UCL (Johnson-1978)	32807

Gamma GOF Test

A-D Test Statistic	0.665	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.709	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.275	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.312	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	9.004	k star (bias corrected MLE)	5.24
Theta hat (MLE)	2757	Theta star (bias corrected MLE)	4738
nu hat (MLE)	126.1	nu star (bias corrected)	73.37
MLE Mean (bias corrected)	24829	MLE Sd (bias corrected)	10846
		Approximate Chi Square Value (0.05)	54.64
Adjusted Level of Significance	0.0158	Adjusted Chi Square Value	49.79

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	33337	95% Adjusted Gamma UCL (use when n<50)	36583

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.83	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.803	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.253	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.304	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	9.776	Mean of logged Data	10.06
Maximum of Logged Data	10.75	SD of logged Data	0.342

Assuming Lognormal Distribution

95% H-UCL	34111	90% Chebyshev (MVUE) UCL	34247
95% Chebyshev (MVUE) UCL	38590	97.5% Chebyshev (MVUE) UCL	44617
99% Chebyshev (MVUE) UCL	56455		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	31167	95% Jackknife UCL	32317
95% Standard Bootstrap UCL	30706	95% Bootstrap-t UCL	49740
95% Hall's Bootstrap UCL	60186	95% Percentile Bootstrap UCL	31229
95% BCA Bootstrap UCL	33943		
90% Chebyshev(Mean, Sd) UCL	36389	95% Chebyshev(Mean, Sd) UCL	41626
97.5% Chebyshev(Mean, Sd) UCL	48894	99% Chebyshev(Mean, Sd) UCL	63172

Suggested UCL to Use

95% Student's-t UCL 32317

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Antimony

General Statistics

Total Number of Observations	244	Number of Distinct Observations	134
		Number of Missing Observations	254
Number of Detects	72	Number of Non-Detects	172
Number of Distinct Detects	61	Number of Distinct Non-Detects	84
Minimum Detect	0.21	Minimum Non-Detect	0.16
Maximum Detect	27	Maximum Non-Detect	14.4
Variance Detects	17.8	Percent Non-Detects	70.49%
Mean Detects	2.301	SD Detects	4.219
Median Detects	1.3	CV Detects	1.833
Skewness Detects	4.697	Kurtosis Detects	23
Mean of Logged Detects	0.321	SD of Logged Detects	0.844

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.388	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.375	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.104	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.825	KM Standard Error of Mean	0.16
KM SD	2.473	95% KM (BCA) UCL	1.152
95% KM (t) UCL	1.089	95% KM (Percentile Bootstrap) UCL	1.099
95% KM (z) UCL	1.088	95% KM Bootstrap t UCL	1.306
90% KM Chebyshev UCL	1.305	95% KM Chebyshev UCL	1.522
97.5% KM Chebyshev UCL	1.823	99% KM Chebyshev UCL	2.415

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	7.235	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.778	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.259	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.108	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.113	k star (bias corrected MLE)	1.076
Theta hat (MLE)	2.066	Theta star (bias corrected MLE)	2.138
nu hat (MLE)	160.3	nu star (bias corrected)	155
Mean (detects)	2.301		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.686
Maximum	27	Median	0.01
SD	2.509	CV	3.658
k hat (MLE)	0.255	k star (bias corrected MLE)	0.255
Theta hat (MLE)	2.689	Theta star (bias corrected MLE)	2.693
nu hat (MLE)	124.5	nu star (bias corrected)	124.3
Adjusted Level of Significance (β)	0.049		
Approximate Chi Square Value (124.32, α)	99.57	Adjusted Chi Square Value (124.32, β)	99.44
95% Gamma Approximate UCL (use when n>=50)	0.857	95% Gamma Adjusted UCL (use when n<50)	0.858

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.825	SD (KM)	2.473
Variance (KM)	6.115	SE of Mean (KM)	0.16
k hat (KM)	0.111	k star (KM)	0.113
nu hat (KM)	54.34	nu star (KM)	55
theta hat (KM)	7.411	theta star (KM)	7.321
80% gamma percentile (KM)	0.672	90% gamma percentile (KM)	2.295
95% gamma percentile (KM)	4.743	99% gamma percentile (KM)	12.34

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (55.00, α)	38.96	Adjusted Chi Square Value (55.00, β)	38.88
95% Gamma Approximate KM-UCL (use when n>=50)	1.165	95% Gamma Adjusted KM-UCL (use when n<50)	1.167

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.875	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	5.6539E-8	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.166	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.104	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.796	Mean in Log Scale	-1.288
SD in Original Scale	2.482	SD in Log Scale	1.245
95% t UCL (assumes normality of ROS data)	1.058	95% Percentile Bootstrap UCL	1.096
95% BCA Bootstrap UCL	1.163	95% Bootstrap t UCL	1.364
95% H-UCL (Log ROS)	0.723		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.104	KM Geo Mean	0.332
KM SD (logged)	1.078	95% Critical H Value (KM-Log)	2.223
KM Standard Error of Mean (logged)	0.0755	95% H-UCL (KM -Log)	0.691
KM SD (logged)	1.078	95% Critical H Value (KM-Log)	2.223
KM Standard Error of Mean (logged)	0.0755		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.932	Mean in Log Scale	-0.947
SD in Original Scale	2.519	SD in Log Scale	1.152

95% t UCL (Assumes normality)	1.198	95% H-Stat UCL	0.893

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1.522

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	244	Number of Distinct Observations	171
		Number of Missing Observations	254
Number of Detects	240	Number of Non-Detects	4
Number of Distinct Detects	168	Number of Distinct Non-Detects	4
Minimum Detect	1.57	Minimum Non-Detect	1.035
Maximum Detect	334	Maximum Non-Detect	14.4
Variance Detects	1145	Percent Non-Detects	1.639%
Mean Detects	11.83	SD Detects	33.84
Median Detects	4.3	CV Detects	2.86
Skewness Detects	6.88	Kurtosis Detects	53.84
Mean of Logged Detects	1.684	SD of Logged Detects	0.895

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.291	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0576	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	11.68	KM Standard Error of Mean	2.15
KM SD	33.51	95% KM (BCA) UCL	15.8
95% KM (t) UCL	15.23	95% KM (Percentile Bootstrap) UCL	15.37
95% KM (z) UCL	15.22	95% KM Bootstrap t UCL	17.28
90% KM Chebyshev UCL	18.13	95% KM Chebyshev UCL	21.05
97.5% KM Chebyshev UCL	25.11	99% KM Chebyshev UCL	33.07

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	37.56	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.796	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.326	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.0614	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.759	k star (bias corrected MLE)	0.753
Theta hat (MLE)	15.58	Theta star (bias corrected MLE)	15.72

nu hat (MLE)	364.5	nu star (bias corrected)	361.3
Mean (detects)	11.83		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	11.64
Maximum	334	Median	4.3
SD	33.59	CV	2.886
k hat (MLE)	0.709	k star (bias corrected MLE)	0.703
Theta hat (MLE)	16.41	Theta star (bias corrected MLE)	16.55
nu hat (MLE)	346.2	nu star (bias corrected)	343.3
Adjusted Level of Significance (β)	0.049		
Approximate Chi Square Value (343.27, α)	301.3	Adjusted Chi Square Value (343.27, β)	301.1
95% Gamma Approximate UCL (use when n>=50)	13.26	95% Gamma Adjusted UCL (use when n<50)	13.27

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	11.68	SD (KM)	33.51
Variance (KM)	1123	SE of Mean (KM)	2.15
k hat (KM)	0.121	k star (KM)	0.123
nu hat (KM)	59.29	nu star (KM)	59.89
theta hat (KM)	96.15	theta star (KM)	95.18
80% gamma percentile (KM)	10.5	90% gamma percentile (KM)	33.3
95% gamma percentile (KM)	66.46	99% gamma percentile (KM)	167.1

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (59.89, α)	43.1	Adjusted Chi Square Value (59.89, β)	43.01
95% Gamma Approximate KM-UCL (use when n>=50)	16.23	95% Gamma Adjusted KM-UCL (use when n<50)	16.27

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.769	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.218	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0576	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	11.68	Mean in Log Scale	1.665
SD in Original Scale	33.58	SD in Log Scale	0.909
95% t UCL (assumes normality of ROS data)	15.23	95% Percentile Bootstrap UCL	15.44
95% BCA Bootstrap UCL	16.34	95% Bootstrap t UCL	17.49
95% H-UCL (Log ROS)	9.02		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.668	KM Geo Mean	5.301
KM SD (logged)	0.899	95% Critical H Value (KM-Log)	2.073
KM Standard Error of Mean (logged)	0.0577	95% H-UCL (KM -Log)	8.951
KM SD (logged)	0.899	95% Critical H Value (KM-Log)	2.073
KM Standard Error of Mean (logged)	0.0577		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	11.69	Mean in Log Scale	1.666
SD in Original Scale	33.58	SD in Log Scale	0.912
95% t UCL (Assumes normality)	15.24	95% H-Stat UCL	9.065

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	21.05

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Cadmium

General Statistics

Total Number of Observations	244	Number of Distinct Observations	164
		Number of Missing Observations	254
Number of Detects	105	Number of Non-Detects	139
Number of Distinct Detects	86	Number of Distinct Non-Detects	87
Minimum Detect	0.03	Minimum Non-Detect	0.0275
Maximum Detect	13.1	Maximum Non-Detect	1.54
Variance Detects	2.364	Percent Non-Detects	56.97%
Mean Detects	0.75	SD Detects	1.537
Median Detects	0.44	CV Detects	2.05
Skewness Detects	6.501	Kurtosis Detects	47.03
Mean of Logged Detects	-0.948	SD of Logged Detects	1.102

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.379	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.321	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0867	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.381	KM Standard Error of Mean	0.0684
KM SD	1.058	95% KM (BCA) UCL	0.507
95% KM (t) UCL	0.494	95% KM (Percentile Bootstrap) UCL	0.511
95% KM (z) UCL	0.494	95% KM Bootstrap t UCL	0.63
90% KM Chebyshev UCL	0.587	95% KM Chebyshev UCL	0.68
97.5% KM Chebyshev UCL	0.809	99% KM Chebyshev UCL	1.062

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.519	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.788	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.148	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.0912	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.887	k star (bias corrected MLE)	0.868
Theta hat (MLE)	0.846	Theta star (bias corrected MLE)	0.864
nu hat (MLE)	186.3	nu star (bias corrected)	182.3
Mean (detects)	0.75		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.331
Maximum	13.1	Median	0.01
SD	1.07	CV	3.238
k hat (MLE)	0.356	k star (bias corrected MLE)	0.354
Theta hat (MLE)	0.93	Theta star (bias corrected MLE)	0.934
nu hat (MLE)	173.5	nu star (bias corrected)	172.7
Adjusted Level of Significance (β)	0.049		
Approximate Chi Square Value (172.72, α)	143.3	Adjusted Chi Square Value (172.72, β)	143.2
95% Gamma Approximate UCL (use when n>=50)	0.398	95% Gamma Adjusted UCL (use when n<50)	0.399

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.381	SD (KM)	1.058
Variance (KM)	1.12	SE of Mean (KM)	0.0684
k hat (KM)	0.13	k star (KM)	0.131
nu hat (KM)	63.4	nu star (KM)	63.96
theta hat (KM)	2.936	theta star (KM)	2.911
80% gamma percentile (KM)	0.367	90% gamma percentile (KM)	1.105
95% gamma percentile (KM)	2.15	99% gamma percentile (KM)	5.274

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (63.96, α)	46.56	Adjusted Chi Square Value (63.96, β)	46.47
95% Gamma Approximate KM-UCL (use when n>=50)	0.524	95% Gamma Adjusted KM-UCL (use when n<50)	0.525

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.972	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.163	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0805	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0867	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.37	Mean in Log Scale	-1.909
SD in Original Scale	1.059	SD in Log Scale	1.188
95% t UCL (assumes normality of ROS data)	0.482	95% Percentile Bootstrap UCL	0.49
95% BCA Bootstrap UCL	0.547	95% Bootstrap t UCL	0.636
95% H-UCL (Log ROS)	0.358		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.905	KM Geo Mean	0.149
KM SD (logged)	1.237	95% Critical H Value (KM-Log)	2.369
KM Standard Error of Mean (logged)	0.101	95% H-UCL (KM -Log)	0.386
KM SD (logged)	1.237	95% Critical H Value (KM-Log)	2.369

KM Standard Error of Mean (logged)	0.101

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.432	Mean in Log Scale	-1.579
SD in Original Scale	1.056	SD in Log Scale	1.101
95% t UCL (Assumes normality)	0.544	95% H-Stat UCL	0.443

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	0.386

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Chromium

General Statistics

Total Number of Observations	155	Number of Distinct Observations	101
		Number of Missing Observations	343
Minimum	4.4	Mean	18.1
Maximum	76	Median	16.3
SD	10.27	Std. Error of Mean	0.825
Coefficient of Variation	0.567	Skewness	3.365

Normal GOF Test

Shapiro Wilk Test Statistic	0.671	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.236	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0716	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.47	95% Adjusted-CLT UCL (Chen-1995)	19.7
		95% Modified-t UCL (Johnson-1978)	19.5

Gamma GOF Test

A-D Test Statistic	6.105	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.755	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.159	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.0754	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	5.084	k star (bias corrected MLE)	4.99
Theta hat (MLE)	3.561	Theta star (bias corrected MLE)	3.628

nu hat (MLE)	1576	nu star (bias corrected)	1547
MLE Mean (bias corrected)	18.1	MLE Sd (bias corrected)	8.104
		Approximate Chi Square Value (0.05)	1456
Adjusted Level of Significance	0.0485	Adjusted Chi Square Value	1456

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	19.22	95% Adjusted Gamma UCL (use when n<50)	19.23

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.928	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	2.2707E-9	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.126	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.0716	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.482	Mean of logged Data	2.794
Maximum of Logged Data	4.331	SD of logged Data	0.425

Assuming Lognormal Distribution

95% H-UCL	19.03	90% Chebyshev (MVUE) UCL	19.79
95% Chebyshev (MVUE) UCL	20.66	97.5% Chebyshev (MVUE) UCL	21.85
99% Chebyshev (MVUE) UCL	24.21		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	19.46	95% Jackknife UCL	19.47
95% Standard Bootstrap UCL	19.47	95% Bootstrap-t UCL	19.7
95% Hall's Bootstrap UCL	19.65	95% Percentile Bootstrap UCL	19.62
95% BCA Bootstrap UCL	19.9		
90% Chebyshev(Mean, Sd) UCL	20.58	95% Chebyshev(Mean, Sd) UCL	21.7
97.5% Chebyshev(Mean, Sd) UCL	23.25	99% Chebyshev(Mean, Sd) UCL	26.31

Suggested UCL to Use

95% Student's-t UCL	19.47	or 95% Modified-t UCL	19.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Cobalt

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	258
Minimum	4.43	Mean	8.057
Maximum	17.9	Median	6.2
SD	4.579	Std. Error of Mean	1.731
Coefficient of Variation	0.568	Skewness	2.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.744	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.42	95% Adjusted-CLT UCL (Chen-1995)	12.38
		95% Modified-t UCL (Johnson-1978)	11.65

Gamma GOF Test

A-D Test Statistic	0.567	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.71	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.243	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.313	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	5.003	k star (bias corrected MLE)	2.954
Theta hat (MLE)	1.61	Theta star (bias corrected MLE)	2.727
nu hat (MLE)	70.05	nu star (bias corrected)	41.36
MLE Mean (bias corrected)	8.057	MLE Sd (bias corrected)	4.688
		Approximate Chi Square Value (0.05)	27.62
Adjusted Level of Significance	0.0158	Adjusted Chi Square Value	24.28

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	12.07	95% Adjusted Gamma UCL (use when n<50)	13.72

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.803	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.216	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.304	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.488	Mean of logged Data	1.983
Maximum of Logged Data	2.885	SD of logged Data	0.458

Assuming Lognormal Distribution

95% H-UCL	12.58	90% Chebyshev (MVUE) UCL	12.08
95% Chebyshev (MVUE) UCL	13.96	97.5% Chebyshev (MVUE) UCL	16.57
99% Chebyshev (MVUE) UCL	21.68		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	10.9	95% Jackknife UCL	11.42
95% Standard Bootstrap UCL	10.71	95% Bootstrap-t UCL	16.35
95% Hall's Bootstrap UCL	21.55	95% Percentile Bootstrap UCL	11.06
95% BCA Bootstrap UCL	12.38		
90% Chebyshev(Mean, Sd) UCL	13.25	95% Chebyshev(Mean, Sd) UCL	15.6
97.5% Chebyshev(Mean, Sd) UCL	18.87	99% Chebyshev(Mean, Sd) UCL	25.28

Suggested UCL to Use

95% Adjusted Gamma UCL	13.72

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	244	Number of Distinct Observations	168
		Number of Missing Observations	254
Minimum	3.09	Mean	430.5
Maximum	48500	Median	16.4
SD	4314	Std. Error of Mean	276.1
Coefficient of Variation	10.02	Skewness	10.96

Normal GOF Test

Shapiro Wilk Test Statistic	0.0909	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.498	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0571	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	886.4	95% Adjusted-CLT UCL (Chen-1995)	1092
		95% Modified-t UCL (Johnson-1978)	918.7

Gamma GOF Test

A-D Test Statistic	73.84	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.903	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.442	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.0646	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.235	k star (bias corrected MLE)	0.235
Theta hat (MLE)	1834	Theta star (bias corrected MLE)	1835
nu hat (MLE)	114.5	nu star (bias corrected)	114.5
MLE Mean (bias corrected)	430.5	MLE Sd (bias corrected)	888.9
		Approximate Chi Square Value (0.05)	90.76
Adjusted Level of Significance	0.049	Adjusted Chi Square Value	90.63

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	542.9	95% Adjusted Gamma UCL (use when n<50)	543.6

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.693	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.193	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.0571	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.128	Mean of logged Data	3.008
Maximum of Logged Data	10.79	SD of logged Data	1.085

Assuming Lognormal Distribution

95% H-UCL	42.56	90% Chebyshev (MVUE) UCL	45.74
95% Chebyshev (MVUE) UCL	50.02	97.5% Chebyshev (MVUE) UCL	55.95
99% Chebyshev (MVUE) UCL	67.6		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	884.7	95% Jackknife UCL	886.4
95% Standard Bootstrap UCL	884.7	95% Bootstrap-t UCL	14280
95% Hall's Bootstrap UCL	14531	95% Percentile Bootstrap UCL	999.3
95% BCA Bootstrap UCL	1219		
90% Chebyshev(Mean, Sd) UCL	1259	95% Chebyshev(Mean, Sd) UCL	1634
97.5% Chebyshev(Mean, Sd) UCL	2155	99% Chebyshev(Mean, Sd) UCL	3178

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1634

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Lead

General Statistics

Total Number of Observations	244	Number of Distinct Observations	226
		Number of Missing Observations	254
Minimum	1.9	Mean	1264
Maximum	93300	Median	58.65
SD	6708	Std. Error of Mean	429.4
Coefficient of Variation	5.306	Skewness	11.37

Normal GOF Test

Shapiro Wilk Test Statistic	0.206	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.425	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0571	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1973	95% Adjusted-CLT UCL (Chen-1995)	2305
		95% Modified-t UCL (Johnson-1978)	2025

Gamma GOF Test

A-D Test Statistic	24.05	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.892	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.222	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.0643	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.256	k star (bias corrected MLE)	0.255
Theta hat (MLE)	4944	Theta star (bias corrected MLE)	4952
nu hat (MLE)	124.8	nu star (bias corrected)	124.6
MLE Mean (bias corrected)	1264	MLE Sd (bias corrected)	2502
		Approximate Chi Square Value (0.05)	99.8
Adjusted Level of Significance	0.049	Adjusted Chi Square Value	99.67

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1578	95% Adjusted Gamma UCL (use when n<50)	1580

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	1.369E-12	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0839	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0571	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.642	Mean of logged Data	4.374
Maximum of Logged Data	11.44	SD of logged Data	2.133

Assuming Lognormal Distribution

95% H-UCL	1219	90% Chebyshev (MVUE) UCL	1280
95% Chebyshev (MVUE) UCL	1520	97.5% Chebyshev (MVUE) UCL	1853
99% Chebyshev (MVUE) UCL	2508		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	1970	95% Jackknife UCL	1973
95% Standard Bootstrap UCL	1966	95% Bootstrap-t UCL	3039
95% Hall's Bootstrap UCL	4731	95% Percentile Bootstrap UCL	2049
95% BCA Bootstrap UCL	2433		
90% Chebyshev(Mean, Sd) UCL	2552	95% Chebyshev(Mean, Sd) UCL	3136
97.5% Chebyshev(Mean, Sd) UCL	3946	99% Chebyshev(Mean, Sd) UCL	5537

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3136

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Manganese

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	258
Minimum	178	Mean	372.9
Maximum	633	Median	366
SD	172.4	Std. Error of Mean	65.14
Coefficient of Variation	0.462	Skewness	0.336

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.938	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.155	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	499.4	95% Adjusted-CLT UCL (Chen-1995)	488.8
		95% Modified-t UCL (Johnson-1978)	500.8

Gamma GOF Test

A-D Test Statistic	0.279	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.71	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.193	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.313	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	5.129	k star (bias corrected MLE)	3.026
Theta hat (MLE)	72.7	Theta star (bias corrected MLE)	123.2
nu hat (MLE)	71.8	nu star (bias corrected)	42.36
MLE Mean (bias corrected)	372.9	MLE Sd (bias corrected)	214.3
		Approximate Chi Square Value (0.05)	28.44
Adjusted Level of Significance	0.0158	Adjusted Chi Square Value	25.05

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	555.4	95% Adjusted Gamma UCL (use when n<50)	630.6

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.919	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.184	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.304	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	5.182	Mean of logged Data	5.821
Maximum of Logged Data	6.45	SD of logged Data	0.498

Assuming Lognormal Distribution

95% H-UCL	629.6	90% Chebyshev (MVUE) UCL	587
95% Chebyshev (MVUE) UCL	683.3	97.5% Chebyshev (MVUE) UCL	817
99% Chebyshev (MVUE) UCL	1079		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	480	95% Jackknife UCL	499.4
95% Standard Bootstrap UCL	470.7	95% Bootstrap-t UCL	523.5
95% Hall's Bootstrap UCL	517.6	95% Percentile Bootstrap UCL	476.4
95% BCA Bootstrap UCL	478.7		
90% Chebyshev(Mean, Sd) UCL	568.3	95% Chebyshev(Mean, Sd) UCL	656.8
97.5% Chebyshev(Mean, Sd) UCL	779.7	99% Chebyshev(Mean, Sd) UCL	1021

Suggested UCL to Use

95% Student's-t UCL	499.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	244	Number of Distinct Observations	147
		Number of Missing Observations	254
Number of Detects	216	Number of Non-Detects	28
Number of Distinct Detects	139	Number of Distinct Non-Detects	10
Minimum Detect	0.0079	Minimum Non-Detect	0
Maximum Detect	10.3	Maximum Non-Detect	0.057
Variance Detects	0.702	Percent Non-Detects	11.48%
Mean Detects	0.253	SD Detects	0.838
Median Detects	0.06	CV Detects	3.307
Skewness Detects	8.91	Kurtosis Detects	98.57

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.298	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0607	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.225	KM Standard Error of Mean	0.0507
KM SD	0.79	95% KM (BCA) UCL	0.326
95% KM (t) UCL	0.309	95% KM (Percentile Bootstrap) UCL	0.32
95% KM (z) UCL	0.309	95% KM Bootstrap t UCL	0.383
90% KM Chebyshev UCL	0.378	95% KM Chebyshev UCL	0.447
97.5% KM Chebyshev UCL	0.542	99% KM Chebyshev UCL	0.73

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	23.99	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.816	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.259	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.0652	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.548	k star (bias corrected MLE)	0.544
Theta hat (MLE)	0.462	Theta star (bias corrected MLE)	0.466
nu hat (MLE)	236.8	nu star (bias corrected)	234.9
Mean (detects)	0.253		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.225	SD (KM)	0.79
Variance (KM)	0.625	SE of Mean (KM)	0.0507
k hat (KM)	0.0814	k star (KM)	0.0831
nu hat (KM)	39.7	nu star (KM)	40.54
theta hat (KM)	2.771	theta star (KM)	2.714
80% gamma percentile (KM)	0.115	90% gamma percentile (KM)	0.547
95% gamma percentile (KM)	1.313	99% gamma percentile (KM)	3.922

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.049
Approximate Chi Square Value (40.54, α)	26.95	Adjusted Chi Square Value (40.54, β)	26.89
95% Gamma Approximate KM-UCL (use when n>=50)	0.339	95% Gamma Adjusted KM-UCL (use when n<50)	0.34

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	N/A	KM Geo Mean	N/A
KM SD (logged)	N/A	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	N/A	95% H-UCL (KM -Log)	N/A
KM SD (logged)	N/A	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	N/A		

DL/2 Statistics

Mean in Original Scale	0.225	SD in Original Scale	0.792
95% t UCL (Assumes normality)	0.309		

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.73

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	244	Number of Distinct Observations	173
		Number of Missing Observations	254
Minimum	0.971	Mean	10.11
Maximum	205	Median	8.315
SD	14.23	Std. Error of Mean	0.911
Coefficient of Variation	1.407	Skewness	11.15

Normal GOF Test

Shapiro Wilk Test Statistic	0.315	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.331	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0571	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.62	95% Adjusted-CLT UCL (Chen-1995)	12.31
		95% Modified-t UCL (Johnson-1978)	11.72

Gamma GOF Test

A-D Test Statistic	4.098E+28	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.763	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.0592	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.438	k star (bias corrected MLE)	2.41
Theta hat (MLE)	4.148	Theta star (bias corrected MLE)	4.195
nu hat (MLE)	1190	nu star (bias corrected)	1176
MLE Mean (bias corrected)	10.11	MLE Sd (bias corrected)	6.513
		Approximate Chi Square Value (0.05)	1098
Adjusted Level of Significance	0.049	Adjusted Chi Square Value	1097

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	10.84	95% Adjusted Gamma UCL (use when n<50)	10.84

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.129	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0571	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.0294	Mean of logged Data	2.095
Maximum of Logged Data	5.323	SD of logged Data	0.57

Assuming Lognormal Distribution

95% H-UCL	10.23	90% Chebyshev (MVUE) UCL	10.68
95% Chebyshev (MVUE) UCL	11.19	97.5% Chebyshev (MVUE) UCL	11.89
99% Chebyshev (MVUE) UCL	13.28		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	11.61	95% Jackknife UCL	11.62
95% Standard Bootstrap UCL	11.62	95% Bootstrap-t UCL	13.41
95% Hall's Bootstrap UCL	17.77	95% Percentile Bootstrap UCL	11.78
95% BCA Bootstrap UCL	12.57		
90% Chebyshev(Mean, Sd) UCL	12.84	95% Chebyshev(Mean, Sd) UCL	14.08
97.5% Chebyshev(Mean, Sd) UCL	15.8	99% Chebyshev(Mean, Sd) UCL	19.18

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.08

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Selenium

General Statistics

Total Number of Observations	244	Number of Distinct Observations	128
		Number of Missing Observations	254
Number of Detects	141	Number of Non-Detects	103
Number of Distinct Detects	87	Number of Distinct Non-Detects	50
Minimum Detect	0.16	Minimum Non-Detect	0.19
Maximum Detect	17.3	Maximum Non-Detect	14.4
Variance Detects	6.348	Percent Non-Detects	42.21%
Mean Detects	1.629	SD Detects	2.52
Median Detects	1	CV Detects	1.547
Skewness Detects	4.423	Kurtosis Detects	21.3
Mean of Logged Detects	0.0659	SD of Logged Detects	0.768

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.444	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.352	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.075	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	1.185	KM Standard Error of Mean	0.129
KM SD	1.992	95% KM (BCA) UCL	1.425
95% KM (t) UCL	1.398	95% KM (Percentile Bootstrap) UCL	1.402

95% KM (z) UCL	1.398	95% KM Bootstrap t UCL	1.485
90% KM Chebyshev UCL	1.572	95% KM Chebyshev UCL	1.748
97.5% KM Chebyshev UCL	1.991	99% KM Chebyshev UCL	2.469

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	12.67	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.775	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.257	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.0806	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.327	k star (bias corrected MLE)	1.303
Theta hat (MLE)	1.227	Theta star (bias corrected MLE)	1.25
nu hat (MLE)	374.2	nu star (bias corrected)	367.6
Mean (detects)	1.629		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1.023
Maximum	17.3	Median	0.65
SD	2.05	CV	2.004
k hat (MLE)	0.477	k star (bias corrected MLE)	0.474
Theta hat (MLE)	2.144	Theta star (bias corrected MLE)	2.158
nu hat (MLE)	232.9	nu star (bias corrected)	231.4
Adjusted Level of Significance (β)	0.049		
Approximate Chi Square Value (231.35, α)	197.1	Adjusted Chi Square Value (231.35, β)	197
95% Gamma Approximate UCL (use when n>=50)	1.201	95% Gamma Adjusted UCL (use when n<50)	1.202

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1.185	SD (KM)	1.992
Variance (KM)	3.967	SE of Mean (KM)	0.129
k hat (KM)	0.354	k star (KM)	0.353
nu hat (KM)	172.8	nu star (KM)	172
theta hat (KM)	3.347	theta star (KM)	3.362
80% gamma percentile (KM)	1.879	90% gamma percentile (KM)	3.419
95% gamma percentile (KM)	5.142	99% gamma percentile (KM)	9.534

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (172.05, α)	142.7	Adjusted Chi Square Value (172.05, β)	142.6
95% Gamma Approximate KM-UCL (use when n>=50)	1.429	95% Gamma Adjusted KM-UCL (use when n<50)	1.431

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.887	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	1.110E-16	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.172	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.075	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.173	Mean in Log Scale	-0.257
SD in Original Scale	1.991	SD in Log Scale	0.758
95% t UCL (assumes normality of ROS data)	1.383	95% Percentile Bootstrap UCL	1.407
95% BCA Bootstrap UCL	1.427	95% Bootstrap t UCL	1.468
95% H-UCL (Log ROS)	1.134		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.29	KM Geo Mean	0.748
KM SD (logged)	0.858	95% Critical H Value (KM-Log)	2.041
KM Standard Error of Mean (logged)	0.0646	95% H-UCL (KM -Log)	1.21
KM SD (logged)	0.858	95% Critical H Value (KM-Log)	2.041
KM Standard Error of Mean (logged)	0.0646		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1.184	Mean in Log Scale	-0.291
SD in Original Scale	2.036	SD in Log Scale	0.828
95% t UCL (Assumes normality)	1.4	95% H-Stat UCL	1.172

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1.748

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Silver

General Statistics

Total Number of Observations	244	Number of Distinct Observations	132
		Number of Missing Observations	254
Number of Detects	54	Number of Non-Detects	190
Number of Distinct Detects	47	Number of Distinct Non-Detects	93
Minimum Detect	0.08	Minimum Non-Detect	0.08
Maximum Detect	6.3	Maximum Non-Detect	8.65
Variance Detects	0.939	Percent Non-Detects	77.87%
Mean Detects	0.617	SD Detects	0.969
Median Detects	0.293	CV Detects	1.57
Skewness Detects	4.447	Kurtosis Detects	23.34
Mean of Logged Detects	-0.995	SD of Logged Detects	0.9

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.506	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.12	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.215	KM Standard Error of Mean	0.0327
KM SD	0.502	95% KM (BCA) UCL	0.28
95% KM (t) UCL	0.27	95% KM (Percentile Bootstrap) UCL	0.273
95% KM (z) UCL	0.269	95% KM Bootstrap t UCL	0.314
90% KM Chebyshev UCL	0.314	95% KM Chebyshev UCL	0.358
97.5% KM Chebyshev UCL	0.42	99% KM Chebyshev UCL	0.541

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.974	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.777	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.201	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.124	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.113	k star (bias corrected MLE)	1.064
Theta hat (MLE)	0.554	Theta star (bias corrected MLE)	0.58
nu hat (MLE)	120.2	nu star (bias corrected)	114.9
Mean (detects)	0.617		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.144
Maximum	6.3	Median	0.01
SD	0.518	CV	3.59
k hat (MLE)	0.358	k star (bias corrected MLE)	0.356
Theta hat (MLE)	0.403	Theta star (bias corrected MLE)	0.405
nu hat (MLE)	174.7	nu star (bias corrected)	173.9
Adjusted Level of Significance (β)	0.049		
Approximate Chi Square Value (173.93, α)	144.4	Adjusted Chi Square Value (173.93, β)	144.3
95% Gamma Approximate UCL (use when n>=50)	0.174	95% Gamma Adjusted UCL (use when n<50)	0.174

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.215	SD (KM)	0.502
Variance (KM)	0.252	SE of Mean (KM)	0.0327
k hat (KM)	0.184	k star (KM)	0.185
nu hat (KM)	89.96	nu star (KM)	90.18
theta hat (KM)	1.169	theta star (KM)	1.166
80% gamma percentile (KM)	0.272	90% gamma percentile (KM)	0.651
95% gamma percentile (KM)	1.133	99% gamma percentile (KM)	2.477

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (90.18, α)	69.29	Adjusted Chi Square Value (90.18, β)	69.18
95% Gamma Approximate KM-UCL (use when n>=50)	0.28	95% Gamma Adjusted KM-UCL (use when n<50)	0.281

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.94	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0.014	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.146	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.12	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.178	Mean in Log Scale	-2.663
SD in Original Scale	0.511	SD in Log Scale	1.145
95% t UCL (assumes normality of ROS data)	0.232	95% Percentile Bootstrap UCL	0.239
95% BCA Bootstrap UCL	0.257	95% Bootstrap t UCL	0.281
95% H-UCL (Log ROS)	0.159		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-2.036	KM Geo Mean	0.131
KM SD (logged)	0.732	95% Critical H Value (KM-Log)	1.95
KM Standard Error of Mean (logged)	0.0605	95% H-UCL (KM -Log)	0.187
KM SD (logged)	0.732	95% Critical H Value (KM-Log)	1.95
KM Standard Error of Mean (logged)	0.0605		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.232	Mean in Log Scale	-2.039
SD in Original Scale	0.567	SD in Log Scale	0.797
95% t UCL (Assumes normality)	0.292	95% H-Stat UCL	0.198

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.358

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	244	Number of Distinct Observations	122
		Number of Missing Observations	254
Number of Detects	26	Number of Non-Detects	218
Number of Distinct Detects	24	Number of Distinct Non-Detects	101
Minimum Detect	0.5	Minimum Non-Detect	0.325
Maximum Detect	3.4	Maximum Non-Detect	28.85
Variance Detects	0.518	Percent Non-Detects	89.34%
Mean Detects	1.586	SD Detects	0.72
Median Detects	1.58	CV Detects	0.454
Skewness Detects	0.586	Kurtosis Detects	0.639
Mean of Logged Detects	0.348	SD of Logged Detects	0.512

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.937	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.146	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.17	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.473	KM Standard Error of Mean	0.0314
KM SD	0.464	95% KM (BCA) UCL	0.568
95% KM (t) UCL	0.525	95% KM (Percentile Bootstrap) UCL	0.549
95% KM (z) UCL	0.525	95% KM Bootstrap t UCL	0.526
90% KM Chebyshev UCL	0.567	95% KM Chebyshev UCL	0.61
97.5% KM Chebyshev UCL	0.669	99% KM Chebyshev UCL	0.785

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.747	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.747	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.184	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.172	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.583	k star (bias corrected MLE)	4.08
Theta hat (MLE)	0.346	Theta star (bias corrected MLE)	0.389
nu hat (MLE)	238.3	nu star (bias corrected)	212.2
Mean (detects)	1.586		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.19
Maximum	3.4	Median	0.01
SD	0.539	CV	2.829
k hat (MLE)	0.306	k star (bias corrected MLE)	0.305
Theta hat (MLE)	0.623	Theta star (bias corrected MLE)	0.625
nu hat (MLE)	149.1	nu star (bias corrected)	148.6
Adjusted Level of Significance (β)	0.049		
Approximate Chi Square Value (148.61, α)	121.4	Adjusted Chi Square Value (148.61, β)	121.3
95% Gamma Approximate UCL (use when n>=50)	0.233	95% Gamma Adjusted UCL (use when n<50)	0.233

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.473	SD (KM)	0.464
Variance (KM)	0.215	SE of Mean (KM)	0.0314
k hat (KM)	1.042	k star (KM)	1.031
nu hat (KM)	508.3	nu star (KM)	503.4
theta hat (KM)	0.454	theta star (KM)	0.459
80% gamma percentile (KM)	0.76	90% gamma percentile (KM)	1.082
95% gamma percentile (KM)	1.403	99% gamma percentile (KM)	2.146

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (503.35, α)	452.3	Adjusted Chi Square Value (503.35, β)	452
95% Gamma Approximate KM-UCL (use when n>=50)	0.527	95% Gamma Adjusted KM-UCL (use when n<50)	0.527

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.914	**Shapiro Wilk GOF Test**

5% Shapiro Wilk Critical Value	0.92	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.216	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.17	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.362	Mean in Log Scale	-1.459
SD in Original Scale	0.495	SD in Log Scale	0.832
95% t UCL (assumes normality of ROS data)	0.414	95% Percentile Bootstrap UCL	0.417
95% BCA Bootstrap UCL	0.423	95% Bootstrap t UCL	0.426
95% H-UCL (Log ROS)	0.366		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.945	KM Geo Mean	0.389
KM SD (logged)	0.5	95% Critical H Value (KM-Log)	1.808
KM Standard Error of Mean (logged)	0.0345	95% H-UCL (KM -Log)	0.467
KM SD (logged)	0.5	95% Critical H Value (KM-Log)	1.808
KM Standard Error of Mean (logged)	0.0345		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.71	Mean in Log Scale	-0.816
SD in Original Scale	1.338	SD in Log Scale	0.789
95% t UCL (Assumes normality)	0.852	95% H-Stat UCL	0.667

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.525

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Vanadium

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	258
Minimum	34.8	Mean	44.21
Maximum	58.3	Median	42.6
SD	8.797	Std. Error of Mean	3.325
Coefficient of Variation	0.199	Skewness	0.824

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.265	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.68	95% Adjusted-CLT UCL (Chen-1995)	50.79
		95% Modified-t UCL (Johnson-1978)	50.85

Gamma GOF Test

A-D Test Statistic	0.381	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.707	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.247	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.311	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	31.15	k star (bias corrected MLE)	17.89
Theta hat (MLE)	1.42	Theta star (bias corrected MLE)	2.471
nu hat (MLE)	436	nu star (bias corrected)	250.5
MLE Mean (bias corrected)	44.21	MLE Sd (bias corrected)	10.45
		Approximate Chi Square Value (0.05)	214.9
Adjusted Level of Significance	0.0158	Adjusted Chi Square Value	204.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	51.55	95% Adjusted Gamma UCL (use when n<50)	54.07

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.921	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.234	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.304	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.55	Mean of logged Data	3.773
Maximum of Logged Data	4.066	SD of logged Data	0.192

Assuming Lognormal Distribution

95% H-UCL	51.74	90% Chebyshev (MVUE) UCL	53.81
95% Chebyshev (MVUE) UCL	58.17	97.5% Chebyshev (MVUE) UCL	64.21
99% Chebyshev (MVUE) UCL	76.09		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	49.68	95% Jackknife UCL	50.68
95% Standard Bootstrap UCL	49.22	95% Bootstrap-t UCL	55.85
95% Hall's Bootstrap UCL	96.44	95% Percentile Bootstrap UCL	49.33
95% BCA Bootstrap UCL	50		
90% Chebyshev(Mean, Sd) UCL	54.19	95% Chebyshev(Mean, Sd) UCL	58.71

97.5% Chebyshev(Mean, Sd) UCL	64.98	99% Chebyshev(Mean, Sd) UCL	77.3

Suggested UCL to Use

95% Student's-t UCL	50.68

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	244	Number of Distinct Observations	217
		Number of Missing Observations	254
Minimum	3.77	Mean	280.4
Maximum	27700	Median	54.7
SD	1837	Std. Error of Mean	117.6
Coefficient of Variation	6.551	Skewness	13.93

Normal GOF Test

Shapiro Wilk Test Statistic	0.139	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.44	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0571	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	474.5	95% Adjusted-CLT UCL (Chen-1995)	585.9
		95% Modified-t UCL (Johnson-1978)	492

Gamma GOF Test

A-D Test Statistic	4.098E+28	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.832	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.313	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.0623	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.454	k star (bias corrected MLE)	0.451
Theta hat (MLE)	617.6	Theta star (bias corrected MLE)	621.5
nu hat (MLE)	221.5	nu star (bias corrected)	220.1
MLE Mean (bias corrected)	280.4	MLE Sd (bias corrected)	417.4
		Approximate Chi Square Value (0.05)	186.8
Adjusted Level of Significance	0.049	Adjusted Chi Square Value	186.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	330.4	95% Adjusted Gamma UCL (use when n<50)	330.7

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.877	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0	Data Not Lognormal at 5% Significance Level

Lilliefors Test Statistic	0.167	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.0571	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.327	Mean of logged Data	4.216
Maximum of Logged Data	10.23	SD of logged Data	1.1

Assuming Lognormal Distribution

95% H-UCL	145.4	90% Chebyshev (MVUE) UCL	156.3
95% Chebyshev (MVUE) UCL	171.2	97.5% Chebyshev (MVUE) UCL	191.8
99% Chebyshev (MVUE) UCL	232.2		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	473.8	95% Jackknife UCL	474.5
95% Standard Bootstrap UCL	468.9	95% Bootstrap-t UCL	993.6
95% Hall's Bootstrap UCL	1088	95% Percentile Bootstrap UCL	501.8
95% BCA Bootstrap UCL	659.7		
90% Chebyshev(Mean, Sd) UCL	633.1	95% Chebyshev(Mean, Sd) UCL	792.9
97.5% Chebyshev(Mean, Sd) UCL	1015	99% Chebyshev(Mean, Sd) UCL	1450

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	792.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2,4-DinitrotolueneSVOC

General Statistics

Total Number of Observations	257	Number of Distinct Observations	105
		Number of Missing Observations	241
Number of Detects	79	Number of Non-Detects	178
Number of Distinct Detects	71	Number of Distinct Non-Detects	41
Minimum Detect	26	Minimum Non-Detect	33.5
Maximum Detect	280000	Maximum Non-Detect	440000
Variance Detects	2.457E+9	Percent Non-Detects	69.26%
Mean Detects	12466	SD Detects	49567
Median Detects	360	CV Detects	3.976
Skewness Detects	4.914	Kurtosis Detects	23.53
Mean of Logged Detects	6.43	SD of Logged Detects	2.159

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.271	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.409	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0998	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	3892	KM Standard Error of Mean	1758
KM SD	27954	95% KM (BCA) UCL	7262
95% KM (t) UCL	6795	95% KM (Percentile Bootstrap) UCL	7153
95% KM (z) UCL	6784	95% KM Bootstrap t UCL	9082
90% KM Chebyshev UCL	9167	95% KM Chebyshev UCL	11556
97.5% KM Chebyshev UCL	14873	99% KM Chebyshev UCL	21387

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	9.788	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.896	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.256	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.111	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.238	k star (bias corrected MLE)	0.238
Theta hat (MLE)	52272	Theta star (bias corrected MLE)	52407
nu hat (MLE)	37.68	nu star (bias corrected)	37.58
Mean (detects)	12466		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	3832
Maximum	280000	Median	0.01
SD	27961	CV	7.297
k hat (MLE)	0.0873	k star (bias corrected MLE)	0.0888
Theta hat (MLE)	43918	Theta star (bias corrected MLE)	43139
nu hat (MLE)	44.85	nu star (bias corrected)	45.66
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (45.66, α)	31.16	Adjusted Chi Square Value (45.66, β)	31.09
95% Gamma Approximate UCL (use when n>=50)	5616	95% Gamma Adjusted UCL (use when n<50)	5628

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3892	SD (KM)	27954
Variance (KM)	7.814E+8	SE of Mean (KM)	1758
k hat (KM)	0.0194	k star (KM)	0.0218
nu hat (KM)	9.965	nu star (KM)	11.18
theta hat (KM)	200767	theta star (KM)	178915
80% gamma percentile (KM)	3.588	90% gamma percentile (KM)	809.4
95% gamma percentile (KM)	10223	99% gamma percentile (KM)	107550

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (11.18, α)	4.693	Adjusted Chi Square Value (11.18, β)	4.669
95% Gamma Approximate KM-UCL (use when n>=50)	9273	95% Gamma Adjusted KM-UCL (use when n<50)	9320

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.909	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	4.7383E-6	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.117	**Lilliefors GOF Test**

5% Lilliefors Critical Value	0.0998	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3872	Mean in Log Scale	4.276
SD in Original Scale	27955	SD in Log Scale	2.191
95% t UCL (assumes normality of ROS data)	6750	95% Percentile Bootstrap UCL	7040
95% BCA Bootstrap UCL	7863	95% Bootstrap t UCL	8877
95% H-UCL (Log ROS)	1252		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.793	KM Geo Mean	120.7
KM SD (logged)	1.662	95% Critical H Value (KM-Log)	2.751
KM Standard Error of Mean (logged)	0.121	95% H-UCL (KM -Log)	638.6
KM SD (logged)	1.662	95% Critical H Value (KM-Log)	2.751
KM Standard Error of Mean (logged)	0.121		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	4758	Mean in Log Scale	5.055
SD in Original Scale	31031	SD in Log Scale	1.647
95% t UCL (Assumes normality)	7954	95% H-Stat UCL	807

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	11556

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2,6-DinitrotolueneSVOC

General Statistics

Total Number of Observations	257	Number of Distinct Observations	94
		Number of Missing Observations	241
Number of Detects	57	Number of Non-Detects	200
Number of Distinct Detects	52	Number of Distinct Non-Detects	47
Minimum Detect	21	Minimum Non-Detect	16.5
Maximum Detect	73000	Maximum Non-Detect	440000
Variance Detects	1.822E+8	Percent Non-Detects	77.82%
Mean Detects	3873	SD Detects	13497
Median Detects	200	CV Detects	3.485
Skewness Detects	4.37	Kurtosis Detects	19.18
Mean of Logged Detects	5.676	SD of Logged Detects	1.983

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.318	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.438	**Lilliefors GOF Test**	

5% Lilliefors Critical Value	0.117	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	897.2	KM Standard Error of Mean	410.6
KM SD	6511	95% KM (BCA) UCL	1714
95% KM (t) UCL	1575	95% KM (Percentile Bootstrap) UCL	1630
95% KM (z) UCL	1573	95% KM Bootstrap t UCL	3095
90% KM Chebyshev UCL	2129	95% KM Chebyshev UCL	2687
97.5% KM Chebyshev UCL	3461	99% KM Chebyshev UCL	4982

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	7.034	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.878	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.253	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.129	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.271	k star (bias corrected MLE)	0.269
Theta hat (MLE)	14284	Theta star (bias corrected MLE)	14421
nu hat (MLE)	30.91	nu star (bias corrected)	30.61
Mean (detects)	3873		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	859.4
Maximum	73000	Median	0.01
SD	6515	CV	7.581
k hat (MLE)	0.0913	k star (bias corrected MLE)	0.0928
Theta hat (MLE)	9411	Theta star (bias corrected MLE)	9256
nu hat (MLE)	46.94	nu star (bias corrected)	47.72
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (47.72, α)	32.87	Adjusted Chi Square Value (47.72, β)	32.8
95% Gamma Approximate UCL (use when n>=50)	1248	95% Gamma Adjusted UCL (use when n<50)	1250

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	897.2	SD (KM)	6511
Variance (KM)	42388625	SE of Mean (KM)	410.6
k hat (KM)	0.019	k star (KM)	0.0214
nu hat (KM)	9.761	nu star (KM)	10.98
theta hat (KM)	47245	theta star (KM)	41999
80% gamma percentile (KM)	0.698	90% gamma percentile (KM)	173.8
95% gamma percentile (KM)	2292	99% gamma percentile (KM)	24859

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (10.98, α)	4.563	Adjusted Chi Square Value (10.98, β)	4.54
95% Gamma Approximate KM-UCL (use when n>=50)	2159	95% Gamma Adjusted KM-UCL (use when n<50)	2170

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.909	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	2.2118E-4	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.118	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.117	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	888.1	Mean in Log Scale	3.418
SD in Original Scale	6512	SD in Log Scale	1.992
95% t UCL (assumes normality of ROS data)	1559	95% Percentile Bootstrap UCL	1661
95% BCA Bootstrap UCL	1852	95% Bootstrap t UCL	3160
95% H-UCL (Log ROS)	326.4		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.026	KM Geo Mean	56.01
KM SD (logged)	1.414	95% Critical H Value (KM-Log)	2.501
KM Standard Error of Mean (logged)	0.127	95% H-UCL (KM -Log)	190
KM SD (logged)	1.414	95% Critical H Value (KM-Log)	2.501
KM Standard Error of Mean (logged)	0.127		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1793	Mean in Log Scale	4.658
SD in Original Scale	15134	SD in Log Scale	1.327
95% t UCL (Assumes normality)	3351	95% H-Stat UCL	310.7

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	2687

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]anthracene

General Statistics

Total Number of Observations	257	Number of Distinct Observations	115
		Number of Missing Observations	241
Number of Detects	98	Number of Non-Detects	159
Number of Distinct Detects	79	Number of Distinct Non-Detects	43
Minimum Detect	4	Minimum Non-Detect	9.5
Maximum Detect	9400	Maximum Non-Detect	440000
Variance Detects	1247621	Percent Non-Detects	61.87%
Mean Detects	456.4	SD Detects	1117
Median Detects	137.5	CV Detects	2.447
Skewness Detects	6.058	Kurtosis Detects	43.91
Mean of Logged Detects	5.154	SD of Logged Detects	1.267

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.39	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.35	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0897	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	204	KM Standard Error of Mean	45.54
KM SD	720	95% KM (BCA) UCL	292.8
95% KM (t) UCL	279.2	95% KM (Percentile Bootstrap) UCL	285.9
95% KM (z) UCL	279	95% KM Bootstrap t UCL	344.8
90% KM Chebyshev UCL	340.7	95% KM Chebyshev UCL	402.6
97.5% KM Chebyshev UCL	488.4	99% KM Chebyshev UCL	657.2

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.541	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.806	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.157	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.0947	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.632	k star (bias corrected MLE)	0.62
Theta hat (MLE)	721.7	Theta star (bias corrected MLE)	736.4
nu hat (MLE)	123.9	nu star (bias corrected)	121.5
Mean (detects)	456.4		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	176.4
Maximum	9400	Median	0.01
SD	722.2	CV	4.095
k hat (MLE)	0.133	k star (bias corrected MLE)	0.134
Theta hat (MLE)	1326	Theta star (bias corrected MLE)	1316
nu hat (MLE)	68.36	nu star (bias corrected)	68.89
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (68.89, α)	50.79	Adjusted Chi Square Value (68.89, β)	50.7
95% Gamma Approximate UCL (use when n>=50)	239.3	95% Gamma Adjusted UCL (use when n<50)	239.7

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	204	SD (KM)	720
Variance (KM)	518436	SE of Mean (KM)	45.54
k hat (KM)	0.0803	k star (KM)	0.082
nu hat (KM)	41.28	nu star (KM)	42.13
theta hat (KM)	2541	theta star (KM)	2489
80% gamma percentile (KM)	101.7	90% gamma percentile (KM)	491.1
95% gamma percentile (KM)	1188	99% gamma percentile (KM)	3572

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (42.13, α)	28.25	Adjusted Chi Square Value (42.13, β)	28.19

95% Gamma Approximate KM-UCL (use when n>=50)	304.3	95% Gamma Adjusted KM-UCL (use when n<50)	305

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.971	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.169	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0869	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0897	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	198.6	Mean in Log Scale	4.012
SD in Original Scale	717.3	SD in Log Scale	1.398
95% t UCL (assumes normality of ROS data)	272.5	95% Percentile Bootstrap UCL	276.2
95% BCA Bootstrap UCL	320.3	95% Bootstrap t UCL	344.2
95% H-UCL (Log ROS)	182.5		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.935	KM Geo Mean	51.16
KM SD (logged)	1.586	95% Critical H Value (KM-Log)	2.673
KM Standard Error of Mean (logged)	0.158	95% H-UCL (KM -Log)	234.7
KM SD (logged)	1.586	95% Critical H Value (KM-Log)	2.673
KM Standard Error of Mean (logged)	0.158		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1150	Mean in Log Scale	4.581
SD in Original Scale	13742	SD in Log Scale	1.325
95% t UCL (Assumes normality)	2565	95% H-Stat UCL	286.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	234.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	257	Number of Distinct Observations	115
		Number of Missing Observations	241
Number of Detects	102	Number of Non-Detects	155
Number of Distinct Detects	81	Number of Distinct Non-Detects	42
Minimum Detect	6	Minimum Non-Detect	9.5
Maximum Detect	8200	Maximum Non-Detect	440000
Variance Detects	958104	Percent Non-Detects	60.31%
Mean Detects	424	SD Detects	978.8
Median Detects	150	CV Detects	2.309
Skewness Detects	5.803	Kurtosis Detects	41.02

Mean of Logged Detects	5.093	SD of Logged Detects	1.274

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.418	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.335	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.088	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	196.3	KM Standard Error of Mean	40.88
KM SD	646.3	95% KM (BCA) UCL	277.1
95% KM (t) UCL	263.8	95% KM (Percentile Bootstrap) UCL	271.1
95% KM (z) UCL	263.5	95% KM Bootstrap t UCL	322.8
90% KM Chebyshev UCL	318.9	95% KM Chebyshev UCL	374.5
97.5% KM Chebyshev UCL	451.6	99% KM Chebyshev UCL	603.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.941	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.805	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.163	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.0931	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.64	k star (bias corrected MLE)	0.628
Theta hat (MLE)	662.6	Theta star (bias corrected MLE)	675.6
nu hat (MLE)	130.5	nu star (bias corrected)	128
Mean (detects)	424		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	170.9
Maximum	8200	Median	0.01
SD	648.6	CV	3.795
k hat (MLE)	0.138	k star (bias corrected MLE)	0.139
Theta hat (MLE)	1242	Theta star (bias corrected MLE)	1233
nu hat (MLE)	70.73	nu star (bias corrected)	71.24
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (71.24, α)	52.8	Adjusted Chi Square Value (71.24, β)	52.72
95% Gamma Approximate UCL (use when n>=50)	230.6	95% Gamma Adjusted UCL (use when n<50)	231

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	196.3	SD (KM)	646.3
Variance (KM)	417727	SE of Mean (KM)	40.88
k hat (KM)	0.0922	k star (KM)	0.0937
nu hat (KM)	47.41	nu star (KM)	48.19
theta hat (KM)	2128	theta star (KM)	2094
80% gamma percentile (KM)	123.5	90% gamma percentile (KM)	507.7
95% gamma percentile (KM)	1143	99% gamma percentile (KM)	3220

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (48.19, α)	33.25	Adjusted Chi Square Value (48.19, β)	33.18
95% Gamma Approximate KM-UCL (use when n>=50)	284.4	95% Gamma Adjusted KM-UCL (use when n<50)	285

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.978	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.4	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0553	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.088	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	191.2	Mean in Log Scale	3.981
SD in Original Scale	643.7	SD in Log Scale	1.418
95% t UCL (assumes normality of ROS data)	257.5	95% Percentile Bootstrap UCL	260.8
95% BCA Bootstrap UCL	283.7	95% Bootstrap t UCL	309.9
95% H-UCL (Log ROS)	182.7		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.96	KM Geo Mean	52.44
KM SD (logged)	1.508	95% Critical H Value (KM-Log)	2.594
KM Standard Error of Mean (logged)	0.13	95% H-UCL (KM -Log)	208.6
KM SD (logged)	1.508	95% Critical H Value (KM-Log)	2.594
KM Standard Error of Mean (logged)	0.13		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1142	Mean in Log Scale	4.562
SD in Original Scale	13738	SD in Log Scale	1.329
95% t UCL (Assumes normality)	2557	95% H-Stat UCL	283

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	208.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Chrysene

General Statistics

Total Number of Observations	257	Number of Distinct Observations	117
		Number of Missing Observations	241
Number of Detects	101	Number of Non-Detects	156
Number of Distinct Detects	82	Number of Distinct Non-Detects	44
Minimum Detect	5	Minimum Non-Detect	9.5
Maximum Detect	8700	Maximum Non-Detect	440000
Variance Detects	1051494	Percent Non-Detects	60.7%

Mean Detects	453.9	SD Detects	1025
Median Detects	190	CV Detects	2.259
Skewness Detects	5.975	Kurtosis Detects	43.26
Mean of Logged Detects	5.245	SD of Logged Detects	1.235

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.409	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.331	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0884	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	208.3	KM Standard Error of Mean	42.72
KM SD	675.1	95% KM (BCA) UCL	290.4
95% KM (t) UCL	278.9	95% KM (Percentile Bootstrap) UCL	285.8
95% KM (z) UCL	278.6	95% KM Bootstrap t UCL	337.7
90% KM Chebyshev UCL	336.5	95% KM Chebyshev UCL	394.5
97.5% KM Chebyshev UCL	475.1	99% KM Chebyshev UCL	633.4

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.741	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.8	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.157	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.0931	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.693	k star (bias corrected MLE)	0.679
Theta hat (MLE)	654.8	Theta star (bias corrected MLE)	668.2
nu hat (MLE)	140	nu star (bias corrected)	137.2
Mean (detects)	453.9		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	179.9
Maximum	8700	Median	0.01
SD	678	CV	3.769
k hat (MLE)	0.135	k star (bias corrected MLE)	0.136
Theta hat (MLE)	1328	Theta star (bias corrected MLE)	1319
nu hat (MLE)	69.61	nu star (bias corrected)	70.13
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (70.13, α)	51.85	Adjusted Chi Square Value (70.13, β)	51.77
95% Gamma Approximate UCL (use when n>=50)	243.3	95% Gamma Adjusted UCL (use when n<50)	243.7

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	208.3	SD (KM)	675.1
Variance (KM)	455815	SE of Mean (KM)	42.72
k hat (KM)	0.0952	k star (KM)	0.0967
nu hat (KM)	48.94	nu star (KM)	49.71

theta hat (KM)	2188	theta star (KM)	2154
80% gamma percentile (KM)	137.6	90% gamma percentile (KM)	546.6
95% gamma percentile (KM)	1211	99% gamma percentile (KM)	3365

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (49.71, α)	34.52	Adjusted Chi Square Value (49.71, β)	34.45
95% Gamma Approximate KM-UCL (use when n>=50)	300	95% Gamma Adjusted KM-UCL (use when n<50)	300.6

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.974	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.26	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0683	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0884	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	202.8	Mean in Log Scale	4.09
SD in Original Scale	672.6	SD in Log Scale	1.4
95% t UCL (assumes normality of ROS data)	272	95% Percentile Bootstrap UCL	273.3
95% BCA Bootstrap UCL	310.2	95% Bootstrap t UCL	329.4
95% H-UCL (Log ROS)	197.7		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.999	KM Geo Mean	54.54
KM SD (logged)	1.602	95% Critical H Value (KM-Log)	2.689
KM Standard Error of Mean (logged)	0.149	95% H-UCL (KM -Log)	257.5
KM SD (logged)	1.602	95% Critical H Value (KM-Log)	2.689
KM Standard Error of Mean (logged)	0.149		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1153	Mean in Log Scale	4.631
SD in Original Scale	13739	SD in Log Scale	1.33
95% t UCL (Assumes normality)	2568	95% H-Stat UCL	304

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	257.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Di-n-butylphthalate

General Statistics

Total Number of Observations	257	Number of Distinct Observations	83
		Number of Missing Observations	241
Number of Detects	39	Number of Non-Detects	218
Number of Distinct Detects	33	Number of Distinct Non-Detects	53

Minimum Detect	34	Minimum Non-Detect	19.5
Maximum Detect	500	Maximum Non-Detect	440000
Variance Detects	9648	Percent Non-Detects	84.82%
Mean Detects	124.1	SD Detects	98.22
Median Detects	92	CV Detects	0.792
Skewness Detects	2.292	Kurtosis Detects	5.551
Mean of Logged Detects	4.614	SD of Logged Detects	0.607

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.725	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.939	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.26	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.14	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	62.47	KM Standard Error of Mean	5.341
KM SD	55.1	95% KM (BCA) UCL	71.57
95% KM (t) UCL	71.29	95% KM (Percentile Bootstrap) UCL	71.42
95% KM (z) UCL	71.26	95% KM Bootstrap t UCL	71.98
90% KM Chebyshev UCL	78.5	95% KM Chebyshev UCL	85.76
97.5% KM Chebyshev UCL	95.83	99% KM Chebyshev UCL	115.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.626	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.756	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.189	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.143	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.571	k star (bias corrected MLE)	2.391
Theta hat (MLE)	48.26	Theta star (bias corrected MLE)	51.91
nu hat (MLE)	200.6	nu star (bias corrected)	186.5
Mean (detects)	124.1		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	45.25
Maximum	500	Median	25.54
SD	60.2	CV	1.33
k hat (MLE)	0.278	k star (bias corrected MLE)	0.277
Theta hat (MLE)	162.8	Theta star (bias corrected MLE)	163.2
nu hat (MLE)	142.8	nu star (bias corrected)	142.5
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (142.50, α)	115.9	Adjusted Chi Square Value (142.50, β)	115.8
95% Gamma Approximate UCL (use when n>=50)	55.62	95% Gamma Adjusted UCL (use when n<50)	55.69

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	62.47	SD (KM)	55.1

Variance (KM)	3036	SE of Mean (KM)	5.341
k hat (KM)	1.285	k star (KM)	1.273
nu hat (KM)	660.7	nu star (KM)	654.3
theta hat (KM)	48.6	theta star (KM)	49.08
80% gamma percentile (KM)	98.34	90% gamma percentile (KM)	135.5
95% gamma percentile (KM)	172	99% gamma percentile (KM)	255.4

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (654.31, α)	596	Adjusted Chi Square Value (654.31, β)	595.7
95% Gamma Approximate KM-UCL (use when n>=50)	68.59	95% Gamma Adjusted KM-UCL (use when n<50)	68.62

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.939	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.147	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.14	Detected Data Not Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	61.35	Mean in Log Scale	3.928
SD in Original Scale	51.06	SD in Log Scale	0.578
95% t UCL (assumes normality of ROS data)	66.61	95% Percentile Bootstrap UCL	67.42
95% BCA Bootstrap UCL	67.4	95% Bootstrap t UCL	68.09
95% H-UCL (Log ROS)	64.12		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.865	KM Geo Mean	47.69
KM SD (logged)	0.726	95% Critical H Value (KM-Log)	1.927
KM Standard Error of Mean (logged)	0.102	95% H-UCL (KM -Log)	67.75
KM SD (logged)	0.726	95% Critical H Value (KM-Log)	1.927
KM Standard Error of Mean (logged)	0.102		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1014	Mean in Log Scale	4.366
SD in Original Scale	13732	SD in Log Scale	0.952
95% t UCL (Assumes normality)	2428	95% H-Stat UCL	140.3

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	67.75

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Naphthalene

General Statistics

Total Number of Observations	160	Number of Distinct Observations	58

		Number of Missing Observations	338
Number of Detects	9	Number of Non-Detects	151
Number of Distinct Detects	9	Number of Distinct Non-Detects	49
Minimum Detect	11	Minimum Non-Detect	9.5
Maximum Detect	2700	Maximum Non-Detect	440000
Variance Detects	782497	Percent Non-Detects	94.38%
Mean Detects	342	SD Detects	884.6
Median Detects	44	CV Detects	2.587
Skewness Detects	2.996	Kurtosis Detects	8.98
Mean of Logged Detects	4.158	SD of Logged Detects	1.535

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.416	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.503	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	36.25	KM Standard Error of Mean	18.25
KM SD	212.9	95% KM (BCA) UCL	70.06
95% KM (t) UCL	66.44	95% KM (Percentile Bootstrap) UCL	69.93
95% KM (z) UCL	66.26	95% KM Bootstrap t UCL	156.2
90% KM Chebyshev UCL	90.99	95% KM Chebyshev UCL	115.8
97.5% KM Chebyshev UCL	150.2	99% KM Chebyshev UCL	217.8

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.804	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.79	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.448	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.298	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.394	k star (bias corrected MLE)	0.336
Theta hat (MLE)	869.1	Theta star (bias corrected MLE)	1017
nu hat (MLE)	7.083	nu star (bias corrected)	6.055
Mean (detects)	342		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	29.13
Maximum	2700	Median	0.01
SD	220.5	CV	7.568
k hat (MLE)	0.115	k star (bias corrected MLE)	0.117
Theta hat (MLE)	254.4	Theta star (bias corrected MLE)	250
nu hat (MLE)	36.65	nu star (bias corrected)	37.3
Adjusted Level of Significance (β)	0.0485		
Approximate Chi Square Value (37.30, α)	24.31	Adjusted Chi Square Value (37.30, β)	24.22
95% Gamma Approximate UCL (use when n>=50)	44.69	95% Gamma Adjusted UCL (use when n<50)	44.87

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	36.25	SD (KM)	212.9
Variance (KM)	45331	SE of Mean (KM)	18.25
k hat (KM)	0.029	k star (KM)	0.0326
nu hat (KM)	9.274	nu star (KM)	10.43
theta hat (KM)	1251	theta star (KM)	1112
80% gamma percentile (KM)	0.684	90% gamma percentile (KM)	25.89
95% gamma percentile (KM)	151	99% gamma percentile (KM)	914.4

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (10.43, α)	4.215	Adjusted Chi Square Value (10.43, β)	4.179
95% Gamma Approximate KM-UCL (use when n>=50)	89.73	95% Gamma Adjusted KM-UCL (use when n<50)	90.5

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.777	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	26.76	Mean in Log Scale	1.153
SD in Original Scale	213.5	SD in Log Scale	1.665
95% t UCL (assumes normality of ROS data)	54.68	95% Percentile Bootstrap UCL	60.77
95% BCA Bootstrap UCL	80.33	95% Bootstrap t UCL	280
95% H-UCL (Log ROS)	18.6		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.67	KM Geo Mean	14.44
KM SD (logged)	0.811	95% Critical H Value (KM-Log)	2.047
KM Standard Error of Mean (logged)	0.138	95% H-UCL (KM -Log)	22.89
KM SD (logged)	0.811	95% Critical H Value (KM-Log)	2.047
KM Standard Error of Mean (logged)	0.138		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1506	Mean in Log Scale	4.368
SD in Original Scale	17384	SD in Log Scale	1.229
95% t UCL (Assumes normality)	3780	95% H-Stat UCL	212.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	115.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	256	Number of Distinct Observations	65
		Number of Missing Observations	242
Number of Detects	17	Number of Non-Detects	239
Number of Distinct Detects	13	Number of Distinct Non-Detects	56
Minimum Detect	19	Minimum Non-Detect	16.5
Maximum Detect	24000	Maximum Non-Detect	440000
Variance Detects	32919654	Percent Non-Detects	93.36%
Mean Detects	1828	SD Detects	5738
Median Detects	220	CV Detects	3.139
Skewness Detects	4.067	Kurtosis Detects	16.66
Mean of Logged Detects	5.79	SD of Logged Detects	1.575

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.325	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.446	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	142	KM Standard Error of Mean	97.28
KM SD	1506	95% KM (BCA) UCL	343.5
95% KM (t) UCL	302.6	95% KM (Percentile Bootstrap) UCL	328.3
95% KM (z) UCL	302.1	95% KM Bootstrap t UCL	1725
90% KM Chebyshev UCL	433.9	95% KM Chebyshev UCL	566.1
97.5% KM Chebyshev UCL	749.6	99% KM Chebyshev UCL	1110

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.224	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.823	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.316	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.224	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.385	k star (bias corrected MLE)	0.356
Theta hat (MLE)	4751	Theta star (bias corrected MLE)	5134
nu hat (MLE)	13.08	nu star (bias corrected)	12.11
Mean (detects)	1828		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	121.4
Maximum	24000	Median	0.01
SD	1508	CV	12.42
k hat (MLE)	0.0939	k star (bias corrected MLE)	0.0954
Theta hat (MLE)	1293	Theta star (bias corrected MLE)	1272

nu hat (MLE)	48.09	nu star (bias corrected)	48.86
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (48.86, α)	33.81	Adjusted Chi Square Value (48.86, β)	33.74
95% Gamma Approximate UCL (use when n>=50)	175.4	95% Gamma Adjusted UCL (use when n<50)	175.8

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	142	SD (KM)	1506
Variance (KM)	2269296	SE of Mean (KM)	97.28
k hat (KM)	0.00889	k star (KM)	0.0114
nu hat (KM)	4.552	nu star (KM)	5.832
theta hat (KM)	15977	theta star (KM)	12470
80% gamma percentile (KM)	2.1932E-5	90% gamma percentile (KM)	0.679
95% gamma percentile (KM)	78.74	99% gamma percentile (KM)	3895

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (5.83, α)	1.555	Adjusted Chi Square Value (5.83, β)	1.542
95% Gamma Approximate KM-UCL (use when n>=50)	532.9	95% Gamma Adjusted KM-UCL (use when n<50)	537.1

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.144	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	124.7	Mean in Log Scale	-0.196
SD in Original Scale	1508	SD in Log Scale	2.698
95% t UCL (assumes normality of ROS data)	280.2	95% Percentile Bootstrap UCL	313.1
95% BCA Bootstrap UCL	410.4	95% Bootstrap t UCL	1749
95% H-UCL (Log ROS)	60.74		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.114	KM Geo Mean	22.52
KM SD (logged)	0.904	95% Critical H Value (KM-Log)	2.053
KM Standard Error of Mean (logged)	0.0879	95% H-UCL (KM -Log)	38.07
KM SD (logged)	0.904	95% Critical H Value (KM-Log)	2.053
KM Standard Error of Mean (logged)	0.0879		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1121	Mean in Log Scale	4.351
SD in Original Scale	13834	SD in Log Scale	1.129
95% t UCL (Assumes normality)	2549	95% H-Stat UCL	171.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	38.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Exhibit 3

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/9/2019 11:41:38 AM
From File	proucl input_surrogate_oldESBs_e&ecombined_20190509.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2,4,6-Trinitrotoluene

General Statistics

Total Number of Observations	347	Number of Distinct Observations	92
		Number of Missing Observations	149
Number of Detects	126	Number of Non-Detects	221
Number of Distinct Detects	69	Number of Distinct Non-Detects	29
Minimum Detect	85	Minimum Non-Detect	45.45
Maximum Detect	21000	Maximum Non-Detect	195
Variance Detects	81335693	Percent Non-Detects	63.69%
Mean Detects	7226	SD Detects	9019
Median Detects	1400	CV Detects	1.248
Skewness Detects	0.78	Kurtosis Detects	-1.291
Mean of Logged Detects	7.55	SD of Logged Detects	1.862

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.659	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0793	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	2654	KM Standard Error of Mean	346
KM SD	6420	95% KM (BCA) UCL	3239
95% KM (t) UCL	3224	95% KM (Percentile Bootstrap) UCL	3247
95% KM (z) UCL	3223	95% KM Bootstrap t UCL	3264
90% KM Chebyshev UCL	3692	95% KM Chebyshev UCL	4162
97.5% KM Chebyshev UCL	4815	99% KM Chebyshev UCL	6097

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	8.331	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.824	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.185	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.0878	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.479	k star (bias corrected MLE)	0.473
Theta hat (MLE)	15090	Theta star (bias corrected MLE)	15285
nu hat (MLE)	120.7	nu star (bias corrected)	119.1
Mean (detects)	7226		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2624
Maximum	21000	Median	0.01
SD	6442	CV	2.455
k hat (MLE)	0.101	k star (bias corrected MLE)	0.102
Theta hat (MLE)	26074	Theta star (bias corrected MLE)	25804
nu hat (MLE)	69.84	nu star (bias corrected)	70.57
Adjusted Level of Significance (β)	0.0493		
Approximate Chi Square Value (70.57, α)	52.23	Adjusted Chi Square Value (70.57, β)	52.16
95% Gamma Approximate UCL (use when n>=50)	3545	95% Gamma Adjusted UCL (use when n<50)	3550

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	2654	SD (KM)	6420
Variance (KM)	41218267	SE of Mean (KM)	346
k hat (KM)	0.171	k star (KM)	0.171
nu hat (KM)	118.6	nu star (KM)	118.9
theta hat (KM)	15532	theta star (KM)	15492
80% gamma percentile (KM)	3189	90% gamma percentile (KM)	7979
95% gamma percentile (KM)	14202	99% gamma percentile (KM)	31799

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (118.88, α)	94.7	Adjusted Chi Square Value (118.88, β)	94.62
95% Gamma Approximate KM-UCL (use when n>=50)	3331	95% Gamma Adjusted KM-UCL (use when n<50)	3334

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.853	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.175	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0793	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2646	Mean in Log Scale	4.308
SD in Original Scale	6433	SD in Log Scale	3.055
95% t UCL (assumes normality of ROS data)	3215	95% Percentile Bootstrap UCL	3238
95% BCA Bootstrap UCL	3281	95% Bootstrap t UCL	3258
95% H-UCL (Log ROS)	16104		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	5.184	KM Geo Mean	178.5
KM SD (logged)	2.11	95% Critical H Value (KM-Log)	3.222
KM Standard Error of Mean (logged)	0.114	95% H-UCL (KM -Log)	2383
KM SD (logged)	2.11	95% Critical H Value (KM-Log)	3.222
KM Standard Error of Mean (logged)	0.114		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2655	Mean in Log Scale	5.148
SD in Original Scale	6429	SD in Log Scale	2.167
95% t UCL (Assumes normality)	3224	95% H-Stat UCL	2641

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	4162

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2,4-Dinitrotoluene

General Statistics

Total Number of Observations	155	Number of Distinct Observations	22
		Number of Missing Observations	341
Number of Detects	25	Number of Non-Detects	130
Number of Distinct Detects	17	Number of Distinct Non-Detects	5
Minimum Detect	110	Minimum Non-Detect	50
Maximum Detect	700	Maximum Non-Detect	70
Variance Detects	53264	Percent Non-Detects	83.87%
Mean Detects	393.2	SD Detects	230.8
Median Detects	400	CV Detects	0.587
Skewness Detects	0.257	Kurtosis Detects	-1.617
Mean of Logged Detects	5.779	SD of Logged Detects	0.665

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.841	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.188	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.173	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	105.4	KM Standard Error of Mean	12.75
KM SD	155.5	95% KM (BCA) UCL	127.2
95% KM (t) UCL	126.5	95% KM (Percentile Bootstrap) UCL	127
95% KM (z) UCL	126.3	95% KM Bootstrap t UCL	130.5
90% KM Chebyshev UCL	143.6	95% KM Chebyshev UCL	160.9
97.5% KM Chebyshev UCL	185	99% KM Chebyshev UCL	232.2

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.2	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.753	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.173	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.176	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.712	k star (bias corrected MLE)	2.413
Theta hat (MLE)	145	Theta star (bias corrected MLE)	162.9
nu hat (MLE)	135.6	nu star (bias corrected)	120.7
Mean (detects)	393.2		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	69.61
Maximum	700	Median	0.01
SD	170.5	CV	2.449
k hat (MLE)	0.124	k star (bias corrected MLE)	0.126
Theta hat (MLE)	559.9	Theta star (bias corrected MLE)	551.5
nu hat (MLE)	38.54	nu star (bias corrected)	39.13
Adjusted Level of Significance (β)	0.0485		
Approximate Chi Square Value (39.13, α)	25.8	Adjusted Chi Square Value (39.13, β)	25.7
95% Gamma Approximate UCL (use when n>=50)	105.6	95% Gamma Adjusted UCL (use when n<50)	106

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	105.4	SD (KM)	155.5
Variance (KM)	24181	SE of Mean (KM)	12.75
k hat (KM)	0.459	k star (KM)	0.454
nu hat (KM)	142.3	nu star (KM)	140.9
theta hat (KM)	229.5	theta star (KM)	231.8
80% gamma percentile (KM)	172.1	90% gamma percentile (KM)	290.6
95% gamma percentile (KM)	418.7	99% gamma percentile (KM)	736.5

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (140.88, α)	114.4	Adjusted Chi Square Value (140.88, β)	114.2
95% Gamma Approximate KM-UCL (use when n>=50)	129.7	95% Gamma Adjusted KM-UCL (use when n<50)	129.9

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.874	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.157	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.173	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	94.94	Mean in Log Scale	3.556
SD in Original Scale	162.9	SD in Log Scale	1.434
95% t UCL (assumes normality of ROS data)	116.6	95% Percentile Bootstrap UCL	117.3
95% BCA Bootstrap UCL	119.2	95% Bootstrap t UCL	119.9
95% H-UCL (Log ROS)	132.9		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.213	KM Geo Mean	67.57
KM SD (logged)	0.735	95% Critical H Value (KM-Log)	1.987
KM Standard Error of Mean (logged)	0.0602	95% H-UCL (KM -Log)	99.55
KM SD (logged)	0.735	95% Critical H Value (KM-Log)	1.987
KM Standard Error of Mean (logged)	0.0602		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	87.73	Mean in Log Scale	3.754

SD in Original Scale	162.4	SD in Log Scale	0.93
95% t UCL (Assumes normality)	109.3	95% H-Stat UCL	77.29

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	129.7	95% GROS Approximate Gamma UCL	105.6

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2,4-DinitrotolueneSVOC

General Statistics

Total Number of Observations	257	Number of Distinct Observations	72
		Number of Missing Observations	241
Number of Detects	85	Number of Non-Detects	172
Number of Distinct Detects	42	Number of Distinct Non-Detects	36
Minimum Detect	26	Minimum Non-Detect	33.5
Maximum Detect	700	Maximum Non-Detect	280
Variance Detects	75789	Percent Non-Detects	66.93%
Mean Detects	419.4	SD Detects	275.3
Median Detects	430	CV Detects	0.656
Skewness Detects	-0.136	Kurtosis Detects	-1.796
Mean of Logged Detects	5.679	SD of Logged Detects	0.981

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.759	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.281	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0962	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	181.3	KM Standard Error of Mean	14.87
KM SD	231.1	95% KM (BCA) UCL	206.2
95% KM (t) UCL	205.8	95% KM (Percentile Bootstrap) UCL	205.4
95% KM (z) UCL	205.7	95% KM Bootstrap t UCL	208
90% KM Chebyshev UCL	225.9	95% KM Chebyshev UCL	246.1
97.5% KM Chebyshev UCL	274.1	99% KM Chebyshev UCL	329.2

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	6.215	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.77	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.265	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.0987	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.535	k star (bias corrected MLE)	1.489
Theta hat (MLE)	273.2	Theta star (bias corrected MLE)	281.7
nu hat (MLE)	261	nu star (bias corrected)	253.1
Mean (detects)	419.4		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	206.4
Maximum	700	Median	117.2
SD	226.6	CV	1.098
k hat (MLE)	0.537	k star (bias corrected MLE)	0.533
Theta hat (MLE)	384.5	Theta star (bias corrected MLE)	387.2
nu hat (MLE)	276	nu star (bias corrected)	274.1
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (274.08, α)	236.7	Adjusted Chi Square Value (274.08, β)	236.5
95% Gamma Approximate UCL (use when n>=50)	239	95% Gamma Adjusted UCL (use when n<50)	239.2

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	181.3	SD (KM)	231.1
Variance (KM)	53415	SE of Mean (KM)	14.87
k hat (KM)	0.615	k star (KM)	0.611
nu hat (KM)	316.2	nu star (KM)	313.9
theta hat (KM)	294.7	theta star (KM)	296.9
80% gamma percentile (KM)	298.8	90% gamma percentile (KM)	469.6
95% gamma percentile (KM)	648.2	99% gamma percentile (KM)	1079

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (313.87, α)	273.8	Adjusted Chi Square Value (313.87, β)	273.6
95% Gamma Approximate KM-UCL (use when n>=50)	207.8	95% Gamma Adjusted KM-UCL (use when n<50)	207.9

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.807	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	4.441E-16	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.248	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0962	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	192.1	Mean in Log Scale	4.686
SD in Original Scale	227.8	SD in Log Scale	1.041
95% t UCL (assumes normality of ROS data)	215.5	95% Percentile Bootstrap UCL	215.7
95% BCA Bootstrap UCL	217.1	95% Bootstrap t UCL	216.1
95% H-UCL (Log ROS)	214.6		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.592	KM Geo Mean	98.64
KM SD (logged)	1.014	95% Critical H Value (KM-Log)	2.141

KM Standard Error of Mean (logged)	0.087	95% H-UCL (KM -Log)	189
KM SD (logged)	1.014	95% Critical H Value (KM-Log)	2.141
KM Standard Error of Mean (logged)	0.087		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	193.6	Mean in Log Scale	4.78
SD in Original Scale	225.2	SD in Log Scale	0.908
95% t UCL (Assumes normality)	216.8	95% H-Stat UCL	202

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	246.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2,6-DinitrotolueneSVOC

General Statistics

Total Number of Observations	257	Number of Distinct Observations	74
		Number of Missing Observations	241
Number of Detects	63	Number of Non-Detects	194
Number of Distinct Detects	37	Number of Distinct Non-Detects	42
Minimum Detect	21	Minimum Non-Detect	16.5
Maximum Detect	700	Maximum Non-Detect	280
Variance Detects	86143	Percent Non-Detects	75.49%
Mean Detects	361.2	SD Detects	293.5
Median Detects	260	CV Detects	0.813
Skewness Detects	0.162	Kurtosis Detects	-1.859
Mean of Logged Detects	5.338	SD of Logged Detects	1.216

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.747	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	2.631E-14	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.25	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.111	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	121.4	KM Standard Error of Mean	13.11
KM SD	200.4	95% KM (BCA) UCL	144.7
95% KM (t) UCL	143	95% KM (Percentile Bootstrap) UCL	144.1
95% KM (z) UCL	143	95% KM Bootstrap t UCL	145
90% KM Chebyshev UCL	160.7	95% KM Chebyshev UCL	178.6
97.5% KM Chebyshev UCL	203.3	99% KM Chebyshev UCL	251.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.986	**Anderson-Darling GOF Test**	

5% A-D Critical Value	0.779	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.235	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.115	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.042	k star (bias corrected MLE)	1.003
Theta hat (MLE)	346.6	Theta star (bias corrected MLE)	360.1
nu hat (MLE)	131.3	nu star (bias corrected)	126.4
Mean (detects)	361.2		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	129.4
Maximum	700	Median	42.12
SD	205.2	CV	1.586
k hat (MLE)	0.231	k star (bias corrected MLE)	0.231
Theta hat (MLE)	559.6	Theta star (bias corrected MLE)	559.9
nu hat (MLE)	118.8	nu star (bias corrected)	118.8
Adjusted Level of Significance (β)	0.0491		
Approximate Chi Square Value (118.76, α)	94.6	Adjusted Chi Square Value (118.76, β)	94.48
95% Gamma Approximate UCL (use when n>=50)	162.4	95% Gamma Adjusted UCL (use when n<50)	162.6

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	121.4	SD (KM)	200.4
Variance (KM)	40175	SE of Mean (KM)	13.11
k hat (KM)	0.367	k star (KM)	0.365
nu hat (KM)	188.6	nu star (KM)	187.7
theta hat (KM)	330.9	theta star (KM)	332.4
80% gamma percentile (KM)	193.6	90% gamma percentile (KM)	348.2
95% gamma percentile (KM)	520.4	99% gamma percentile (KM)	957.6

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (187.70, α)	157	Adjusted Chi Square Value (187.70, β)	156.9
95% Gamma Approximate KM-UCL (use when n>=50)	145.1	95% Gamma Adjusted KM-UCL (use when n<50)	145.3

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.831	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	1.4260E-9	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.111	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	122.3	Mean in Log Scale	3.891
SD in Original Scale	201.4	SD in Log Scale	1.304
95% t UCL (assumes normality of ROS data)	143.1	95% Percentile Bootstrap UCL	142.6
95% BCA Bootstrap UCL	146.1	95% Bootstrap t UCL	143.9
95% H-UCL (Log ROS)	139.3		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.985	KM Geo Mean	53.78
KM SD (logged)	1.135	95% Critical H Value (KM-Log)	2.243
KM Standard Error of Mean (logged)	0.113	95% H-UCL (KM -Log)	120.1
KM SD (logged)	1.135	95% Critical H Value (KM-Log)	2.243
KM Standard Error of Mean (logged)	0.113		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	148.9	Mean in Log Scale	4.529
SD in Original Scale	190.5	SD in Log Scale	0.899
95% t UCL (Assumes normality)	168.5	95% H-Stat UCL	155.7

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	178.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Appendix B

TNT Refined Delineation Technical Memorandum

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609-285-2620

TNT Refined Delineation Technical Memorandum

August 2020

Prepared for

HERCULES

Ashland Hercules Research Center
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K/J Project No. 1540001*57

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Section 1: Introduction

On behalf of Hercules LLC (Hercules), Kennedy/Jenks Consultants Inc. (KJ) prepared this TNT Refined Delineation Technical Memorandum (TRDTM) summarizing the results of refined delineation activities outlined in the *TNT Refined Delineation Work Plan* (TRDWP) (Hercules 2017) at the Hercules Kenvil Works Facility, located in Kenvil, Morris County, New Jersey (the Facility) (**Figure 1**). Activities described herein focused on refining delineation of 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene (DNT), 2,6-DNT, 2-amino-4,6-DNT (2ADNT), and 4-amino-2,6-DNT (4ADNT) in soil (hereafter collectively referred to as target constituents) within an area encompassing approximately 80 acres in the southwestern portion of the Facility (TNT Project Area). This TRDTM supports the TNT Area Soil Remedial Action Work Plan (TNT RAWP) and establishes a basis for the remedial excavation planning.

The remainder of this memorandum summarizes field sampling activities, presents sample analytical results, and updates constituent-specific delineation drawings presented in the Phase II Remedial Investigation Report (Phase II RIR) (Hercules 2016).

1.1 Overview

Hercules acknowledged the need for active remediation of TNT early in the Site Investigation/Remedial Investigation (SI/RI) process and initiated a remedial alternatives evaluation to identify potentially applicable approaches given conditions in the TNT Area (e.g., crystalline TNT particles of various size entrained in surface and shallow subsurface soil). Hercules identified ex-situ bioremediation as an effective, implementable approach to address target constituents (see Section 4 of the TNT RAWP).

Remedial design and planning required an understanding of the total volume of soil requiring treatment via bioremediation. The TRDWP outlined an iterative, stepwise process to improve the resolution of the macroscale delineation presented in the SI/RI to support TNT Area soil remedial design activities. Consistent with the SI/RI, refined delineation targeted the most stringent criterion from NJDEP's non-residential direct contact soil remediation standard (NRDCSRS), residential direct contact soil remediation standard (RDCSRS), and impact to groundwater soil remediation standard (IGWSRS). For target constituents, the default IGWSRS are the most stringent criterion. **Table 1** summarizes applicable criteria for target constituents.

Refined delineation sampling occurred over two field events, Fall 2017 (Section 2.1) and Spring 2019 (Section 2.3). Following 2017 field sampling, Hercules conducted supplemental soil sampling to support development of site-specific IGWSRS for target constituents, and attended a technical consultation with New Jersey Department of Environmental Protection (NJDEP) staff regarding site-specific IGWSRS methods, and the role that site-specific IGWSRS would play in the remedial administrative process given the presence of target constituents in groundwater (Section 2.2). NJDEP indicated that the model for developing site-specific IGWSRS was not built to address constituents with relatively low solubility and mobility (i.e., TNT). Given that target constituents are currently found in groundwater underlying soil source areas, NJDEP recommended proceeding with the ex-situ bioremediation focused on addressing source mass removal and attaining applicable direct contact soil remediation standards. Following source mass removal to mitigate target constituent mass transfer to groundwater, and post-remediation soil and groundwater sampling, development of a site-specific IGWSRS would be appropriate. To this

end, refined delineation activities performed in 2019 focused on finalizing delineation to RDCSRS (the more stringent of the direct contact SRS for target constituents) in a number of areas.

The following sections summarize 2017 and 2019 sampling event results.

Section 2: Refined Delineation Activities

2.1 Refined Delineation Sampling - 2017

Target constituent criteria-specific isoconcentration contours presented in the SI/RI (**Exhibit 1**) identified approximately 109 acres exceeding NJDEP default IGWSRS for target constituents in and proximate to the TNT Project Area. TRDWP sampling focused on refining delineation within these areas.

KJ field staff and a Pace Analytical (Pace) mobile laboratory unit and laboratory technician mobilized to the Facility to begin refined delineation in October 2017. Refined delineation investigation locations were selected based on SI/RI data and field-identified step-out locations. Test pit excavation and preliminary soil screening were conducted as outlined in the TRDWP and repeated until areas were delineated vertically and horizontally to IGWSRS[1]. At each location, field personnel screened test pit sidewalls/bottom visually for signs of crystalline TNT and using an explosive detection field test kit (Expray®) and followed the iterative process for analytical sampling and/or establishment of step-out locations as outlined in the TRDWP.

Over the course of 30 field days, the team screened 180 test pits in accordance with the stepwise process outlined in the TRDWP (Hercules 2017) and collected 565 samples. Samples were submitted to Pace under chain-of-custody procedures, and a subset of samples authorized for Nitroaromatics and Nitramines (energetics and explosives [E&E]) analysis by United States Environmental Protection Agency (USEPA) SW846 Method 8095. Remaining samples were held as contingency samples. Upon receipt of analytical results, KJ reviewed the data and authorized contingency sample analysis until achieving delineation. Following data evaluation, KJ collected additional samples in December 2017 that were submitted to Pace's fixed laboratory in Madison, Wisconsin for analysis via USEPA SW846 Method 8095.

Exhibit 2 presents test pit logs and soil screening results. **Table 1** presents analytical sample results. **Exhibit 3** presents laboratory analytical data packages. Electronic data deliverables (EDDs) corresponding to the TRDWP data were generated in NJDEP's HAZSITE format, checked for errors using NJDEP's Electronic Data Submission Application (EDSA) (Version 7.1.5; Last updated September 2016), and submitted electronically to NJDEP via email. **Exhibit 4** presents a confirmation email that EDDs were successfully uploaded to NJDEP's database.

2017 refined delineation sampling distilled the 109-acre SI/RI delineation down to 22 discrete areas covering approximately 9 acres where target constituents exceed their respective default IGWSRS (**Figure 7**).

[1] In certain circumstances field sampling did not achieve delineation to IGWSRS due to field conditions and/or the capabilities of the sampling methods (e.g., mechanical limitations of excavator).

A summary of findings by area follows.

- **Area A** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area B** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area C** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area D** – Historical samples with TNT less than 1 mg/kg but above 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area E** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area F** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area G** – Delineation samples with TNT at concentration less than 1 mg/kg but above 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area H** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area I** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area J** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area K** – Horizontal delineation complete, groundwater infiltration and excavation sidewall instability precluded vertical delineation at certain interior sample locations.

- **Area L** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area M -** Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area N** – Horizontal and vertical delineation samples less than 1 mg/kg for TNT but greater than 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area O** – Vertical delineation samples less than 1 mg/kg for TNT but greater than 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area P** – Historical samples less than 1 mg/kg for TNT but greater than 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area Q** – Vertical delineation samples less than 1 mg/kg for TNT but greater than 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area R** – Vertical delineation incomplete at interior vertical confirmation sample location due to excavation sidewall instability and intrusion of groundwater. Sample location accessibility precluded horizontal delineation to IGWSRS at certain locations.

- **Area S** – Vertical delineation to IGWSRS not achieved prior to encountering the groundwater table; vertical delineation to RDCSRS achieved. A horizontal delineation sample less than 1 mg/kg for TNT but greater than 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area T** – Horizontal and vertical delineation of target constituents to default IGWSRS complete.

- **Area U** – Delineation samples less than 1 mg/kg for TNT but greater than 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

- **Area V** – Positive field screening results at horizontal delineation sample location, sample location inaccessibility precluded step-out location. Delineation samples less than 1 mg/kg for TNT but greater than 0.2 mg/kg (IGWSRS), existing dataset provides sufficient resolution for excavation planning and remedy implementation.

2.2 NJDEP Technical Consultation on Site-Specific IGWSRS

On December 5, 2018, representatives of NJDEP and Hercules met to discuss the technical scope, regulatory approach, and site-specific remediation goals associated with the bioremediation remedy in the TNT Project Area. When discussing the potential use of the SESOIL/AT123D model outlined in NJDEP's guidance (2014) to estimate TNT migration over time, NJDEP indicated that while TNT is soluble, its physiochemical properties cause it to move through the vadose zone and into groundwater at a rate well below that of volatile organic compounds for which the model was developed, and that the model is not the appropriate tool for developing a site-specific IGWSRS for TNT.

In light of that information, the remaining discussion focused on where and how site-specific IGWSRS for target constituents will influence the technical and administrative paths to closure. NJDEP noted the reduced reliance on site-specific IGWSRS in instances where groundwater contamination already exists, such as this case. NJDEP and Hercules agreed that the existing data are sufficient to support development of a remedial action work plan, and that following active remediation of soil and monitoring of concentration trends in groundwater, Hercules will consult with NJDEP regarding development of a post-remediation site-specific IGWSRS. **Exhibit 5** provides the technical consultation meeting minutes and summary memorandum.

2.2.1 Refined Delineation – Data Re-Evaluation

Based on the outcome of the technical consultation, delineation to RDCSRS (rather than IGWSRS) will guide remedy design and implementation. As such, KJ re-evaluated the comprehensive dataset (SI/RI and 2017 refined delineation data) to identify areas where delineation is complete to RDCSRS, opportunities to reduce the delineation extents, and supplemental sampling needs (data gaps).

The evaluation identified 20 of 22 areas delineated to RDCSRS. The two remaining areas (Areas R and V) required additional sampling to complete vertical and/or horizontal delineation to RDCSRS. Sampling to confirm target constituent concentrations at historical sample locations in two areas (Areas F and H) and to reduce delineation boundaries in two areas (Areas L and T) was also recommended. Supplemental sampling in these areas occurred in spring 2019.

2.3 Refined Delineation Sampling - 2019

In April 2019, field personnel conducted additional sampling at the six areas listed in Section 2.2.1. Nine soil boring locations were selected in these six areas, as follows:

- **Area F** – 1 historical confirmation location
- **Area H** – 1 historical confirmation location
- **Area L** – 2 horizontal delineation locations
- **Area R** – 1 horizontal delineation location
- **Area T** – 2 horizontal delineation locations
- **Area V** – 2 horizontal delineation locations

Soil borings were advanced via track-mounted Geoprobe at each location in Areas F, H, L, R, and T. Hand-driven cores were collected in Area V due to conditions inaccessible by Geoprobe equipment. Soil cores were screened consistent with the test pit screening procedures outlined in the TRDWP, and step-out boring locations selected accordingly. Forty-seven samples were collected and submitted to Pace for E&E analysis consistent with 2017 procedures.

Exhibit 2 presents boring logs and soil screening results. **Table 1** presents analytical sample results. **Exhibit 3** presents Pace analytical data packages. Electronic data deliverables (EDDs) corresponding to the TRDWP data were generated in NJDEP's HAZSITE format, checked for errors using NJDEP's Electronic Data Submission Application (EDSA) (Version 7.1.5; Last updated September 2016), and submitted electronically to NJDEP via email. **Exhibit 4** presents a confirmation email that EDDs were successfully uploaded to NJDEP.

Soil sample analytical results from the six areas sampled indicate:

- **Area F** – Historical sample results confirmed.

- **Area H** – Historical sample results not confirmed, confirmation sample did not contain target constituents at concentrations greater than RDCSRS.

- **Area L** – Horizontal delineation to RDCSRS complete and delineation boundary adjusted to reduce areal extent.

- **Area R** – Horizontal delineation to RDCSRS complete.

- **Area T** – Horizontal delineation to RDCSRS complete and delineation boundary adjusted to reduce areal extent.

- **Area V** – Horizontal delineation to RDCSRS complete.

Based on these results, delineation is complete and no additional sampling is necessary.

Section 3: Data Usability Evaluation

Prior to preparing the TNT RAWP, KJ evaluated refined delineation soil sample laboratory data in the context of NJDEP's Data Quality Assessment and Data Usability Evaluation Technical Guidance (2014). The evaluation includes a review of case narrative information, holding times, and Quality Assurance and Quality Control (QA/QC) analyses for E&E compounds. **Exhibit 3** provides Pace's Level II analytical laboratory data packages.

Samples were collected and submitted to Pace's mobile and/or fixed laboratory. Samples were analyzed for E&E by USEPA SW846 Method 8095. EPA Method 8095 incorporates the use of gas chromatography/nitrogen phosphorous detection (GC/NPD) and gas chromatography/ electron capture detector (GC/ECD) techniques as an improvement over high-performance liquid chromatography (HPLC) separation techniques used in EPA Method 8330. GC/NPD and GC/ECD techniques improve the selectivity of Method 8095 and eliminate potential interferences that are common in Method 8330. Due to the advantages provided by EPA Method 8095 and its ability to be run in a mobile laboratory, this method was selected for use during refined delineation over the historically used Method 8330.

Lab analysis methods were conducted in accordance with the Pace Analytical ECCS Mobile Lab Services' Standard Operating Procedures. NJDEP does not provide specific guidance or protocols for Method 8095 (or other E&E methods) in its Data of Known Quality Protocols Technical Guidance (DKQP; NJDEP 2014). Consistent with DKQP guidance in the absence of a specific protocol, equivalent QC data was collected and analyzed.

Field QC samples were collected in accordance with the AQAPP (draft; Hercules, 2018) at the frequency noted below. Field blank analytical results are presented in **Table 2**.

Field QC Sample	Frequency
Blind Duplicate	1 sample per 20 samples
Matrix Spike/Matrix Spike Duplicate	1 sample per 20 samples
Field Blank (Equipment Rinsate Blank)	1 sample per day

Laboratory blanks and control samples were prepared at an equivalent frequency as outlined in Pace's Method Summary and Standard Operating Procedures.

KJ noted the following during the data usability evaluation:

- Where internal standards were outside QC limits, the data were qualified as estimated ("J" qualifier) by the laboratory.
- A comparison of blind duplicate samples to their parent samples showed that concentrations were similar.
- E&E were detected in 4 of the 28 field blanks collected during refined delineation.
- No tentatively identified compounds (TICs) were identified.
- The reporting limit (RL) for all compounds was 100 micrograms per kilogram.

Sample submission and management processes varied slightly between the mobile and fixed laboratory. As such, these elements are discussed separately below.

Onsite Mobile Laboratory

The mobile laboratory provided 24-hour turn-around times, allowing for prompt decision making regarding additional field sample collection and contingency sample analysis authorizations. Given the rapid turn-around and prompt decision making, samples were analyzed within required holding times.

A total of 438 soil samples and 26 water samples were analyzed by the mobile laboratory. The following table summarizes the outcomes of the quality control analyses performed by the mobile lab:

Initial Calibration	Initial calibrations were prepared using method specified number of points. The calibration was verified using a single point second source standard. Method calibration criteria were acceptable.
Continuing Calibration	The instrument calibration was verified every 10 samples using a single point calibration standard. Method criteria were acceptable for all constituents of concern over the course of the project, except where qualified.
Method Blanks	The method blanks that were analyzed each day were free of contamination.
Blank Spikes	The recoveries for the constituents of concern were acceptable, except where qualified.
MS/MSD	Method criteria were acceptable for all constituents of concern over the course of the projects, except where qualified.

Madison WI Laboratory

A total of 166 samples were sent to Pace Analytical laboratory in Madison, WI. The case narrative provided by the laboratory noted that samples were received in acceptable condition and met quality criteria outlined above except where qualified. Samples that were not placed on hold were extracted and analyzed within applicable holding times, held samples were frozen upon arrival to arrest hold times.

Based on review of the information provided by Pace, the data are appropriate for use in remedial design and subsequent actions.

Section 4: Results & Conclusions

Refined delineation activities provide a greater understanding of the extent of target constituents within the TNT Project Area at a resolution appropriate for remedial design and excavation planning. The following table compares SI/RI delineation to refined delineation results in the context of remediation standards.

Remediation Standard	SI/RI Delineation	Refined Delineation	Reduction
IGWSRS	109 Ac	9 Ac	100 Ac (92%)
RDCSRS	28 Ac	6.5 Ac	21.5 Ac (77%)

Ac – acres
% - percent reduction

Figures 2 through 6 illustrate sample analytical results for each of the five target constituents. Given the size of the Facility, sample density, and volume of data generated at each sample location, Facility-specific data presentation schemes developed for the Phase II RIR (Hercules 2016) were used to provide a useful visual tool for the reader while fulfilling the fundamental intent of the TRSR.

Figure 7 illustrates the delineated boundaries of target constituents (evaluated collectively) and includes information from both laboratory analytical data as well as field screening (visual observations and Expray® test kit results). These boundaries support remedial design and excavation planning activities outlined in the TNT RAWP.

References

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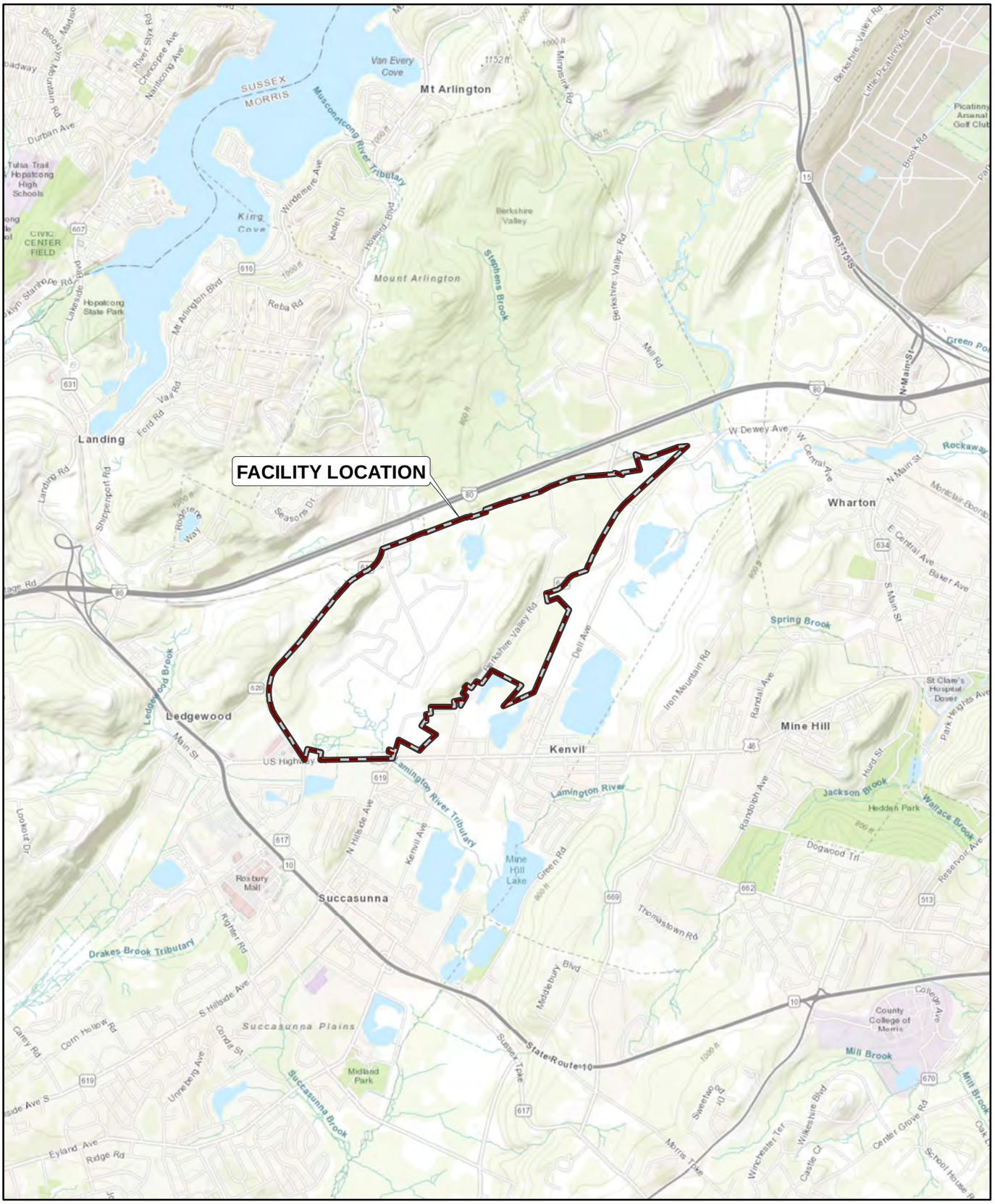
Hercules, Inc. 2017. TNT Refined Delineation Work Plan. Hercules, Incorporated. Kenvil Works Facility, Kenvil, Morris County, New Jersey. September.

NJDEP. 2014. Guidance Document: Using the Combined SESOIL/AT123D Models to Develop Site-Specific Impact to Groundwater Soil Remediation Standards for Mobile Constituents. New Jersey Department of Environmental Protection, Trenton, New Jersey. May.

Figures

Figures



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KENVIL, NEW JERSEY

TNT Refined Delineation Technical Memorandum

FACILITY LOCATION MAP

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Kennedy Jenks

FIGURE
1

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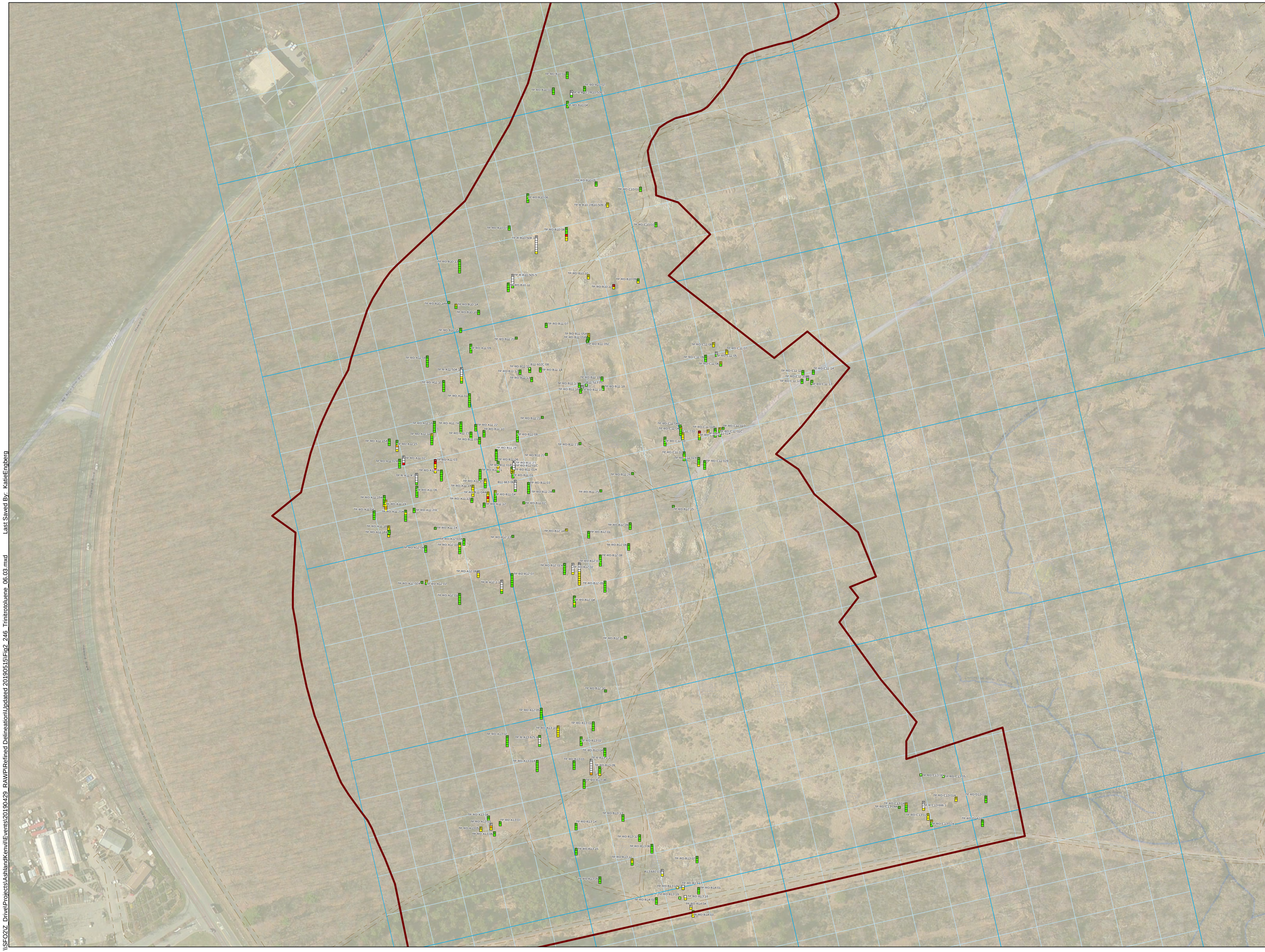
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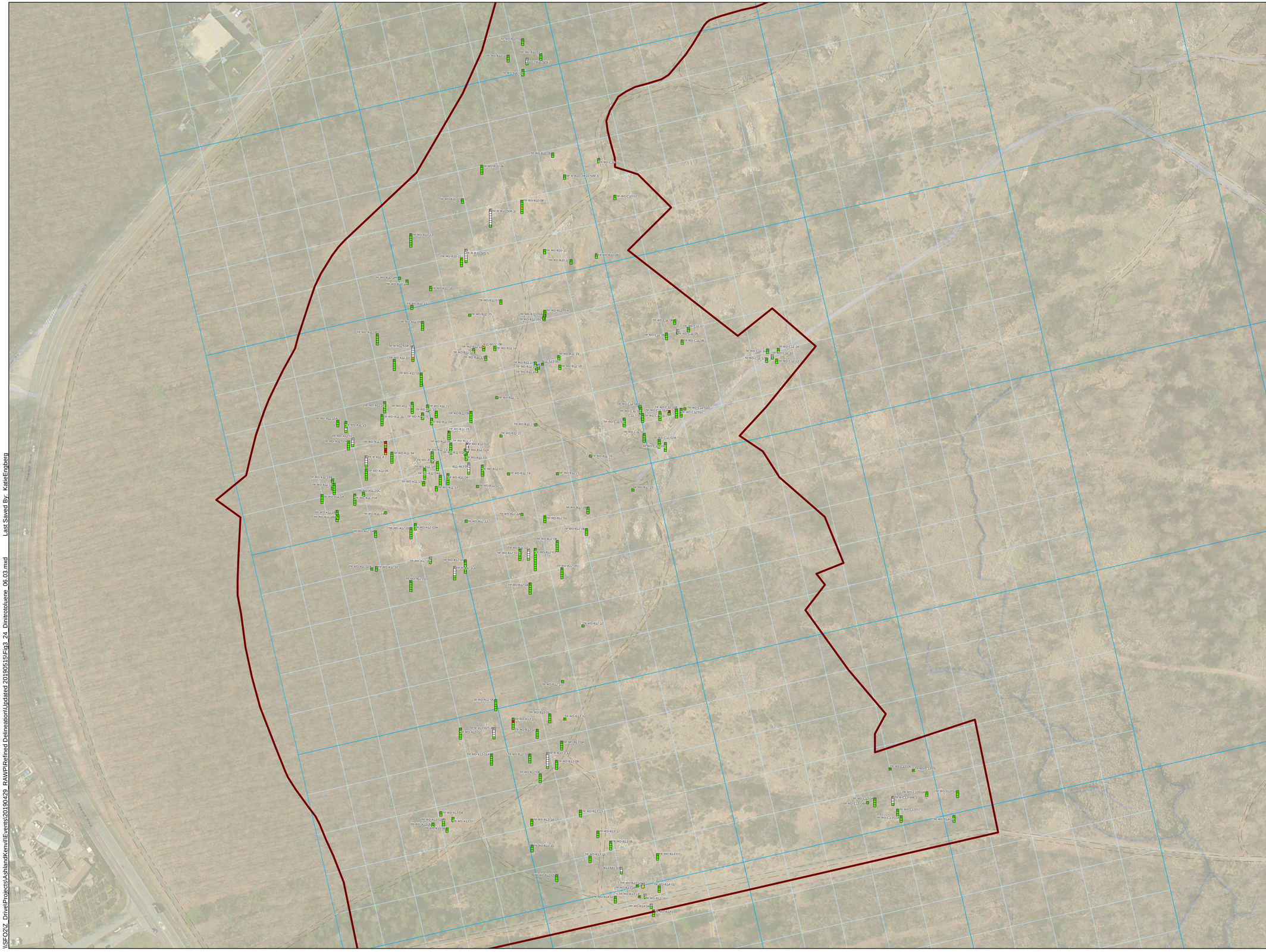

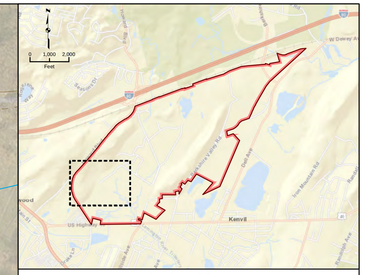

Index Map

Legend

- Road
- TNT Project Area Boundary

Soil Sample

- Not Sampled
- No Exceedance
- Exceeds IGWSRS (0.2 mg/kg)
- Exceeds RDCSRS (21 mg/kg)
- Exceeds NRDCSRS (95 mg/kg)

Notes:

1. NRDCSRS = Non Residential Direct Contact Soil Remediation Standard
2. RDCSRS = Residential Direct Contact Soil Remediation Standard
3. IGWSRS = Impact to Groundwater Soil Remediation Standard
4. Colored boxes represent 2 foot depth intervals at each soil sample location

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TNT Refined Delineation Technical Memorandum

SOIL SAMPLING RESULTS
2,4-Dinitrotoluene

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Kennedy Jenks

FIGURE
3

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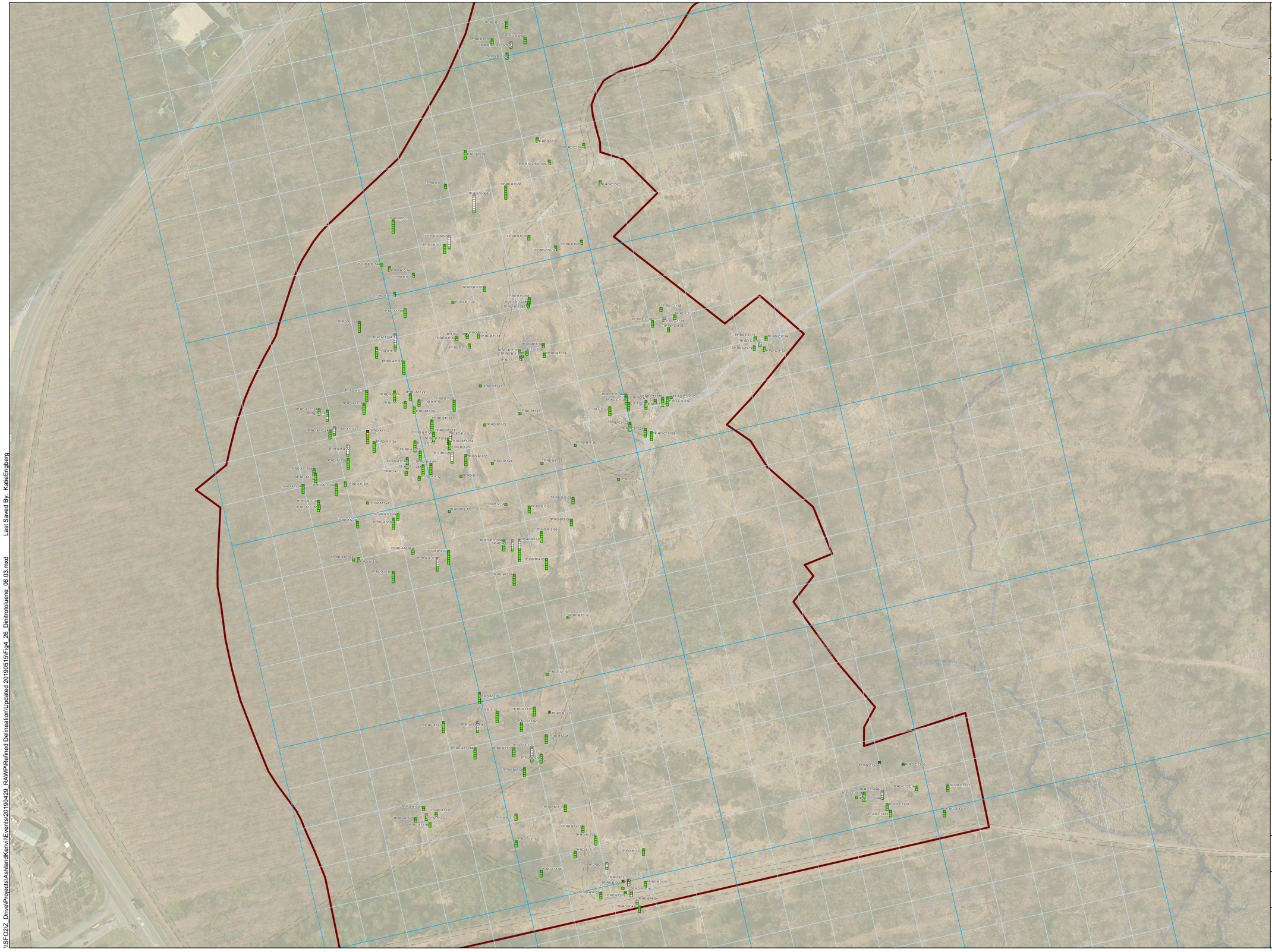

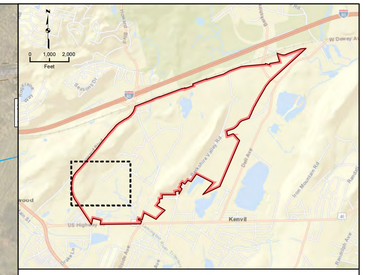

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TNT Refined Delineation Technical Memorandum

SOIL SAMPLING RESULTS
2,6-Dinitrotoluene

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FIGURE
4

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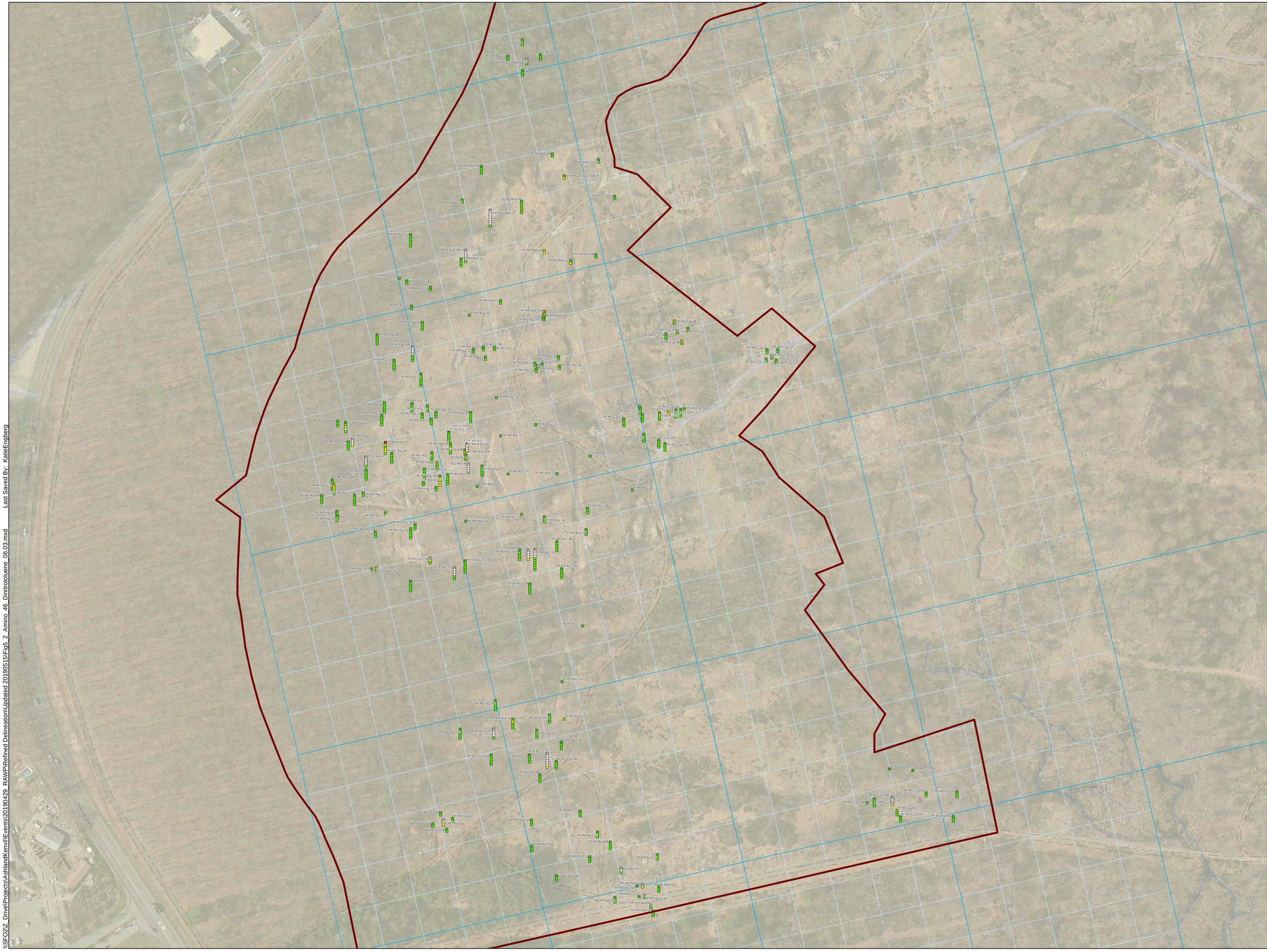

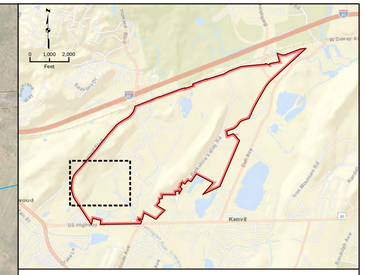

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TNT Refined Delineation Technical Memorandum

SOIL SAMPLING RESULTS
2-Amino-4,6-Dinitrotoluene

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FIGURE
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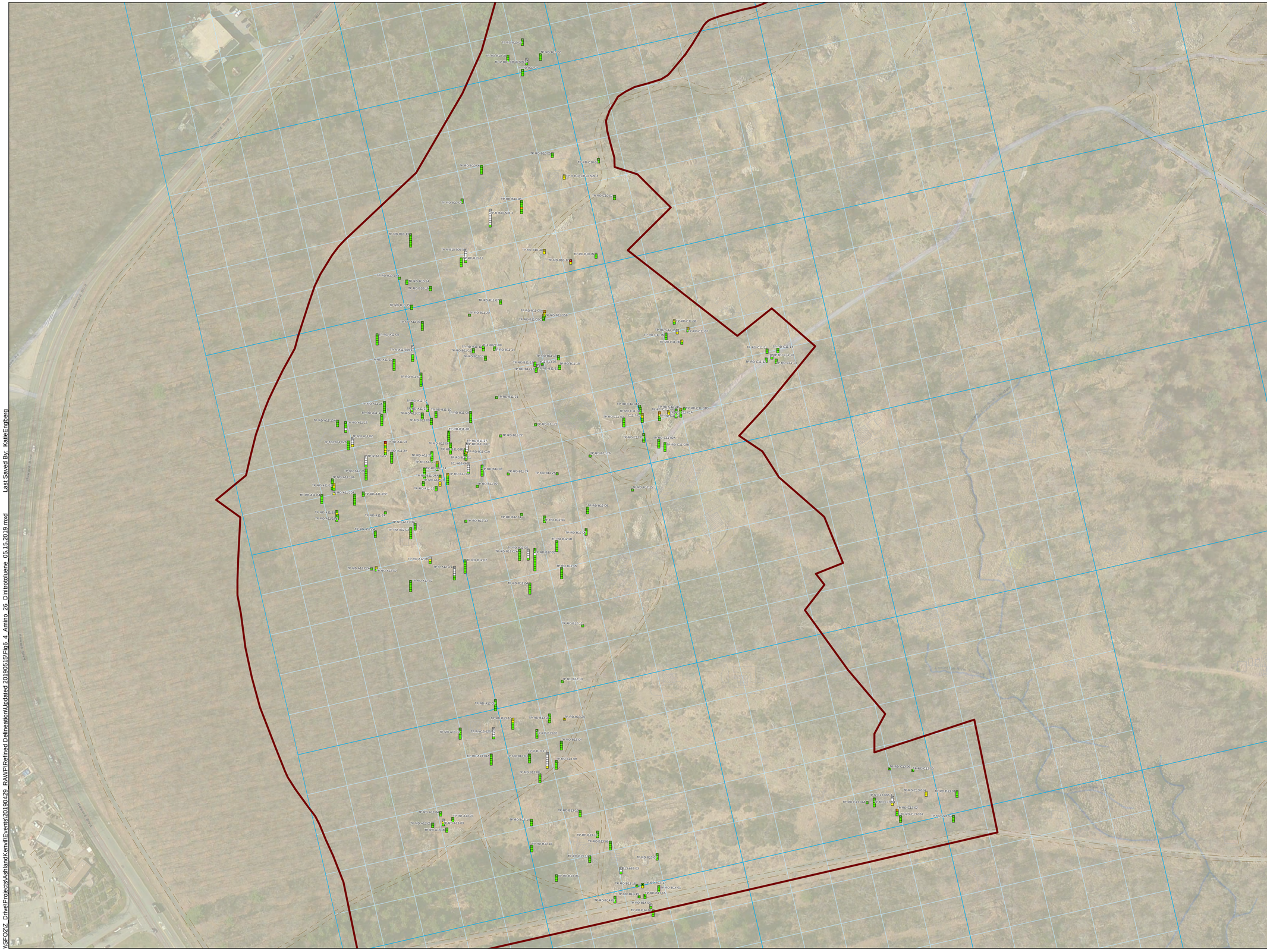

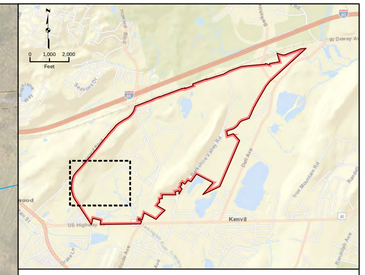

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SOIL SAMPLING RESULTS
4-Amino-2,6-Dinitrotoluene

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FIGURE
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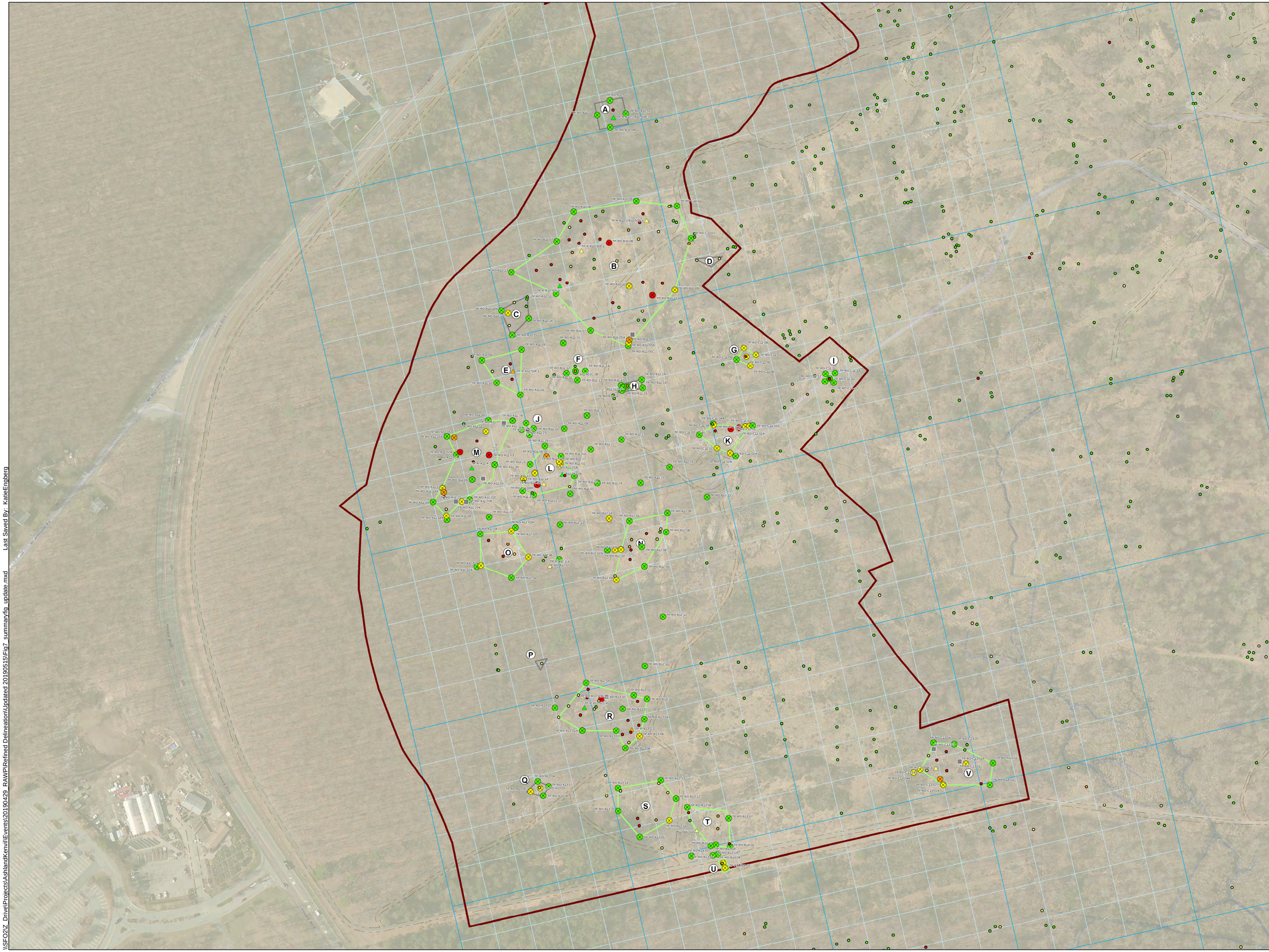

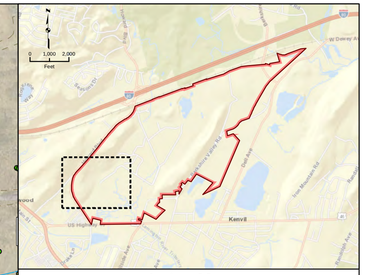

Index Map

Legend

- Delineation Boundary
- 2017 Refined Delineation Investigation Area
- TNT Project Area Boundary
- Road

Soil Sample Type

- Analytical Soil Sample
- Confirmation Soil Sample
- No Sample Collected*
- Historical Soil Sample

Soil Sample - Analytical Results

- Not Sampled
- No Exceedance
- Exceeds IGWSRS (0.2 mg/kg)
- Exceeds RDCSRS (21 mg/kg)
- Exceeds NRDCSRS (95 mg/kg)

Notes:

1. NRDCSRS = Non Residential Direct Contact Soil Remediation Standard
2. RDCSRS = Residential Direct Contact Soil Remediation Standard
3. IGWSRS = Impact to Groundwater Soil Remediation Standard

* At these locations, high concentrations of TNT were identified by visual observation or a positive Xpray test result. No analytical sample was collected.

N

0 55 110 220
Feet

HERCULES LLC
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT Refined Delineation Technical Memorandum

REFINED DELINEATION RESULTS
Target Constituents

HERCULES
Kennedy Jenks

FIGURE
7

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Tables

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-513-05	B11-602C-08	B11-663-06	B13-682-03	C11-7-02	C11-7-02	C11-7-02
					Sample Date	4/17/2019	4/17/2019	10/6/2017	11/8/2017	10/23/2017	10/23/2017	10/23/2017
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	8.5-9.0 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	B11-513-05(00.0-01.0)	B11-602C-08(00.0-01.0)	B11-663-06(08.5-09.0)	B13-682-03(05.0-05.5)	C11-7-02(01.0-01.5)	C11-7-02(03.0-03.5)	C11-7-02(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.031	0.047	0.17	0.55	2.8	2.2	0.38
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.019	**2.5**	< 0.11	< 0.12	0.22	0.24	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.019	0.11	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.021	< 0.019	< 0.11	< 0.12	0.39	0.38	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.029	< 0.019	< 0.11	< 0.12	1	1.4	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12 J-	< 0.11 J-
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.019	< 0.019	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C11-7-02	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A12-1-1
					Sample Date	10/23/2017	10/5/2017	10/4/2017	10/10/2017	10/10/2017	10/17/2017	10/11/2017
					Sample Depths	6.0-6.5 ft	8.5-9.0 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	12.0-12.5 ft	9.0-9.5 ft
					Sample ID	C11-7-02(06.0-06.5)	TP-R-A11-4-2(08.5-09.0)	TP-R-A11-504-1(08.5-09.0)	TP-R-A11-504-1(10.5-11.0)	TP-R-A11-504-1(11.5-12.0)	TP-R-A11-504-1(12.0-12.5)	TP-R-A12-1-1(09.0-09.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.12	< 0.11	0.42	5.7	0.3	0.11	0.32
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	0.21	**1.3**	< 0.11	0.26	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	0.16	0.16	< 0.11	< 0.11	0.23
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	0.2	0.23	< 0.11	< 0.11	0.18
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.11	< 0.11 J+	< 0.11	< 0.11	< 0.11	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11 J-	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A12-1-1	TP-R-A13-625-4	TP-R-B10-2/B10-509-3	TP-R-B10-2/B10-509-3	TP-R-B10-2/B10-509-3	TP-R-B10-2/B10-509-7	TP-R-B10-505-5
					Sample Date	10/17/2017	11/2/2017	10/3/2017	10/10/2017	10/10/2017	10/2/2017	10/5/2017
					Sample Depths	10.5-11.0 ft	8.0-8.5 ft	1.5-2.0 ft	2.0-2.5 ft	3.0-3.5 ft	4.5-5.0 ft	11.0-11.5 ft
					Sample ID	TP-R-A12-1-1(10.5-11.0)	TP-R-A13-625-4(08.0-08.5)	TP-R-B10-2/B10-509-3(01.5-02.0)	TP-R-B10-2/B10-509-3(02.0-02.5)	TP-R-B10-2/B10-509-3(03.0-03.5)	TP-R-B10-2/B10-509-7(04.5-05.0)	BD100517
					Parent ID							TP-R-B10-505-5(11.0-11.5)
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	0.28	0.36	< 0.12	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	0.28	0.7	< 0.12	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	0.72	0.96	< 0.12	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11 J+	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.12 J+	< 0.12	< 0.12	< 0.11 J+	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11 J-	< 0.12 J+	< 0.12	< 0.12	< 0.11 J+	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.12 J+	< 0.12	< 0.12	< 0.11 J+	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11 J+	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
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ug/kg = micrograms per kilogram
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-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B13-1-1	TP-R-C13-666-1	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01
					Sample Date	10/5/2017	10/5/2017	11/1/2017	11/7/2017	10/4/2017	10/4/2017	10/4/2017
					Sample Depths	11.0-11.5 ft	14.0-14.5 ft	12.0-12.5 ft	6.5-7.0 ft	1.0-1.5 ft	10.5-11.0 ft	3.0-3.5 ft
					Sample ID	TP-R-B10-505-5(11.0-11.5)	TP-R-B10-508-1(14.0-14.5)	TP-R-B13-1-1(12.0-12.5)	TP-R-C13-666-1(06.5-07.0)	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-01(10.5-11.0)	TP-RD-A11-01(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.13	1.6	**83 J+**	3.7	< 0.12	< 0.11	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	0.14	< 0.12	< 0.13	0.24	< 0.11	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.28	0.2	0.66	0.79	< 0.12	< 0.11	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.26	0.31	0.69	0.73	< 0.12	< 0.11	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11 J+	< 0.12	< 0.13 J-	< 0.12	< 0.11	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.13	< 0.12	< 0.11	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-02	TP-RD-A11-02	TP-RD-A11-02A	TP-RD-A11-02A
					Sample Date	10/4/2017	10/4/2017	10/4/2017	10/5/2017	10/10/2017	10/20/2017	10/20/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	6.0-6.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-01(05.0-05.5)	TP-RD-A11-01(07.0-07.5)	TP-RD-A11-01(09.0-09.5)	TP-RD-A11-02(06.0-06.5)	TP-RD-A11-02(07.0-07.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-02A(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.11	0.12	< 0.1	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.11	< 0.11	**210**	< 0.1 J	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.11	0.67	< 0.1 J	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.11	0.36	< 0.1	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	< 0.11	1.4 P	< 0.1	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.11	< 0.11	3	< 0.1	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11	< 0.11	< 0.11 J+	< 0.1	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03
					Sample Date	10/20/2017	10/20/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft
					Sample ID	TP-RD-A11-02A(05.0-05.5)	TP-RD-A11-02A(07.0-07.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-03(03.0-03.5)	TP-RD-A11-03(05.0-05.5)	TP-RD-A11-03(07.0-07.5)	TP-RD-A11-03(08.5-09.0)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	**< 120**	< 0.11	< 0.11	< 0.11	0.91
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	**79000**	**110**	1.6	15	**250**
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	**14000**	**1.7**	< 0.11	**14**	**200**
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	**270**	0.55	< 0.11	< 0.11	**1.3**
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	**380**	1	0.17	0.47	2.7
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	**540**	1.5	0.2	0.89	3.4
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	**< 120**	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	**< 120**	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	**< 120**	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 120	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04
					Sample Date	10/16/2017	10/16/2017	10/16/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017
					Sample Depths	10.5-11.0 ft	11.5-12.0 ft	9.5-10.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-A11-03(10.5-11.0)	TP-RD-A11-03(11.5-12.0)	TP-RD-A11-03(09.5-10.0)	TP-RD-A11-04(01.0-01.5)	TP-RD-A11-04(03.0-03.5)	TP-RD-A11-04(05.0-05.5)	TP-RD-A11-04(07.0-07.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	9.2	0.77	1.6	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	**2.5**	0.12	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.11 J-	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.16 J-	0.15	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11 J+	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-08
						Sample Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/19/2017
						Sample Depths	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-9.0 ft	1.0-1.5 ft
						Sample ID	BD10122017	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-06(03.0-03.5)	TP-RD-A11-06(05.0-05.5)	TP-RD-A11-06(07.0-07.5)	TP-RD-A11-06(08.0-09.0)	TP-RD-A11-08(01.0-01.5)
						Parent ID	TP-RD-A11-06(01.0-01.5)						
						Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS								
Explosives and Energetics													
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg					< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46		< 0.12 J+	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg					< 0.12 J+	< 0.12	< 0.12 J+	< 0.1 J+	< 0.11 J+	< 0.1 J+	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11
Tetryl	479-45-8	mg/kg		10000	780		< 0.12	< 0.12	< 0.12	< 0.1	< 0.11	< 0.1	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09
					Sample Date	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-08(03.0-03.5)	TP-RD-A11-08(05.0-05.5)	TP-RD-A11-08(07.0-07.5)	TP-RD-A11-08(09.0-09.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-09(03.0-03.5)
					Parent ID					TP-RD-A11-09(01.0-01.5)		
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10
					Sample Date	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
					Sample ID	TP-RD-A11-09(05.0-05.5)	TP-RD-A11-09(07.0-07.5)	TP-RD-A11-10(01.0-01.5)	TP-RD-A11-10(03.0-03.5)	TP-RD-A11-10(05.0-05.5)	TP-RD-A11-10(07.0-07.5)	TP-RD-A11-10(08.0-08.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-12
					Sample Date	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/19/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft
					Sample ID	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-11(03.0-03.5)	TP-RD-A11-11(05.0-05.5)	TP-RD-A11-11(07.0-07.5)	TP-RD-A11-11(08.0-08.5)	TP-RD-A11-12(01.0-01.5)
					Parent ID	TP-RD-A11-11(01.0-01.5)						
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.43	0.31	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	0.29	0.23 J	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.14	0.15	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.18	0.16	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14
					Sample Date	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft
					Sample ID	TP-RD-A11-12(03.0-03.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-13(03.0-03.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-14(03.0-03.5)	TP-RD-A11-14(05.0-05.5)	BD102517
					Parent ID							TP-RD-A11-14(06.0-06.5)
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	0.27	0.46	1.1	0.22
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	0.12	< 0.11	0.15	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	0.25	0.26	0.22	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	0.36	0.29	0.4	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15
					Sample Date	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017
					Sample Depths	6.0-6.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	8.0-8.5 ft
					Sample ID	TP-RD-A11-14(06.0-06.5)	TP-RD-A11-14(07.0-07.5)	TP-RD-A11-14(08.5-09.0)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15(03.0-03.5)	TP-RD-A11-15(05.0-05.5)	TP-RD-A11-15(08.0-08.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.2	0.88	0.48	0.15	0.16	**46**	0.21
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	0.16	0.17	0.18	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	0.2	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	0.15	< 0.11	0.17	0.18	0.73	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	0.2	0.12	0.29	0.28	0.94	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11 J-	< 0.12	< 0.11	< 0.1	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16
					Sample Date	10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-15A(03.0-03.5)	TP-RD-A11-15A(05.0-05.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-16(03.0-03.5)	TP-RD-A11-16(05.0-05.5)	TP-RD-A11-16(07.0-07.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.1	< 0.12	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-18	TP-RD-A11-18
					Sample Date	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	11/3/2017	11/3/2017
					Sample Depths	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-16(08.0-08.5)	TP-RD-A11-17(01.0-01.5)	TP-RD-A11-17(03.0-03.5)	TP-RD-A11-17(05.0-05.5)	TP-RD-A11-17(07.0-07.5)	BD110317	TP-RD-A11-18(01.0-01.5)
					Parent ID						TP-RD-A11-18(01.0-01.5)	
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	7.6	0.23	< 0.12	< 0.11	< 0.11	1.6 J
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	**< 1.2**	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	**< 1.2**	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	1.8	0.15	< 0.12	< 0.11	0.14	0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	3	0.19	< 0.12	< 0.11	0.32	0.3
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 1.2 J-	< 0.13 J-	< 0.12	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 1.2 J-	< 0.13 J-	< 0.12	< 0.11	< 0.11	< 0.11 J
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 1.2	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-18A	TP-RD-A11-19
					Sample Date	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-18(03.0-03.5)	TP-RD-A11-18(05.0-05.5)	TP-RD-A11-18(07.0-07.5)	TP-RD-A11-18(08.0-08.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-18A(03.0-03.5)	TP-RD-A11-19(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	6.8	< 0.11	< 0.11	0.22	< 0.11	< 0.11	1.6
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.28	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	0.98
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.53	< 0.11	< 0.11	0.16	< 0.11	< 0.11	1.1
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11 J-	< 0.11 J-	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A
					Sample Date	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-19(03.0-03.5)	TP-RD-A11-19(05.0-05.5)	TP-RD-A11-19(07.0-07.5)	TP-RD-A11-19(08.0-08.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-19A(03.0-03.5)	TP-RD-A11-19A(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.9	1.3	**24**	14	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.74	0.55	0.27	0.38	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.8	0.48	0.3	0.49	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	0.11	< 0.1 J-	< 0.11 J-	< 0.11 J-	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A
					Sample Date	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
					Sample ID	TP-RD-A11-19A(07.0-07.5)	TP-RD-A11-19A(08.0-08.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20A(03.0-03.5)	TP-RD-A11-20A(05.0-05.5)	TP-RD-A11-20A(07.0-07.5)	TP-RD-A11-20A(08.0-08.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.13	4.9	< 0.12	1.3	0.12	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.1	< 0.12	< 0.12	0.17	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.1 J-	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-20C	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21
					Sample Date	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft
					Sample ID	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-20C(03.0-03.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-21(03.0-03.5)	TP-RD-A11-21(05.0-05.5)	TP-RD-A11-21(07.0-07.5)	TP-RD-A11-21(09.0-09.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.12 J-	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-24
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017
					Sample Depths	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-22(02.0-02.5)	TP-RD-A11-22(04.0-04.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-23(02.0-02.5)	TP-RD-A11-23(04.0-04.5)	TP-RD-A11-24(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A11-7A
					Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-3A(03.0-03.5)	TP-RD-A11-3A(05.0-05.5)	TP-RD-A11-3A(07.0-07.5)	TP-RD-A11-3A(08.5-09.0)	TP-RD-A11-7A(01.0-01.5)	BD101317
					Parent ID							TP-RD-A11-7A(03.0-03.5)
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01
					Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/11/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-7A(03.0-03.5)	TP-RD-A11-7A(05.0-05.5)	TP-RD-A11-7A(07.0-07.5)	TP-RD-A11-7A(08.5-09.0)	TP-RD-A12-01(01.0-01.5)	BD101117	TP-RD-A12-01(03.0-03.5)
					Parent ID						TP-RD-A12-01(03.0-03.5)	
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02	TP-RD-A12-02A	TP-RD-A12-02A
					Sample Date	10/11/2017	10/11/2017	10/11/2017	10/6/2017	10/6/2017	10/11/2017	10/11/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-A12-01(05.0-05.5)	TP-RD-A12-01(07.0-07.5)	TP-RD-A12-01(09.0-09.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02(02.0-02.5)	TP-RD-A12-02A(00.5-01.0)	TP-RD-A12-02A(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	0.46	< 0.11	< 0.11	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	0.52	< 0.11	< 0.11	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	0.65	< 0.11	< 0.11	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-03A
					Sample Date	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/26/2017	10/26/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03(03.0-03.5)	TP-RD-A12-03(05.0-05.5)	TP-RD-A12-03(07.0-07.5)	TP-RD-A12-03(09.0-09.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-03A(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	0.31	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	0.2	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	0.21	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-04	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05
					Sample Date	10/26/2017	10/26/2017	10/26/2017	10/26/2017	11/1/2017	11/1/2017	11/1/2017
					Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A12-03A(05.0-05.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-04(03.0-03.5)	TP-RD-A12-04(05.0-05.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A12-05(03.0-03.5)	TP-RD-A12-05(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12 J-	< 0.12 J-	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-06	TP-RD-A12-06	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A
					Sample Date	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/1/2017	11/1/2017	11/1/2017
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A12-05(07.0-07.5)	TP-RD-A12-05(08.0-08.5)	TP-RD-A12-06(03.0-03.5)	TP-RD-A12-06(05.0-05.5)	TP-RD-A13-01A(01.0-01.5)	BD110117	TP-RD-A13-01A(03.0-03.5)
					Parent ID						TP-RD-A13-01A(03.0-03.5)	
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.1	< 0.1	< 0.11	0.14	< 0.14	< 0.13	< 0.13
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.1	< 0.1	2.3	1.7	< 0.14	< 0.13	< 0.13
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.1	< 0.1	0.43	0.28	< 0.14	< 0.13	< 0.13
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.1	< 0.1	0.48	0.21	< 0.14	< 0.13	< 0.13
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.1 J-	< 0.1 J-	< 0.11 J-	< 0.11 J-	< 0.14 J-	< 0.13	< 0.13 J
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13
Tetryl	479-45-8	mg/kg		10000	780	< 0.1	< 0.1	< 0.11	< 0.11	< 0.14	< 0.13	< 0.13

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02
					Sample Date	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-A13-01A(05.0-05.5)	TP-RD-A13-01A(07.0-07.5)	TP-RD-A13-01A(08.0-08.5)	TP-RD-A13-02(01.0-01.5)	TP-RD-A13-02(03.0-03.5)	TP-RD-A13-02(05.0-05.5)	BD110217
					Parent ID							TP-RD-A13-02(07.0-07.5)
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12 J-	< 0.1 J-	< 0.1 J-	< 0.12 J-	< 0.12 J-	< 0.12 J-	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.1	< 0.1	< 0.12	< 0.12	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-03	TP-RD-A13-03	TP-RD-A13-04	TP-RD-A13-04	TP-RD-A13-05
					Sample Date	11/2/2017	11/2/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A13-02(07.0-07.5)	TP-RD-A13-02(08.0-08.5)	TP-RD-A13-03(03.0-03.5)	TP-RD-A13-03(05.0-05.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-04(03.0-03.5)	TP-RD-A13-05(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	0.28	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	**43**	17	< 0.11	< 0.11	0.3
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	0.25	0.12	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	0.69	0.68 J	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	0.85	0.85 J	< 0.11	< 0.11	0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J	< 0.11 J-	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-06	TP-RD-A13-07	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-01
					Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A13-05(03.0-03.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-06(03.0-03.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-A13-07(03.0-03.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-01(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.57	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.16	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J+
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J+
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11 J+	< 0.11 J+
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11 J+	< 0.11 J+
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11 J+	< 0.11 J+
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-03
					Sample Date	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017
					Sample Depths	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft
					Sample ID	TP-RD-B10-01(04.0-05.0)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-02(03.0-03.5)	TP-RD-B10-02(04.0-05.0)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-03(03.0-03.5)	TP-RD-B10-03(04.0-05.0)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11 J+	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11 J+	< 0.11	< 0.11 J+	< 0.11	< 0.11 J+	< 0.12	< 0.12 J+
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.12 J+
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.12 J+
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.12 J+
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.12 J+
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-06
					Sample Date	10/2/2017	10/2/2017	10/2/2017	10/3/2017	10/3/2017	10/16/2017	10/4/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	4.5-0.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-04(03.0-03.5)	TP-RD-B10-04(04.5-0.50)	TP-RD-B10-05(01.0-01.5)	TP-RD-B10-05(02.0-02.5)	TP-RD-B10-05(03.0-03.5)	TP-RD-B10-06(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.11 J+	< 0.11 J+	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.11 J+	< 0.11 J+	< 0.11 J	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.11 J+	< 0.11 J+	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.11 J+	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-08
					Sample Date	10/4/2017	10/4/2017	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	2.5-3.0 ft	2.5-3.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-06(03.0-03.5)	TP-RD-B10-06(05.0-05.5)	TP-RD-B10-06(06.0-06.5)	TP-RD-B10-07(01.0-01.5)	BD100317A	TP-RD-B10-07(02.5-03.0)	TP-RD-B10-08(01.0-01.5)
					Parent ID					TP-RD-B10-07(02.5-03.0)		
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	0.16
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-09
						Sample Date	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/17/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.5-10.8 ft	1.0-1.5 ft	2.0-2.5 ft
						Sample ID	TP-RD-B10-08(03.0-03.5)	TP-RD-B10-08(05.0-05.5)	TP-RD-B10-08(07.0-07.5)	TP-RD-B10-08(09.0-09.5)	TP-RD-B10-08(10.5.0-10.8)	TP-RD-B10-09(01.0-01.5)	TP-RD-B10-09(02.0-02.5)
						Parent ID							
						Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS								
Explosives and Energetics													
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300		< 0.12	< 0.12	0.24	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21		< 0.12	< 0.12	**190**	0.7	1.5	< 0.11	0.41
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7		< 0.12	< 0.12	**0.91**	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7		< 0.12	< 0.12	0.21	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7		< 0.12	< 0.12	**8.8**	< 0.11	0.16	0.15	0.14 J-
2-Nitrotoluene	88-72-2	mg/kg		10000	780		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7		< 0.12	< 0.12	**25**	0.15	0.22	0.15	0.14 J-
4-Nitrotoluene	99-99-0	mg/kg		10000	780		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg					< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11 J+	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11 J+	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg					< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11 J+	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780		< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11
					Sample Date	10/17/2017	10/17/2017	10/3/2017	10/3/2017	10/10/2017	10/17/2017	10/4/2017
					Sample Depths	3.0-3.5 ft	3.5-4.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	3.5-4.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-09(03.0-03.5)	TP-RD-B10-09(03.5-04.0)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-10(03.5-04.0)	TP-RD-B10-11(01.0-01.5)
					Parent ID			TP-RD-B10-10(01.0-01.5)				
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.89	< 0.11	1.4	1.2 J	< 0.12	1.6	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	0.48	0.18 J	0.16	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.16	< 0.11	0.65	0.35 J	< 0.12	0.62 J-	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.16	< 0.11	1	0.59 J	< 0.12	0.81 J-	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11 J+	< 0.11 J+	< 0.12	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11 J+	< 0.11 J	< 0.12	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11 J+	< 0.11 J	< 0.12	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-12
					Sample Date	10/4/2017	10/4/2017	10/4/2017	10/3/2017	10/10/2017	10/10/2017	10/16/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.5-2.0 ft	2.5-3.0 ft	3.5-4.0 ft
					Sample ID	TP-RD-B10-11(03.0-03.5)	TP-RD-B10-11(05.0-05.5)	TP-RD-B10-11(06.0-06.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-12(02.5-03.0)	TP-RD-B10-12(03.5-04.0)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.11	< 0.11	< 120	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.11	< 0.11	**< 120**	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.11	< 0.11	0.86	**1700**	14	0.14
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	**< 120**	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	**< 120**	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	< 0.11	0.37	**< 120**	0.79	0.32
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 120	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.11	< 0.11	< 120	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.11	< 0.11	0.31	**< 120**	0.74	0.27
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 120	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 120	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.11	< 0.11	**< 120**	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.11	< 0.11 J+	**< 120**	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11	< 0.11	< 0.11 J+	< 120	< 0.12	< 0.12 J+
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11 J+	< 120	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.11	< 0.11	**< 120**	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 120	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-14
					Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/12/2017
					Sample Depths	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-13(10.0-10.5)	TP-RD-B10-13(03.0-03.5)	TP-RD-B10-13(05.0-05.5)	TP-RD-B10-13(07.0-07.5)	TP-RD-B10-13(09.0-09.5)	TP-RD-B10-14(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	0.26
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	0.5
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	0.25
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12 J+
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12 J+
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12 J+
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B10-16
					Sample Date	10/12/2017	10/16/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017
					Sample Depths	2.0-2.5 ft	1.0-1.5 ft	1.0-1.5 ft	2.0-2.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft
					Sample ID	TP-RD-B10-14(02.0-02.5)	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	BD110617	TP-RD-B10-15(02.0-02.5)	TP-RD-B10-16(01.0-01.5)	TP-RD-B10-16(02.0-02.5)
					Parent ID				TP-RD-B10-15(02.0-02.5)			
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11 J+	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J+	< 0.11	< 0.12 J-	< 0.12 J-	< 0.12 J	< 0.12 J	< 0.12 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11 J+	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01B
					Sample Date	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/16/2017	10/16/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	4.0-4.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	2.0-2.5 ft
					Sample ID	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01(03.0-03.5)	BD100617	TP-RD-B11-01(04.0-04.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01B(02.0-02.5)
					Parent ID			TP-RD-B11-01(04.0-04.5)				
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	1.1	0.13	< 0.12	< 0.11	1.6	< 0.11	0.36 J
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.12	< 0.11	0.47	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	< 0.12	< 0.11	0.9	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.15	< 0.11	< 0.12	< 0.11	1.2	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11 J
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12 J+	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12 J+	< 0.11	< 0.11 J
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.12	< 0.11	< 0.12 J+	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03
					Sample Date	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/12/2017	10/12/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-01B(03.0-03.5)	TP-RD-B11-01B(05.0-05.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-01C(03.0-03.5)	TP-RD-B11-01C(05.0-05.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.56	2.2	0.14	< 0.11	0.33	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.48	0.67	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.42	0.7	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12 J	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11 J+
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04
					Sample Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B11-03(03.0-03.5)	TP-RD-B11-03(05.0-05.5)	TP-RD-B11-03(07.0-07.5)	TP-RD-B11-03(08.5-09.0)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04(03.0-03.5)	TP-RD-B11-04(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	1.4	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	0.34	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	0.44	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12 J+	< 0.11 J+	< 0.11 J+
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12 J+	< 0.11 J+	< 0.11 J+
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.12 J+	< 0.11 J+	< 0.11 J+
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A
					Sample Date	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/19/2017	10/19/2017	10/19/2017
					Sample Depths	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B11-04(07.0-07.5)	TP-RD-B11-04(08.5-09.0)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-04A(02.0-02.5)	TP-RD-B11-04A(03.0-03.5)	TP-RD-B11-04A(04.0-04.5)	TP-RD-B11-04A(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 120
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	**< 120**
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	0.83	2.1	0.34	0.61	**2300**
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	**< 120**
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	**< 120**
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	0.22	2.6 J-	0.34	1.3	**< 120**
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 120
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	0.29	3.3 J	0.41	1.5	**< 120**
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 120
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 120
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	**< 120**
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11 J+	< 0.12 J	< 0.11	< 0.11	< 0.11	< 0.12	**< 120**
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J+	< 0.12 J	< 0.11	< 0.11	< 0.11 J+	< 0.12	< 120 J+
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11 J+	< 0.12 J	< 0.11	< 0.11	< 0.11	< 0.12	< 120 J+
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	**< 120**
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 120

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05B
					Sample Date	10/25/2017	10/25/2017	10/16/2017	10/16/2017	10/16/2017	10/18/2017	10/18/2017
					Sample Depths	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B11-04A(07.0-07.5)	TP-RD-B11-04A(08.5-09.0)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05A(03.0-03.5)	TP-RD-B11-05A(05.0-05.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05B(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	11	**25**	0.34	0.72	0.16	0.17	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	0.15	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	1	1.5	**6.3**	0.35	< 0.11	0.41	0.17
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.89	1.1	**12**	0.47	< 0.11	0.68	0.13
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06
					Sample Date	10/18/2017	10/23/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017
					Sample Depths	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft
					Sample ID	TP-RD-B11-05B(05.0-05.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-06(03.0-03.5)	TP-RD-B11-06(05.0-05.5)	TP-RD-B11-06(07.0-07.5)	TP-RD-B11-06(09.0-09.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	< 0.11 J	< 0.11	0.94	**29**	0.16
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	< 0.11	< 0.11	0.66	0.18	0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	< 0.11	< 0.11	0.94	0.19	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.12	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-07	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08
					Sample Date	11/6/2017	11/6/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft
					Sample ID	TP-RD-B11-07(03.0-03.5)	TP-RD-B11-07(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-08(03.0-03.5)	TP-RD-B11-08(05.0-05.5)	TP-RD-B11-08(07.0-07.5)	BD110717A
					Parent ID							TP-RD-B11-08(09.0-09.5)
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12 J-	< 0.11 J-	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-08	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10
					Sample Date	11/7/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
					Sample Depths	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	2.0-2.5 ft	2.0-2.5 ft
					Sample ID	TP-RD-B11-08(09.0-09.5)	TP-RD-B11-09(01.0-01.5)	TP-RD-B11-09(02.0-02.5)	TP-RD-B11-09(04.0-04.5)	TP-RD-B11-10(01.0-01.5)	BD112917A	TP-RD-B11-10(02.0-02.5)
					Parent ID						TP-RD-B11-10(02.0-02.5)	
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12 J

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-13
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
					Sample Depths	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-10(04.0-04.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-11(03.0-03.5)	TP-RD-B11-12(01.0-01.5)	BD112917B	TP-RD-B11-12(03.0-03.5)	TP-RD-B11-13(01.0-01.5)
					Parent ID					TP-RD-B11-12(03.0-03.5)		
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.11	0.18	< 0.11	< 0.11 J	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-14	TP-RD-B11-15	TP-RD-B11-16	TP-RD-B11-16	TP-RD-B11-17
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-13(03.0-03.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-14(03.0-03.5)	TP-RD-B11-15(03.0-03.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-16(03.0-03.5)	TP-RD-B11-17(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-17(03.0-03.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-18(03.0-03.5)	TP-RD-B11-19(01.0-01.5)	TP-RD-B11-19(03.0-03.5)	BD120417	TP-RD-B11-20(01.0-01.5)
					Parent ID						TP-RD-B11-20(01.0-01.5)	
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12 J

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23	TP-RD-B11-24	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B11-27
					Sample Date	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/5/2017	4/16/2019
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B11-20(07.0-07.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.11	0.11	< 0.11	< 0.12	< 0.12	< 0.019
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.019

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-28	TP-RD-B11-28	TP-RD-B11-28	TP-RD-B11-28	TP-RD-B11-28	TP-RD-B12-01	TP-RD-B12-01
					Sample Date	4/16/2019	4/16/2019	4/16/2019	4/16/2019	4/16/2019	10/18/2017	10/18/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-21(03.0-03.5)	TP-RD-B11-21(05.0-05.5)	TP-RD-B11-21(07.0-07.5)	TP-RD-B11-21(09.0-09.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-01(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	0.16	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	0.14	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.02	< 0.018	< 0.018	< 0.019	< 0.019	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-01	TP-RD-B12-02	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A
					Sample Date	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017
					Sample Depths	5.0-5.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B12-01(05.0-05.5)	TP-RD-B12-02(09.0-09.5)	TP-RD-B12-02A(01.0-01.5)	BD101817	TP-RD-B12-02A(03.0-03.5)	TP-RD-B12-02A(05.0-05.5)	TP-RD-B12-02A(07.0-07.5)
					Parent ID				TP-RD-B12-02A(03.0-03.5)			
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	0.5	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	5	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	0.45	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	0.3	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-02A	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03
					Sample Date	10/18/2017	10/23/2017	10/23/2017	10/23/2017	10/26/2017	10/26/2017	10/26/2017
					Sample Depths	9.0-9.5 ft	10.0-10.5 ft	12.0-12.5 ft	9.0-9.5 ft	13.0-13.5 ft	14.0-14.5 ft	15.0-15.5 ft
					Sample ID	TP-RD-B12-02A(09.0-09.5)	TP-RD-B12-03(10.0-10.5)	TP-RD-B12-03(12.0-12.5)	TP-RD-B12-03(09.0-09.5)	TP-RD-B12-03(13.0-13.5)	TP-RD-B12-03(14.0-14.5)	TP-RD-B12-03(15.0-15.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	0.38	0.52 J	0.65	1	0.56	0.6
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	0.11	0.23	0.21	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.11	< 0.11	0.14	0.13	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11 J-	< 0.11 J	< 0.12	< 0.12	< 0.11	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11 J-	< 0.11 J	< 0.12	< 0.12	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-04
					Sample Date	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
					Sample Depths	16.5-17.0 ft	17.5-18.0 ft	18.5-19.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B12-03(16.5-17.0)	TP-RD-B12-03(17.5-18.0)	TP-RD-B12-03(18.5-19.0)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-04(03.0-03.5)	TP-RD-B12-04(05.0-05.5)	TP-RD-B12-04(07.0-07.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.79	0.66	0.49	< 0.12	< 0.12	< 0.12	0.32
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	0.12	< 0.12	0.14	< 0.12	0.14
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	0.12	0.15	0.2	< 0.12	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	0.55	< 0.12	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.11 J-	< 0.11 J-	< 0.12 J-	< 0.12 J-	< 0.12 J-	< 0.12 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-06
					Sample Date	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/30/2017
					Sample Depths	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B12-04(09.0-09.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-05(03.0-03.5)	TP-RD-B12-05(05.0-05.5)	TP-RD-B12-05(07.0-07.5)	TP-RD-B12-05(09.0-09.5)	TP-RD-B12-06(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	0.19
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	0.14
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	0.16
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	0.15	< 0.12	0.12	< 0.1	< 0.1	< 0.13
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.12 J-	< 0.12 J-	< 0.12 J-	< 0.1 J-	< 0.1 J-	< 0.13
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.12	< 0.12	< 0.1	< 0.1	< 0.13

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07
					Sample Date	11/30/2017	11/30/2017	11/30/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	5.0-5.5 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B12-06(03.0-03.5)	BD113017A	TP-RD-B12-06(05.0-05.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-07(10.0-10.5)	TP-RD-B12-07(03.0-03.5)	TP-RD-B12-07(05.0-05.5)
					Parent ID		TP-RD-B12-06(05.0-05.5)					
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11 J	< 0.11 J-	< 0.11 J-	< 0.11 J-	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08
					Sample Date	11/2/2017	11/2/2017	11/2/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017
					Sample Depths	7.0-7.5 ft	7.0-7.5 ft	9.0-9.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	BD110217A	TP-RD-B12-07(07.0-07.5)	TP-RD-B12-07(09.0-09.5)	BD110717B	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-08(03.0-03.5)	TP-RD-B12-08(05.0-05.5)
					Parent ID	TP-RD-B12-07(07.0-07.5)			TP-RD-B12-07(07.0-07.5)			
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.11	< 0.11	0.12	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.11 J	< 0.11 J-	< 0.11 J-	< 0.12	< 0.11 J-	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12
					Sample Date	11/7/2017	11/7/2017	11/30/2017	11/30/2017	11/30/2017	12/5/2017	12/5/2017
					Sample Depths	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B12-08(07.0-07.5)	TP-RD-B12-08(09.0-09.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-09(03.0-03.5)	TP-RD-B12-09(05.0-05.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J	< 0.11 J-	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.13

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01
					Sample Date	12/4/2017	12/5/2017	12/5/2017	12/5/2017	10/30/2017	10/30/2017	10/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-01(03.0-03.5)	TP-RD-B13-01(05.0-05.5)
					Parent ID		TP-RD-B12-14(01.0-01.5)					
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	0.18	0.22 J	< 0.11	< 0.13	< 0.13	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.13	< 0.13	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.12	< 0.11	< 0.13	< 0.13	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	0.17	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.13	< 0.13	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.12	< 0.11	< 0.13	< 0.13	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	1	0.65 J	< 0.11	< 0.13	< 0.13	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13 J-	< 0.13 J-	< 0.12 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.12 J	< 0.11	< 0.13	< 0.13	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-03
					Sample Date	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017
					Sample Depths	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	7.0-7.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-01(07.0-07.5)	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-02(03.0-03.5)	TP-RD-B13-02(05.0-05.5)	BD103017	TP-RD-B13-02(07.0-07.5)	TP-RD-B13-03(01.0-01.5)
					Parent ID					TP-RD-B13-02(07.0-07.5)		
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.13 J-	< 0.12 J-	< 0.11 J-	< 0.11 J-	< 0.11 J	< 0.12 J
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11 J	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.13	< 0.12	< 0.11	< 0.11	< 0.11 J	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-04
					Sample Date	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B13-03(03.0-03.5)	TP-RD-B13-03(05.0-05.5)	TP-RD-B13-03(07.0-07.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-04(03.0-03.5)	TP-RD-B13-04(05.0-05.5)	TP-RD-B13-04(07.0-07.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.11 J-	< 0.12 J-	< 0.12 J-	< 0.11 J-	< 0.11 J-	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06
					Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-05(03.0-03.5)	BD120117B	TP-RD-B13-05(05.0-05.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-06(03.0-03.5)	TP-RD-B13-06(05.0-05.5)
					Parent ID			TP-RD-B13-05(05.0-05.5)				
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.11	< 0.11 J	< 0.12	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08
					Sample Date	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017
					Sample Depths	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-06(07.0-07.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-07(03.0-03.5)	TP-RD-B13-07(05.0-05.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-08(03.0-03.5)	TP-RD-B13-08(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.12 J-	< 0.11 J-	< 0.11 J	< 0.12	< 0.12	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-10
					Sample Date	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017
					Sample Depths	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B13-08(07.0-07.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-09(03.0-03.5)	TP-RD-B13-09(05.0-05.5)	TP-RD-B13-09(07.0-07.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-10(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	1.2
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.12	< 0.12	< 0.11	0.21	1	7.9
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	0.16	**4.2**
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	**< 1.2**
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	0.31	0.27	< 0.11	< 0.1	0.16	2.6
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	0.38	0.32	< 0.11	< 0.1	0.48	2.6
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.12 J-	< 0.11 J-	< 0.1 J-	< 0.11 J-	< 1.2 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.1	< 0.11	< 1.2

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11
					Sample Date	11/1/2017	11/1/2017	11/1/2017	11/7/2017	12/1/2017	12/1/2017	12/1/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-10(05.0-05.5)	TP-RD-B13-10(07.0-07.5)	TP-RD-B13-10(08.0-08.5)	TP-RD-B13-10(09.0-09.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-11(03.0-03.5)	BD120117A
					Parent ID							TP-RD-B13-11(05.0-05.5)
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	2.4	0.44 J+	0.43 J+	0.23	0.31	0.27	0.19
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.1	< 0.11	< 0.11	0.11	0.16	0.2
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.15	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.17	0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.1	< 0.11	< 0.11 J-	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-13
					Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
					Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-11(05.0-05.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-12(03.0-03.5)	TP-RD-B13-12(05.0-05.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-13(03.0-03.5)	TP-RD-B13-13(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11 J	< 0.11	< 0.11	< 0.11	0.16	< 0.11	< 0.1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1
Tetryl	479-45-8	mg/kg		10000	780	< 0.11 J	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.1

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B13-16
					Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	4/16/2019
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B13-14(01.0-01.5)	TP-RD-B13-14(03.0-03.5)	TP-RD-B13-14(05.0-05.5)	TP-RD-B13-15(01.0-01.5)	TP-RD-B13-15(03.0-03.5)	TP-RD-B13-15(05.0-05.5)	TP-RD-B13-16(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	4.3
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	0.21	0.036
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	0.031
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	0.15
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
Nitroglycerin	55-63-0	mg/kg		200	46	0.63	1.5	< 0.13	3.3	0.57	6.6	< 0.019
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.13	< 0.12	< 0.12	< 0.12	< 0.019

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B13-17	TP-RD-B13-17	TP-RD-B13-18	TP-RD-B13-19	TP-RD-B13-20	TP-RD-B14-01	TP-RD-B14-01
						Sample Date	4/16/2019	4/16/2019	4/16/2019	4/16/2019	4/18/2019	11/8/2017	11/8/2017
						Sample Depths	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.0-0.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	BD041619B	TP-RD-B13-17(03.0-03.5)	TP-RD-B13-18(01.0-01.5)	TP-RD-B13-19(01.0-01.5)	TP-RD-B13-20(00.0-00.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-01(03.0-03.5)
						Parent ID	TP-RD-B13-17(03.0-03.5)						
						Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS								
Explosives and Energetics													
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21		5.1	5.1	0.33	0.033	0.37	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7		0.5	0.49	< 0.019	< 0.02	0.091	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7		0.56	0.54	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7		0.56	0.52	0.071	0.021	0.32	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7		0.73	0.67	0.11	0.021	0.51	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg					< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46		< 0.017	< 0.017	< 0.019	< 0.02	0.55	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900		0.61	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12 J-	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg					< 0.017	< 0.017	< 0.019	0.025	< 0.024	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780		< 0.017	< 0.017	< 0.019	< 0.02	< 0.024	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-02	TP-RD-B14-02	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-03
					Sample Date	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B14-01(05.0-05.5)	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-02(03.0-03.5)	TP-RD-B14-02(05.0-05.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-B14-03(03.0-03.5)	TP-RD-B14-03(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	1.6	0.38
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	0.13	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.1 J-	< 0.12 J-	< 0.11 J-	< 0.11 J-	< 0.13	< 0.12	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.1	< 0.12	< 0.11	< 0.11	< 0.13	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B14-04	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C10-02
					Sample Date	11/30/2017	10/16/2017	10/16/2017	10/16/2017	10/17/2017	10/17/2017	10/17/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	2.5-3.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.5-4.0 ft
					Sample ID	TP-RD-B14-04(03.0-03.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-01(02.5-03.0)	TP-RD-C10-01(03.0-03.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C10-02(03.0-03.5)	TP-RD-C10-02(03.5-04.0)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.23	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.11 J+	< 0.11 J+	< 0.11 J+	< 0.11	< 0.11	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01
					Sample Date	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017	10/23/2017
					Sample Depths	0.5-1.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	6.0-6.5 ft
					Sample ID	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01(02.0-02.5)	TP-RD-C11-01(03.0-03.5)	TP-RD-C11-01(04.0-04.5)	TP-RD-C11-01(05.0-05.5)	TP-RD-C11-01(06.0-06.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	**< 12**	**< 11**	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	**62**	**280**	0.99	8.4	0.75	0.81	0.16
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	**< 12**	**< 11**	0.19	< 0.12	< 0.11	< 0.11	< 0.1
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	**< 12**	**< 11**	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	**< 12**	**< 11**	0.23 J-	0.13	< 0.11	< 0.11	< 0.1
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	**< 12**	**16**	0.53 J-	0.94	0.21	0.21	< 0.1
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	**< 12**	**< 11**	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
Nitroglycerin	55-63-0	mg/kg		200	46	< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11 J-	< 0.1 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11 J-	< 0.1 J-
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	**< 12**	**< 11**	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1
Tetryl	479-45-8	mg/kg		10000	780	< 12	< 11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.1

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01B	TP-RD-C11-01B	TP-RD-C11-01B
					Sample Date	10/17/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017
					Sample Depths	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft
					Sample ID	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01A(02.0-02.5)	TP-RD-C11-01A(03.0-03.5)	TP-RD-C11-01B(01.0-01.5)	TP-RD-C11-01B(03.0-03.5)	TP-RD-C11-01B(05.0-05.5)	TP-RD-C11-01B(06.0-06.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	0.37	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	0.28	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	3.3	4.3	0.15	< 0.11	< 0.11	1.4	0.13
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	**3.6**	0.29	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	0.21	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	2.2 J-	0.44 J-	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	0.16	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	4.6	1.2 J-	< 0.11	< 0.11	< 0.11	0.18	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.13	0.12	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11 J-
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.13	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02
					Sample Date	10/27/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	0.5-1.0 ft
					Sample ID	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01C(03.0-03.5)	TP-RD-C11-01C(05.0-05.5)	TP-RD-C11-01C(06.0-06.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)
					Parent ID	TP-RD-C11-01C(01.0-01.5)						
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.29	0.28 J	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	0.42	0.31	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.34	0.37	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.45	0.49	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12 J-	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02A	TP-RD-C11-02A
					Sample Date	10/11/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-C11-02(01.0-01.5)	TP-RD-C11-02(03.0-03.5)	BD102317	TP-RD-C11-02(05.0-05.5)	TP-RD-C11-02(06.0-06.5)	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02A(03.0-03.5)
					Parent ID			TP-RD-C11-02(05.0-05.5)				
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.11	19	2.8 J	< 0.12	< 0.12	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	0.15	< 0.11	< 0.12	< 0.12	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	0.19	< 0.11	< 0.12	< 0.12	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11 J-	< 0.11 J-	< 0.11 J-	< 0.12	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-03
					Sample Date	10/27/2017	10/27/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/11/2017
					Sample Depths	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	0.5-1.0 ft
					Sample ID	TP-RD-C11-02A(05.0-05.5)	TP-RD-C11-02A(06.0-06.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-02B(03.0-03.5)	TP-RD-C11-02B(05.0-05.5)	TP-RD-C11-02B(07.0-07.5)	TP-RD-C11-03(00.5-01.0)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	0.41	0.11	< 0.11	< 0.12	< 0.13	< 0.11
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.11	0.13	< 0.11	< 0.12	< 0.13	< 0.11
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11	< 0.11	< 0.11 J-	< 0.11 J-	< 0.12 J-	< 0.13 J-	< 0.11
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.13	< 0.11

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04
					Sample Date	10/11/2017	10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-03(03.0-03.5)	TP-RD-C11-03(05.0-05.5)	TP-RD-C11-03(06.0-06.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04(03.0-03.5)	TP-RD-C11-04(05.0-05.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.1	< 0.11	< 0.1	< 0.11	0.21	< 0.11	< 0.1
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.1	< 0.11	< 0.1	< 0.11	0.12	< 0.11	< 0.1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.1	< 0.11	< 0.1	< 0.11 J-	< 0.11	< 0.11	< 0.1
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.1	< 0.1 J-	< 0.1 J-	< 0.11 J-	< 0.11	< 0.11	< 0.1
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1
Tetryl	479-45-8	mg/kg		10000	780	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-05	TP-RD-C11-06	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07
					Sample Date	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-04(06.0-06.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-05(03.0-03.5)	TP-RD-C11-06(01.0-01.5)	TP-RD-C11-06(03.0-03.5)	BD113017B	TP-RD-C11-07(01.0-01.5)
					Parent ID						TP-RD-C11-07(01.0-01.5)	
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	< 0.12	0.15	1.3	< 0.12	0.39	0.27 J
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	< 0.12	< 0.13	0.4	< 0.12	< 0.12	< 0.12 J
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 0.12	0.32	0.89	< 0.12	0.22	0.18 J
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 0.12	0.53	0.82	< 0.12	0.46	0.38 J
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.12 J-	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.12	< 0.13	< 0.13	< 0.12	< 0.12	< 0.12 J

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-10
					Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-C11-07(03.0-03.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-08(03.0-03.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-09(03.0-03.5)	TP-RD-C11-09(05.0-05.5)	TP-RD-C11-10(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.26	0.5	0.24	< 0.12	< 0.11	< 0.11	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	0.51	< 0.12	0.21	< 0.11	< 0.11	0.22
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	1	0.15	< 0.12	< 0.11	< 0.11	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.2	1.2	0.29	< 0.12	< 0.11	< 0.11	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	0.24	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	0.99
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	0.99
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 0.13	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-11	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-11(03.0-03.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-12(03.0-03.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-13(03.0-03.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	0.21	0.19	< 0.12	< 0.13	< 0.13	0.94	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	0.84	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-14	TP-RD-C13-01A	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02A
					Sample Date	11/30/2017	11/8/2017	11/8/2017	11/7/2017	11/7/2017	11/7/2017	11/8/2017
					Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-14(03.0-03.5)	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-01A(03.0-03.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02(03.0-03.5)	TP-RD-C13-02(05.0-05.5)	TP-RD-C13-02A(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12	13	6.7	15	0.81	0.3	0.42
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12	**< 1.2**	**< 1.4**	0.19	< 0.12	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12	**< 1.2**	**< 1.4**	< 0.13	< 0.12	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12	< 1.2	< 1.4	1	< 0.12	< 0.12	0.15
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12	< 1.2	< 1.4	**8.3**	0.16	< 0.12	0.22
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12	< 1.2	< 1.4	< 0.13 J-	< 0.12 J-	< 0.12 J-	< 0.12 J-
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.12	< 1.2	< 1.4	< 0.13	< 0.12	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04A
					Sample Date	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	12/4/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.5-7.0 ft	1.0-1.5 ft
					Sample ID	TP-RD-C13-02A(03.0-03.5)	TP-RD-C13-02A(05.0-05.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04(03.0-03.5)	TP-RD-C13-04(05.0-05.5)	TP-RD-C13-04(06.5-07.0)	TP-RD-C13-04A(01.0-01.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.11	< 0.12	1.1	< 0.11	< 0.11	< 0.12	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.11	< 0.12	0.23	< 0.11	< 0.11	< 0.12	0.35
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.11	< 0.12	0.32	< 0.11	< 0.11	< 0.12	0.34
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.11 J-	< 0.12 J	< 0.13	< 0.11	< 0.11	< 0.12 J-	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.11	< 0.12	< 0.13	< 0.11	< 0.11	< 0.12	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C13-05	TP-RD-C13-06	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D14-01	TP-RD-D14-01
					Sample Date	4/17/2019	4/17/2019	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-C13-05(01.0-01.5)	TP-RD-C13-06(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D13-01(03.0-03.5)	TP-RD-D13-01(05.0-05.5)	TP-RD-D14-01(01.0-01.5)	TP-RD-D14-01(03.0-03.5)
					Parent ID							
					Notes							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives and Energetics												
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	0.02	< 0.021	< 0.13	< 0.16	0.16	0.2	< 0.14
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	0.027	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	0.042	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.02	< 0.021	< 0.13	< 0.16 J-	< 0.12	< 0.12	< 0.14
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14
Tetryl	479-45-8	mg/kg		10000	780	< 0.02	< 0.021	< 0.13	< 0.16	< 0.12	< 0.12	< 0.14

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 1. TNT Refined Delineation Soil Sampling Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-D14-01
					Sample Date	12/1/2017
					Sample Depths	5.0-5.5 ft
					Sample ID	TP-RD-D14-01(05.0-05.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives and Energetics						
1,3,5-Trinitrobenzene	99-35-4	mg/kg		10000	2300	< 0.12
1,3-Dinitrobenzene	99-65-0	mg/kg	0.5	100	7.8	< 0.12
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.2	95	21	< 0.12
2,4-Dinitrotoluene	121-14-2	mg/kg	0.7	3	0.7	< 0.12
2,6-Dinitrotoluene	606-20-2	mg/kg	0.5	3	0.7	< 0.12
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0.4	61	4.7	< 0.12
2-Nitrotoluene	88-72-2	mg/kg		10000	780	< 0.12
3-Nitrotoluene	99-08-1	mg/kg		10000	1600	< 0.12
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg		61	4.7	< 0.12
4-Nitrotoluene	99-99-0	mg/kg		10000	780	< 0.12
Benzenamine, 3,5-dinitro-	618-87-1	mg/kg				< 0.12
Nitrobenzene	98-95-3	mg/kg	0.2	14	5	< 0.12
Nitroglycerin	55-63-0	mg/kg		200	46	< 0.12
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/kg		10000	3900	< 0.12
Pentaerythritol Tetranitrate	78-11-5	mg/kg				< 0.12
RDX (Cyclonite)	121-82-4	mg/kg		26	5.8	< 0.12
Tetryl	479-45-8	mg/kg		10000	780	< 0.12

Notes:
Shaded concentrations exceed Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
Bolded concentrations exceed Residential Direct Contact Soil Remediation Standards (RDCSRS)
Underlined concentrations exceed Impact to Groundwater Soil Remediation Standards (IGWSRS)
ug/kg = micrograms per kilogram
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)
-- = soil remediation standard not available

Table 2. TNT Refined Delineation Field Blank Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Sample ID	FB100217	FB100317	FB100417	FB100517	FB100617
		Parent ID					
		Date	10/2/2017	10/3/2017	10/4/2017	10/5/2017	10/5/2017
		Note					
Chemical	CAS Number	Units					
Explosives and Energetics							
1,3,5-Trinitrobenzene	99-35-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,3-Dinitrobenzene	99-65-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4,6-Trinitrotoluene	118-96-7	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	**0.00038**
2,4-Dinitrotoluene	121-14-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,6-Dinitrotoluene	606-20-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Nitrotoluene	88-72-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
3-Nitrotoluene	99-08-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Nitrotoluene	99-99-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Benzenamine, 3,5-dinitro-	618-87-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitrobenzene	98-95-3	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitroglycerin	55-63-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Pentaerythritol Tetranitrate	78-11-5	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
RDX (Cyclonite)	121-82-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tetryl	479-45-8	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Notes:
Bolded concentrations = detected value
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)

Table 2. TNT Refined Delineation Field Blank Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Sample ID	FB101017	FB101117	FB101217	FB101317	FB101617
		Parent ID					
		Date	10/10/2017	10/11/2017	10/12/2017	10/13/2017	10/16/2017
		Note					
Chemical	CAS Number	Units					
Explosives and Energetics							
1,3,5-Trinitrobenzene	99-35-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,3-Dinitrobenzene	99-65-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4,6-Trinitrotoluene	118-96-7	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4-Dinitrotoluene	121-14-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,6-Dinitrotoluene	606-20-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Nitrotoluene	88-72-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
3-Nitrotoluene	99-08-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Nitrotoluene	99-99-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Benzenamine, 3,5-dinitro-	618-87-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitrobenzene	98-95-3	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitroglycerin	55-63-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Pentaerythritol Tetranitrate	78-11-5	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
RDX (Cyclonite)	121-82-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tetryl	479-45-8	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Notes:
Bolded concentrations = detected value
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)

Table 2. TNT Refined Delineation Field Blank Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Sample ID	FB101717	FB101817	FB101917	FB102017	FB102317
		Parent ID					
		Date	10/17/2017	10/18/2017	10/19/2017	10/20/2017	10/23/2017
		Note					
Chemical	CAS Number	Units					
Explosives and Energetics							
1,3,5-Trinitrobenzene	99-35-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,3-Dinitrobenzene	99-65-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4,6-Trinitrotoluene	118-96-7	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	**0.00019**
2,4-Dinitrotoluene	121-14-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,6-Dinitrotoluene	606-20-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Nitrotoluene	88-72-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
3-Nitrotoluene	99-08-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Nitrotoluene	99-99-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Benzenamine, 3,5-dinitro-	618-87-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitrobenzene	98-95-3	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitroglycerin	55-63-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001 J-
Pentaerythritol Tetranitrate	78-11-5	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
RDX (Cyclonite)	121-82-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tetryl	479-45-8	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Notes:
Bolded concentrations = detected value
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)

Table 2. TNT Refined Delineation Field Blank Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Sample ID	FB102517	FB102717	FB102617	FB103017	FB110117
		Parent ID					
		Date	10/25/2017	10/26/2017	10/26/2017	10/30/2017	11/1/2017
		Note					
Chemical	CAS Number	Units					
Explosives and Energetics							
1,3,5-Trinitrobenzene	99-35-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,3-Dinitrobenzene	99-65-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4,6-Trinitrotoluene	118-96-7	mg/L	**0.00015 J**	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4-Dinitrotoluene	121-14-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,6-Dinitrotoluene	606-20-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Nitrotoluene	88-72-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
3-Nitrotoluene	99-08-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Nitrotoluene	99-99-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Benzenamine, 3,5-dinitro-	618-87-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitrobenzene	98-95-3	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitroglycerin	55-63-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/L	< 0.0001 J	< 0.0001 J-	< 0.0001 J-	< 0.0001 J-	< 0.0001 J-
Pentaerythritol Tetranitrate	78-11-5	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
RDX (Cyclonite)	121-82-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tetryl	479-45-8	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Notes:
Bolded concentrations = detected value
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)

Table 2. TNT Refined Delineation Field Blank Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Sample ID	FB110217	FB110317	FB110617	FB110717	FB110817
		Parent ID					
		Date	11/2/2017	11/3/2017	11/6/2017	11/7/2017	11/8/2017
		Note					
Chemical	CAS Number	Units					
Explosives and Energetics							
1,3,5-Trinitrobenzene	99-35-4	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,3-Dinitrobenzene	99-65-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4,6-Trinitrotoluene	118-96-7	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,4-Dinitrotoluene	121-14-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,6-Dinitrotoluene	606-20-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2-Nitrotoluene	88-72-2	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
3-Nitrotoluene	99-08-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4-Nitrotoluene	99-99-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Benzenamine, 3,5-dinitro-	618-87-1	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitrobenzene	98-95-3	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nitroglycerin	55-63-0	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/L	< 0.0001 J-	< 0.0001 J-	< 0.0001	< 0.0001	< 0.0001
Pentaerythritol Tetranitrate	78-11-5	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
RDX (Cyclonite)	121-82-4	mg/L	< 0.0001 J-	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tetryl	479-45-8	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Notes:
Bolded concentrations = detected value
< = non-detection value
J = estimated concentration (J+ estimated high, J- estimated low)

Table 2. TNT Refined Delineation Field Blank Results
TNT Refined Delineation Technical Memorandum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Sample ID	BLANK WATER-20171206	FB041619	FB041719
		Parent ID			
		Date	12/6/2017	4/16/2019	4/17/2019
		Note			
Chemical	CAS Number	Units			
Explosives and Energetics					
1,3,5-Trinitrobenzene	99-35-4	mg/L	< 0.000025	< 0.000025	< 0.000025
1,3-Dinitrobenzene	99-65-0	mg/L	< 0.000025	< 0.000025	< 0.000025
2,4,6-Trinitrotoluene	118-96-7	mg/L	**0.00003**	< 0.000025	< 0.000025
2,4-Dinitrotoluene	121-14-2	mg/L	**0.0002**	< 0.000025	< 0.000025
2,6-Dinitrotoluene	606-20-2	mg/L	**0.00004**	< 0.000025	< 0.000025
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/L	< 0.000025	< 0.000025	< 0.000025
2-Nitrotoluene	88-72-2	mg/L	< 0.000025	< 0.000025	< 0.000025
3-Nitrotoluene	99-08-1	mg/L	< 0.000025	< 0.000025	< 0.000025
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/L	< 0.00005	< 0.00005	< 0.00005
4-Nitrotoluene	99-99-0	mg/L	< 0.000025	< 0.000025	< 0.000025
Benzenamine, 3,5-dinitro-	618-87-1	mg/L	**0.00061**	< 0.000025	< 0.000025
Nitrobenzene	98-95-3	mg/L	< 0.000025	< 0.000025	< 0.000025
Nitroglycerin	55-63-0	mg/L	< 0.000025	< 0.000025	< 0.000025
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	mg/L	< 0.000025	< 0.000025	< 0.000025
Pentaerythritol Tetranitrate	78-11-5	mg/L	< 0.000025	< 0.000025	< 0.000025
RDX (Cyclonite)	121-82-4	mg/L	**0.00048**	< 0.000025	< 0.000025
Tetryl	479-45-8	mg/L	< 0.000025	< 0.000025	< 0.000025

Notes:
Bolded concentrations = detected value
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Exhibit 1

SI/RI Areal Extent Maps

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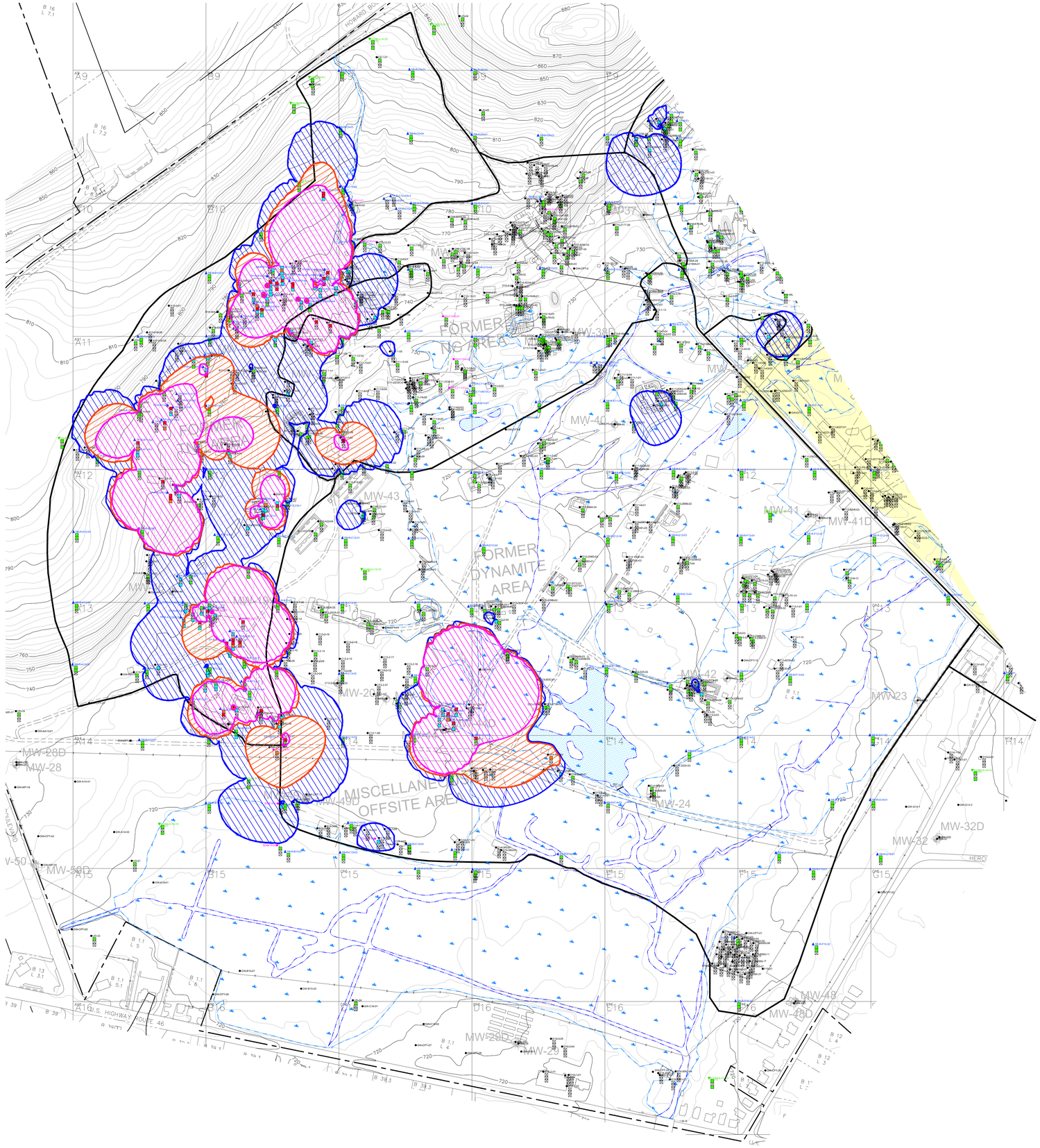

LEGEND

- AREAL E□TENT E□CEEDING NRDCSRS □DASHED WHERE INFERRED□□
- AREAL E□TENT E□CEEDING RDCSRS □DASHED WHERE INFERRED□□
- AREAL E□TENT E□CEEDING IGWSSL □DASHED WHERE INFERRED□□
- RI SOIL SAMPLE LOCATION
- TRENCH SAMPLE LOCATION
- SI SOIL SAMPLE LOCATION
- PROPOSED RI SOIL SAMPLE THAT WAS NOT COLLECTED
- FORMER SEDIMENT SAMPLE LOCATION THAT IS CURRENTLY CONSIDERED A SOIL SAMPLE LOCATION :SEE NOTE 7□:
- O'BRIEN & GERE SOIL BORING LOCATION :DEC. 2013□
- SHALLOW MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION
- SOIL SAMPLE RESULT AT 0-2' BELOW GRADE DEPTH INTERVAL
- SOIL SAMPLE RESULT AT 2'-6' BELOW GRADE DEPTH INTERVAL
- SOIL SAMPLE RESULT AT □6' BELOW GRADE DEPTH INTERVAL
- SOIL SAMPLE RESULT WITH NRDCSRS E□CEEDANCE :mg/□g□96 mg/□g, NOTE 6□
- SOIL SAMPLE RESULT WITH RDCSRS E□CEEDANCE :mg/□g□21 mg/□g, NOTE 6□
- SOIL SAMPLE RESULT WITH IGWSSL E□CEEDANCE :mg/□g□0.2 mg/□g, NOTE 6□
- SOIL SAMPLE RESULT WITH NO NO NRDCSRS, RDCSRS, OR IGWSSL E□CEEDANCE :mg/□g□
- NO SOIL SAMPLE TAKEN
- DRY STREAM SEGMENT, AREA, OR FORMER DITCH :SEE NOTE 7□
- STREAM SEGMENT OR AREA WITHOUT SUFFICIENT WATER PRESENT :SEE NOTE □□
- TRENCH FOR HYDRAULIC OIL INVESTIGATION
- WEIR
- HISTORIC FILL
- PROPERTY LINE
- WATER FEATURE
- FORMER OPERATIONAL AREA
- UTILITY POLE
- LIGHT POLE
- WET AREA
- FENCE
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NOTES.

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2. THE BOUNDARY LINE AS DELINEATED IS APPRO□IMATE AND HAS BEEN DIGIT□ED FROM A MAP ENTITLED "HERCULES INCORPORATED, KENVIL PLANT PROPERTY MAP, PLANT 0.10, ACCOUNT 9500, CLASSIFICATION 21045, FILE CODE 5WE REVISION 1" REVISED TO JUNE 11, 1970 PROVIDED BY REPRESENTATIVES OF HERCULES, INC., AND THE TA□ MAP OF THE TOWNSHIP OF RO□BURY AND NOT FROM AN ACTUAL FIELD SURVEY OR WITH THE BENEFIT OF A TITLE SEARCH.
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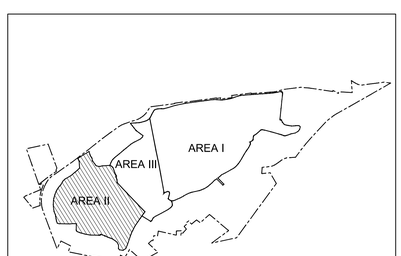
5. ANALYTICAL SAMPLES PRESENTED ON THIS FIGURE WERE COLLECTED DURING THE SITE AND REMEDIAL INVESTIGATIONS. THE HIGHER CONCENTRATION IS PRESENTED FOR MULTIPLE DEPTH SAMPLES.
6. THE RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD .RDCSRS□:FOR 2,4,6-TRINITROTOLUENE IS 21 mg/□g, THE NON-RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD .NRDCSRS□:IS 95 mg/□g □N.J.A.C. 7:26D□:DEFAULT IMPACT TO GROUNDWATER SOIL SCREENING LEVELS IS 0.2 mg/□g .NJDEP□.
7. SOLID BROWN LINES REPRESENT DRY STREAM SEGMENTS OR FORMER DITCHES THAT NO LONGER CONVEY WATER SINCE MANUFACTURING OPERATIONS HAVE CEASED. THESE AREAS ARE NO LONGER CONSIDERED SURFACE WATER OR SEDIMENT BODIES AND ARE CONSIDERED SOIL IN THE REMEDIAL INVESTIGATION REPORT.
8. □ DASHED BROWN LINES REPRESENT STREAM SEGMENTS OR AREAS WITHOUT SUFFICIENT WATER PRESENT FOR SURFACE WATER SAMPLE COLLECTION, HOWEVER SATURATED SEDIMENTS ARE PRESENT.
9. HORI□ONTAL LIMITS OF CONSTITUENTS ANTICIPATED TO BE PRESENT AT CONCENTRATIONS E□CEEDING THE SRS/SSL ON AREAL E□TENT FIGURES ARE INFERRED BASED ON LOCATIONS WHERE CONSTITUENTS E□CEED THE SRS/SSL BY ANALYTICAL GROUP. THE HORI□ONTAL LIMITS OF CONSTITUENTS ANTICIPATED TO BE PRESENT AT CONCENTRATIONS E□CEEDING THE SRS/SSL ON FEC FIGURES ARE BASED ON LOCATIONS WHERE CONSTITUENTS E□CEED THE SRS/SSL AND LOCATIONS WHERE 1/2 THE PRACTICAL QUANTITATION LIMIT .PQL□E□CEED THE SCC. THEREFORE, SINCE THE FEC FIGURES TAKE A MORE CONSERVATIVE APPROACH .USING 1/2 THE PQL□THAN THE AREAL E□TENT FIGURES IN DEFINING THE HORI□ONTAL LIMITS, THE ANTICIPATED AREAS WHERE CONSTITUENTS ARE BELIEVED TO BE PRESENT AT CONCENTRATIONS E□CEEDING THE SRS/SSL ON THE AREAL E□TENT FIGURES WILL BE SMALLER THAN THE COMBINED AREAS FROM THE FEC FIGURES FOR A GIVEN ANALYTICAL GROUP.
10. THIS PLAN IS ADAPTED FROM APRIL 2007 REMEDIAL INVESTIGATION REPORT PREPARED BY MWH AMERICAS, INC.



LOCATION MAP

TRUE NORTH

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1"□140' 140 0 140 2□0

IN CHARGE OF MSK				
DESIGNED BY JAL				
CHECKED BY MAH				
DRAWN BY RJD	NO.	DATE	REVISION	INT.

O'BRIEN & GERE
O'BRIEN & GERE ENGINEERS, INC
EAST NORRITON, PENNSYLVANIA

HERCULES INCORPORATED - KENVIL WORKS FACILITY
PHASE II REMEDIAL INVESTIGATION REPORT

KENVIL, NEW JERSEY

SOILS

2,4,6 TRINITROTOLUENE AREAL EXTENT MAP - AREA II

FILE NO. 2420.50725 -

DATE MAY 2016

B-25B

I:\ASHLAND\2420\50725-KENVIL-REMEDIAL.DOC\SRVG\SHEETS\B-25B 2,4,6 TRINITROTOLUENE AREAL EXTENT MAP - AREA II.DWG

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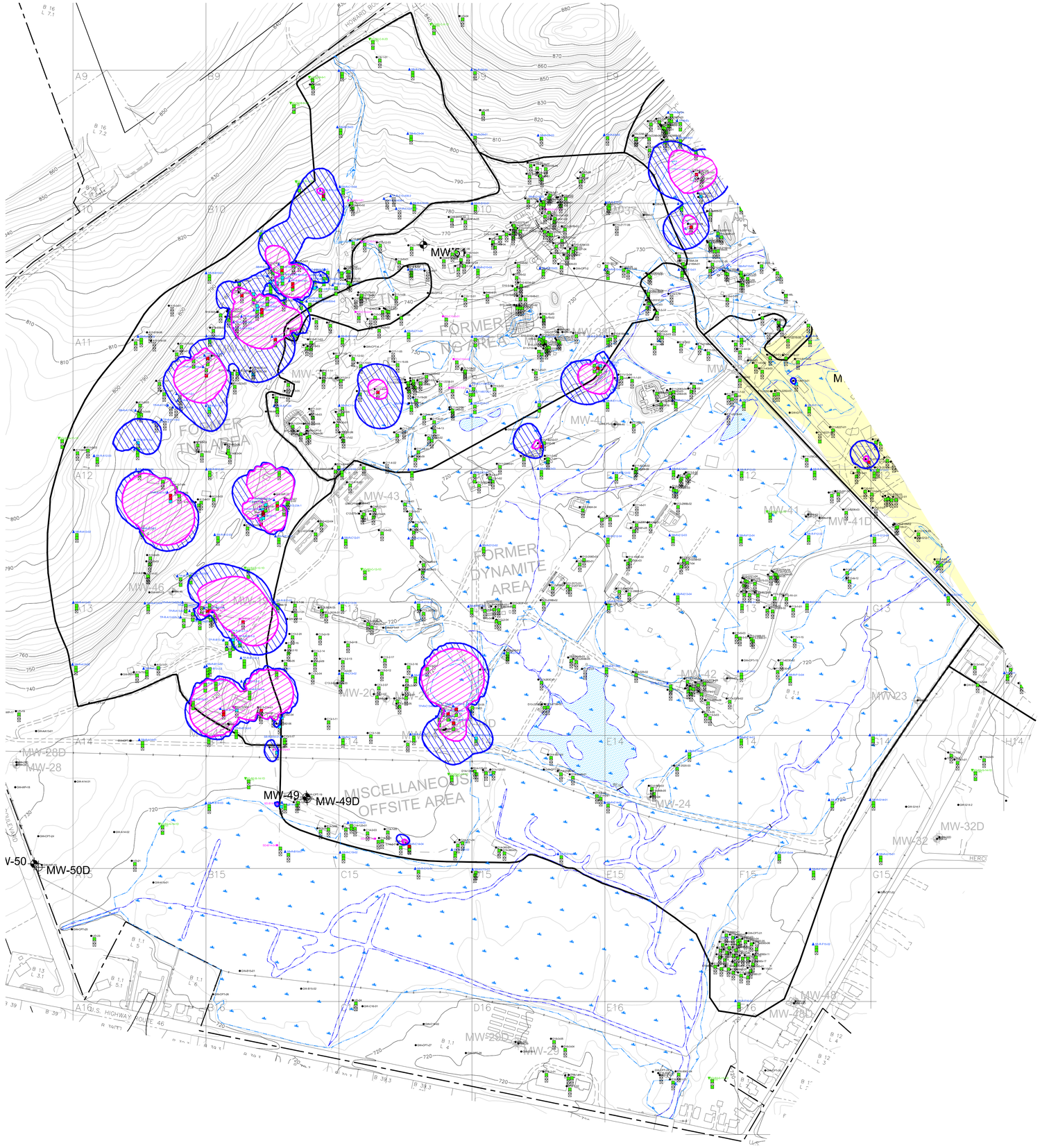

LEGEND

- AREAL E::TENT E::CEEDING NRDCSRS .DASHED WHERE INFERRED::
- AREAL E::TENT E::CEEDING IGWSSL AND RDCSRS .DASHED WHERE INFERRED::
- RI SOIL SAMPLE LOCATION
- TRENCH SAMPLE LOCATION
- SI SOIL SAMPLE LOCATION
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- SOIL SAMPLE RESULT AT ::6' BELOW GRADE DEPTH INTERVAL
- SOIL SAMPLE RESULT WITH NRDCSRS E::CEEDANCE :mg/::g::3 mg/::g, NOTE 6::
- SOIL SAMPLE RESULT WITH IGWSSL AND RDCSRS E::CEEDANCE :mg/::g::0.7 mg/::g, NOTE 6::
- SOIL SAMPLE RESULT WITH NO NO NRDCSRS, RDCSRS, OR IGWSSL E::CEEDANCE :mg/::g::
- NO SOIL SAMPLE TAKEN
- DRY STREAM SEGMENT, AREA, OR FORMER DITCH .SEE NOTE 7::
- STREAM SEGMENT OR AREA WITHOUT SUFFICIENT WATER PRESENT .SEE NOTE ::
- TRENCH FOR HYDRAULIC OIL INVESTIGATION
- WEIR
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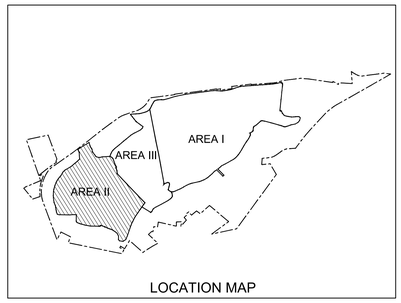

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1"□140' 140 0 140 2::0

IN CHARGE OF MSK				
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PHASE II REMEDIAL INVESTIGATION REPORT

KENVIL, NEW JERSEY

SOILS

2,4-DNT □AREAL EXTENT MAP - AREA II

FILE NO. 2420.50725 -

DATE MAY 2016

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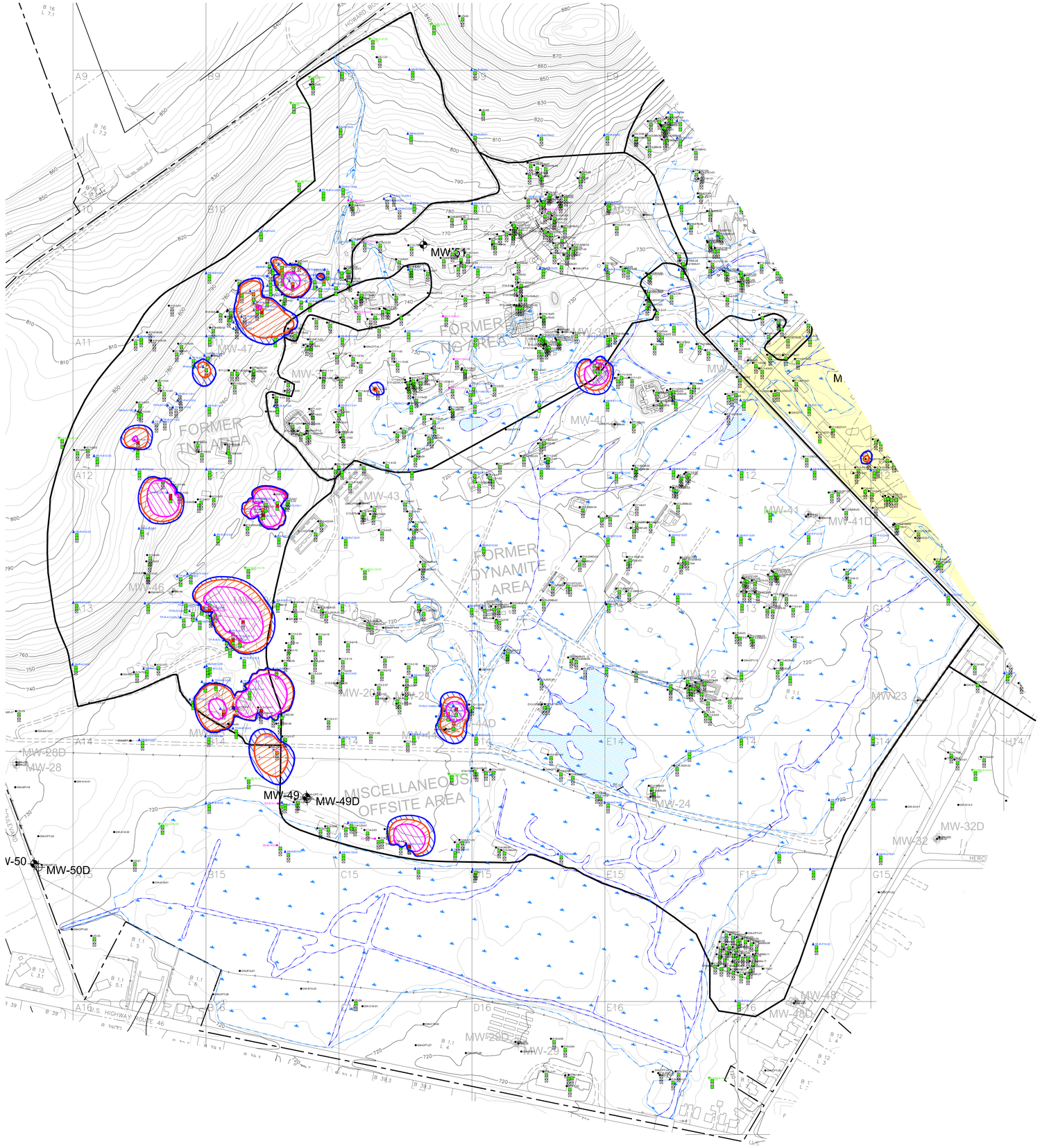

LEGEND

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- SOIL SAMPLE RESULT WITH RDCSRS E□CEEDANCE □mg/□g□0.7 mg/□g, NOTE 6□□
- SOIL SAMPLE RESULT WITH □GWSSL E□CEEDANCE □mg/□g□0.5 mg/□g, NOTE 6□□
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- DRY STREAM SEGMENT, AREA, OR FORMER DITCH □SEE NOTE 7□□
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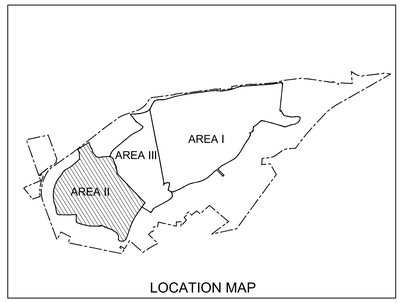
6. THE RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD □RDCSRS□□FOR 2,6-DNT IS 0.7 m g/□g, THE NON-RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD □NRDCSRS□IS 3 mg/□g, N.J.A.C. 7:26D□□DEFAULT IMPACT TO GROUNDWATER SOIL SCREENING LEVEL □IGWSSL□IS 0.5 mg/□g□NJDEP□□.
7. SOLID BROWN LINES REPRESENT DRY STREAM SEGMENTS OR FORMER DITCHES THAT NO LONGER CONVEY WATER SINCE MANUFACTURING OPERATIONS HAVE CEASED. THESE AREAS ARE NO LONGER CONSIDERED SURFACE WATER OR SEDIMENT BODIES AND ARE CONSIDERED SOIL IN THE REMEDIAL INVESTIGATION REPORT.
   □ DASHED BROWN LINES REPRESENT STREAM SEGMENTS OR AREAS WITHOUT SUFFICIENT WATER PRESENT FOR SURFACE WATER SAMPLE COLLECTION, HOWEVER SATURATED SEDIMENTS ARE PRESENT.
9. HORI□ONTAL LIMITS OF CONSTITUENTS ANTICIPATED TO BE PRESENT AT CONCENTRATIONS E□CEEDING THE SRS/SSL ON AREAL E□TENT FIGURES ARE INFERRED BASED ON LOCATIONS WHERE CONSTITUENTS E□CEED THE SRS/SSL BY ANALYTICAL GROUP. THE HORI□ONTAL LIMITS OF CONSTITUENTS ANTICIPATED TO BE PRESENT AT CONCENTRATIONS E□CEEDING THE SRS/SSL ON FEC FIGURES ARE BASED ON LOCATIONS WHERE CONSTITUENTS E□CEED THE SRS/SSL AND LOCATIONS WHERE 1/2 THE PRACTICAL QUANTITATION LIMIT □PQL□E□CEED THE SCC. THEREFORE, SINCE THE FEC FIGURES TAKE A MORE CONSERVATIVE APPROACH □USING 1/2 THE PQL□THAN THE AREAL E□TENT FIGURES IN DEFINING THE HORI□ONTAL LIMITS, THE ANTICIPATED AREAS WHERE CONSTITUENTS ARE BELIEVED TO BE PRESENT AT CONCENTRATIONS E□CEEDING THE SRS/SSL ON THE AREAL E□TENT FIGURES WILL BE SMALLER THAN THE COMBINED AREAS FROM THE FEC FIGURES FOR A GIVEN ANALYTICAL GROUP.
10. THIS PLAN IS ADAPTED FROM APRIL 2007 REMEDIAL INVESTIGATION REPORT PREPARED BY MWH AMERICAS, INC.
11. □□2,6-DINITROTOLUENE.



LOCATION MAP

TRUE NORTH

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THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SCALE.

1"□140' 140 0 140 2□0

IN CHARGE OF MSK				
DESIGNED BY JAL				
CHECKED BY MAH				
DRAWN BY RJD	NO.	DATE	REVISION	INT.

O'BRIEN & GERE
O'BRIEN & GERE ENGINEERS, INC
EAST NORRITON, PENNSYLVANIA

HERCULES INCORPORATED - KENVIL WORKS FACILITY
PHASE II REMEDIAL INVESTIGATION REPORT

KENVIL, NEW JERSEY

SOILS

2,6-DNT □AREAL EXTENT MAP - AREA II

FILE NO. 2420.50725 -

DATE MAY 2016

B-2□B

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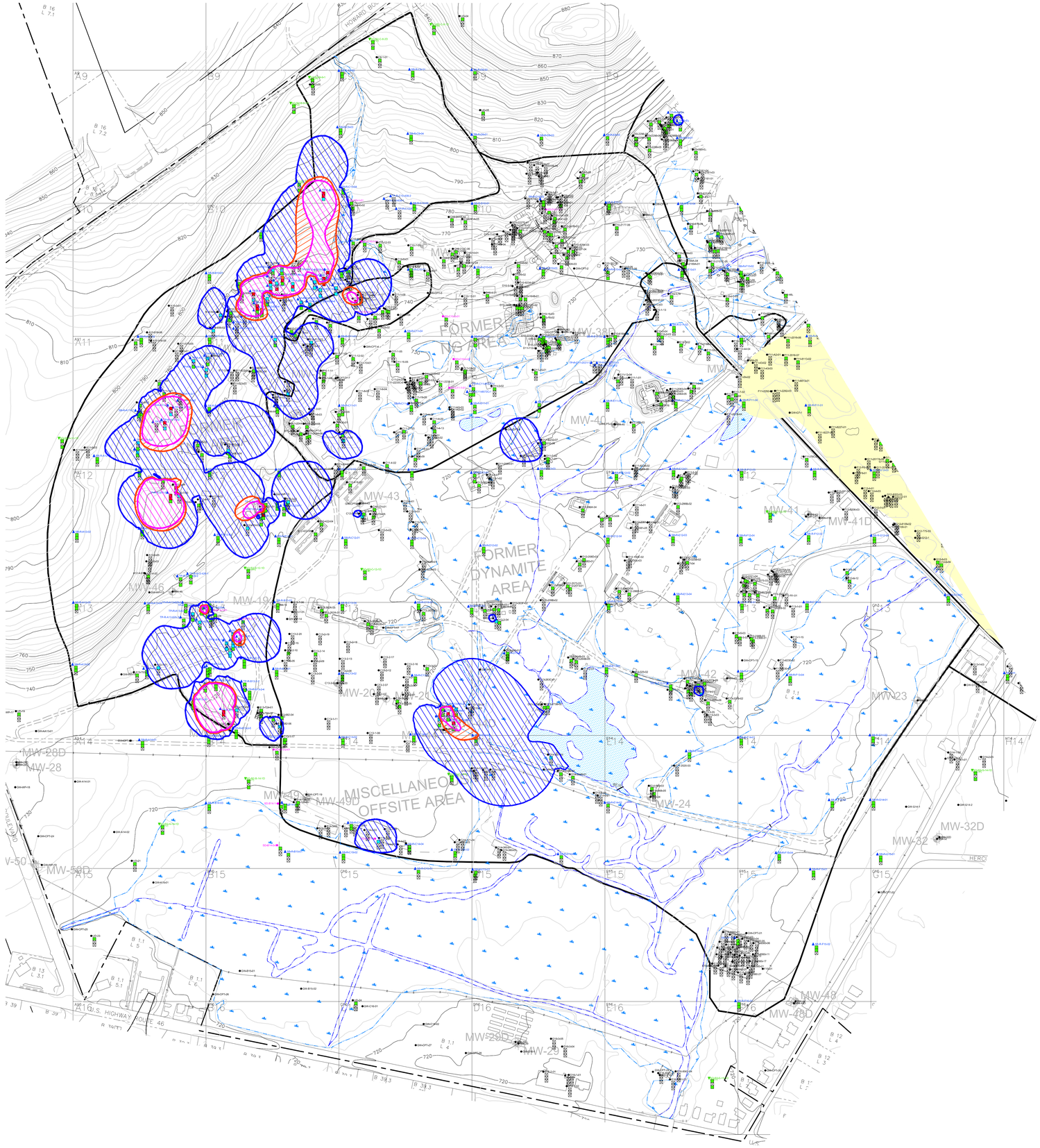
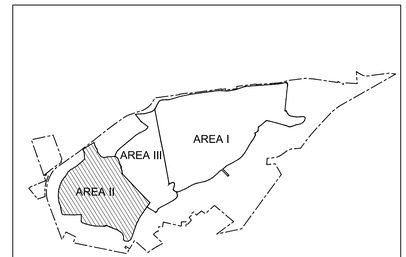


LEGEND

- AREAL E::TENT E::CEEDING NRDCSRS :DASHED WHERE INFERRED::
- AREAL E::TENT E::CEEDING RDCSRS :DASHED WHERE INFERRED::
- AREAL E::TENT E::CEEDING IGWSSL :DASHED WHERE INFERRED::
- RI SOIL SAMPLE LOCATION
- TRENCH SAMPLE LOCATION
- SI SOIL SAMPLE LOCATION
- PROPOSED RI SOIL SAMPLE THAT WAS NOT COLLECTED
- FORMER SEDIMENT SAMPLE LOCATION THAT IS CURRENTLY CONSIDERED A SOIL SAMPLE LOCATION :SEE NOTE 7::
- O'BRIEN & GERE SOIL BORING LOCATION :DEC. 2013::
- SHALLOW MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION
- SOIL SAMPLE RESULT AT 0-2' BELOW GRADE DEPTH INTERVAL
- SOIL SAMPLE RESULT AT 2'-6' BELOW GRADE DEPTH INTERVAL
- SOIL SAMPLE RESULT AT ::6' BELOW GRADE DEPTH INTERVAL
- SOIL SAMPLE RESULT WITH NRDCSRS E::CEEDANCE :mg/::g::6.1 mg/::g, NOTE 6::
- SOIL SAMPLE RESULT WITH RDCSRS E::CEEDANCE :mg/::g::4.7 mg/::g, NOTE 6::
- SOIL SAMPLE RESULT WITH IGWSSL E::CEEDANCE :mg/::g::0.4 mg/::g, NOTE 6::
- SOIL SAMPLE RESULT WITH NO NO NRDCSRS, RDCSRS, OR IGWSSL E::CEEDANCE :mg/::g::
- NO SOIL SAMPLE TAKEN
- DRY STREAM SEGMENT, AREA, OR FORMER DITCH :SEE NOTE 7::
- STREAM SEGMENT OR AREA WITHOUT SUFFICIENT WATER PRESENT :SEE NOTE ::
- TRENCH FOR HYDRAULIC OIL INVESTIGATION
- WEIR
- HISTORIC FILL
- PROPERTY LINE
- WATER FEATURE
- FORMER OPERATIONAL AREA
- UTILITY POLE
- LIGHT POLE
- WET AREA
- FENCE
- GUIDE RAIL
- RAILROAD
- SMALL GAUGE RAIL
- PERIMETER OF WET AREA
- STREAMS
- CULVERT
- ELECTRIC SUBSTATION

NOTES.

1. THESE FILES ARE IN THE NORTH AMERICAN DATUM 19::3 NEW JERSEY STATE PLANE COORDINATE SYSTEM. THE TOPOGRAPHIC FILE REFERENCES THE NORTH AMERICAN VERTICAL DATUM 19::□. THE FACILITY GRID SYSTEM WAS HISTORICALLY DEVELOPED BY HERCULES INCORPORATED TO AID SITE MANAGEMENT, AND THE GRID LINES ARE NOT ORIENTED NORTH.
2. THE BOUNDARY LINE AS DELINEATED IS APPRO::IMATE AND HAS BEEN DIGIT::ED FROM A MAP ENTITLED "HERCULES INCORPORATED, KENVIL PLANT PROPERTY MAP, PLANT 0.0, ACCOUNT 9500, CLASSIFICATION 21045, FILE CODE 5WE REVISION 1" REVISED TO JUNE 11, 1970 PROVIDED BY REPRESENTATIVES OF HERCULES, INC., AND THE TA::MAP OF THE TOWNSHIP OF RO::BURY AND NOT FROM AN ACTUAL FIELD SURVEY OR WITH THE BENEFIT OF A TITLE SEARCH.
3. PHASE II RI SOIL INVESTIGATION SAMPLE LOCATIONS WERE SELECTED BASED ANALYTICAL RESULTS PRESENTED IN THE SOIL SITE INVESTIGATION REPORT ::MWH, 2004::AND THE SOIL REMEDIAL INVESTIGATION REPORT ::MWH, 2007::.
4. SOIL ANALYTICAL SAMPLE RESULTS WERE COMPARED TO CRITERIA DERIVED FROM THE FOLLOWING APPLICABLE SOURCES: NJDEP RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARDS ::RDCSRS::;NON-RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARDS ::NRDCSRS::;AND IMPACT TO GROUNDWATER SOIL SCREENING LEVELS ::GWSSL::; SITE SPECIFIC SCREENING LEVELS PROVIDED BY NJDEP TO HERCULES IN THE JUNE 13, 2003 CORRESPONDENCE AND::SITE SPECIFIC SRS/SSL DEVELOPED BY OBG AND APPROVED BY THE LSRP.
5. ANALYTICAL SAMPLES PRESENTED ON THIS FIGURE WERE COLLECTED DURING THE SITE AND REMEDIAL INVESTIGATIONS. THE HIGHER CONCENTRATION IS PRESENTED FOR MULTIPLE DEPTH SAMPLES.
6. THE RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD ::RDCSRS::FOR 2-AMINO-4,6-DINITROTOLUENE IS 4.7 mg/::g. THE NON-RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD ::NRDCSRS::IS 6.1 mg/::g. N.J.A.C. 7:26D::DEFAULT IMPACT TO GROUNDWATER SOIL SCREENING LEVELS IS 0.4 mg/::g. NJDEP::.
7. SOLID BROWN LINES REPRESENT DRY STREAM SEGMENTS OR FORMER DITCHES THAT NO LONGER CONVEY WATER SINCE MANUFACTURING OPERATIONS HAVE CEASED. THESE AREAS ARE NO LONGER CONSIDERED SURFACE WATER OR SEDIMENT BODIES AND ARE CONSIDERED SOIL IN THE REMEDIAL INVESTIGATION REPORT.
8. □ DASHED BROWN LINES REPRESENT STREAM SEGMENTS OR AREAS WITHOUT SUFFICIENT WATER PRESENT FOR SURFACE WATER SAMPLE COLLECTION, HOWEVER SATURATED SEDIMENTS ARE PRESENT.
9. HORI::ONTAL LIMITS OF CONSTITUENTS ANTICIPATED TO BE PRESENT AT CONCENTRATIONS E::CEEDING THE SRS/SSL ON AREAL E::TENT FIGURES ARE INFERRED BASED ON LOCATIONS WHERE CONSTITUENTS E::CEED THE SRS/SSL BY ANALYTICAL GROUP. THE HORI::ONTAL LIMITS OF CONSTITUENTS ANTICIPATED TO BE PRESENT AT CONCENTRATIONS E::CEEDING THE SRS/SSL ON FEC FIGURES ARE BASED ON LOCATIONS WHERE CONSTITUENTS E::CEED THE SRS/SSL AND LOCATIONS WHERE ½ THE PRACTICAL QUANTITATION LIMIT ::PQL::E::CEED THE SCC. THEREFORE, SINCE THE FEC FIGURES TAKE A MORE CONSERVATIVE APPROACH ::USING ½ THE PQL::THAN THE AREAL E::TENT FIGURES IN DEFINING THE HORI::ONTAL LIMITS, THE ANTICIPATED AREAS WHERE CONSTITUENTS ARE BELIEVED TO BE PRESENT AT CONCENTRATIONS E::CEEDING THE SRS/SSL ON THE AREAL E::TENT FIGURES WILL BE SMALLER THAN THE COMBINED AREAS FROM THE FEC FIGURES FOR A GIVEN ANALYTICAL GROUP.
10. THIS PLAN IS ADAPTED FROM APRIL 2007 REMEDIAL INVESTIGATION REPORT PREPARED BY MWH AMERICAS, INC.



LOCATION MAP

TRUE NORTH

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1"::140' 140 0 140 2::0

IN CHARGE OF MSK
DESIGNED BY JAL
CHECKED BY MAH
DRAWN BY RJD

NO.	DATE	REVISION	INT.

O'BRIEN & GERE
O'BRIEN & GERE ENGINEERS, INC
EAST NORRITON, PENNSYLVANIA

HERCULES INCORPORATED - KENVIL WORKS FACILITY
PHASE II REMEDIAL INVESTIGATION REPORT

KENVIL, NEW JERSEY

SOILS

2-AMINO-4,6-DINITROTOLUENE AREAL EXTENT MAP - AREA II

FILE NO. 2420.50725 -

DATE MAY 2016

B-15B

I:\ASHLAND\2420\50725-KENVIL-REMEDIAL.DOC\SRVG\SHEETS\B-15B 2-AMINO-4,6-DINITROTOLUENE AREAL EXTENT MAP - AREA II.DWG

Exhibit 2

Test Pit Boring Logs

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** B11-513-05
DRILLING COMPANY: **SGS Accutest** / DRILLER: **NA**	**Project Name:** TNT Refined Delineation
DRILLING METHOD(S): **Geoprobe** / DRILL BIT(S) SIZE:	**Project Number:** 1540001*57
ISOLATION CASING: **n/a** / FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 745.83 ft. AMSL** / TOTAL DEPTH: **1.0 ft. bgs**
BLANK CASING: **n/a** / FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/17/19** / DATE COMPLETED: **4/17/19**
SLOTTED CASING: **n/a** / FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a** / NORTH: **747639.367**
SIZE AND TYPE OF FILTER PACK: **n/a** / FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner** / EAST: **452990.505**
SEAL: **n/a** / FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore** / WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a** / FROM **n/a** TO **n/a** FT.	

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
B11-513-05 (00.0-01.0)			PID = 0 PPM Negative Expray				LIGHT BROWN SILT, SOME MED/FINE SAND, TRACE CLAY AND ORGANICES, SOME SMALL ROUND GRAVEL

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**B11-602C-08**
DRILLING COMPANY: **SGS Accutest**	DRILLER: **NA**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Geoprobe**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 756.18 ft. AMSL**	TOTAL DEPTH: **1.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/17/19**	DATE COMPLETED: **4/17/19**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747684.198**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner**	EAST: **452849.028**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES: Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
B11-602C-08 (00.0-01.0)			PID = 0 PPM Negative Expray				BROWN SILT, SOME FINE/MED SAND, TRACE CLAY, FEW LARGER ROCKS/GRAVEL PRESENT

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** B11-663-06
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 756.02 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/6/17**	DATE COMPLETED: **10/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747397.144**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452810.010**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				BROWN SANDY SILT WITH CLAY, METAL DEBRIS
			Negative Expray PID = 0 PPM				BROWN SANDY SILT WITH CLAY, METAL DEBRIS
			Negative Expray PID = 0 PPM				BROWN SANDY SILT WITH CLAY, METAL DEBRIS
		5					
			Negative Expray PID = 0 PPM				BROWN SANDY SILT WITH CLAY, METAL DEBRIS
B11-663-06 (08.5-09.0)			Negative Expray PID = 0 PPM				BROWN SANDY SILT WITH CLAY, METAL DEBRIS

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** B13-682-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 722.16 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746410.128**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453182.505**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Positive Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Positive Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
B13-682-03 (05.0-05.5)		5					

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** C11-7-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano** — **Project Name:** TNT Refined Delineation
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE: — **Project Number:** 1540001*57
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.

ELEVATION AND DATUM: **Ground: 727.89 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **10/23/17**	DATE COMPLETED: **10/23/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747517.836**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453234.598**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
C11-7-02 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
C11-7-02 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
C11-7-02 (05.0-05.5)		5					
C11-7-02 (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION	**Hercules LLC - Kenvil Works Facility - TNT Project Area**
DRILLING COMPANY	**SGS Accutest**
DRILLER	**NA**
DRILLING METHOD(S)	**Geoprobe**
DRILL BIT(S) SIZE	
ISOLATION CASING	**n/a** FROM **n/a** TO **n/a** FT.
BLANK CASING	**n/a** FROM **n/a** TO **n/a** FT.
SLOTTED CASING	**n/a** FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK	**n/a** FROM **n/a** TO **n/a** FT.
SEAL	**n/a** FROM **n/a** TO **n/a** FT.
GROUT	**n/a** FROM **n/a** TO **n/a** FT.

Boring Name	**D14-667-03**
Project Name	**TNT Refined Delineation**
Project Number	**1540001*57**
ELEVATION AND DATUM: **Ground: 716.02 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **4/16/19**	DATE COMPLETED: **4/16/19**
STATIC WATER ELEVATION: **n/a**	NORTH: **746531.078**
LOGGED BY: **E. Lynch/L. Sterner**	EAST: **454261.012**
SAMPLING METHODS: **MacroCore**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
D14-667-03 (00.0-00.5)			PID = 0 PPM				MOIST DARK BROWN SILT AND ORGANICS, SOME FINE/MED SAND AND GRAVEL
			Negative Expray PID = 0 PPM				
D14-667-03 (01.0-01.5)							BROWN SILT, MEDIUM SAND AND GRAVEL
			Negative Expray PID = 0 PPM				BROWN SILT, MEDIUM SAND AND GRAVEL
D14-667-03 (03.0-03.5)							
			Negative Expray PID = 0 PPM				DARK BROWN SILT AND MEDIUM SAND, GRAVEL WITH LARGER ROCKS AND DEBRIS
D14-667-03 (05.0-05.5)		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-A11-4-2
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 772.34 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/5/17**	DATE COMPLETED: **10/5/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747414.501**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452559.639**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT, BUILDING DEBRIS
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, BUILDING DEBRIS
			Negative Expray PID = 0 PPM				LIGHT TAN SAND, BUILDING DEBRIS
		5					
			Negative Expray PID = 0 PPM				LIGHT TAN SAND, BUILDING DEBRIS
			PID = 0 PPM				LIGHT TAN SAND
TP-R-A11-4-2 (08.5-09.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-A11-504-1
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 772.59 ft. AMSL**	TOTAL DEPTH: **12.5 ft. bgs**
DATE STARTED: **10/17/17**	DATE COMPLETED: **10/17/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747682.738**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452674.095**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN TOPSOIL
			Negative Expray PID = 0 PPM				RED SILTY SAND, MOSTLY LARGE ROCKS
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND AND SILT, LARGE GRAVEL AND ROCKS
		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND AND SILT, LARGE GRAVEL AND ROCKS
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND AND SILT, LARGE GRAVEL AND ROCKS
TP-R-A11-504-1 (08.5-09.0)			Positive Expray PID = 0 PPM				RED BROWN COARSE SAND AND SILT, LARGE GRAVEL AND ROCKS
			Negative Expray PID = 0 PPM				
		10					RED BROWN COARSE SAND AND SILT, LARGE GRAVEL AND ROCKS
TP-R-A11-504-1 (10.5-11.0)			Negative Expray PID = 0 PPM				RED BROWN COARSE SAND AND SILT, LARGE GRAVEL AND ROCKS
TP-R-A11-504-1 (11.5-12.0)							
TP-R-A11-504-1 (12.0-12.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND AND SILT, LARGE GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-A12-1-1
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 753.79 ft. AMSL**	TOTAL DEPTH: **12.5 ft. bgs**
DATE STARTED: **10/11/17**	DATE COMPLETED: **10/11/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747143.993**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452775.577**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, SMALL GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-R-A12-1-1 (09.0-09.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
		10					
TP-R-A12-1-1 (10.5-11.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-A13-625-4
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 729.51 ft. AMSL**	TOTAL DEPTH: **11.0 ft. bgs**
DATE STARTED: **11/2/17**	DATE COMPLETED: **11/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746750.591**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452871.496**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					
TP-R-A13-625-4 (08.5-09.0)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		10	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-B10-2/B10-509-3
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 763.97 ft. AMSL**	TOTAL DEPTH: **3.5 ft. bgs**
DATE STARTED: **10/3/17**	DATE COMPLETED: **10/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748100.455**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453043.811**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT. ROOTS
TP-R-B10-2/ B10-509-3 (01.5-02.0)			Negative Expray PID = 0 PPM				MEDIUM BROWN SANDY SILT, METAL DEBRIS
TP-R-B10-2/ B10-509-3 (02.0-02.5)			Negative Expray PID = 0 PPM				MEDIUM BROWN SANDY SILT, METAL DEBRIS
TP-R-B10-2/ B10-509-3 (03.0-03.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-B10-2/B10-509-7
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 786.92 ft. AMSL**	TOTAL DEPTH: **5.0 ft. bgs**
DATE STARTED: **10/2/17**	DATE COMPLETED: **10/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748385.379**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452952.111**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-R-B10-2/ B10-509-7 (04.5-05.0)		5	PID = 0 PPM Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS, LARGE GRAVEL LIGHT BROWN SILTY SAND, ROOTS, LARGE GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-B10-505-5
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 773.05 ft. AMSL**	TOTAL DEPTH: **11.5 ft. bgs**
DATE STARTED: **10/5/17**	DATE COMPLETED: **10/5/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747918.980**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452803.063**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, MEDIUM GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL
		5	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL
		10	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL
TP-R-B10-505-5 (11.0-11.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-R-B10-508-1**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 775.67 ft. AMSL**	TOTAL DEPTH: **14.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/5/17**	DATE COMPLETED: **10/5/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **748016.788**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452863.177**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, SOME BLACK ASPHALT MATERIAL
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, MEDIUM GRAVEL
		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL
		10	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL, SOME ASH
TP-R-B10-508-1 (14.0-14.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL, SOME ASH

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-R-B13-1-1
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.00 ft. AMSL**	TOTAL DEPTH: **12.5 ft. bgs**
DATE STARTED: **10/30/17**	DATE COMPLETED: **10/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746689.888**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453002.219**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					
		10					
TP-R-B13-1-1 (12.0-12.5)			Negative Expray				

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-R-C13-666-1**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 720.03 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/7/17**	DATE COMPLETED: **11/7/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **746582.865**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453845.088**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					
TP-R-C13-666-1 (06.5-07.0)			Negative Expray				

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-01**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 769.10 ft. AMSL**	TOTAL DEPTH: **11.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/4/17**	DATE COMPLETED: **10/4/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747616.825**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452693.864**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN, NUTRIENT RICH TOPSOIL, MOSTLY SILT, SOME CLAY
TP-RD-A11-01 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-01 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, SOME CLAY, LARGE GRAVEL AND ROCKS
TP-RD-A11-01 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, LARGE GRAVEL AND ROCKS
TP-RD-A11-01 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, LARGE GRAVEL AND ROCKS
TP-RD-A11-01 (09.0-09.5)							
		10	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, LARGE GRAVEL AND ROCKS
TP-RD-A11-01 (10.5-11.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-02**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 775.96 ft. AMSL**	TOTAL DEPTH: **8.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/5/17**	DATE COMPLETED: **10/5/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747458.593**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452526.780**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL, DEBRIS
			Positive Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL, DEBRIS
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL, DEBRIS
		5					
TP-RD-A11-02 (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL, DEBRIS
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL, DEBRIS
TP-RD-A11-02 (07.0-07.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL, DEBRIS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-02A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 776.55 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **10/20/17**	DATE COMPLETED: **10/20/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747450.736**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452516.515**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-02A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-A11-02A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-A11-02A (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-A11-02A (07.0-07.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 770.10 ft. AMSL**	TOTAL DEPTH: **12.0 ft. bgs**
DATE STARTED: **10/6/17**	DATE COMPLETED: **10/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747449.966**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452607.072**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY, MEDIUM GRAVEL
TP-RD-A11-03 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY, MEDIUM GRAVEL
TP-RD-A11-03 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY, LARGE GRAVEL
TP-RD-A11-03 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY, LARGE GRAVEL
TP-RD-A11-03 (07.0-07.5)							
			Negative Expray PID = 0 PPM				RED BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-03 (08.5-09.0)			Negative Expray PID = 0 PPM				RED BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-03 (09.5-10.0)			Negative Expray PID = 0 PPM				RED BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
		10					
TP-RD-A11-03 (10.5-11.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY, LARGE GRAVEL AND ROCKS
TP-RD-A11-03 (11.5-12.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 778.51 ft. AMSL**	TOTAL DEPTH: **7.5 ft. bgs**
DATE STARTED: **10/6/17**	DATE COMPLETED: **10/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747319.735**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452451.905**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-A11-04 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SANDY SILT, MEDIUM GRAVEL
TP-RD-A11-04 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, MEDIUM GRAVEL
TP-RD-A11-04 (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, MEDIUM GRAVEL
TP-RD-A11-04 (07.0-07.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-05**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 770.35 ft. AMSL**	TOTAL DEPTH: **8.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/11/17**	DATE COMPLETED: **10/11/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747384.701**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452591.887**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ANGULAR GRAVEL AND COBBLE; DARK BROWN ORGANIC LAYER 0.0-0.5
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ANGULAR GRAVEL AND COBBLE
			Positive Expray PID = 0 PPM				LIGHT BROWN TO TAN SAND, LIGHT TAN TO RED SANDSTONE
		5					
			PID = 0 PPM				LIGHT BROWN TO TAN SAND, LIGHT TAN TO RED SANDSTONE
			PID = 0 PPM				LIGHT BROWN TO TAN SAND, LIGHT TAN TO RED SANDSTONE

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-06**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 771.56 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/12/17**	DATE COMPLETED: **10/12/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747382.380**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452560.249**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN ORGANICS
TP-RD-A11-06 (01.0-01.5)							LIGHT BROWN SILTY SAND SOME GRAVEL AND COBBLE
			Negative Expray PID = 0 PPM				TRANSITION FROM LIGHT BROWN SILTY SAND SOME GRAVEL/COBBLE TO LIGHT TAN AND RED SAND SOME SANDSTONE
TP-RD-A11-06 (03.0-03.5)							
			Negative Expray PID = 0 PPM				
TP-RD-A11-06 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT TAN AND RED COARSE SAND, SOME SANDSTONE GRAVEL AND TRACE COBBLE
TP-RD-A11-06 (07.0-07.5)							
			Negative Expray PID = 0 PPM				SAME AS PREVIOUS
TP-RD-A11-06 (08.5-09.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-07**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 770.52 ft. AMSL**	TOTAL DEPTH: **2.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/13/17**	DATE COMPLETED: **10/13/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747539.042**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452648.409**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES: Type & No.	SAMPLES: Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM Positive Expray				

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-08**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 779.97 ft. AMSL**	TOTAL DEPTH: **12.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/19/17**	DATE COMPLETED: **10/19/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747712.598**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452586.966**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE ROCKS
TP-RD-A11-08 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-A11-08 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-A11-08 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT TAN SAND, LARGE ROCKS
TP-RD-A11-08 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT TAN SAND, LARGE ROCKS
TP-RD-A11-08 (09.0-09.5)							
		10	PID = 0 PPM				LIGHT TAN SAND, LARGE ROCKS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-09
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 772.80 ft. AMSL**	TOTAL DEPTH: **12.0 ft. bgs**
DATE STARTED: **10/20/17**	DATE COMPLETED: **10/20/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747742.477**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452697.120**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN ORGANIC SOIL
TP-RD-A11-09 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-09 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-09 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-RD-A11-09 (07.0-07.5)							
			PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
		10	PID = 0 PPM				LIGHT BROWN SILTY SAND

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-10
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 774.04 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/20/17**	DATE COMPLETED: **10/20/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747650.210**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452628.298**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-10 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-10 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-10 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-10 (07.0-07.5)							
TP-RD-A11-10 (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-11**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 772.17 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/20/17**	DATE COMPLETED: **10/20/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747522.964**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452602.659**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-11 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-11 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-11 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-11 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL

NOTES

1. ALL CONTACTS APPROXIMATE
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-12**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 757.93 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/19/17**	DATE COMPLETED: **10/19/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747339.657**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452730.909**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-12 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-12 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL, CLAY
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-13**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 761.29 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/19/17**	DATE COMPLETED: **10/19/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747351.884**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452699.726**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-13 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-13 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL, CLAY
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-14
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 760.83 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/19/17**	DATE COMPLETED: **10/25/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747384.581**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452702.274**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, RED BRICK DEBRIS
TP-RD-A11-14 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, RED BRICK DEBRIS
TP-RD-A11-14 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, RED BRICK DEBRIS, PURPLE-GRAY ROCK
TP-RD-A11-14 (05.0-05.5)		5					
TP-RD-A11-14 (06.0-06.5)			Negative Expray PID = 0 PPM				PURPLE RED BROWN SILTY SAND WITH CLAY
TP-RD-A11-14 (07.0-07.5)			Negative Expray PID = 0 PPM				PURPLE RED BROWN SANDY SILT WITH CLAY
			Negative Expray PID = 0 PPM				PURPLE RED BROWN SANDY SILT WITH CLAY
TP-RD-A11-14 (08.5-09.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-15
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 778.91 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/25/17**	DATE COMPLETED: **10/25/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747498.688**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452510.195**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-15 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A11-15 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, LARGE ROCKS
TP-RD-A11-15 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-A11-15 (08.0-08.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-15A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 781.18 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/27/17**	DATE COMPLETED: **10/27/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747501.790**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452490.335**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-15A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-15A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT TAN COARSE SAND
TP-RD-A11-15A (05.0-05.5)		5					

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-16
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 772.73 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/26/17**	DATE COMPLETED: **10/26/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747546.873**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452604.833**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-16 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SMALL ROCKS
TP-RD-A11-16 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SMALL ROCKS
TP-RD-A11-16 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-A11-16 (07.0-07.5)							
TP-RD-A11-16 (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-17
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 756.48 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **10/26/17**	DATE COMPLETED: **10/26/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747400.358**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452733.578**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
TP-RD-A11-17 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY, ROTTED TREE ROOTS
TP-RD-A11-17 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY, LARGE RED ROCKS
TP-RD-A11-17 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY, LARGE ROCKS
TP-RD-A11-17 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-18**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 775.00 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/3/17**	DATE COMPLETED: **11/3/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747281.442**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452488.722**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-18 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-18 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-18 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL AND ROCKS
TP-RD-A11-18 (07.0-07.5)							
TP-RD-A11-18 (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL AND ROCKS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-18A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 774.40 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747270.726**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452490.355**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-18A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A11-18A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-19**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 776.87 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/3/17**	DATE COMPLETED: **11/6/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747346.894**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452481.767**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-19 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A11-19 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-19 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT TAN SILTY SAND, MEDIUM GRAVEL AND ROCKS
TP-RD-A11-19 (07.0-07.5)							
TP-RD-A11-19 (08.0-08.5)			Negative Expray PID = 0 PPM				HARD ROCK AT BOTTOM OF EXCAVATION, LIGHT TAN COARSE SAND

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-19A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 777.40 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747358.611**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452477.797**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-19A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND WITH MEDIUM ROCKS
TP-RD-A11-19A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, MEDIUM ROCKS
TP-RD-A11-19A (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT RED BROWN COARSE SAND, MEDIUM ROCKS
TP-RD-A11-19A (07.0-07.5)							
TP-RD-A11-19A (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT RED BROWN COARSE SAND, LARGE ROCKS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-20
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 773.51 ft. AMSL**	TOTAL DEPTH: **2.0 ft. bgs**
DATE STARTED: **11/3/17**	DATE COMPLETED: **11/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747320.785**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452515.304**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM Positive Expray				

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-20A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 771.91 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **11/3/17**	DATE COMPLETED: **11/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747321.303**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452531.742**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-20A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL.
TP-RD-A11-20A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-20A (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-20A (07.0-07.5)							
TP-RD-A11-20A (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-20B
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 771.37 ft. AMSL**	TOTAL DEPTH: **2.0 ft. bgs**
DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747320.604**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452543.766**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM Positive Expray				LIGHT BROWN SILTY SAND

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-20C
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 770.98 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747326.189**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452553.282**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-20C (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-20C (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-21
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 762.05 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **11/3/17**	DATE COMPLETED: **11/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747424.656**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452720.801**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-A11-21 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-21 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-21 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-21 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN-PURPLE SILTY SAND, MEDIUM GRAVEL
TP-RD-A11-21 (09.0-09.5)							
		10					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-22
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 766.38 ft. AMSL**	TOTAL DEPTH: **4.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747538.657**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452709.618**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-22 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-A11-22 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-A11-22 (04.0-04.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A11-23
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 766.46 ft. AMSL**	TOTAL DEPTH: **4.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747519.328**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452697.395**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-23 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-A11-23 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-A11-23 (04.0-04.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-A11-24
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano** — **Project Name** TNT Refined Delineation
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE: — **Project Number** 1540001*57
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.

ELEVATION AND DATUM: **Ground: 768.73 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/4/17**	DATE COMPLETED: **12/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747278.146**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452607.178**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-24 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-3A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 767.48 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/13/17**	DATE COMPLETED: **10/13/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747423.433**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452622.541**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-03A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A11-03A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-RD-A11-03A (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-RD-A11-03A (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-RD-A11-03A (08.5-09.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A11-7A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 768.53 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/13/17**	DATE COMPLETED: **10/13/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747545.187**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452671.869**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-A11-07A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-A11-07A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-A11-07A (05.0-05.5)		5					
			PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL AND ROCKS
TP-RD-A11-07A (07.0-07.5)							
			PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL AND ROCKS
TP-RD-A11-07A (08.5-09.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A12-01**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 764.27 ft. AMSL**	TOTAL DEPTH: **9.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/11/17**	DATE COMPLETED: **10/11/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747110.269**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452668.647**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A12-01 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A12-01 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-RD-A12-01 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-RD-A12-01 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS
TP-RD-A12-01 (09.0-09.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A12-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 769.35 ft. AMSL**	TOTAL DEPTH: **4.0 ft. bgs**
DATE STARTED: **10/6/17**	DATE COMPLETED: **10/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747143.851**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452584.596**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH LARGE ROCKS
TP-RD-A12-02 (01.0-01.5)							
TP-RD-A12-02 (02.0-02.5)			Negative Expray				LIGHT BROWN SILTY SAND WITH LARGE ROCKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH LARGE ROCKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH LARGE ROCKS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A12-02A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.	ELEVATION AND DATUM: Ground: 770.24 ft. AMSL	TOTAL DEPTH: 2.0 ft. bgs
BLANK CASING: n/a	FROM n/a	TO n/a	FT.	DATE STARTED: 10/11/17	DATE COMPLETED: 10/11/17
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.	STATIC WATER ELEVATION: n/a	NORTH: 747140.856
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.	LOGGED BY: K. Engberg/L. Sterner	EAST: 452573.327
SEAL: n/a	FROM n/a	TO n/a	FT.	SAMPLING METHODS: Test Pit/Hand Auger	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.
GROUT: n/a	FROM n/a	TO n/a	FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-A12-02 (00.5-01.0)			Negative Expray				LIGHT BROWN SILTY SAND WITH CLAY AND SMALL GRAVEL. LARGE ROCK IN TEST PIT
TP-RD-A12-02 (01.0-01.5)			Negative Expray				LIGHT BROWN SILTY SAND WITH CLAY AND SMALL GRAVEL. LARGE ROCK IN TEST PIT

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A12-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 763.98 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **10/18/17**	DATE COMPLETED: **10/18/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747239.074**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452668.850**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-A12-03 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A12-03 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A12-03 (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND. BROKEN CLAY PIPE
TP-RD-A12-03 (07.0-07.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-A12-03 (09.0-09.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
		10					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A12-03A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 762.81 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **10/26/17**	DATE COMPLETED: **10/26/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747249.275**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452679.799**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-A12-03A (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A12-03A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A12-03A (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A12-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 774.02 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **10/26/17**	DATE COMPLETED: **10/26/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747231.283**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452582.567**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A11-04 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-A11-04 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-A11-04 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A12-05
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 730.64 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **11/1/17**	DATE COMPLETED: **11/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746819.246**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452875.740**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-A12-05 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-A12-05 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A12-05 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A12-05 (07.0-07.5)							
TP-RD-A12-05 (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A12-06**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 758.67 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/2/17**	DATE COMPLETED: **11/2/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747167.544**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452716.229**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-A12-06 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-A12-06 (05.0-05.5)		5					

NOTES

1. ALL CONTACTS APPROXIMATE
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-A13-01A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 728.25 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/1/17**	DATE COMPLETED: **11/1/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **746686.442**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452865.410**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-A13-01A (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND. SOME BLACK ASPHALT-TYPE MATERIAL
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, METAL DEBRIS
TP-RD-A13-01A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A13-01A (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A13-01A (07.0-07.5)							
TP-RD-A13-01A (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A13-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 733.58 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **11/2/17**	DATE COMPLETED: **11/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746749.801**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452789.519**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
TP-RD-A13-02 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
TP-RD-A13-02 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A13-02 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-A13-02 (07.0-07.5)							
TP-RD-A13-02 (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A13-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 727.07 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746527.472**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452748.445**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A13-03 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A13-03 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A13-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 726.72 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746545.806**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452741.917**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A13-04 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A13-04 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A13-05
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 730.00 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746518.021**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452722.496**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A13-05 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A13-05 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A13-06
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 728.55 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746506.232**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452757.002**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A13-06 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A13-06 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-A13-07
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 726.00 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746531.849**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452771.813**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-A13-07 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-A13-07 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-01
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 790.72 ft. AMSL**	TOTAL DEPTH: **5.0 ft. bgs**
DATE STARTED: **10/2/17**	DATE COMPLETED: **10/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748432.580**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452941.604**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B10-01 (01.0-01.5)		0	PID = 0 PPM				LIGHT BROWN SILTY SAND; ROOTS; LARGE GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH LARGE GRAVEL AND ROOTS; DRY
TP-RD-B10-01 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH LARGE GRAVEL AND ROOTS; DRY
TP-RD-B10-01 (04.5-05.0)							
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B10-02**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 785.25 ft. AMSL**	TOTAL DEPTH: **5.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/2/17**	DATE COMPLETED: **10/2/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **748396.115**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452985.724**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B10-02 (01.0-01.5)		5	PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS, LARGE GRAVEL
TP-RD-B10-02 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS, LARGE GRAVEL
TP-RD-B10-02 (04.5-05.0)			PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS, LARGE GRAVEL

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 790.30 ft. AMSL**	TOTAL DEPTH: **5.0 ft. bgs**
DATE STARTED: **10/2/17**	DATE COMPLETED: **10/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748392.107**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452906.407**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B10-03 (01.0-01.5)		5	PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL, ROOTS
TP-RD-B10-03 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL, ROOTS
TP-RD-B10-03 (04.5-05.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL, ROOTS

NOTES

1. ALL CONTACTS APPROXIMATE
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3. PPM: PARTS PER MILLION
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 786.06 ft. AMSL**	TOTAL DEPTH: **5.0 ft. bgs**
DATE STARTED: **10/2/17**	DATE COMPLETED: **10/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748358.316**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452942.352**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B10-04 (01.0-01.5)		0	PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS, GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS, GRAVEL
TP-RD-B10-04 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS, GRAVEL
TP-RD-B10-04 (04.5-05.0)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-05
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 767.78 ft. AMSL**	TOTAL DEPTH: **3.5 ft. bgs**
DATE STARTED: **10/3/17**	DATE COMPLETED: **10/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748153.852**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453014.883**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-B10-05 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-B10-05 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B10-05 (03.0-03.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-06
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 780.69 ft. AMSL**	TOTAL DEPTH: **6.5 ft. bgs**
DATE STARTED: **10/4/17**	DATE COMPLETED: **10/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748123.903**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452841.712**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-B10-06 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-B10-06 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL
TP-RD-B10-06 (05.0-05.5)		5					
TP-RD-B10-06 (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, LARGE GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

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Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-07
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 780.55 ft. AMSL**	TOTAL DEPTH: **3.0 ft. bgs**
DATE STARTED: **10/3/17**	DATE COMPLETED: **10/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748041.877**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452794.315**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B10-07 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILT WITH TRACE SAND AND CLAY
TP-RD-B10-07 (02.5-03.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILT WITH TRACE SAND AND CLAY

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B10-08**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 767.61 ft. AMSL**	TOTAL DEPTH: **10.8 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/3/17**	DATE COMPLETED: **10/3/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **748038.409**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452939.508**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILT
TP-RD-B10-08 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B10-08 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL, BUILDING DEBRIS
TP-RD-B10-08 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL AND ROCKS, BUILDING DEBRIS
TP-RD-B10-08 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL, LARGE ROCKS, BUILDING DEBRIS
TP-RD-B10-08 (09.0-09.5)							
		10	PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-B10-08 (10.5-10.8)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-09
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 747.31 ft. AMSL**	TOTAL DEPTH: **4.0 ft. bgs**
DATE STARTED: **10/3/17**	DATE COMPLETED: **10/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747907.691**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453121.412**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B10-09 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B10-09 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B10-09 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B10-09 (03.5-04.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B10-10**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 756.98 ft. AMSL**	TOTAL DEPTH: **4.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/3/17**	DATE COMPLETED: **10/17/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747918.345**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452995.084**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SOIL, LARGE GRAVEL
TP-RD-B10-10 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SOIL, LARGE GRAVEL
TP-RD-B10-10 (01.5-02.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SOIL, LARGE GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SOIL, LARGE GRAVEL
TP-RD-B10-10 (03.5-04.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-11
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 772.91 ft. AMSL**	TOTAL DEPTH: **6.5 ft. bgs**
DATE STARTED: **10/4/17**	DATE COMPLETED: **10/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747897.557**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452792.261**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILT, SMALL AMOUNT OF SAND AND CLAY
TP-RD-B10-11 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILT, SMALL AMOUNT OF SAND AND CLAY, LARGE GRAVEL
TP-RD-B10-11 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILT, SMALL AMOUNT OF SAND AND CLAY, LARGE GRAVEL
		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILT, SMALL AMOUNT OF SAND AND CLAY, LARGE GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-12
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 753.79 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **10/3/17**	DATE COMPLETED: **10/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747893.322**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453059.441**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT, BROKEN CLAY PIPE
TP-RD-B10-12 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, BROKEN CLAY PIPE
TP-RD-B10-12 (01.5-02.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, BROKEN CLAY PIPE
TP-RD-B10-12 (02.5-03.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, BROKEN CLAY PIPE
TP-RD-B10-12 (03.5-04.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, MEDIUM GRAVEL
		5	Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, MEDIUM GRAVEL

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION	**Hercules LLC - Kenvil Works Facility - TNT Project Area**
DRILLING COMPANY	**Land N Sea Environmental Services LLC**
DRILLER	**Doug Dano**
DRILLING METHOD(S)	**Excavator/Test Pit**
DRILL BIT(S) SIZE	
ISOLATION CASING	**n/a** FROM **n/a** TO **n/a** FT.
BLANK CASING	**n/a** FROM **n/a** TO **n/a** FT.
SLOTTED CASING	**n/a** FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK	**n/a** FROM **n/a** TO **n/a** FT.
SEAL	**n/a** FROM **n/a** TO **n/a** FT.
GROUT	**n/a** FROM **n/a** TO **n/a** FT.

Boring Name	**TP-RD-B10-13**
Project Name	**TNT Refined Delineation**
Project Number	**1540001*57**
ELEVATION AND DATUM	**Ground: 785.33 ft. AMSL**
TOTAL DEPTH	**10.5 ft. bgs**
DATE STARTED	**10/13/17**
DATE COMPLETED	**10/13/17**
STATIC WATER ELEVATION	**n/a**
NORTH	**747956.685**
LOGGED BY	**K. Engberg/L. Sterner**
EAST	**452668.720**
SAMPLING METHODS	**Test Pit/Hand Auger**
WELL COMPLETION	☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B10-13 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B10-13 (03.0-03.5)							
			Negative Expray PID = 0 PPM				PALE TAN COARSE SAND
TP-RD-B10-13 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				PALE TAN SAND MIXED WITH RED SILTY SAND
TP-RD-B10-13 (07.0-07.5)							
			Negative Expray PID = 0 PPM				RED SILTY SAND
TP-RD-B10-13 (09.0-09.5)							
TP-RD-B10-13 (10.0-10.5)		10	Negative Expray PID = 0 PPM				RED SILTY SAND MIXED WITH PALE TAN SAND

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B10-14**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 778.96 ft. AMSL**	TOTAL DEPTH: **2.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED	DATE COMPLETED
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747843.644**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452659.641**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B10-14 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND, DARKER ORGANIC LAYER FROM 0.0-0.8
TP-RD-B10-14 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, DARKER ORGANIC LAYER FROM 0.0-0.8

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B10-14A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 781.93 ft. AMSL**	TOTAL DEPTH: **2.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/16/17**	DATE COMPLETED: **10/16/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747850.661**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452641.170**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B10-14A (01.0-01.5)							
TP-RD-B10-14A (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-15
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 775.30 ft. AMSL**	TOTAL DEPTH: **3.5 ft. bgs**
DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747782.666**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452671.268**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
TP-RD-B10-15 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
TP-RD-B10-15 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B10-16
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.	ELEVATION AND DATUM: Ground: 774.26 ft. AMSL; TOTAL DEPTH: 3.5 ft. bgs
BLANK CASING: n/a	FROM n/a	TO n/a	FT.	DATE STARTED: 11/6/17; DATE COMPLETED: 11/6/17
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.	STATIC WATER ELEVATION: n/a; NORTH: 747828.461
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.	LOGGED BY: K. Engberg/L. Sterner; EAST: 452717.020
SEAL: n/a	FROM n/a	TO n/a	FT.	SAMPLING METHODS: Test Pit/Hand Auger; WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.
GROUT: n/a	FROM n/a	TO n/a	FT.	

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B10-16 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B10-16 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B11-01**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 755.33 ft. AMSL**	TOTAL DEPTH: **4.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/6/17**	DATE COMPLETED: **10/6/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747419.924**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452803.830**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH MEDIUM GRAVEL
TP-RD-B11-01 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH MEDIUM GRAVEL AND CLAY
TP-RD-B11-01 (03.0-03.5)							
TP-RD-B11-01 (04.0-04.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH MEDIUM GRAVEL AND CLAY

NOTES

1. ALL CONTACTS APPROXIMATE
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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-01A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 755.17 ft. AMSL**	TOTAL DEPTH: **1.5 ft. bgs**
DATE STARTED: **10/11/17**	DATE COMPLETED: **10/11/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747425.139**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452804.322**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B11-01A (01.0-01.5)			PID = 0 PPM Negative Expray				LIGHT BROWN SILTY SAND, SOME YELLOW AND RED GRAVEL, BLACK GRANULAR MATERIAL AT 1'

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-01B
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 755.33 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **10/16/17**	DATE COMPLETED: **10/25/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747431.557**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452801.278**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-01B (01.0-01.5)							
TP-RD-B11-01B (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-01B (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY AND ROCKS
TP-RD-B11-01B (05.0-05.5)		5					

NOTES

1. ALL CONTACTS APPROXIMATE
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-01C
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 754.94 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **10/25/17**	DATE COMPLETED: **10/25/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747439.122**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452806.448**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
TP-RD-B11-01C (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
TP-RD-B11-01C (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B11-01C (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 755.96 ft. AMSL**	TOTAL DEPTH: **4.5 ft. bgs**
DATE STARTED: **10/12/17**	DATE COMPLETED: **10/12/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747342.568**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452831.635**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B11-02 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME GRAVEL
			Negative Expray PID = 0 PPM				SAME AS ABOVE
			Negative Expray PID = 0 PPM				SAME AS ABOVE

NOTES

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2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 756.01 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/12/17**	DATE COMPLETED: **10/12/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747391.843**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452843.323**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				BROWN SILTY SAND, SOME GRAVEL
TP-RD-B11-03 (01.0-01.5)							
			Negative Expray PID = 0 PPM				2-3: SAME AS PREVIOUS, REBAR IN SIDEWALL; 3-4: LIGHT RED COARSE SAND, SOME RED GRAVEL
TP-RD-B11-03 (03.0-03.5)							
			Negative Expray PID = 0 PPM				TRANSITION FROM RED SAND TO BR SILTY SAND, POCKET OF GLEYED SOIL AND BLACK ORGANICS IN END WALL @6'
TP-RD-B11-03 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				SAME AS ABOVE; RED/BR LAYERING
TP-RD-B11-03 (07.0-07.5)							
			Negative Expray PID = 0 PPM				SAME AS ABOVE
TP-RD-B11-03 (08.5-09.0)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 756.01 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
DATE STARTED: **10/12/17**	DATE COMPLETED: **10/12/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747371.103**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452759.042**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B11-04 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND, DARK ORGANIC LAYER AT 1.0-1.2'
TP-RD-B11-04 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-04 (05.0-05.5)		5	Negative Expray PID = 0 PPM				4-5.5: LIGHT BROWN SILTY SAND; 5.5-6: RED SAND AND SANDSTONE GRAVEL/COBBLE
TP-RD-B11-04 (07.0-07.5)			Negative Expray PID = 0 PPM				SAME AS ABOVE, COBBLE LARGER AND MORE PREVALENT
TP-RD-B11-04 (08.5-09.0)			Negative Expray PID = 0 PPM				8-9: BROWN TO ORANGE SANDY SILT, LARGE ANGULAR GRAVEL AND COBBLE

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B11-04A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 756.00 ft. AMSL**	TOTAL DEPTH: **9.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/16/17**	DATE COMPLETED: **10/19/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747367.468**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452740.362**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-04A (01.0-01.5)							
TP-RD-B11-04A (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-04A (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-04A (04.0-04.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-04A (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Positive Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
TP-RD-B11-04A (07.0-07.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT WITH CLAY AND ROCKS
TP-RD-B11-04A (08.5-09.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B11-05**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 751.66 ft. AMSL**	TOTAL DEPTH: **2.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/16/17**	DATE COMPLETED: **10/16/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747783.036**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453003.567**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES: Type & No.	SAMPLES: Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM Positive Expray				

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-05A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 751.60 ft. AMSL**	TOTAL DEPTH: **6.5 ft. bgs**
DATE STARTED: **10/16/17**	DATE COMPLETED: **10/16/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747769.658**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452995.752**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B11-05A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B11-05A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B11-05A (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B11-05B**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 751.17 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/18/17**	DATE COMPLETED: **10/18/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747760.604**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452993.855**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN ORGANIC SOIL
TP-RD-B11-05B (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-05B (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B11-05B (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-05C
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 750.72 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **10/23/17**	DATE COMPLETED: **10/23/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747752.256**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452992.425**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B11-05C (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-06
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 752.00 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **11/3/17**	DATE COMPLETED: **11/3/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747445.800**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452766.169**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B11-06 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B11-06 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B11-06 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B11-06 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT PURPLE BROWN SILTY SAND, LARGE GRAVEL, ROCKY
TP-RD-B11-06 (09.0-09.5)							
		10					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-07
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 759.76 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747795.423**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452888.400**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-07 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-07 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-08
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 755.41 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **11/7/17**	DATE COMPLETED: **11/7/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747522.816**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452815.335**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B11-08 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-08 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-B11-08 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-B11-08 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
TP-RD-B11-08 (09.0-09.5)							
		10					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-09
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 764.35 ft. AMSL**	TOTAL DEPTH: **4.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747506.276**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452719.248**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-09 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-09 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-09 (04.0-04.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-10
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 764.06 ft. AMSL**	TOTAL DEPTH: **4.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747523.457**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452730.533**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-10 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-10 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-10 (04.0-04.5)							

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-11
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 756.24 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747681.475**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452846.550**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-11 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-11 (03.0-03.5)			Negative Expray PID = 0 PPM				GRAY BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B11-12
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 758.73 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747676.703**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452821.765**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-12 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
TP-RD-B11-12 (03.0-03.5)			Negative Expray PID = 0 PPM				PURPLE GRAY SILTY SAND, SOME CLAY
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B11-13
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

ISOLATION CASING	n/a	FROM n/a	TO n/a	FT.
BLANK CASING	n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING	n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK	n/a	FROM n/a	TO n/a	FT.
SEAL	n/a	FROM n/a	TO n/a	FT.
GROUT	n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 756.20 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747658.024**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452851.563**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-13 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-13 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B11-14
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.	
BLANK CASING: n/a	FROM n/a	TO n/a	FT.	
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.	
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.	
SEAL: n/a	FROM n/a	TO n/a	FT.	
GROUT: n/a	FROM n/a	TO n/a	FT.	

ELEVATION AND DATUM: **Ground: 756.16 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747682.430**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452873.553**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-14 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-14 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-15
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 746.57 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747636.806**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452979.476**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-15 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH MEDIUM ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-16
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 747.21 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747628.884**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452975.278**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-16 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-16 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-17
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 747.71 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747643.584**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452972.351**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-17 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-17 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-18
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 743.33 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747636.015**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453032.361**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-18 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-18 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-19
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 744.86 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/29/17**	DATE COMPLETED: **11/29/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747659.229**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453029.787**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-19 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
TP-RD-B11-19 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION	**Hercules LLC - Kenvil Works Facility - TNT Project Area**
DRILLING COMPANY	**SGS Accutest**
DRILLER	**NA**
DRILLING METHOD(S)	**Geoprobe**
DRILL BIT(S) SIZE	
ISOLATION CASING	**n/a** FROM **n/a** TO **n/a** FT.
BLANK CASING	**n/a** FROM **n/a** TO **n/a** FT.
SLOTTED CASING	**n/a** FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK	**n/a** FROM **n/a** TO **n/a** FT.
SEAL	**n/a** FROM **n/a** TO **n/a** FT.
GROUT	**n/a** FROM **n/a** TO **n/a** FT.

Boring Name	**TP-RD-B11-20**
Project Name	**TNT Refined Delineation**
Project Number	**1540001*57**
ELEVATION AND DATUM	**Ground: 765.45 ft. AMSL**
TOTAL DEPTH	**9.5 ft. bgs**
DATE STARTED	**4/16/19**
DATE COMPLETED	**4/16/19**
STATIC WATER ELEVATION	**n/a**
NORTH	**747446.493**
LOGGED BY	**E. Lynch/L. Sterner**
EAST	**452806.060**
SAMPLING METHODS	**MacroCore**
WELL COMPLETION	☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-20 (01.0-01.5)			Negative Expray PID = 0 PPM				BROWN SILT AND MED SAND, SOME ORGANICS, MOIST
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				GRAVEL AND DEBRIS, SOME SILT AND MED SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5	Negative Expray PID = 0 PPM				BROWN SILT, SOME CLAY AND GRAVEL, TRACE FINE SAND
			Negative Expray PID = 0 PPM				BROWN SILT, SOME CLAY AND GRAVEL, TRACE FINE SAND
TP-RD-B11-20 (07.0-07.5)			Negative Expray PID = 0 PPM				BROWN SILT AND GRAVEL, SOME CLAY WITH DEBRIS AND LARGE ROCKS
TP-RD-B11-20 (09.0-09.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION	**Hercules LLC - Kenvil Works Facility - TNT Project Area**
DRILLING COMPANY	**SGS Accutest**
DRILLER	**NA**
DRILLING METHOD(S)	**Geoprobe**
DRILL BIT(S) SIZE	
ISOLATION CASING	**n/a** FROM **n/a** TO **n/a** FT.
BLANK CASING	**n/a** FROM **n/a** TO **n/a** FT.
SLOTTED CASING	**n/a** FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK	**n/a** FROM **n/a** TO **n/a** FT.
SEAL	**n/a** FROM **n/a** TO **n/a** FT.
GROUT	**n/a** FROM **n/a** TO **n/a** FT.

Boring Name	**TP-RD-B11-21**
Project Name	**TNT Refined Delineation**
Project Number	**1540001*57**
ELEVATION AND DATUM	**Ground: 752.24 ft. AMSL**
TOTAL DEPTH	**9.5 ft. bgs**
DATE STARTED	**4/16/19**
DATE COMPLETED	**4/16/19**
STATIC WATER ELEVATION	**n/a**
NORTH	**747475.211**
LOGGED BY	**E. Lynch/L. Sterner**
EAST	**452761.611**
SAMPLING METHODS	**MacroCore**
WELL COMPLETION	☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-21 (01.0-01.5)			Negative Expray PID = 0 PPM				DARK BROWN SILT AND ORGANICS, TRACE SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SMALL ROCKS
TP-RD-B11-21 (03.0-03.5)			Negative Expray PID = 0 PPM				BROWN SILT AND MED SAND, SOME GRAVEL, WET
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B11-21 (05.0-05.5)		5	Negative Expray PID = 0 PPM				BROWN SILT AND MED SAND, SOME GRAVEL AND CONSTRUCTION DEBRIS, WET
			Negative Expray PID = 0 PPM				GRAVEL WITH SOME LARGER ROCKS AND DEBRIS, SOME MEDIUM SAND AND SILT
TP-RD-B11-21 (07.0-07.5)			Negative Expray PID = 0 PPM				BROWN SILT, SOME MED SAND AND CLAY, TRACE GRAVEL
TP-RD-B11-21 (09.0-09.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B11-22
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano** — **Project Name** TNT Refined Delineation
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE: — **Project Number** 1540001*57
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.

ELEVATION AND DATUM: **Ground: 746.14 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/4/17**	DATE COMPLETED: **12/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747465.572**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452888.788**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-22 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B11-23
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano** — **Project Name** TNT Refined Delineation
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE: — **Project Number** 1540001*57
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.

ELEVATION AND DATUM: **Ground: 743.66 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/4/17**	DATE COMPLETED: **12/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747492.843**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452973.806**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, SMALL ROCKS
TP-RD-B11-23 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B11-24
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.
ELEVATION AND DATUM: **Ground: 746.89 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/4/17**	DATE COMPLETED: **12/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747372.851**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452906.905**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-24 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND , MEDIUM ROCKS
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B11-25
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.	
BLANK CASING: n/a	FROM n/a	TO n/a	FT.	
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.	
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.	
SEAL: n/a	FROM n/a	TO n/a	FT.	
GROUT: n/a	FROM n/a	TO n/a	FT.	

ELEVATION AND DATUM: **Ground: 739.14 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/4/17**	DATE COMPLETED: **12/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747373.178**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453026.575**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-25 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B11-26
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano** — **Project Name** TNT Refined Delineation
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE: — **Project Number** 1540001*57
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.

ELEVATION AND DATUM: **Ground: 733.99 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/5/17**	DATE COMPLETED: **12/5/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747416.674**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453107.114**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B11-26 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-01
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 737.13 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **10/18/17**	DATE COMPLETED: **10/18/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747267.550**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452995.780**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B12-01 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-01 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
TP-RD-B12-01 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 740.44 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **10/18/17**	DATE COMPLETED: **10/18/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747186.937**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452955.809**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, BURNED WOOD
			Positive Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
			Positive Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
		5					
			Positive Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, LARGE GRAVEL
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, CLAY PRESENT
TP-RD-B12-02 (09.0-09.5)							
		10					

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

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Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-02A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 741.12 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **10/18/17**	DATE COMPLETED: **10/18/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747186.391**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452934.852**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B12-02A (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-02A (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-02A (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B12-02A (07.0-07.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, CLAY
TP-RD-B12-02A (09.0-09.5)		10					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 740.03 ft. AMSL**	TOTAL DEPTH: **19.0 ft. bgs**
DATE STARTED: **11/2/17**	DATE COMPLETED: **11/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747189.005**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452973.620**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
		5					
TP-RD-B12-03 (09.0-09.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
TP-RD-B12-03 (10.0-10.5)		10	Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-03 (12.0-12.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-03 (13.0-13.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-03 (14.0-14.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-03 (15.0-15.5)		15	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B12-03 (16.5-17.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY

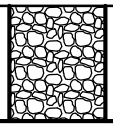
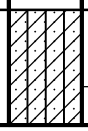
BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

Project Name TNT Refined Delineation **Project Number** 1540001*57 **Boring Name** TP-RD-B12-03

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B12-03 (17.5-18.0)							
TP-RD-B12-03 (18.5-19.0)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 736.00 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **11/2/17**	DATE COMPLETED: **11/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747104.138**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452959.649**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B12-04 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-04 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-04 (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND WITH CLAY
TP-RD-B12-04 (07.0-07.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND WITH CLAY
TP-RD-B12-04 (09.0-09.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND WITH CLAY AND MEDIUM GRAVEL
		10					

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-05
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 732.14 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **11/2/17**	DATE COMPLETED: **11/2/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747141.652**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453037.361**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-05 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-05 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-B12-05 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B12-05 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B12-05 (09.0-09.5)							
		10					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-06
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 731.98 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747236.774**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453097.287**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				MEDIUM BROWN SILTY SAND
TP-RD-B12-06 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-06 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B12-06 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B12-07**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 752.84 ft. AMSL**	TOTAL DEPTH: **11.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/2/17**	DATE COMPLETED: **11/2/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747160.646**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452801.765**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-07 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B12-07 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B12-07 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL AND ROCKS
TP-RD-B12-07 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL AND ROCKS
TP-RD-B12-07 (09.0-09.5)							
TP-RD-B12-07 (10.0-10.5)		10	Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL AND ROCKS

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION	**Hercules LLC - Kenvil Works Facility - TNT Project Area**
DRILLING COMPANY	**Land N Sea Environmental Services LLC**
DRILLER	**Doug Dano**
DRILLING METHOD(S)	**Excavator/Test Pit**
DRILL BIT(S) SIZE	
ISOLATION CASING	**n/a** FROM **n/a** TO **n/a** FT.
BLANK CASING	**n/a** FROM **n/a** TO **n/a** FT.
SLOTTED CASING	**n/a** FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK	**n/a** FROM **n/a** TO **n/a** FT.
SEAL	**n/a** FROM **n/a** TO **n/a** FT.
GROUT	**n/a** FROM **n/a** TO **n/a** FT.

Boring Name	**TP-RD-B12-08**
Project Name	**TNT Refined Delineation**
Project Number	**1540001*57**
ELEVATION AND DATUM	**Ground: 738.82 ft. AMSL**
TOTAL DEPTH	**16.0 ft. bgs**
DATE STARTED	**11/7/17**
DATE COMPLETED	**11/7/17**
STATIC WATER ELEVATION	**n/a**
NORTH	**747207.843**
LOGGED BY	**K. Engberg/L. Sterner**
EAST	**453025.669**
SAMPLING METHODS	**Test Pit/Hand Auger**
WELL COMPLETION	☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-08 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-08 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
TP-RD-B12-08 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B12-08 (07.0-07.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B12-08 (09.0-09.5)							
		10	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		15					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Project Name TNT Refined Delineation **Project Number** 1540001*57 **Boring Name** TP-RD-B12-08

SAMPLES		Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
Type & No.	Penetr. Resist. Blows/6"						

4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-09
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 732.89 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747289.312**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453101.094**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-09 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-09 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B12-09 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-10
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 726.36 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/5/17**	DATE COMPLETED: **12/5/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746865.788**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453038.823**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-10 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B12-12
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 726.35 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/5/17**	DATE COMPLETED: **12/5/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747001.876**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453088.850**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				MEDIUM BROWN SILTY SAND
TP-RD-B12-12 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, SOME CLAY
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

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3. PPM: PARTS PER MILLION
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B12-13
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

ISOLATION CASING	n/a	FROM n/a	TO n/a	FT.
BLANK CASING	n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING	n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK	n/a	FROM n/a	TO n/a	FT.
SEAL	n/a	FROM n/a	TO n/a	FT.
GROUT	n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 752.29 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/4/17**	DATE COMPLETED: **12/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747257.511**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452803.495**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-13 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B12-14
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 743.30 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/5/17**	DATE COMPLETED: **12/5/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747273.889**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452939.460**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-14 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT RED BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B12-15
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

ISOLATION CASING	n/a	FROM n/a	TO n/a	FT.
BLANK CASING	n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING	n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK	n/a	FROM n/a	TO n/a	FT.
SEAL	n/a	FROM n/a	TO n/a	FT.
GROUT	n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 727.70 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/5/17**	DATE COMPLETED: **12/5/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747333.738**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453210.598**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B12-15 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SMALL ROCKS
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM ROCKS
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B13-01**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 728.01 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **10/30/17**	DATE COMPLETED: **10/30/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **746784.594**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453007.828**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-01 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-01 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, CLAY
TP-RD-B13-01 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, CLAY
TP-RD-B13-01 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 725.79 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **10/30/17**	DATE COMPLETED: **10/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746746.789**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452976.930**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-02 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-02 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B13-02 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B13-02 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.00 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **10/30/17**	DATE COMPLETED: **10/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746686.418**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452958.949**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, ROOTS
TP-RD-B13-03 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-03 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-03 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-03 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 725.54 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **10/30/17**	DATE COMPLETED: **10/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746718.216**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453036.857**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-04 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-04 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-04 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-04 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-05
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 723.53 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746391.723**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453024.566**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-05 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-05 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-05 (05.0-05.5)		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B13-06**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 723.12 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **746474.040**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453156.190**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-06 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-06 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-06 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-06 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-07
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 722.53 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746443.586**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453270.672**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B13-07 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-07 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-07 (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-08
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 726.04 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **11/1/17**	DATE COMPLETED: **11/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746638.212**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452984.311**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
TP-RD-B13-08 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B13-08 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY, MEDIUM GRAVEL
TP-RD-B13-08 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-08 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-09
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 726.00 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **11/1/17**	DATE COMPLETED: **11/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746671.240**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453024.191**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-09 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-B13-09 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-09 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-09 (07.0-07.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-10
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 728.12 ft. AMSL**	TOTAL DEPTH: **10.0 ft. bgs**
DATE STARTED: **11/1/17**	DATE COMPLETED: **11/7/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746774.327**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452918.434**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-10 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-10 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-10 (05.0-05.5)		5					
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-10 (07.0-07.5)							
TP-RD-B13-10 (08.0-08.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-10 (09.0-09.5)			Negative Expray PID = 0 PPM ▽				LIGHT BROWN COARSE SAND
		10					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B13-10A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 729.86 ft. AMSL**	TOTAL DEPTH: **12.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/7/17**	DATE COMPLETED: **11/7/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **746780.287**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452932.622**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B13-10A (01.0-01.5)			PID = 0 PPM				
			Positive Expray PID = 0 PPM				
			PID = 0 PPM				
		5					
			PID = 0 PPM				
			PID = 0 PPM				
		10	PID = 0 PPM				

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-11
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 722.78 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746437.917**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453106.240**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-11 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-11 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-11 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B13-12
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 723.70 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746498.330**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453125.029**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-12 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-12 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B13-12 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-B13-13
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name TNT Refined Delineation	
Project Number 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.96 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746549.234**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453082.760**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-13 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-13 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-13 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-14
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 723.26 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746527.477**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452963.954**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, METAL AND CONCRETE
TP-RD-B13-14 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-14 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B13-14 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-15
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 721.93 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746463.808**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **452964.444**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, METAL AND CONCRETE DEBRIS
TP-RD-B13-15 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, METAL AND CONCRETE DEBRIS
TP-RD-B13-15 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, METAL AND CONCRETE DEBRIS
TP-RD-B13-15 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION	**Hercules LLC - Kenvil Works Facility - TNT Project Area**
DRILLING COMPANY	**SGS Accutest**
DRILLER	**NA**
DRILLING METHOD(S)	**Geoprobe**
DRILL BIT(S) SIZE	
ISOLATION CASING	**n/a** FROM **n/a** TO **n/a** FT.
BLANK CASING	**n/a** FROM **n/a** TO **n/a** FT.
SLOTTED CASING	**n/a** FROM **n/a** TO **n/a** FT.
SIZE AND TYPE OF FILTER PACK	**n/a** FROM **n/a** TO **n/a** FT.
SEAL	**n/a** FROM **n/a** TO **n/a** FT.
GROUT	**n/a** FROM **n/a** TO **n/a** FT.

Boring Name	**TP-RD-B13-16**
Project Name	**TNT Refined Delineation**
Project Number	**1540001*57**
ELEVATION AND DATUM	**Ground: 721.99 ft. AMSL**
TOTAL DEPTH	**5.5 ft. bgs**
DATE STARTED	**4/16/19**
DATE COMPLETED	**4/16/19**
STATIC WATER ELEVATION	**n/a**
NORTH	**746344.206**
LOGGED BY	**E. Lynch/L. Sterner**
EAST	**453241.138**
SAMPLING METHODS	**MacroCore**
WELL COMPLETION	☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				SOFT BROWN SILTY SAND, SOME GRAVEL, MOIST
			Negative Expray PID = 0 PPM				DARK BROWN SILT AND GRAVEL, SOME MEDIUM SAND AND LARGER ROCKS
TP-RD-B13-16 (03.0-03.5)							
			Negative Expray PID = 0 PPM				MOIST BROWN SILT AND GRAVEL
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-17
DRILLING COMPANY: **SGS Accutest** / DRILLER: **NA**	**Project Name:** TNT Refined Delineation
DRILLING METHOD(S): **Geoprobe** / DRILL BIT(S) SIZE:	**Project Number:** 1540001*57
ISOLATION CASING: **n/a** / FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 722.00 ft. AMSL** / TOTAL DEPTH: **5.5 ft. bgs**
BLANK CASING: **n/a** / FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/16/19** / DATE COMPLETED: **4/16/19**
SLOTTED CASING: **n/a** / FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a** / NORTH: **746370.442**
SIZE AND TYPE OF FILTER PACK: **n/a** / FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner** / EAST: **453235.247**
SEAL: **n/a** / FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore** / WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a** / FROM **n/a** TO **n/a** FT.	

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				BROWN SILT, MEDIUM SAND AND GRAVEL WITH SOME LARGER ROCKS
			Negative Expray PID = 0 PPM				BROWN SILT, MEDIUM SAND AND GRAVEL WITH SOME LARGER ROCKS
TP-RD-B13-17 (03.0-03.5)			Negative Expray PID = 0 PPM				BROWN SILT, MEDIUM SAND AND GRAVEL WITH SOME LARGER ROCKS, WET
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B13-18
DRILLING COMPANY: **SGS Accutest** / DRILLER: **NA**	**Project Name:** TNT Refined Delineation
DRILLING METHOD(S): **Geoprobe** / DRILL BIT(S) SIZE:	**Project Number:** 1540001*57
ISOLATION CASING: **n/a** — FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 721.99 ft. AMSL** / TOTAL DEPTH: **5.5 ft. bgs**
BLANK CASING: **n/a** — FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/16/19** / DATE COMPLETED: **4/16/19**
SLOTTED CASING: **n/a** — FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a** / NORTH: **746367.233**
SIZE AND TYPE OF FILTER PACK: **n/a** — FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner** / EAST: **453221.058**
SEAL: **n/a** — FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore** / WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a** — FROM **n/a** TO **n/a** FT.	

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B13-18 (01.0-01.5)			PID = 0 PPM				BROWN SILT AND ORGANICS, SOME FINE/MED SAND, SOME GRAVEL
			Negative Expray PID = 0 PPM				BROWN SILT AND MEDIUM SAND, GRAVEL
			Negative Expray PID = 0 PPM				BROWN SILT AND MEDIUM SAND, MOSTLY GRAVEL, WET
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B13-19**
DRILLING COMPANY: **SGS Accutest**	DRILLER: **NA**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Geoprobe**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 721.98 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/16/19**	DATE COMPLETED: **4/16/19**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **746340.812**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner**	EAST: **453226.856**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B13-19 (01.0-01.5)			PID = 0 PPM				BROWN SILT AND ORGANICS, SOME GRAVEL
			Negative Expray PID = 0 PPM				BROWN SILT AND GRAVEL, SOME FINE SAND
			Negative Expray PID = 0 PPM				BROWN SILT AND MEDIUM SAND, SOME GRAVEL AND LARGE ROCKS
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-B13-20**
DRILLING COMPANY: **SGS Accutest**	DRILLER: **NA**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Geoprobe**	DRILL BIT(S) SIZE	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 725.98 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/16/19**	DATE COMPLETED: **4/16/19**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **746774.665**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner**	EAST: **453044.542**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B13-20(00.0-00.5)			PID = 0 PPM				DARK BROWN SILT AND ORGANICS
			Negative Expray PID = 0 PPM				BROWN SILT, WET AND SOFT, TRACE SAND
			Negative Expray PID = 0 PPM				BROWN SILT AND GRAVEL, SOME MEDIUM SAND
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B14-01
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 722.02 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746364.824**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453274.937**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B14-01 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B14-01 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B14-01 (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B14-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 722.01 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746338.873**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453167.854**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-B14-02 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B14-02 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B14-02 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B14-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 722.00 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746305.958**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453260.794**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B14-03 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B14-03 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-B14-03 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-B14-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 722.00 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746320.065**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453255.232**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-B14-04 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C10-01
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 759.68 ft. AMSL**	TOTAL DEPTH: **3.5 ft. bgs**
DATE STARTED: **10/16/17**	DATE COMPLETED: **10/16/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748140.352**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453127.235**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-C10-01 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-C10-01 (02.5-03.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
TP-RD-C10-01 (03.0-03.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C10-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 753.01 ft. AMSL**	TOTAL DEPTH: **4.0 ft. bgs**
DATE STARTED: **10/17/17**	DATE COMPLETED: **10/17/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **748050.647**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453166.419**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C10-02 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C10-02 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C10-02 (03.5-04.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-01
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 727.12 ft. AMSL**	TOTAL DEPTH: **6.5 ft. bgs**
DATE STARTED: **10/11/17**	DATE COMPLETED: **10/23/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747522.059**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453276.684**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN ORGANIC RICH SOIL
TP-RD-C11-01 (00.5-01.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, SMALL GRAVEL
TP-RD-C11-01 (01.0-01.5)			Positive Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, SMALL GRAVEL
TP-RD-C11-01 (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SANDY SILT, SMALL GRAVEL; PIPE
TP-RD-C11-01 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-01 (04.0-04.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-01 (05.0-05.5)		5	Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-01 (06.0-06.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-01A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 726.24 ft. AMSL**	TOTAL DEPTH: **3.5 ft. bgs**
DATE STARTED: **10/17/17**	DATE COMPLETED: **10/17/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747525.195**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453298.810**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
FP-RD-C11-01A (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
FP-RD-C11-01A (02.0-02.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, MEDIUM GRAVEL
FP-RD-C11-01A (03.0-03.5)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-01B
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 725.31 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **10/23/17**	DATE COMPLETED: **10/23/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747528.747**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453316.881**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-01B (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-01B (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-01B (05.0-05.5)		5					
TP-RD-C11-01B (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-01C
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.72 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **10/27/17**	DATE COMPLETED: **10/27/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747530.496**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453328.321**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, BUILDING DEBRIS
TP-RD-C11-01C (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-01C (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-01C (05.0-05.5)		5					
TP-RD-C11-01C (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-01D
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.26 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747531.741**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453337.022**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-C11-01D (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 724.00 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **10/11/17**	DATE COMPLETED: **10/11/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747469.183**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453238.185**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-02 (00.5-01.0)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SMALL GRAVEL
TP-RD-C11-02 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-02 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-02 (05.0-05.5)		5					
TP-RD-C11-02 (06.0-06.5)			Negative Expray PID = 0 PPM ▽				LIGHT BROWN COARSE SAND

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-02A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.00 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **10/27/17**	DATE COMPLETED: **10/27/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747454.923**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453274.823**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND, BUILDING DEBRIS
TP-RD-C11-02A (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-02A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-02A (05.0-05.5)		5					
TP-RD-C11-02A (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND, WATER AT BOTTOM

NOTES

1. ALL CONTACTS APPROXIMATE
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-02B
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.00 ft. AMSL**	TOTAL DEPTH: **8.0 ft. bgs**
DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747447.084**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453289.957**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
FP-RD-C11-02B (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
FP-RD-C11-02B (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
FP-RD-C11-02B (05.0-05.5)		5					
			Negative Expray PID = 0 PPM ▽				LIGHT BROWN COARSE SAND
FP-RD-C11-02B (07.0-07.5)							

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 729.13 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **10/11/17**	DATE COMPLETED: **10/11/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747506.769**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453189.458**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN ORGANIC SOIL
TP-RD-C11-03 (00.5-01.0)			Negative Expray PID = 0 PPM				MEDIUM BROWN SILTY SAND, SMALL GRAVEL
TP-RD-C11-03 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-03 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-03 (05.0-05.5)		5					
TP-RD-C11-03 (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

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4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 730.06 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **10/27/17**	DATE COMPLETED: **10/27/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747533.139**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453229.326**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-04 (01.0-01.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-04 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-04 (05.0-05.5)		5					
TP-RD-C11-04 (06.0-06.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND

NOTES

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2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

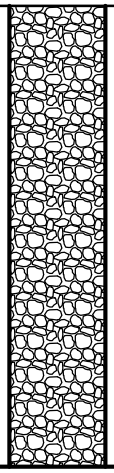
F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**		**Boring Name**	**TP-RD-C11-04A**
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**	**Project Name**	**TNT Refined Delineation**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:	**Project Number**	**1540001*57**
ISOLATION CASING: **n/a**	FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 730.23 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
BLANK CASING: **n/a**	FROM **n/a** TO **n/a** FT.	DATE STARTED: **11/6/17**	DATE COMPLETED: **11/6/17**
SLOTTED CASING: **n/a**	FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a**	NORTH: **747537.511**
SIZE AND TYPE OF FILTER PACK: **n/a**	FROM **n/a** TO **n/a** FT.	LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453227.894**
SEAL: **n/a**	FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a**	FROM **n/a** TO **n/a** FT.		

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-C11-04A (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND, BUILDING DEBRIS
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, BUILDING DEBRIS
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, BUILDING DEBRIS
		5					



NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-05
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 725.98 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747722.565**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453319.838**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT GRAY SILTY CLAY
TP-RD-C11-05 (03.0-03.5)			Negative Expray PID = 0 PPM				TAN COARSE SAND
		5					

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-06
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 726.01 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747697.535**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453330.718**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-06 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-06 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-07
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 725.97 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747727.853**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453345.979**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-07 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
TP-RD-C11-07 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND, SOME CLAY
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-08
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 726.00 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747746.425**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453312.670**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-08 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT TAN SILTY CLAY
TP-RD-C11-08 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-09
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

ISOLATION CASING: n/a	FROM n/a	TO n/a	FT.
BLANK CASING: n/a	FROM n/a	TO n/a	FT.
SLOTTED CASING: n/a	FROM n/a	TO n/a	FT.
SIZE AND TYPE OF FILTER PACK: n/a	FROM n/a	TO n/a	FT.
SEAL: n/a	FROM n/a	TO n/a	FT.
GROUT: n/a	FROM n/a	TO n/a	FT.

ELEVATION AND DATUM: **Ground: 726.59 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747714.355**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453292.359**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-09 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
TP-RD-C11-09 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C11-09 (05.0-05.5)		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-10
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.01 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747661.592**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453550.793**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK GRAY SILTY SAND
TP-RD-C11-10 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT GRAY SILTY SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-11
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 723.88 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747675.513**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453539.076**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT GRAY SILTY SAND
TP-RD-C11-11 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT GRAY COARSE SAND
TP-RD-C11-11 (03.0-03.5)							
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-12
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.01 ft. AMSL**	TOTAL DEPTH: **5.0 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747653.500**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453536.944**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT GRAY SILTY SAND
TP-RD-C11-12 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT GRAY COARSE SAND, BOTTLES IN SOIL AT 5'
TP-RD-C11-12 (03.0-03.5)							
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-13
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.01 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747650.775**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453561.676**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK GRAY SILTY SAND
TP-RD-C11-13 (01.0-01.5)			Negative Expray PID = 0 PPM				DARK GRAY COARSE SAND
TP-RD-C11-13 (03.0-03.5)			Negative Expray PID = 0 PPM				DARK GRAY COARSE SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C11-14
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 724.00 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **11/30/17**	DATE COMPLETED: **11/30/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **747676.962**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453565.492**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK GRAY SILTY SAND
TP-RD-C11-14 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT GRAY COARSE SAND
TP-RD-C11-14 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT GRAY COARSE SAND
		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C13-01A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 718.85 ft. AMSL**	TOTAL DEPTH: **4.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746594.298**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453927.666**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN ORGANIC SOIL
FP-RD-C13-01A (01.0-01.5)			Negative Expray PID = 0 PPM				MEDIUM BROWN SILTY SAND
FP-RD-C13-01A (03.0-03.5)							

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C13-02
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 719.88 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/7/17**	DATE COMPLETED: **11/7/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746552.021**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453856.544**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-C13-02 (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C13-02 (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C13-02 (05.0-05.5)		5					

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C13-02A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 719.79 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746535.966**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453865.009**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-C13-02A (01.0-01.5)			PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C13-02A (03.0-03.5)							
			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-C13-02A (05.0-05.5)		5	▽				

NOTES

1. ALL CONTACTS APPROXIMATE
2. BGS: BELOW GROUND SURFACE
3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C13-03
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 719.99 ft. AMSL**	TOTAL DEPTH: **6.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746635.950**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453839.264**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				DARK BROWN ORGANIC SOIL
			Positive Expray PID = 0 PPM				MEDIUM BROWN SILTY SAND
			Positive Expray PID = 0 PPM				MEDIUM BROWN COARSE SAND, MEDIUM GRAVEL
		5	▽				

NOTES

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3. PPM: PARTS PER MILLION
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C13-04
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 720.30 ft. AMSL**	TOTAL DEPTH: **7.0 ft. bgs**
DATE STARTED: **11/8/17**	DATE COMPLETED: **11/8/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746578.964**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453800.967**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-C13-04 (01.0-01.5)			PID = 0 PPM				DARK BROWN ORGANIC SOIL
			Negative Expray PID = 0 PPM				MEDIUM BROWN SILTY SAND
TP-RD-C13-04 (03.0-03.5)			Negative Expray PID = 0 PPM				MEDIUM BROWN COARSE SAND, MEDIUM GRAVEL
TP-RD-C13-04 (05.0-05.5)		5	Negative Expray PID = 0 PPM				MEDIUM BROWN COARSE SAND
TP-RD-C13-04 (06.5-07.0)							

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C13-04A
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 720.61 ft. AMSL**	TOTAL DEPTH: **5.0 ft. bgs**
DATE STARTED: **12/4/17**	DATE COMPLETED: **12/4/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746570.163**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453783.401**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND
FP-RD-C13-04A (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND
FP-RD-C13-04A (05.0-05.5)		5					

NOTES

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3. PPM: PARTS PER MILLION
4. SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, ASTM D-2488-93

BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-C13-05
DRILLING COMPANY: **SGS Accutest** / DRILLER: **NA**	**Project Name:** TNT Refined Delineation
DRILLING METHOD(S): **Geoprobe** / DRILL BIT(S) SIZE:	**Project Number:** 1540001*57
ISOLATION CASING: **n/a** — FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 719.28 ft. AMSL** / TOTAL DEPTH: **3.5 ft. bgs**
BLANK CASING: **n/a** — FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/17/19** / DATE COMPLETED: **4/17/19**
SLOTTED CASING: **n/a** — FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a** / NORTH: **746649.117**
SIZE AND TYPE OF FILTER PACK: **n/a** — FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner** / EAST: **453895.210**
SEAL: **n/a** — FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore** / WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a** — FROM **n/a** TO **n/a** FT.	

SAMPLES Type & No.	SAMPLES Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-C13-05 (01.0-01.5)			PID = 0 PPM Negative Expray PID = 0 PPM				LIGHT BROWN MEDIUM SAND AND GRAVEL, WET LIGHT BROWN MEDIUM SAND AND GRAVEL, WET

NOTES

1. ALL CONTACTS APPROXIMATE
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name** TP-RD-C13-06
DRILLING COMPANY: **SGS Accutest** / DRILLER: **NA**	**Project Name** TNT Refined Delineation
DRILLING METHOD(S): **Geoprobe** / DRILL BIT(S) SIZE:	**Project Number** 1540001*57
ISOLATION CASING: **n/a** — FROM **n/a** TO **n/a** FT.	ELEVATION AND DATUM: **Ground: 719.79 ft. AMSL** / TOTAL DEPTH: **1.5 ft. bgs**
BLANK CASING: **n/a** — FROM **n/a** TO **n/a** FT.	DATE STARTED: **4/17/19** / DATE COMPLETED: **4/17/19**
SLOTTED CASING: **n/a** — FROM **n/a** TO **n/a** FT.	STATIC WATER ELEVATION: **n/a** / NORTH: **746652.901**
SIZE AND TYPE OF FILTER PACK: **n/a** — FROM **n/a** TO **n/a** FT.	LOGGED BY: **E. Lynch/L. Sterner** / EAST: **453838.298**
SEAL: **n/a** — FROM **n/a** TO **n/a** FT.	SAMPLING METHODS: **MacroCore** / WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE **n/a** FT.
GROUT: **n/a** — FROM **n/a** TO **n/a** FT.	

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
TP-RD-C13-06 (01.0-01.5)			PID = 0 PPM Negative Expray				DARK BROWN COARSE SAND AND GRAVEL, SOME ORGANICS, WET

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-D13-01
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 716.96 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746596.585**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **454003.017**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT GRAY SILTY CLAY
TP-RD-D13-01 (01.0-01.5)			Negative Expray PID = 0 PPM				DARK GRAY SILTY SAND WITH CLAY
TP-RD-D13-01 (03.0-03.5)			Negative Expray PID = 0 PPM				DARK GRAY SILTY SAND WITH CLAY
TP-RD-D13-01 (05.0-05.5)		5					

NOTES

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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: **Hercules LLC - Kenvil Works Facility - TNT Project Area**	**Boring Name:** TP-RD-D14-01
DRILLING COMPANY: **Land N Sea Environmental Services LLC**	DRILLER: **Doug Dano**
DRILLING METHOD(S): **Excavator/Test Pit**	DRILL BIT(S) SIZE:
Project Name: TNT Refined Delineation	
Project Number: 1540001*57	

	FROM	TO	FT.
ISOLATION CASING: n/a	n/a	n/a	
BLANK CASING: n/a	n/a	n/a	
SLOTTED CASING: n/a	n/a	n/a	
SIZE AND TYPE OF FILTER PACK: n/a	n/a	n/a	
SEAL: n/a	n/a	n/a	
GROUT: n/a	n/a	n/a	

ELEVATION AND DATUM: **Ground: 718.11 ft. AMSL**	TOTAL DEPTH: **5.5 ft. bgs**
DATE STARTED: **12/1/17**	DATE COMPLETED: **12/1/17**
STATIC WATER ELEVATION: **n/a**	NORTH: **746536.225**
LOGGED BY: **K. Engberg/L. Sterner**	EAST: **453994.288**
SAMPLING METHODS: **Test Pit/Hand Auger**	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE n/a FT.

SAMPLES Type & No.	Penetr. Resist. Blows/6"	Drill Depth (Feet)	BACKFILL DETAILS	USCS Log	Lithology	Color	SAMPLE DESCRIPTION and DRILLING REMARKS
			PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-D14-01 (01.0-01.5)			Negative Expray PID = 0 PPM				LIGHT BROWN SILTY SAND WITH CLAY
TP-RD-D14-01 (03.0-03.5)			Negative Expray PID = 0 PPM				LIGHT BROWN COARSE SAND
TP-RD-D14-01 (05.0-05.5)		5					

NOTES

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3. PPM: PARTS PER MILLION
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BORING & WELL CONSTRUCTION ASHLAND KERVIL_REV.GPJ KENNEDY JENKS.GDT 6/14/19

Exhibit 3

Laboratory Analytical Data Packages

Pace Analytical®
Mobile Lab Services

Mobile Lab Project Case Narrative

Report Date	December 1, 2017
Client	Kennedy/Jenks
Site/ Project Name	Hercules Inc. – Kenvil Works Facility
Location	Kenvil, NJ
Dates of Service	Oct 4 – Nov 7, 2017
Test Method Reference	LAM-018 Nitroaromatics by 8095
Pace Project Number	2769
Client Project or PO Number	1540001*36

1. Introduction

Pace Analytical – Mobile Lab Services (Pace) mobilized to the referenced site to provide analytical chemistry support during site investigation activities. The target analytes for the project were a client supplied list of nitroaromatics. The laboratory analyzed 438 soil samples and 26 water samples while on site. All method holding times were met. The Pace Lead Chemist was Christopher Munz and the Pace Project Manager was Nick Nigro.

2. Pace Method Summary

- Samples were analyzed for the client specified list of nitroaromatics in accordance with the Pace standard operating procedures (SOP) listed above.
- Soil samples were submitted in 4 oz jars. Samples that were not placed on hold were extracted immediately upon receipt and analyzed in less than 24 hours.
- The rinsate samples were received in 500 mL amber glass bottles. Samples were then immediately logged in on Pace chain of custody (COC).
- Nitroaromatics analysis was performed on an HP5890A GC equipped with an electron capture detector (ECD) and Agilent Chemstation for data processing.
- The reporting limit (RL) for all compounds was 100 µg/kg.
- Surrogate compounds were added to all samples prior to extraction.
- A laboratory blank and laboratory control sample (blank spike) were prepared on a daily basis or with every 20 samples. Matrix spike/matrix spike duplicate (MS/MSD) samples were prepared, extracted and analyzed using separate soil subsamples from the same parent sample bottle. Fortification of laboratory control and MS/MSD samples with target analytes occurred prior to sample extraction.
- All detections were confirmed in accordance with the Pace SOP using a second column.

3. Quality Control Summary

Initial Calibration	Initial calibrations were prepared using method specified number of points. The calibration was verified using a single point second source standard. Method calibration criteria were acceptable.
Continuing Calibration	The instrument calibration was verified every 10 samples using a single point calibration standard. Method criteria were acceptable for all constituents of concern over the course of the project, except where qualified.
Method Blanks	The method blanks that were analyzed each day were free of contamination.
Blank Spikes	The recoveries for the constituents of concern were acceptable, except where qualified.
MS/MSD	Method criteria were acceptable for all constituents of concern over the course of the project, except where qualified.

4. Analytical Reports

All field-generated draft results were confirmed through the standard Pace review process and one change was identified, as noted below. Draft results were reported on a dry weight basis.

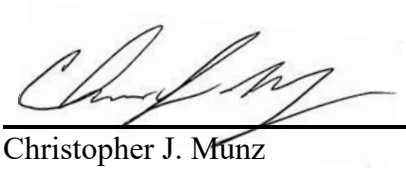
Sample ID	Description	Analyte	Draft Result	Final Result
K174301-12	C11-7-02(03.0-03.5)	2,4-Dinitrotoluene	<120 ug/kg	240 ug/kg

Following is a listing of the appendices to this report:

- A – All analytical results in detailed format, including associated QC
- B – Chain of Custody Documentation

5. Signature Approval

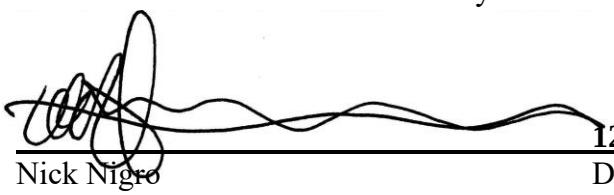
This document has been prepared by the under-signed:



12/01/2017

Christopher J. Munz Date
Lead Chemist

This document has been reviewed by the under-signed:



12/01/2017

Nick Nigro Date
Project Manager

Certification List		**Number**	**Expires**
ADEQ	Arkansas Department of Environmental Quality	17-065-0	09/26/2018
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2018
ILEPA	Illinois Secondary NELAP Accreditation	003174	04/30/2018
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2018
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Env. Quality Accreditation	688	12/31/2017
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Dept. of Env. Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2018
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018

Appendix A

Detailed Sample and Quality Control Results

Pace Analytical®
ECCS Mobile Lab Services

2525 Advance Road
Madison, WI 53718
608.221.8700 Phone
608.221.4889 Fax

Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-RD-B10-01(01.0-01.5)	K174001-01	Soil	10/02/2017	10/02/2017
TP-RD-B10-01(03.0-03.5)	K174001-02	Soil	10/02/2017	10/02/2017
TP-RD-B10-01(04.0-05.0)	K174001-03	Soil	10/02/2017	10/02/2017
TP-RD-B10-02(01.0-01.5)	K174001-04	Soil	10/02/2017	10/02/2017
TP-RD-B10-02(03.0-03.5)	K174001-05	Soil	10/02/2017	10/02/2017
TP-RD-B10-02(04.0-05.0)	K174001-06	Soil	10/02/2017	10/02/2017
TP-RD-B10-03(01.0-01.5)	K174001-07	Soil	10/02/2017	10/02/2017
TP-RD-B10-03(03.0-03.5)	K174001-08	Soil	10/02/2017	10/02/2017
TP-RD-B10-03(04.0-05.0)	K174001-09	Soil	10/02/2017	10/02/2017
TP-R-B10-2/B10-509-7(04.5-05.0)	K174001-10	Soil	10/02/2017	10/02/2017
TP-RD-B10-04(01.0-01.5)	K174001-11	Soil	10/02/2017	10/02/2017
TP-RD-B10-04(03.0-03.5)	K174001-12	Soil	10/02/2017	10/02/2017
TP-RD-B10-04(04.5-0.50)	K174001-13	Soil	10/02/2017	10/02/2017
TP-RD-B10-05(01.0-01.5)	K174002-01	Soil	10/03/2017	10/03/2017
TP-RD-B10-05(02.0-02.5)	K174002-02	Soil	10/03/2017	10/03/2017
TP-RD-B10-09(01.0-01.5)	K174002-03	Soil	10/03/2017	10/03/2017
TP-RD-B10-12(01.0-01.5)	K174002-04	Soil	10/03/2017	10/03/2017
TP-RD-B10-10(01.0-01.5)	K174002-05	Soil	10/03/2017	10/03/2017
BD100317	K174002-06	Soil	10/03/2017	10/03/2017
TP-R-B10-2/B10-509-3(01.5-02.0)	K174002-07	Soil	10/03/2017	10/03/2017
BD100317A	K174003-01	Soil	10/03/2017	10/03/2017
TP-RD-B10-08(01.0-01.5)	K174003-02	Soil	10/03/2017	10/03/2017
TP-RD-B10-08(03.0-03.5)	K174003-03	Soil	10/03/2017	10/03/2017
TP-RD-B10-08(05.0-05.5)	K174003-04	Soil	10/03/2017	10/03/2017
TP-RD-B10-08(07.0-07.5)	K174003-05	Soil	10/03/2017	10/03/2017
TP-RD-B10-08(09.0-09.5)	K174003-06	Soil	10/03/2017	10/03/2017
TP-RD-B10-08(10.5.0-10.8)	K174003-07	Soil	10/03/2017	10/03/2017
TP-RD-B10-07(01.0-01.5)	K174003-08	Soil	10/03/2017	10/03/2017
TP-RD-B10-07(02.5-03.0)	K174003-09	Soil	10/03/2017	10/03/2017
FB100317	K174004-01	Water	10/03/2017	10/03/2017
FB100217	K174004-02	Water	10/02/2017	10/03/2017

Pace Analytical®
ECCS Mobile Lab Services

2525 Advance Road
Madison, WI 53718
608.221.8700 Phone
608.221.4889 Fax

Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FB100417	K174004-03	Water	10/04/2017	10/04/2017
FB100517	K174004-04	Water	10/05/2017	10/05/2017
FB100617	K174004-05	Water	10/05/2017	10/06/2017
TP-RD-B10-06(01.0-01.5)	K174005-01	Soil	10/04/2017	10/04/2017
TP-RD-B10-06(03.0-03.5)	K174005-02	Soil	10/04/2017	10/04/2017
TP-RD-B10-06(05.0-05.5)	K174005-03	Soil	10/04/2017	10/04/2017
TP-RD-B10-06(06.0-06.5)	K174005-04	Soil	10/04/2017	10/04/2017
TP-RD-B10-11(01.0-01.5)	K174005-05	Soil	10/04/2017	10/04/2017
TP-RD-B10-11(03.0-03.5)	K174005-06	Soil	10/04/2017	10/04/2017
TP-RD-B10-11(05.0-05.5)	K174005-07	Soil	10/04/2017	10/04/2017
TP-RD-B10-11(06.0-06.5)	K174005-08	Soil	10/04/2017	10/04/2017
TP-R-A11-504-1(08.5-09.0)	K174006-01	Soil	10/04/2017	10/04/2017
TP-RD-A11-01(01.0-01.5)	K174006-02	Soil	10/04/2017	10/04/2017
TP-RD-A11-01(03.0-03.5)	K174006-03	Soil	10/04/2017	10/04/2017
TP-RD-A11-01(05.0-05.5)	K174006-04	Soil	10/04/2017	10/04/2017
TP-RD-A11-01(07.0-07.5)	K174006-05	Soil	10/04/2017	10/04/2017
TP-RD-A11-01(09.0-09.5)	K174006-06	Soil	10/04/2017	10/04/2017
TP-RD-A11-01(10.5-11.0)	K174006-07	Soil	10/04/2017	10/04/2017
TP-R-B10-508-1(14.0-14.5)	K174007-01	Soil	10/05/2017	10/05/2017
TP-R-B10-505-5(11.0-11.5)	K174007-02	Soil	10/05/2017	10/05/2017
TP-RD-A11-02(06.0-06.5)	K174007-03	Soil	10/05/2017	10/05/2017
TP-R-A11-4-2(08.5-09.0)	K174007-04	Soil	10/05/2017	10/05/2017
BD100517	K174007-05	Soil	10/05/2017	10/05/2017
TP-RD-B11-01(01.0-01.5)	K174101-01	Soil	10/06/2017	10/06/2017
TP-RD-B11-01(03.0-03.5)	K174101-02	Soil	10/06/2017	10/06/2017
TP-RD-B11-01(04.0-04.5)	K174101-03	Soil	10/06/2017	10/06/2017
B11-663-06(08.5-09.0)	K174101-04	Soil	10/06/2017	10/06/2017
TP-RD-A12-02(01.0-01.5)	K174101-05	Soil	10/06/2017	10/06/2017
TP-RD-A12-02(02.0-02.5)	K174101-06	Soil	10/06/2017	10/06/2017
TP-RD-A11-04(01.0-01.5)	K174101-07	Soil	10/06/2017	10/06/2017
TP-RD-A11-04(03.0-03.5)	K174101-08	Soil	10/06/2017	10/06/2017

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TP-RD-A11-04(05.0-05.5)	K174101-09	Soil	10/06/2017	10/06/2017
TP-RD-A11-04(07.0-07.5)	K174101-10	Soil	10/06/2017	10/06/2017
TP-RD-A11-03(01.0-01.5)	K174101-11	Soil	10/06/2017	10/06/2017
TP-RD-A11-03(03.0-03.5)	K174101-12	Soil	10/06/2017	10/06/2017
TP-RD-A11-03(05.0-05.5)	K174101-13	Soil	10/06/2017	10/06/2017
TP-RD-A11-03(07.0-07.5)	K174101-14	Soil	10/06/2017	10/06/2017
TP-RD-A11-03(08.5-09.0)	K174101-15	Soil	10/06/2017	10/06/2017
BD100617	K174101-16	Soil	10/06/2017	10/06/2017
FB101017	K174102-01	Water	10/10/2017	10/10/2017
TNT-PS-PW-1	K174102-02	Water	10/11/2017	10/11/2017
FB101117	K174102-03	Water	10/11/2017	10/11/2017
FB101217	K174102-04	Water	10/12/2017	10/12/2017
FB101317	K174102-05	Water	10/13/2017	10/13/2017
TP-R-B10-2/B10-509-3(02.0-02.5)	K174103-01	Soil	10/10/2017	10/10/2017
TP-R-B10-2/B10-509-3(03.0-03.5)	K174103-02	Soil	10/10/2017	10/10/2017
TP-RD-B10-10(01.5-02.0)	K174103-03	Soil	10/10/2017	10/10/2017
TP-RD-B10-12(01.5-02.0)	K174103-05	Soil	10/10/2017	10/10/2017
TP-RD-B10-12(02.5-03.0)	K174103-06	Soil	10/10/2017	10/10/2017
TP-R-A11-504-1(10.5-11.0)	K174103-07	Soil	10/10/2017	10/10/2017
TP-R-A11-504-1(11.5-12.0)	K174103-08	Soil	10/10/2017	10/10/2017
TP-RD-A11-02(07.0-07.5)	K174103-09	Soil	10/10/2017	10/10/2017
TP-RD-C11-01(00.5-01.0)	K174104-01	Soil	10/11/2017	10/11/2017
TP-RD-C11-01(01.0-01.5)	K174104-02	Soil	10/11/2017	10/11/2017
TP-RD-C11-02(00.5-01.0)	K174104-03	Soil	10/11/2017	10/11/2017
TP-RD-C11-02(01.0-01.5)	K174104-04	Soil	10/11/2017	10/11/2017
TP-RD-C11-03(00.5-01.0)	K174104-05	Soil	10/11/2017	10/11/2017
TP-RD-C11-03(01.0-01.5)	K174104-06	Soil	10/11/2017	10/11/2017
TP-RD-A12-02A(00.5-01.0)	K174104-07	Soil	10/11/2017	10/11/2017
TP-RD-A12-02A(01.0-01.5)	K174104-08	Soil	10/11/2017	10/11/2017
TP-RD-A12-01(01.0-01.5)	K174104-09	Soil	10/11/2017	10/11/2017
TP-RD-A12-01(03.0-03.5)	K174104-10	Soil	10/11/2017	10/11/2017

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TP-RD-A12-01(05.0-05.5)	K174104-11	Soil	10/11/2017	10/11/2017
TP-RD-A12-01(07.0-07.5)	K174104-12	Soil	10/11/2017	10/11/2017
TP-RD-A12-01(09.0-09.5)	K174104-13	Soil	10/11/2017	10/11/2017
TP-R-A12-1-1(09.0-09.5)	K174104-14	Soil	10/11/2017	10/11/2017
BD101117	K174104-15	Soil	10/11/2017	10/11/2017
TP-RD-B11-02(01.0-01.5)	K174105-01	Soil	10/12/2017	10/12/2017
TP-RD-A11-06(01.0-01.5)	K174105-04	Soil	10/12/2017	10/12/2017
TP-RD-A11-06(03.0-03.5)	K174105-05	Soil	10/12/2017	10/12/2017
TP-RD-A11-06(05.0-05.5)	K174105-06	Soil	10/12/2017	10/12/2017
TP-RD-A11-06(07.0-07.5)	K174105-07	Soil	10/12/2017	10/12/2017
TP-RD-A11-06(08.0-09.0)	K174105-08	Soil	10/12/2017	10/12/2017
TP-RD-B11-03(01.0-01.5)	K174105-09	Soil	10/12/2017	10/12/2017
TP-RD-B11-03(03.0-03.5)	K174105-10	Soil	10/12/2017	10/12/2017
TP-RD-B11-03(05.0-05.5)	K174105-11	Soil	10/12/2017	10/12/2017
TP-RD-B11-03(07.0-07.5)	K174105-12	Soil	10/12/2017	10/12/2017
TP-RD-B11-03(08.5-09.0)	K174105-13	Soil	10/12/2017	10/12/2017
BD10122017	K174105-14	Soil	10/12/2017	10/12/2017
TP-RD-B11-01A(01.0-01.5)	K174105-15	Soil	10/12/2017	10/12/2017
TP-RD-B10-14(01.0-01.5)	K174105-16	Soil	10/12/2017	10/12/2017
TP-RD-B10-14(02.0-02.5)	K174105-17	Soil	10/12/2017	10/12/2017
TP-RD-B11-04(01.0-01.5)	K174105-18	Soil	10/12/2017	10/12/2017
TP-RD-B11-04(03.0-03.5)	K174105-19	Soil	10/12/2017	10/12/2017
TP-RD-B11-04(05.0-05.5)	K174105-20	Soil	10/12/2017	10/12/2017
TP-RD-B11-04(07.0-07.5)	K174105-21	Soil	10/12/2017	10/12/2017
TP-RD-B11-04(08.5-09.0)	K174105-22	Soil	10/12/2017	10/12/2017
TP-RD-B10-13(01.0-01.5)	K174106-01	Soil	10/13/2017	10/13/2017
TP-RD-B10-13(03.0-03.5)	K174106-02	Soil	10/13/2017	10/13/2017
TP-RD-B10-13(05.0-05.5)	K174106-03	Soil	10/13/2017	10/13/2017
TP-RD-B10-13(07.0-07.5)	K174106-04	Soil	10/13/2017	10/13/2017
TP-RD-B10-13(09.0-09.5)	K174106-05	Soil	10/13/2017	10/13/2017
TP-RD-B10-13(10.0-10.5)	K174106-06	Soil	10/13/2017	10/13/2017

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TP-RD-A11-7A(01.0-01.5)	K174106-07	Soil	10/13/2017	10/13/2017
TP-RD-A11-7A(03.0-03.5)	K174106-08	Soil	10/13/2017	10/13/2017
TP-RD-A11-7A(05.0-05.5)	K174106-09	Soil	10/13/2017	10/13/2017
TP-RD-A11-7A(07.0-07.5)	K174106-10	Soil	10/13/2017	10/13/2017
TP-RD-A11-7A(08.5-09.0)	K174106-11	Soil	10/13/2017	10/13/2017
TP-RD-A11-3A(01.0-01.5)	K174106-12	Soil	10/13/2017	10/13/2017
TP-RD-A11-3A(03.0-03.5)	K174106-13	Soil	10/13/2017	10/13/2017
TP-RD-A11-3A(05.0-05.5)	K174106-14	Soil	10/13/2017	10/13/2017
TP-RD-A11-3A(07.0-07.5)	K174106-15	Soil	10/13/2017	10/13/2017
TP-RD-A11-3A(08.5-09.0)	K174106-16	Soil	10/13/2017	10/13/2017
BD101317	K174106-17	Soil	10/13/2017	10/13/2017
TP-RD-B10-05(03.0-03.5)	K174201-01	Soil	10/16/2017	10/16/2017
TP-RD-C10-01(01.0-01.5)	K174201-02	Soil	10/16/2017	10/16/2017
TP-RD-C10-01(02.5-03.0)	K174201-03	Soil	10/16/2017	10/16/2017
TP-RD-C10-01(03.0-03.5)	K174201-04	Soil	10/16/2017	10/16/2017
TP-RD-B10-12(03.5-04.0)	K174201-05	Soil	10/16/2017	10/16/2017
TP-RD-B11-05A(01.0-01.5)	K174201-08	Soil	10/16/2017	10/16/2017
TP-RD-B11-05A(03.0-03.5)	K174201-09	Soil	10/16/2017	10/16/2017
TP-RD-B11-05A(05.0-05.5)	K174201-10	Soil	10/16/2017	10/16/2017
TP-RD-B10-14A(01.0-01.5)	K174201-12	Soil	10/16/2017	10/16/2017
TP-RD-B11-01B(01.0-01.5)	K174201-14	Soil	10/16/2017	10/16/2017
TP-RD-B11-01B(02.0-02.5)	K174201-15	Soil	10/16/2017	10/16/2017
TP-RD-B11-04A(01.0-01.5)	K174201-16	Soil	10/16/2017	10/16/2017
TP-RD-B11-04A(02.0-02.5)	K174201-17	Soil	10/16/2017	10/16/2017
TP-RD-A11-03(09.5-10.0)	K174201-18	Soil	10/16/2017	10/16/2017
TP-RD-A11-03(10.5-11.0)	K174201-19	Soil	10/16/2017	10/16/2017
TP-RD-A11-03(11.5-12.0)	K174201-20	Soil	10/16/2017	10/16/2017
FB101617	K174203-01	Water	10/16/2017	10/16/2017
FB101717	K174203-02	Water	10/17/2017	10/16/2017
FB101817	K174203-03	Water	10/18/2017	10/16/2017
FB101917	K174203-04	Water	10/19/2017	10/20/2017

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FB102017	K174203-05	Water	10/20/2017	10/20/2017
TP-RD-C11-01A(01.0-01.5)	K174206-01	Soil	10/17/2017	10/17/2017
TP-RD-C11-01A(02.0-02.5)	K174206-02	Soil	10/17/2017	10/17/2017
TP-RD-C11-01A(03.0-03.5)	K174206-03	Soil	10/17/2017	10/17/2017
TP-RD-C11-01(02.0-02.5)	K174206-04	Soil	10/17/2017	10/17/2017
TP-RD-C11-01(03.0-03.5)	K174206-05	Soil	10/17/2017	10/17/2017
TP-R-A12-1-1(10.5-11.0)	K174206-06	Soil	10/17/2017	10/17/2017
TP-R-A11-504-1(12.0-12.5)	K174206-08	Soil	10/17/2017	10/17/2017
TP-RD-C10-02(01.0-01.5)	K174206-09	Soil	10/17/2017	10/17/2017
TP-RD-C10-02(03.0-03.5)	K174206-10	Soil	10/17/2017	10/17/2017
TP-RD-C10-02(03.5-04.0)	K174206-11	Soil	10/17/2017	10/17/2017
TP-RD-B10-09(03.0-03.5)	K174206-12	Soil	10/17/2017	10/17/2017
TP-RD-B10-09(02.0-02.5)	K174206-13	Soil	10/17/2017	10/17/2017
TP-RD-B10-09(03.5-04.0)	K174206-14	Soil	10/17/2017	10/17/2017
TP-RD-B10-10(03.5-04.0)	K174206-15	Soil	10/17/2017	10/17/2017
TP-RD-B11-05B(01.0-01.5)	K174207-01	Soil	10/18/2017	10/18/2017
TP-RD-B11-05B(03.0-03.5)	K174207-02	Soil	10/18/2017	10/18/2017
TP-RD-B11-05B(05.0-05.5)	K174207-03	Soil	10/18/2017	10/18/2017
TP-RD-B12-02(09.0-09.5)	K174207-04	Soil	10/18/2017	10/18/2017
TP-RD-B12-02A(01.0-01.5)	K174207-05	Soil	10/18/2017	10/18/2017
TP-RD-B12-02A(03.0-03.5)	K174207-06	Soil	10/18/2017	10/18/2017
TP-RD-B12-02A(05.0-05.5)	K174207-07	Soil	10/18/2017	10/18/2017
TP-RD-B12-02A(07.0-07.5)	K174207-08	Soil	10/18/2017	10/18/2017
TP-RD-B12-02A(09.0-09.5)	K174207-09	Soil	10/18/2017	10/18/2017
BD101817	K174207-10	Soil	10/18/2017	10/18/2017
TP-RD-B12-01(01.0-01.5)	K174207-11	Soil	10/18/2017	10/18/2017
TP-RD-B12-01(03.0-03.5)	K174207-12	Soil	10/18/2017	10/18/2017
TP-RD-B12-01(05.0-05.5)	K174207-13	Soil	10/18/2017	10/18/2017
TP-RD-A12-03(01.0-01.5)	K174207-14	Soil	10/18/2017	10/18/2017
TP-RD-A12-03(03.0-03.5)	K174207-15	Soil	10/18/2017	10/18/2017
TP-RD-A12-03(05.0-05.5)	K174207-16	Soil	10/18/2017	10/18/2017

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TP-RD-A12-03(07.0-07.5)	K174207-17	Soil	10/18/2017	10/18/2017
TP-RD-A12-03(09.0-09.5)	K174207-18	Soil	10/18/2017	10/18/2017
TP-RD-B11-04A(03.0-03.5)	K174210-01	Soil	10/19/2017	10/19/2017
TP-RD-B11-04A(04.0-04.5)	K174210-02	Soil	10/19/2017	10/19/2017
TP-RD-B11-04A(05.0-05.5)	K174210-03	Soil	10/19/2017	10/19/2017
TP-RD-A11-14(01.0-01.5)	K174210-04	Soil	10/19/2017	10/19/2017
TP-RD-A11-14(03.0-03.5)	K174210-05	Soil	10/19/2017	10/19/2017
TP-RD-A11-14(05.0-05.5)	K174210-06	Soil	10/19/2017	10/19/2017
TP-RD-A11-13(01.0-01.5)	K174210-07	Soil	10/19/2017	10/19/2017
TP-RD-A11-13(03.0-03.5)	K174210-08	Soil	10/19/2017	10/19/2017
TP-RD-A11-12(01.0-01.5)	K174210-10	Soil	10/19/2017	10/19/2017
TP-RD-A11-12(03.0-03.5)	K174210-11	Soil	10/19/2017	10/19/2017
TP-RD-A11-08(01.0-01.5)	K174210-13	Soil	10/19/2017	10/19/2017
TP-RD-A11-08(03.0-03.5)	K174210-14	Soil	10/19/2017	10/19/2017
TP-RD-A11-08(05.0-05.5)	K174210-15	Soil	10/19/2017	10/19/2017
TP-RD-A11-08(07.0-07.5)	K174210-16	Soil	10/19/2017	10/19/2017
TP-RD-A11-08(09.0-09.5)	K174210-17	Soil	10/19/2017	10/19/2017
TP-RD-A11-09(01.0-01.5)	K174213-01	Soil	10/20/2017	10/20/2017
TP-RD-A11-09(03.0-03.5)	K174213-02	Soil	10/20/2017	10/20/2017
TP-RD-A11-09(05.0-05.5)	K174213-03	Soil	10/20/2017	10/20/2017
TP-RD-A11-09(07.0-07.5)	K174213-04	Soil	10/20/2017	10/20/2017
TP-RD-A11-10(01.0-01.5)	K174213-05	Soil	10/20/2017	10/20/2017
TP-RD-A11-10(03.0-03.5)	K174213-06	Soil	10/20/2017	10/20/2017
TP-RD-A11-10(05.0-05.5)	K174213-07	Soil	10/20/2017	10/20/2017
TP-RD-A11-10(07.0-07.5)	K174213-08	Soil	10/20/2017	10/20/2017
TP-RD-A11-10(08.0-08.5)	K174213-09	Soil	10/20/2017	10/20/2017
TP-RD-A11-11(01.0-01.5)	K174213-10	Soil	10/20/2017	10/20/2017
TP-RD-A11-11(03.0-03.5)	K174213-11	Soil	10/20/2017	10/20/2017
TP-RD-A11-11(05.0-05.5)	K174213-12	Soil	10/20/2017	10/20/2017
TP-RD-A11-11(07.0-07.5)	K174213-13	Soil	10/20/2017	10/20/2017
TP-RD-A11-11(08.0-08.5)	K174213-14	Soil	10/20/2017	10/20/2017

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BD102017A	K174213-15	Soil	10/20/2017	10/20/2017
BD102017B	K174213-16	Soil	10/20/2017	10/20/2017
TP-RD-A11-02A(01.0-01.5)	K174213-17	Soil	10/20/2017	10/20/2017
TP-RD-A11-02A(03.0-03.5)	K174213-18	Soil	10/20/2017	10/20/2017
TP-RD-A11-02A(05.0-05.5)	K174213-19	Soil	10/20/2017	10/20/2017
TP-RD-A11-02A(07.0-07.5)	K174213-20	Soil	10/20/2017	10/20/2017
TP-RD-B11-05C(01.0-01.5)	K174301-01	Soil	10/23/2017	10/23/2017
TP-RD-C11-01(04.0-04.5)	K174301-04	Soil	10/23/2017	10/23/2017
TP-RD-C11-01(05.0-05.5)	K174301-05	Soil	10/23/2017	10/23/2017
TP-RD-C11-01(06.0-06.5)	K174301-06	Soil	10/23/2017	10/23/2017
TP-RD-C11-01B(01.0-01.5)	K174301-07	Soil	10/23/2017	10/23/2017
TP-RD-C11-01B(03.0-03.5)	K174301-08	Soil	10/23/2017	10/23/2017
TP-RD-C11-01B(05.0-05.5)	K174301-09	Soil	10/23/2017	10/23/2017
TP-RD-C11-01B(06.0-06.5)	K174301-10	Soil	10/23/2017	10/23/2017
C11-7-02(01.0-01.5)	K174301-11	Soil	10/23/2017	10/23/2017
C11-7-02(03.0-03.5)	K174301-12	Soil	10/23/2017	10/23/2017
C11-7-02(05.0-05.5)	K174301-13	Soil	10/23/2017	10/23/2017
C11-7-02(06.0-06.5)	K174301-14	Soil	10/23/2017	10/23/2017
TP-RD-C11-02(03.0-03.5)	K174301-15	Soil	10/23/2017	10/23/2017
TP-RD-C11-02(05.0-05.5)	K174301-16	Soil	10/23/2017	10/23/2017
TP-RD-C11-02(06.0-06.5)	K174301-17	Soil	10/23/2017	10/23/2017
BD102317	K174301-18	Soil	10/23/2017	10/23/2017
TP-RD-C11-03(03.0-03.5)	K174301-19	Soil	10/23/2017	10/23/2017
TP-RD-C11-03(05.0-05.5)	K174301-20	Soil	10/23/2017	10/23/2017
TP-RD-C11-03(06.0-06.5)	K174301-21	Soil	10/23/2017	10/23/2017
TP-RD-B12-03(09.0-09.5)	K174301-22	Soil	10/23/2017	10/23/2017
TP-RD-B12-03(10.0-10.5)	K174301-23	Soil	10/23/2017	10/23/2017
TP-RD-B12-03(12.0-12.5)	K174301-24	Soil	10/23/2017	10/23/2017
TP-RD-A11-14(06.0-06.5)	K174305-01	Soil	10/25/2017	10/25/2017
TP-RD-A11-14(07.0-07.5)	K174305-02	Soil	10/25/2017	10/25/2017
TP-RD-A11-14(08.5-09.0)	K174305-03	Soil	10/25/2017	10/25/2017

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TP-RD-B11-01C(01.0-01.5)	K174305-04	Soil	10/25/2017	10/25/2017
TP-RD-B11-01C(03.0-03.5)	K174305-05	Soil	10/25/2017	10/25/2017
TP-RD-B11-01C(05.0-05.5)	K174305-06	Soil	10/25/2017	10/25/2017
TP-RD-B11-01B(03.0-03.5)	K174305-07	Soil	10/25/2017	10/25/2017
TP-RD-B11-01B(05.0-05.5)	K174305-08	Soil	10/25/2017	10/25/2017
TP-RD-B11-04A(07.0-07.5)	K174305-09	Soil	10/25/2017	10/25/2017
TP-RD-B11-04A(08.5-09.0)	K174305-10	Soil	10/25/2017	10/25/2017
BD102517	K174305-11	Soil	10/25/2017	10/25/2017
TP-RD-A11-15(01.0-01.5)	K174305-12	Soil	10/25/2017	10/25/2017
TP-RD-A11-15(03.0-03.5)	K174305-13	Soil	10/25/2017	10/25/2017
TP-RD-A11-15(05.0-05.5)	K174305-14	Soil	10/25/2017	10/25/2017
TP-RD-A11-15(08.0-08.5)	K174305-15	Soil	10/25/2017	10/25/2017
FB102317	K174306-01	Water	10/23/2017	10/25/2017
FB102517	K174306-02	Water	10/25/2017	10/25/2017
FB102617	K174306-03	Water	10/26/2017	10/27/2017
FB102717	K174306-04	Water	10/26/2017	10/27/2017
TP-RD-A11-16(01.0-01.5)	K174309-01	Soil	10/26/2017	10/26/2017
TP-RD-A11-16(03.0-03.5)	K174309-02	Soil	10/26/2017	10/26/2017
TP-RD-A11-16(05.0-05.5)	K174309-03	Soil	10/26/2017	10/26/2017
TP-RD-A11-16(07.0-07.5)	K174309-04	Soil	10/26/2017	10/26/2017
TP-RD-A11-16(08.0-08.5)	K174309-05	Soil	10/26/2017	10/26/2017
TP-RD-B12-03(13.0-13.5)	K174309-06	Soil	10/26/2017	10/26/2017
TP-RD-B12-03(14.0-14.5)	K174309-07	Soil	10/26/2017	10/26/2017
TP-RD-B12-03(15.0-15.5)	K174309-08	Soil	10/26/2017	10/26/2017
TP-RD-A12-04(01.0-01.5)	K174309-09	Soil	10/26/2017	10/26/2017
TP-RD-A12-04(03.0-03.5)	K174309-10	Soil	10/26/2017	10/26/2017
TP-RD-A12-04(05.0-05.5)	K174309-11	Soil	10/26/2017	10/26/2017
TP-RD-A12-03A(01.0-01.5)	K174309-12	Soil	10/26/2017	10/26/2017
TP-RD-A12-03A(03.0-03.5)	K174309-13	Soil	10/26/2017	10/26/2017
TP-RD-A12-03A(05.0-05.5)	K174309-14	Soil	10/26/2017	10/26/2017
TP-RD-A11-17(01.0-01.5)	K174309-15	Soil	10/26/2017	10/26/2017

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TP-RD-A11-17(03.0-03.5)	K174309-16	Soil	10/26/2017	10/26/2017
TP-RD-A11-17(05.0-05.5)	K174309-17	Soil	10/26/2017	10/26/2017
TP-RD-A11-17(07.0-07.5)	K174309-18	Soil	10/26/2017	10/26/2017
TP-RD-A11-15A(01.0-01.5)	K174310-01	Soil	10/27/2017	10/27/2017
TP-RD-A11-15A(03.0-03.5)	K174310-02	Soil	10/27/2017	10/27/2017
TP-RD-A11-15A(05.0-05.5)	K174310-03	Soil	10/27/2017	10/27/2017
TP-RD-C11-01C(01.0-01.5)	K174310-04	Soil	10/27/2017	10/27/2017
TP-RD-C11-01C(03.0-03.5)	K174310-05	Soil	10/27/2017	10/27/2017
TP-RD-C11-01C(05.0-05.5)	K174310-06	Soil	10/27/2017	10/27/2017
TP-RD-C11-01C(06.0-06.5)	K174310-07	Soil	10/27/2017	10/27/2017
TP-RD-C11-02A(01.0-01.5)	K174310-08	Soil	10/27/2017	10/27/2017
TP-RD-C11-02A(03.0-03.5)	K174310-09	Soil	10/27/2017	10/27/2017
TP-RD-C11-02A(05.0-05.5)	K174310-10	Soil	10/27/2017	10/27/2017
TP-RD-C11-02A(06.0-06.5)	K174310-11	Soil	10/27/2017	10/27/2017
TP-RD-C11-04(01.0-01.5)	K174310-12	Soil	10/27/2017	10/27/2017
TP-RD-C11-04(03.0-03.5)	K174310-13	Soil	10/27/2017	10/27/2017
TP-RD-C11-04(05.0-05.5)	K174310-14	Soil	10/27/2017	10/27/2017
TP-RD-C11-04(06.0-06.5)	K174310-15	Soil	10/27/2017	10/27/2017
BD102717	K174310-16	Soil	10/27/2017	10/27/2017
TP-RD-B13-03(01.0-01.5)	K174401-01	Soil	10/30/2017	10/30/2017
TP-RD-B13-03(03.0-03.5)	K174401-02	Soil	10/30/2017	10/30/2017
TP-RD-B13-03(05.0-05.5)	K174401-03	Soil	10/30/2017	10/30/2017
TP-RD-B13-03(07.0-07.5)	K174401-04	Soil	10/30/2017	10/30/2017
TP-RD-B13-04(01.0-01.5)	K174401-05	Soil	10/30/2017	10/30/2017
TP-RD-B13-04(03.0-03.5)	K174401-06	Soil	10/30/2017	10/30/2017
TP-RD-B13-04(05.0-05.5)	K174401-07	Soil	10/30/2017	10/30/2017
TP-RD-B13-04(07.0-07.5)	K174401-08	Soil	10/30/2017	10/30/2017
TP-RD-B13-02(01.0-01.5)	K174401-09	Soil	10/30/2017	10/30/2017
TP-RD-B13-02(03.0-03.5)	K174401-10	Soil	10/30/2017	10/30/2017
TP-RD-B13-02(05.0-05.5)	K174401-11	Soil	10/30/2017	10/30/2017
TP-RD-B13-02(07.0-07.5)	K174401-12	Soil	10/30/2017	10/30/2017

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TP-RD-B13-01(01.0-01.5)	K174401-13	Soil	10/30/2017	10/30/2017
TP-RD-B13-01(03.0-03.5)	K174401-14	Soil	10/30/2017	10/30/2017
TP-RD-B13-01(05.0-05.5)	K174401-15	Soil	10/30/2017	10/30/2017
TP-RD-B13-01(07.0-07.5)	K174401-16	Soil	10/30/2017	10/30/2017
BD103017	K174401-17	Soil	10/30/2017	10/30/2017
TP-R-B13-1-1(12.0-12.5)	K174402-01	Soil	11/01/2017	11/01/2017
TP-RD-B13-08(01.0-01.5)	K174402-02	Soil	11/01/2017	11/01/2017
TP-RD-B13-08(03.0-03.5)	K174402-03	Soil	11/01/2017	11/01/2017
TP-RD-B13-08(05.0-05.5)	K174402-04	Soil	11/01/2017	11/01/2017
TP-RD-B13-08(07.0-07.5)	K174402-05	Soil	11/01/2017	11/01/2017
TP-RD-B13-09(01.0-01.5)	K174402-06	Soil	11/01/2017	11/01/2017
TP-RD-B13-09(03.0-03.5)	K174402-07	Soil	11/01/2017	11/01/2017
TP-RD-B13-09(05.0-05.5)	K174402-08	Soil	11/01/2017	11/01/2017
TP-RD-B13-09(07.0-07.5)	K174402-09	Soil	11/01/2017	11/01/2017
TP-RD-A13-01A(01.0-01.5)	K174402-10	Soil	11/01/2017	11/01/2017
TP-RD-A13-01A(03.0-03.5)	K174402-11	Soil	11/01/2017	11/01/2017
TP-RD-A13-01A(05.0-05.5)	K174402-12	Soil	11/01/2017	11/01/2017
TP-RD-A13-01A(07.0-07.5)	K174402-13	Soil	11/01/2017	11/01/2017
TP-RD-A13-01A(08.0-08.5)	K174402-14	Soil	11/01/2017	11/01/2017
TP-RD-A12-05(01.0-01.5)	K174402-15	Soil	11/01/2017	11/01/2017
TP-RD-A12-05(03.0-03.5)	K174402-16	Soil	11/01/2017	11/01/2017
TP-RD-A12-05(05.0-05.5)	K174402-17	Soil	11/01/2017	11/01/2017
TP-RD-A12-05(07.0-07.5)	K174402-18	Soil	11/01/2017	11/01/2017
TP-RD-A12-05(08.0-08.5)	K174402-19	Soil	11/01/2017	11/01/2017
TP-RD-B13-10(01.0-01.5)	K174402-20	Soil	11/01/2017	11/01/2017
TP-RD-B13-10(03.0-03.5)	K174402-21	Soil	11/01/2017	11/01/2017
TP-RD-B13-10(05.0-05.5)	K174402-22	Soil	11/01/2017	11/01/2017
TP-RD-B13-10(07.0-07.5)	K174402-23	Soil	11/01/2017	11/01/2017
TP-RD-B13-10(08.0-08.5)	K174402-24	Soil	11/01/2017	11/01/2017
BD110117	K174402-25	Soil	11/01/2017	11/01/2017
FB103017	K174403-01	Water	10/30/2017	11/01/2017

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FB110117	K174403-02	Water	11/01/2017	11/01/2017
FB110217	K174403-03	Water	11/02/2017	11/03/2017
FB110317	K174403-04	Water	11/03/2017	11/03/2017
TP-RD-A13-02(01.0-01.5)	K174404-01	Soil	11/02/2017	11/02/2017
TP-RD-A13-02(03.0-03.5)	K174404-02	Soil	11/02/2017	11/02/2017
TP-RD-A13-02(05.0-05.5)	K174404-03	Soil	11/02/2017	11/02/2017
TP-RD-A13-02(07.0-07.5)	K174404-04	Soil	11/02/2017	11/02/2017
TP-RD-A13-02(08.0-08.5)	K174404-05	Soil	11/02/2017	11/02/2017
TP-R-A13-625-4(08.0-08.5)	K174404-06	Soil	11/02/2017	11/02/2017
TP-RD-B12-04(01.0-01.5)	K174404-09	Soil	11/02/2017	11/02/2017
TP-RD-B12-04(03.0-03.5)	K174404-10	Soil	11/02/2017	11/02/2017
TP-RD-B12-04(05.0-05.5)	K174404-11	Soil	11/02/2017	11/02/2017
TP-RD-B12-04(07.0-07.5)	K174404-12	Soil	11/02/2017	11/02/2017
TP-RD-B12-04(09.0-09.5)	K174404-13	Soil	11/02/2017	11/02/2017
TP-RD-B12-05(01.0-01.5)	K174404-14	Soil	11/02/2017	11/02/2017
TP-RD-B12-05(03.0-03.5)	K174404-15	Soil	11/02/2017	11/02/2017
TP-RD-B12-05(05.0-05.5)	K174404-16	Soil	11/02/2017	11/02/2017
TP-RD-B12-05(07.0-07.5)	K174404-17	Soil	11/02/2017	11/02/2017
TP-RD-B12-05(09.0-09.5)	K174404-18	Soil	11/02/2017	11/02/2017
BD110217	K174404-19	Soil	11/02/2017	11/02/2017
TP-RD-B12-03(16.5-17.0)	K174404-20	Soil	11/02/2017	11/02/2017
TP-RD-B12-03(17.5-18.0)	K174404-21	Soil	11/02/2017	11/02/2017
TP-RD-B12-03(18.5-19.0)	K174404-22	Soil	11/02/2017	11/02/2017
TP-RD-A12-06(03.0-03.5)	K174404-23	Soil	11/02/2017	11/02/2017
TP-RD-A12-06(05.0-05.5)	K174404-24	Soil	11/02/2017	11/02/2017
TP-RD-B12-07(01.0-01.5)	K174404-25	Soil	11/02/2017	11/02/2017
TP-RD-B12-07(03.0-03.5)	K174404-26	Soil	11/02/2017	11/02/2017
TP-RD-B12-07(05.0-05.5)	K174404-27	Soil	11/02/2017	11/02/2017
TP-RD-B12-07(07.0-07.5)	K174404-28	Soil	11/02/2017	11/02/2017
TP-RD-B12-07(09.0-09.5)	K174404-29	Soil	11/02/2017	11/02/2017
TP-RD-B12-07(10.0-10.5)	K174404-30	Soil	11/02/2017	11/02/2017

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BD110217A	K174404-31	Soil	11/02/2017	11/02/2017
TP-RD-A11-18(01.0-01.5)	K174405-01	Soil	11/03/2017	11/03/2017
TP-RD-A11-18(03.0-03.5)	K174405-02	Soil	11/03/2017	11/03/2017
TP-RD-A11-18(05.0-05.5)	K174405-03	Soil	11/03/2017	11/03/2017
TP-RD-A11-18(07.0-07.5)	K174405-04	Soil	11/03/2017	11/03/2017
TP-RD-A11-18(08.0-08.5)	K174405-05	Soil	11/03/2017	11/03/2017
TP-RD-A11-20A(01.0-01.5)	K174405-06	Soil	11/03/2017	11/03/2017
TP-RD-A11-20A(03.0-03.5)	K174405-07	Soil	11/03/2017	11/03/2017
TP-RD-A11-20A(05.0-05.5)	K174405-08	Soil	11/03/2017	11/03/2017
TP-RD-A11-20A(07.0-07.5)	K174405-09	Soil	11/03/2017	11/03/2017
TP-RD-A11-20A(08.0-08.5)	K174405-10	Soil	11/03/2017	11/03/2017
TP-RD-A11-19(01.0-01.5)	K174405-11	Soil	11/03/2017	11/03/2017
TP-RD-A11-19(03.0-03.5)	K174405-12	Soil	11/03/2017	11/03/2017
TP-RD-A11-19(05.0-05.5)	K174405-13	Soil	11/03/2017	11/03/2017
TP-RD-A11-19(07.0-07.5)	K174405-14	Soil	11/03/2017	11/03/2017
TP-RD-A11-21(01.0-01.5)	K174405-15	Soil	11/03/2017	11/03/2017
TP-RD-A11-21(03.0-03.5)	K174405-16	Soil	11/03/2017	11/03/2017
TP-RD-A11-21(05.0-05.5)	K174405-17	Soil	11/03/2017	11/03/2017
TP-RD-A11-21(07.0-07.5)	K174405-18	Soil	11/03/2017	11/03/2017
TP-RD-A11-21(09.0-09.5)	K174405-19	Soil	11/03/2017	11/03/2017
BD110317	K174405-20	Soil	11/03/2017	11/03/2017
TP-RD-B11-06(01.0-01.5)	K174405-21	Soil	11/03/2017	11/03/2017
TP-RD-B11-06(03.0-03.5)	K174405-22	Soil	11/03/2017	11/03/2017
TP-RD-B11-06(05.0-05.5)	K174405-23	Soil	11/03/2017	11/03/2017
TP-RD-B11-06(07.0-07.5)	K174405-24	Soil	11/03/2017	11/03/2017
TP-RD-B11-06(09.0-09.5)	K174405-25	Soil	11/03/2017	11/03/2017
TP-RD-B11-07(03.0-03.5)	K174501-01	Soil	11/06/2017	11/06/2017
TP-RD-B10-16(01.0-01.5)	K174501-02	Soil	11/06/2017	11/06/2017
TP-RD-A11-19A(07.0-07.5)	K174501-03	Soil	11/06/2017	11/06/2017
TP-RD-B10-16(02.0-02.5)	K174501-04	Soil	11/06/2017	11/06/2017
TP-RD-A11-19A(08.0-08.5)	K174501-05	Soil	11/06/2017	11/06/2017

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TP-RD-B11-07(01.0-01.5)	K174501-06	Soil	11/06/2017	11/06/2017
TP-RD-B10-15(01.0-01.5)	K174501-07	Soil	11/06/2017	11/06/2017
TP-RD-B10-15(02.0-02.5)	K174501-08	Soil	11/06/2017	11/06/2017
TP-RD-A11-20C(01.0-01.5)	K174501-12	Soil	11/06/2017	11/06/2017
TP-RD-A11-20C(03.0-03.5)	K174501-13	Soil	11/06/2017	11/06/2017
TP-RD-A11-19(08.0-08.5)	K174501-15	Soil	11/06/2017	11/06/2017
BD110617	K174501-16	Soil	11/06/2017	11/06/2017
TP-RD-A11-18A(01.0-01.5)	K174501-17	Soil	11/06/2017	11/06/2017
TP-RD-A11-18A(03.0-03.5)	K174501-18	Soil	11/06/2017	11/06/2017
TP-RD-A11-19A(01.0-01.5)	K174501-20	Soil	11/06/2017	11/06/2017
TP-RD-A11-19A(03.0-03.5)	K174501-21	Soil	11/06/2017	11/06/2017
TP-RD-A11-19A(05.0-05.5)	K174501-22	Soil	11/06/2017	11/06/2017
TP-RD-C11-02B(01.0-01.5)	K174501-23	Soil	11/06/2017	11/06/2017
TP-RD-C11-02B(03.0-03.5)	K174501-24	Soil	11/06/2017	11/06/2017
TP-RD-C11-02B(05.0-05.5)	K174501-25	Soil	11/06/2017	11/06/2017
TP-RD-C11-02B(07.0-07.5)	K174501-26	Soil	11/06/2017	11/06/2017
TP-RD-C11-04A(01.0-01.5)	K174501-27	Soil	11/06/2017	11/06/2017
TP-RD-C11-01D(01.0-01.5)	K174501-30	Soil	11/06/2017	11/06/2017
TP-RD-B11-08(01.0-01.5)	K174502-01	Soil	11/07/2017	11/07/2017
TP-RD-B11-08(03.0-03.5)	K174502-02	Soil	11/07/2017	11/07/2017
TP-RD-B11-08(05.0-05.5)	K174502-03	Soil	11/07/2017	11/07/2017
TP-RD-B11-08(07.0-07.5)	K174502-04	Soil	11/07/2017	11/07/2017
TP-RD-B11-08(09.0-09.5)	K174502-05	Soil	11/07/2017	11/07/2017
TP-RD-B12-08(01.0-01.5)	K174502-06	Soil	11/07/2017	11/07/2017
TP-RD-B12-08(03.0-03.5)	K174502-07	Soil	11/07/2017	11/07/2017
TP-RD-B12-08(05.0-05.5)	K174502-08	Soil	11/07/2017	11/07/2017
TP-RD-B12-08(07.0-07.5)	K174502-09	Soil	11/07/2017	11/07/2017
TP-RD-B12-08(09.0-09.5)	K174502-10	Soil	11/07/2017	11/07/2017
BD110717A	K174502-14	Soil	11/07/2017	11/07/2017
BD110717B	K174502-15	Soil	11/07/2017	11/07/2017
TP-RD-B13-10(09.0-09.5)	K174502-16	Soil	11/07/2017	11/07/2017

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-R-C13-666-1(06.5-07.0)	K174502-17	Soil	11/07/2017	11/07/2017
TP-RD-C13-02(01.0-01.5)	K174502-18	Soil	11/07/2017	11/07/2017
TP-RD-C13-02(03.0-03.5)	K174502-19	Soil	11/07/2017	11/07/2017
TP-RD-C13-02(05.0-05.5)	K174502-20	Soil	11/07/2017	11/07/2017
FB110617	K174503-01	Water	11/06/2017	11/07/2017
FB110717	K174503-02	Water	11/07/2017	11/07/2017
FB110817	K174503-03	Water	11/08/2017	11/09/2017
TP-RD-C13-04(01.0-01.5)	K174504-01	Soil	11/08/2017	11/08/2017
TP-RD-C13-04(03.0-03.5)	K174504-02	Soil	11/08/2017	11/08/2017
TP-RD-C13-04(05.0-05.5)	K174504-03	Soil	11/08/2017	11/08/2017
TP-RD-C13-01A(01.0-01.5)	K174504-04	Soil	11/08/2017	11/08/2017
TP-RD-C13-01A(03.0-03.5)	K174504-05	Soil	11/08/2017	11/08/2017
B13-682-03(05.0-05.5)	K174504-06	Soil	11/08/2017	11/08/2017
TP-RD-B13-06(01.0-01.5)	K174504-07	Soil	11/08/2017	11/08/2017
TP-RD-B13-06(03.0-03.5)	K174504-08	Soil	11/08/2017	11/08/2017
TP-RD-B13-06(05.0-05.5)	K174504-09	Soil	11/08/2017	11/08/2017
TP-RD-B13-06(07.0-07.5)	K174504-10	Soil	11/08/2017	11/08/2017
TP-RD-C13-04(06.5-07.0)	K174504-11	Soil	11/08/2017	11/08/2017
TP-RD-B14-02(01.0-01.5)	K174504-12	Soil	11/08/2017	11/08/2017
TP-RD-B14-02(03.0-03.5)	K174504-13	Soil	11/08/2017	11/08/2017
TP-RD-B14-02(05.0-05.5)	K174504-14	Soil	11/08/2017	11/08/2017
TP-RD-B14-01(01.0-01.5)	K174504-15	Soil	11/08/2017	11/08/2017
TP-RD-B14-01(03.0-03.5)	K174504-16	Soil	11/08/2017	11/08/2017
TP-RD-B14-01(05.0-05.5)	K174504-17	Soil	11/08/2017	11/08/2017
TP-RD-B13-07(01.0-01.5)	K174504-19	Soil	11/08/2017	11/08/2017
TP-RD-B13-07(03.0-03.5)	K174504-20	Soil	11/08/2017	11/08/2017
TP-RD-B13-07(05.0-05.5)	K174504-21	Soil	11/08/2017	11/08/2017
TP-RD-C13-02A(01.0-01.5)	K174504-23	Soil	11/08/2017	11/08/2017
TP-RD-C13-02A(03.0-03.5)	K174504-24	Soil	11/08/2017	11/08/2017
TP-RD-C13-02A(05.0-05.5)	K174504-25	Soil	11/08/2017	11/08/2017

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-01(01.0-01.5)

K174001-01 (Soil)

Date Sampled
10/02/2017 11:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:46	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:46	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:46	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:46	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:18	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*70.2 %*		*63.7-134*	*10/03/2017*	*10/03/2017 16:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**88.2**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-01(03.0-03.5)

K174001-02 (Soil)

Date Sampled
10/02/2017 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:09	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 16:41	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*76.5 %*		*63.7-134*	*10/03/2017*	*10/03/2017 17:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**88.7**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-01(04.0-05.0)

K174001-03 (Soil)

Date Sampled
10/02/2017 11:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	LC
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 18:16	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*81.0 %*		*63.7-134*	*10/03/2017*	*10/04/2017 18:16*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**87.2**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-02(01.0-01.5)

K174001-04 (Soil)

Date Sampled
10/02/2017 14:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:54	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:54	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 17:26	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*68.3 %*		*63.7-134*	*10/03/2017*	*10/03/2017 17:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**89.2**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-02(03.0-03.5)

K174001-05 (Soil)

Date Sampled
10/02/2017 14:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:39	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:39	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:11	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*70.4 %*		*63.7-134*	*10/03/2017*	*10/03/2017 18:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**88.8**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-02(04.0-05.0)

K174001-06 (Soil)

Date Sampled
10/02/2017 14:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 19:02	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 19:02	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 19:02	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:34	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*68.6 %*		*63.7-134*	*10/03/2017*	*10/03/2017 19:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**89.7**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-03(01.0-01.5)

K174001-07 (Soil)

Date Sampled
10/02/2017 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 19:25	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 19:25	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 18:56	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*80.8 %*		*63.7-134*	*10/03/2017*	*10/03/2017 19:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**87.0**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-03(03.0-03.5)

K174001-08 (Soil)

Date Sampled
10/02/2017 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	LC
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:47	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:47	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:19	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*74.9 %*		*63.7-134*	*10/03/2017*	*10/03/2017 19:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**86.9**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project Number: 2769

TP-RD-B10-03(04.0-05.0)

K174001-09 (Soil)

Date Sampled
10/02/2017 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	LC
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 20:10	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 19:42	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*75.2 %*		*63.7-134*	*10/03/2017*	*10/03/2017 20:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**84.6**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-B10-2/B10-509-7(04.5-05.0)

K174001-10 (Soil)

Date Sampled
10/02/2017 14:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:32	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:32	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:32	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:32	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:04	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*82.2 %*		*63.7-134*	*10/03/2017*	*10/03/2017 20:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**89.7**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-04(01.0-01.5)

K174001-11 (Soil)

Date Sampled
10/02/2017 15:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:55	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:55	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:27	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*84.5 %*		*63.7-134*	*10/03/2017*	*10/03/2017 20:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**87.6**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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TP-RD-B10-04(03.0-03.5)

K174001-12 (Soil)

Date Sampled
10/02/2017 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:17	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 20:49	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*76.1 %*		*63.7-134*	*10/03/2017*	*10/03/2017 21:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**88.5**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B10-04(04.5-0.50)

K174001-13 (Soil)

Date Sampled
10/02/2017 15:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:40	EPA 8095	LC
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:40	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:40	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/03/2017	10/03/2017 21:12	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*70.1 %*		*63.7-134*	*10/03/2017*	*10/03/2017 21:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**86.4**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-05(01.0-01.5)

K174002-01 (Soil)

Date Sampled
10/03/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:02	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 21:34	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*78.0 %*		*63.7-134*	*10/03/2017*	*10/03/2017 22:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**89.7**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-05(02.0-02.5)

K174002-02 (Soil)

Date Sampled
10/03/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:46	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:46	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:46	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:46	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:18	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*83.2 %*		*63.7-134*	*10/03/2017*	*10/03/2017 22:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**88.4**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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TP-RD-B10-09(01.0-01.5)

K174002-03 (Soil)

Date Sampled
10/03/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:08	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:08	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	**150**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:08	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	**150**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:08	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 22:40	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*78.1 %*		*63.7-134*	*10/03/2017*	*10/03/2017 23:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**89.7**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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TP-RD-B10-12(01.0-01.5)

K174002-04 (Soil)

Date Sampled
10/03/2017 09:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:30	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:30	EPA 8095	
2,4-Dinitrotoluene	**110**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
2,4,6-Trinitrotoluene	**860**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:30	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	**310**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:30	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	**370**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:30	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:02	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*82.0 %*		*63.7-134*	*10/03/2017*	*10/03/2017 23:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**88.0**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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Project Number: 2769

TP-RD-B10-10(01.0-01.5)

K174002-05 (Soil)

Date Sampled
10/03/2017 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:52	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	M
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:52	EPA 8095	
2,4-Dinitrotoluene	**180**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:52	EPA 8095	M
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:52	EPA 8095	
2,4,6-Trinitrotoluene	**1200**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:52	EPA 8095	X, M
PETN	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	LC, M
RDX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	**590**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:52	EPA 8095	M, X
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	**350**	110	ug/kg dry	1	10/03/2017	10/03/2017 23:52	EPA 8095	M, X
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/03/2017 23:24	EPA 8095	LC, X, M
Surrogate: 2,2'-Dinitrobiphenyl		*84.2 %*		*63.7-134*	*10/03/2017*	*10/03/2017 23:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**88.0**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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BD100317

K174002-06 (Soil)

Date Sampled
10/03/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	
2,4-Dinitrotoluene	**480**	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	
2,4,6-Trinitrotoluene	**1400**	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1000**	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	**650**	110	ug/kg dry	1	10/03/2017	10/04/2017 00:58	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/03/2017	10/04/2017 00:30	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*10/03/2017*	*10/04/2017 00:58*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**87.7**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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TP-R-B10-2/B10-509-3(01.5-02.0)

K174002-07 (Soil)

Date Sampled
10/03/2017 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710001**			
Nitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 01:20	EPA 8095	LC
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 01:20	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 01:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
2,4,6-Trinitrotoluene	**280**	120	ug/kg dry	1	10/03/2017	10/04/2017 01:20	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	**720**	120	ug/kg dry	1	10/03/2017	10/04/2017 01:20	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	**280**	120	ug/kg dry	1	10/03/2017	10/04/2017 01:20	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/03/2017	10/04/2017 00:52	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/03/2017*	*10/04/2017 01:20*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710002**			
% Solids	**86.0**	0.00	% by Weight	1	10/03/2017	10/04/2017 10:42	SM 2540B	

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BD100317A

K174003-01 (Soil)

Date Sampled
10/03/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:22	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:22	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*85.2 %*		*63.7-134*	*10/04/2017*	*10/05/2017 14:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**85.6**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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TP-RD-B10-08(01.0-01.5)

K174003-02 (Soil)

Date Sampled
10/03/2017 11:06

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:45	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:45	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:45	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	120	ug/kg dry	1	10/04/2017	10/05/2017 14:45	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:45	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 14:43	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.3 %*		*63.7-134*	*10/04/2017*	*10/05/2017 14:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**83.9**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-08(03.0-03.5)

K174003-03 (Soil)

Date Sampled
10/03/2017 11:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:12	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:06	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.5 %*		*63.7-134*	*10/04/2017*	*10/05/2017 15:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**82.3**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-08(05.0-05.5)

K174003-04 (Soil)

Date Sampled
10/03/2017 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:30	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:30	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:30	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:29	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.5 %*		*63.7-134*	*10/04/2017*	*10/05/2017 15:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**85.7**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-08(07.0-07.5)

K174003-05 (Soil)

Date Sampled
10/03/2017 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:53	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:53	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
2,6-Dinitrotoluene	**210**	120	ug/kg dry	1	10/04/2017	10/05/2017 15:53	EPA 8095	
2,4-Dinitrotoluene	**910**	120	ug/kg dry	1	10/04/2017	10/05/2017 15:53	EPA 8095	
1,3,5-Trinitrobenzene	**240**	120	ug/kg dry	1	10/04/2017	10/05/2017 15:53	EPA 8095	
2,4,6-Trinitrotoluene	**190000**	12000	ug/kg dry	100	10/04/2017	10/05/2017 16:54	EPA 8095	D
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	**25000**	12000	ug/kg dry	100	10/04/2017	10/05/2017 16:54	EPA 8095	D
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	**8800**	5800	ug/kg dry	50	10/04/2017	10/06/2017 10:52	EPA 8095	D
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 15:52	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*160 %*		*63.7-134*	*10/04/2017*	*10/05/2017 15:53*	*EPA 8095*	*S*
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**86.3**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B10-08(09.0-09.5)

K174003-06 (Soil)

Date Sampled
10/03/2017 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
2,4,6-Trinitrotoluene	**700**	110	ug/kg dry	1	10/04/2017	10/05/2017 17:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	**150**	110	ug/kg dry	1	10/04/2017	10/05/2017 17:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
2-Amino-4,6-dinitrotoluene	**110**	110	ug/kg dry	1	10/04/2017	10/05/2017 17:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:16	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*		*63.7-134*	*10/04/2017*	*10/05/2017 17:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**90.8**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B10-08(10.5.0-10.8)

K174003-07 (Soil)

Date Sampled
10/03/2017 11:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:40	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
2,4,6-Trinitrotoluene	**1500**	110	ug/kg dry	1	10/04/2017	10/05/2017 17:40	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	**220**	110	ug/kg dry	1	10/04/2017	10/05/2017 17:40	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	**160**	110	ug/kg dry	1	10/04/2017	10/05/2017 17:40	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 17:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/04/2017*	*10/05/2017 17:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**93.9**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-07(01.0-01.5)

K174003-08 (Soil)

Date Sampled
10/03/2017 14:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.7 %*		*63.7-134*	*10/04/2017*	*10/05/2017 18:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**84.9**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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TP-RD-B10-07(02.5-03.0)

K174003-09 (Soil)

Date Sampled
10/03/2017 14:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 18:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*87.9 %*		*63.7-134*	*10/04/2017*	*10/05/2017 18:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**84.9**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project Number: 2769

FB100317

K174004-01 (Water)

Date Sampled
10/03/2017 15:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710008**			
Nitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
PETN	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
RDX	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
HMX	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.4 %*		*60-140*	*10/06/2017*	*10/06/2017 17:30*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB100217

K174004-02 (Water)

Date Sampled
10/02/2017 16:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710008**			
Nitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:56	EPA 8095	
PETN	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
RDX	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
HMX	ND	0.10	ug/L	1	10/06/2017	10/06/2017 17:52	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.7 %*		*60-140*	*10/06/2017*	*10/06/2017 17:52*	*EPA 8095*	

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FB100417

K174004-03 (Water)

Date Sampled
10/04/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710008**			
Nitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:19	EPA 8095	
PETN	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
RDX	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
HMX	ND	0.10	ug/L	1	10/06/2017	10/06/2017 18:15	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*101 %*		*60-140*	*10/06/2017*	*10/06/2017 18:15*	*EPA 8095*	

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FB100517

K174004-04 (Water)

Date Sampled
10/05/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710008**			
Nitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 16:10	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 16:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
PETN	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
RDX	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
HMX	ND	0.10	ug/L	1	10/06/2017	10/07/2017 15:59	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*92.1 %*		*60-140*	*10/06/2017*	*10/07/2017 16:10*	*EPA 8095*	

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FB100617

K174004-05 (Water)

Date Sampled
10/05/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710008**			
Nitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
2,4,6-Trinitrotoluene	**0.38**	0.10	ug/L	1	10/06/2017	10/07/2017 17:17	EPA 8095	
PETN	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
RDX	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
HMX	ND	0.10	ug/L	1	10/06/2017	10/07/2017 17:06	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*96.0 %*		*60-140*	*10/06/2017*	*10/07/2017 17:17*	*EPA 8095*	

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TP-RD-B10-06(01.0-01.5)

K174005-01 (Soil)

Date Sampled
10/04/2017 08:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 19:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.2 %*		*63.7-134*	*10/04/2017*	*10/05/2017 19:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**88.9**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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TP-RD-B10-06(03.0-03.5)

K174005-02 (Soil)

Date Sampled
10/04/2017 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 20:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*94.0 %*		*63.7-134*	*10/04/2017*	*10/05/2017 20:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**91.8**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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TP-RD-B10-06(05.0-05.5)

K174005-03 (Soil)

Date Sampled
10/04/2017 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 20:40	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.8 %*		*63.7-134*	*10/04/2017*	*10/05/2017 20:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**84.1**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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TP-RD-B10-06(06.0-06.5)
K174005-04 (Soil)

Date Sampled
10/04/2017 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:02	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*10/04/2017*	*10/05/2017 21:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**89.9**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-11(01.0-01.5)

K174005-05 (Soil)

Date Sampled
10/04/2017 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:25	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 21:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.3 %*		*63.7-134*	*10/04/2017*	*10/05/2017 21:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**87.1**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-11(03.0-03.5)

K174005-06 (Soil)

Date Sampled
10/04/2017 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:48	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:48	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/04/2017	10/05/2017 21:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/04/2017*	*10/05/2017 21:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**85.7**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-11(05.0-05.5)

K174005-07 (Soil)

Date Sampled
10/04/2017 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/06/2017 09:20	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:33	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.5 %*		*63.7-134*	*10/04/2017*	*10/05/2017 22:33*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**89.8**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-11(06.0-06.5)

K174005-08 (Soil)

Date Sampled
10/04/2017 09:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710003**			
Nitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/04/2017	10/05/2017 22:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.2 %*		*63.7-134*	*10/04/2017*	*10/05/2017 22:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710004**			
% Solids	**87.1**	0.00	% by Weight	1	10/04/2017	10/05/2017 12:34	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-A11-504-1(08.5-09.0)

K174006-01 (Soil)

Date Sampled
10/04/2017 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
2,4-Dinitrotoluene	**210**	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
2,4,6-Trinitrotoluene	**420**	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	**200**	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	**160**	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 17:40	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*90.4 %*		*60-140*	*10/05/2017*	*10/06/2017 17:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**88.7**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-01(01.0-01.5)

K174006-02 (Soil)

Date Sampled
10/04/2017 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
2,4-Dinitrotoluene	**240**	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/07/2017 02:24	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.0 %*		*60-140*	*10/05/2017*	*10/06/2017 18:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**85.2**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-01(03.0-03.5)

K174006-03 (Soil)

Date Sampled
10/04/2017 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.3 %*		*60-140*	*10/05/2017*	*10/06/2017 18:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**84.0**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-A11-01(05.0-05.5)

K174006-04 (Soil)

Date Sampled
10/04/2017 12:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/05/2017	10/06/2017 18:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.0 %*		*60-140*	*10/05/2017*	*10/06/2017 18:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**86.7**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-01(07.0-07.5)

K174006-05 (Soil)

Date Sampled
10/04/2017 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:10	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*94.3 %*		*60-140*	*10/05/2017*	*10/06/2017 19:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**89.6**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-01(09.0-09.5)

K174006-06 (Soil)

Date Sampled
10/04/2017 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:33	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*89.6 %*		*60-140*	*10/05/2017*	*10/06/2017 19:33*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**93.6**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-01(10.5-11.0)

K174006-07 (Soil)

Date Sampled
10/04/2017 12:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 19:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*90.6 %*		*60-140*	*10/05/2017*	*10/06/2017 19:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**92.9**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-B10-508-1(14.0-14.5)

K174007-01 (Soil)

Date Sampled
10/05/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
2,4-Dinitrotoluene	**140**	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 04:38	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	**310**	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	**200**	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 20:17	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*109 %*		*60-140*	*10/05/2017*	*10/06/2017 20:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**90.7**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-B10-505-5(11.0-11.5)

K174007-02 (Soil)

Date Sampled
10/05/2017 08:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
2,4,6-Trinitrotoluene	**130**	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	**260**	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	**280**	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:02	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*92.0 %*		*60-140*	*10/05/2017*	*10/06/2017 21:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**89.0**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-02(06.0-06.5)

K174007-03 (Soil)

Date Sampled
10/05/2017 10:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
2,6-Dinitrotoluene	**360**	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
2,4-Dinitrotoluene	**670**	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
1,3,5-Trinitrobenzene	**120**	110	ug/kg dry	1	10/05/2017	10/07/2017 05:44	EPA 8095	
2,4,6-Trinitrotoluene	**210000**	11000	ug/kg dry	100	10/05/2017	10/07/2017 12:43	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	**3000**	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1400**	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	P
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 21:24	EPA 8095	LC
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*116 %*		*60-140*	*10/05/2017*	*10/06/2017 21:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**94.3**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-A11-4-2(08.5-09.0)

K174007-04 (Soil)

Date Sampled
10/05/2017 11:16

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 13:05	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*92.9 %*		*60-140*	*10/05/2017*	*10/07/2017 13:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**92.3**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project Number: 2769

BD100517

K174007-05 (Soil)

Date Sampled
10/05/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710006**			
Nitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/05/2017	10/07/2017 07:13	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/05/2017	10/06/2017 22:54	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.8 %*		*60-140*	*10/05/2017*	*10/06/2017 22:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710007**			
% Solids	**90.7**	0.00	% by Weight	1	10/05/2017	10/06/2017 12:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-01(01.0-01.5)

K174101-01 (Soil)

Date Sampled
10/06/2017 12:44

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 19:40	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
2,4,6-Trinitrotoluene	**1100**	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	**150**	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/09/2017	10/09/2017 14:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*99.6 %*		*63.7-134*	*10/09/2017*	*10/09/2017 14:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**83.3**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-B11-01(03.0-03.5)

K174101-02 (Soil)

Date Sampled
10/06/2017 12:44

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
2,4,6-Trinitrotoluene	**130**	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 14:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*99.3 %*		*63.7-134*	*10/09/2017*	*10/09/2017 14:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**87.9**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-B11-01(04.0-04.5)

K174101-03 (Soil)

Date Sampled
10/06/2017 12:44

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 15:02	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/09/2017*	*10/09/2017 15:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**87.9**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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B11-663-06(08.5-09.0)

K174101-04 (Soil)

Date Sampled
10/06/2017 12:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 21:32	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
2,4,6-Trinitrotoluene	**170**	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*99.8 %*		*63.7-134*	*10/09/2017*	*10/09/2017 16:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**90.8**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-A12-02(01.0-01.5)

K174101-05 (Soil)

Date Sampled
10/06/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
2,4,6-Trinitrotoluene	**460**	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	**650**	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	**520**	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/09/2017*	*10/09/2017 16:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**89.0**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-A12-02(02.0-02.5)

K174101-06 (Soil)

Date Sampled
10/06/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/09/2017 16:54	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*10/09/2017*	*10/09/2017 16:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**90.7**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-A11-04(01.0-01.5)

K174101-07 (Soil)

Date Sampled
10/06/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 17:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/09/2017*	*10/09/2017 17:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**96.3**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-A11-04(03.0-03.5)

K174101-08 (Soil)

Date Sampled
10/06/2017 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 23:24	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/09/2017*	*10/09/2017 18:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**96.1**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-04(05.0-05.5)

K174101-09 (Soil)

Date Sampled
10/06/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/09/2017*	*10/09/2017 18:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**95.7**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-04(07.0-07.5)

K174101-10 (Soil)

Date Sampled
10/06/2017 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/09/2017	10/09/2017 18:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*94.2 %*		*63.7-134*	*10/09/2017*	*10/09/2017 18:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**96.5**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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Project Number: 2769

TP-RD-A11-03(01.0-01.5)

K174101-11 (Soil)

Date Sampled
10/06/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
2-Nitrotoluene	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
3-Nitrotoluene	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
4-Nitrotoluene	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
Nitroglycerin	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
1,3-Dinitrobenzene	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
2,6-Dinitrotoluene	**270000**	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	D
2,4-Dinitrotoluene	**14000000**	1200000	ug/kg dry	10000	10/09/2017	10/10/2017 11:32	EPA 8095	D
1,3,5-Trinitrobenzene	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
2,4,6-Trinitrotoluene	**79000000**	12000000	ug/kg dry	100000	10/09/2017	10/10/2017 11:54	EPA 8095	D
PETN	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
RDX	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	**540000**	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	D
3,5-Dinitroaniline	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	**380000**	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	D
Tetryl	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
HMX	ND	120000	ug/kg dry	1000	10/09/2017	10/09/2017 19:10	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl			*%*	*63.7-134*	*10/09/2017*	*10/09/2017 19:10*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**83.8**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-A11-03(03.0-03.5)

K174101-12 (Soil)

Date Sampled
10/06/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
2,6-Dinitrotoluene	**550**	110	ug/kg dry	1	10/09/2017	10/10/2017 12:17	EPA 8095	
2,4-Dinitrotoluene	**1700**	110	ug/kg dry	1	10/09/2017	10/10/2017 12:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
2,4,6-Trinitrotoluene	**110000**	11000	ug/kg dry	100	10/09/2017	10/10/2017 12:39	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1500**	110	ug/kg dry	1	10/09/2017	10/10/2017 12:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1000**	110	ug/kg dry	1	10/09/2017	10/10/2017 12:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:37	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*120 %*		*63.7-134*	*10/09/2017*	*10/10/2017 12:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**90.6**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-A11-03(05.0-05.5)

K174101-13 (Soil)

Date Sampled
10/06/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:01	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	110	ug/kg dry	1	10/09/2017	10/10/2017 13:01	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
4-Amino-2,6-dinitrotoluene	**200**	110	ug/kg dry	1	10/09/2017	10/10/2017 13:01	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	**170**	110	ug/kg dry	1	10/09/2017	10/10/2017 13:01	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 01:59	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*110 %*		*63.7-134*	*10/09/2017*	*10/10/2017 13:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**90.3**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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Project Number: 2769

TP-RD-A11-03(07.0-07.5)

K174101-14 (Soil)

Date Sampled
10/06/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 02:21	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 02:21	EPA 8095	
2,6-Dinitrotoluene	**110**	110	ug/kg dry	1	10/09/2017	10/10/2017 02:21	EPA 8095	
2,4-Dinitrotoluene	**14000**	11000	ug/kg dry	100	10/09/2017	10/10/2017 13:46	EPA 8095	D
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
2,4,6-Trinitrotoluene	**15000**	11000	ug/kg dry	100	10/09/2017	10/10/2017 13:46	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	**890**	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	**470**	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 13:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*121 %*		*63.7-134*	*10/09/2017*	*10/10/2017 13:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**92.2**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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TP-RD-A11-03(08.5-09.0)

K174101-15 (Soil)

Date Sampled
10/06/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 14:08	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
1,3-Dinitrobenzene	**910**	110	ug/kg dry	1	10/09/2017	10/10/2017 14:08	EPA 8095	
2,6-Dinitrotoluene	**1300**	110	ug/kg dry	1	10/09/2017	10/10/2017 14:08	EPA 8095	
2,4-Dinitrotoluene	**200000**	11000	ug/kg dry	100	10/09/2017	10/10/2017 14:30	EPA 8095	D
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
2,4,6-Trinitrotoluene	**250000**	11000	ug/kg dry	100	10/09/2017	10/10/2017 14:30	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	**3400**	110	ug/kg dry	1	10/09/2017	10/10/2017 14:08	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	**2700**	110	ug/kg dry	1	10/09/2017	10/10/2017 14:08	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/09/2017	10/10/2017 03:05	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*137 %*		*63.7-134*	*10/09/2017*	*10/10/2017 14:08*	*EPA 8095*	*S*
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**89.9**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD100617

K174101-16 (Soil)

Date Sampled
10/06/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710009**			
Nitrobenzene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/09/2017	10/10/2017 14:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/09/2017*	*10/10/2017 14:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710010**			
% Solids	**84.2**	0.00	% by Weight	1	10/09/2017	10/10/2017 10:50	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB101017

K174102-01 (Water)

Date Sampled
10/10/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710019**			
Nitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:18	EPA 8095	
PETN	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
RDX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
HMX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:04	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*84.3 %*		*60-140*	*10/13/2017*	*10/13/2017 15:18*	*EPA 8095*	

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Project Number: 2769

TNT-PS-PW-1

K174102-02 (Water)

Date Sampled
10/11/2017 11:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710019**			
Nitrobenzene	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
2-Nitrotoluene	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
3-Nitrotoluene	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
4-Nitrotoluene	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
Nitroglycerin	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
1,3-Dinitrobenzene	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
2,6-Dinitrotoluene	**21**	8.0	ug/L	1	10/13/2017	10/13/2017 18:02	EPA 8095	
2,4-Dinitrotoluene	**49**	8.0	ug/L	1	10/13/2017	10/13/2017 18:02	EPA 8095	
1,3,5-Trinitrobenzene	**140**	8.0	ug/L	1	10/13/2017	10/13/2017 18:02	EPA 8095	
2,4,6-Trinitrotoluene	**13000**	160	ug/L	20	10/13/2017	10/13/2017 18:24	EPA 8095	D
PETN	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
RDX	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	**3300**	160	ug/L	20	10/13/2017	10/13/2017 18:24	EPA 8095	D
3,5-Dinitroaniline	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	**4000**	160	ug/L	20	10/13/2017	10/13/2017 18:24	EPA 8095	D
Tetryl	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:02	EPA 8095	
HMX	ND	8.0	ug/L	1	10/13/2017	10/13/2017 18:24	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*88.0 %*		*60-140*	*10/13/2017*	*10/13/2017 18:02*	*EPA 8095*	

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FB101117

K174102-03 (Water)

Date Sampled
10/11/2017 13:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710019**			
Nitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:40	EPA 8095	
PETN	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
RDX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
HMX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:26	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*83.5 %*		*60-140*	*10/13/2017*	*10/13/2017 15:40*	*EPA 8095*	

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FB101217

K174102-04 (Water)

Date Sampled
10/12/2017 15:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710019**			
Nitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:02	EPA 8095	
PETN	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
RDX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
HMX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 15:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*82.5 %*		*60-140*	*10/13/2017*	*10/13/2017 16:02*	*EPA 8095*	

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FB101317

K174102-05 (Water)

Date Sampled
10/13/2017 11:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710019**			
Nitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:24	EPA 8095	
PETN	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
RDX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
HMX	ND	0.10	ug/L	1	10/13/2017	10/13/2017 16:10	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*75.0 %*		*60-140*	*10/13/2017*	*10/13/2017 16:24*	*EPA 8095*	

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TP-R-B10-2/B10-509-3(02.0-02.5)

K174103-01 (Soil)

Date Sampled
10/10/2017 08:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710011**			
Nitrobenzene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/10/2017	10/11/2017 14:34	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
2,4,6-Trinitrotoluene	**360**	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/10/2017	10/11/2017 14:34	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	**960**	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	**700**	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 21:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.5 %*		*63.7-134*	*10/10/2017*	*10/10/2017 21:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710012**			
% Solids	**83.2**	0.00	% by Weight	1	10/10/2017	10/11/2017 09:55	SM 2540B	

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Project Number: 2769

TP-R-B10-2/B10-509-3(03.0-03.5)

K174103-02 (Soil)

Date Sampled
10/10/2017 08:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:38	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 13:46	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*90.1 %*		*60-140*	*10/12/2017*	*10/12/2017 13:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**84.8**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-10(01.5-02.0)

K174103-03 (Soil)

Date Sampled
10/10/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710011**			
Nitrobenzene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/10/2017	10/11/2017 14:57	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
2,4-Dinitrotoluene	**160**	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/10/2017	10/11/2017 14:57	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/10/2017	10/10/2017 22:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.6 %*		*63.7-134*	*10/10/2017*	*10/10/2017 22:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710012**			
% Solids	**85.2**	0.00	% by Weight	1	10/10/2017	10/11/2017 09:55	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-12(01.5-02.0)

K174103-05 (Soil)

Date Sampled
10/10/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710011**			
Nitrobenzene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
2-Nitrotoluene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
3-Nitrotoluene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
4-Nitrotoluene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
Nitroglycerin	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
1,3-Dinitrobenzene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
2,6-Dinitrotoluene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
2,4-Dinitrotoluene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
2,4,6-Trinitrotoluene	**1700000**	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	D
PETN	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
RDX	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
3,5-Dinitroaniline	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
Tetryl	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
HMX	ND	120000	ug/kg dry	1000	10/10/2017	10/10/2017 22:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl			*%*	*63.7-134*	*10/10/2017*	*10/10/2017 22:39*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K710012**			
% Solids	**84.4**	0.00	% by Weight	1	10/10/2017	10/11/2017 09:55	SM 2540B	

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TP-RD-B10-12(02.5-03.0)

K174103-06 (Soil)

Date Sampled
10/10/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
2,4,6-Trinitrotoluene	**14000**	1200	ug/kg dry	10	10/12/2017	10/12/2017 14:36	EPA 8095	D
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	**740**	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	**790**	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 14:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*105 %*		*60-140*	*10/12/2017*	*10/12/2017 14:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**84.4**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-A11-504-1(10.5-11.0)

K174103-07 (Soil)

Date Sampled
10/10/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710011**			
Nitrobenzene	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/10/2017	10/11/2017 15:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
2,4-Dinitrotoluene	**1300**	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
2,4,6-Trinitrotoluene	**5700**	1100	ug/kg dry	10	10/10/2017	10/11/2017 09:50	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	**230**	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	**160**	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/10/2017	10/10/2017 23:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/10/2017*	*10/10/2017 23:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710012**			
% Solids	**92.4**	0.00	% by Weight	1	10/10/2017	10/11/2017 09:55	SM 2540B	

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Project Number: 2769

TP-R-A11-504-1(11.5-12.0)

K174103-08 (Soil)

Date Sampled
10/10/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
2,4-Dinitrotoluene	**110**	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
2,4,6-Trinitrotoluene	**300**	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 14:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*94.8 %*		*60-140*	*10/12/2017*	*10/12/2017 14:58*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**88.9**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-02(07.0-07.5)

K174103-09 (Soil)

Date Sampled
10/10/2017 14:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710011**			
Nitrobenzene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 16:26	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	M
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	M, X
PETN	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 16:26	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/10/2017	10/11/2017 00:29	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*88.8 %*		*63.7-134*	*10/10/2017*	*10/11/2017 00:29*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710012**			
% Solids	**95.5**	0.00	% by Weight	1	10/10/2017	10/11/2017 09:55	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-01(00.5-01.0)

K174104-01 (Soil)

Date Sampled
10/11/2017 08:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
2-Nitrotoluene	ND	12000	ug/kg dry	100	10/11/2017	10/11/2017 22:27	EPA 8095	
3-Nitrotoluene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
4-Nitrotoluene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
Nitroglycerin	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
1,3-Dinitrobenzene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
2,6-Dinitrotoluene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
2,4-Dinitrotoluene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	12000	ug/kg dry	100	10/11/2017	10/11/2017 22:27	EPA 8095	
2,4,6-Trinitrotoluene	**62000**	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	D
PETN	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
RDX	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
3,5-Dinitroaniline	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
Tetryl	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
HMX	ND	12000	ug/kg dry	100	10/11/2017	10/12/2017 01:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*121 %*		*60-140*	*10/11/2017*	*10/12/2017 01:58*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**84.1**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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TP-RD-C11-01(01.0-01.5)

K174104-02 (Soil)

Date Sampled
10/11/2017 08:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
2-Nitrotoluene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
3-Nitrotoluene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
4-Nitrotoluene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
Nitroglycerin	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
1,3-Dinitrobenzene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
2,6-Dinitrotoluene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
2,4-Dinitrotoluene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
1,3,5-Trinitrobenzene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 16:08	EPA 8095	
2,4,6-Trinitrotoluene	**280000**	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	D
PETN	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
RDX	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
4-Amino-2,6-dinitrotoluene	**16000**	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	D
3,5-Dinitroaniline	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
Tetryl	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
HMX	ND	11000	ug/kg dry	100	10/11/2017	10/11/2017 19:38	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*116 %*		*60-140*	*10/11/2017*	*10/11/2017 19:38*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**88.6**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-02(00.5-01.0)

K174104-03 (Soil)

Date Sampled
10/11/2017 08:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 16:30	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 16:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*105 %*		*60-140*	*10/11/2017*	*10/11/2017 20:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**93.8**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-02(01.0-01.5)

K174104-04 (Soil)

Date Sampled
10/11/2017 08:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 16:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 16:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.1 %*		*60-140*	*10/11/2017*	*10/11/2017 20:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**88.7**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-03(00.5-01.0)

K174104-05 (Soil)

Date Sampled
10/11/2017 08:37

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710013**		
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 17:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 17:15	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*99.3 %*		*60-140*	*10/11/2017*	*10/11/2017 20:45*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710014**		
% Solids	**89.7**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-03(01.0-01.5)

K174104-06 (Soil)

Date Sampled
10/11/2017 08:37

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 17:37	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 17:37	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 17:37	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/11/2017	10/11/2017 21:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*99.5 %*		*60-140*	*10/11/2017*	*10/11/2017 21:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**96.4**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-02A(00.5-01.0)

K174104-07 (Soil)

Date Sampled
10/11/2017 09:18

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 17:59	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 17:59	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 17:59	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 17:59	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 17:59	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.7 %*		*60-140*	*10/11/2017*	*10/11/2017 21:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**88.1**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-02A(01.0-01.5)

K174104-08 (Soil)

Date Sampled
10/11/2017 09:18

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710013**		
Nitrobenzene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 18:21	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 18:21	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 18:21	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:52	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 18:21	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 18:21	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*106 %*		*60-140*	*10/11/2017*	*10/11/2017 21:52*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710014**		
% Solids	**86.6**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-01(01.0-01.5)

K174104-09 (Soil)

Date Sampled
10/11/2017 09:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 19:06	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 19:06	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 19:06	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 19:06	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:37	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*108 %*		*60-140*	*10/11/2017*	*10/11/2017 22:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**91.1**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-01(03.0-03.5)

K174104-10 (Soil)

Date Sampled
10/11/2017 09:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710013**		
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 19:28	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 19:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:59	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*94.3 %*		*60-140*	*10/11/2017*	*10/11/2017 22:59*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710014**		
% Solids	**91.2**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-01(05.0-05.5)

K174104-11 (Soil)

Date Sampled
10/11/2017 09:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710013**		
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:07	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*96.5 %*		*60-140*	*10/11/2017*	*10/12/2017 00:07*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710014**		
% Solids	**91.9**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-01(07.0-07.5)

K174104-12 (Soil)

Date Sampled
10/11/2017 09:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710013**		
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 20:57	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:29	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.0 %*		*60-140*	*10/11/2017*	*10/12/2017 00:29*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710014**		
% Solids	**89.9**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-01(09.0-09.5)

K174104-13 (Soil)

Date Sampled
10/11/2017 09:35

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:19	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 21:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 00:51	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*109 %*		*60-140*	*10/11/2017*	*10/12/2017 00:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**87.8**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project Number: 2769

TP-R-A12-1-1(09.0-09.5)

K174104-14 (Soil)

Date Sampled
10/11/2017 10:34

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:42	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
2,4,6-Trinitrotoluene	**320**	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	**180**	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	**230**	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/11/2017	10/11/2017 21:42	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/11/2017	10/12/2017 01:14	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.6 %*		*60-140*	*10/11/2017*	*10/12/2017 01:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**86.7**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD101117

K174104-15 (Soil)

Date Sampled
10/11/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710013**			
Nitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/11/2017	10/11/2017 22:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/11/2017	10/12/2017 01:36	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.7 %*		*60-140*	*10/11/2017*	*10/12/2017 01:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710014**			
% Solids	**91.7**	0.00	% by Weight	1	10/11/2017	10/12/2017 09:20	SM 2540B	

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TP-RD-B11-02(01.0-01.5)

K174105-01 (Soil)

Date Sampled
10/12/2017 11:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 15:28	EPA 8095	X, M
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.8 %*		*60-140*	*10/12/2017*	*10/12/2017 15:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**85.8**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-A11-06(01.0-01.5)

K174105-04 (Soil)

Date Sampled
10/12/2017 11:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 16:35	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*109 %*		*60-140*	*10/12/2017*	*10/12/2017 16:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**83.9**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-A11-06(03.0-03.5)

K174105-05 (Soil)

Date Sampled
10/12/2017 11:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 17:19	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*106 %*		*60-140*	*10/12/2017*	*10/12/2017 17:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**85.4**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-06(05.0-05.5)

K174105-06 (Soil)

Date Sampled
10/12/2017 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	LC
RDX	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 17:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*105 %*		*60-140*	*10/12/2017*	*10/12/2017 17:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**95.5**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-06(07.0-07.5)

K174105-07 (Soil)

Date Sampled
10/12/2017 12:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.8 %*		*60-140*	*10/12/2017*	*10/12/2017 18:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**95.1**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-06(08.0-09.0)

K174105-08 (Soil)

Date Sampled
10/12/2017 12:05

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	LC
RDX	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 21:12	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/12/2017	10/12/2017 18:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.1 %*		*60-140*	*10/12/2017*	*10/12/2017 18:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**96.0**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-03(01.0-01.5)

K174105-09 (Soil)

Date Sampled
10/12/2017 12:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 21:34	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 18:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*101 %*		*60-140*	*10/12/2017*	*10/12/2017 18:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**87.3**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-03(03.0-03.5)

K174105-10 (Soil)

Date Sampled
10/12/2017 12:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 21:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:10	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.6 %*		*60-140*	*10/12/2017*	*10/12/2017 19:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**90.2**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-03(05.0-05.5)

K174105-11 (Soil)

Date Sampled
10/12/2017 12:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:32	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.4 %*		*60-140*	*10/12/2017*	*10/12/2017 19:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**89.3**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-03(07.0-07.5)

K174105-12 (Soil)

Date Sampled
10/12/2017 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 19:54	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.7 %*		*60-140*	*10/12/2017*	*10/12/2017 19:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**91.5**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-03(08.5-09.0)

K174105-13 (Soil)

Date Sampled
10/12/2017 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 20:16	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*100 %*		*60-140*	*10/12/2017*	*10/12/2017 20:16*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**93.7**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD10122017

K174105-14 (Soil)

Date Sampled
10/12/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710015**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 23:46	EPA 8095	LC
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 20:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*108 %*		*60-140*	*10/12/2017*	*10/12/2017 20:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710016**			
% Solids	**83.5**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-01A(01.0-01.5)

K174105-15 (Soil)

Date Sampled
10/12/2017 15:05

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:52	EPA 8095	LC
1,3-Dinitrobenzene	**120**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
2,4-Dinitrotoluene	**470**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1200**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	**900**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:07	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*115 %*		*60-140*	*10/12/2017*	*10/12/2017 22:07*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**84.8**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-14(01.0-01.5)

K174105-16 (Soil)

Date Sampled
10/12/2017 15:06

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 01:14	EPA 8095	LC
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
2,4-Dinitrotoluene	**500**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
2,4,6-Trinitrotoluene	**260**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	**250**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	**120**	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/12/2017 22:29	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*118 %*		*60-140*	*10/12/2017*	*10/12/2017 22:29*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**85.7**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-14(02.0-02.5)

K174105-17 (Soil)

Date Sampled
10/12/2017 15:07

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 22:51	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*113 %*		*60-140*	*10/12/2017*	*10/12/2017 22:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**92.4**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04(01.0-01.5)

K174105-18 (Soil)

Date Sampled
10/12/2017 15:08

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	LC
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 10:17	EPA 8095	
2,4,6-Trinitrotoluene	**1400**	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	**440**	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	**340**	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 09:03	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 10:17	EPA 8095	LC
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*105 %*		*60-140*	*10/12/2017*	*10/13/2017 09:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**83.7**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04(03.0-03.5)

K174105-19 (Soil)

Date Sampled
10/12/2017 15:09

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 02:20	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:35	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*102 %*		*60-140*	*10/12/2017*	*10/12/2017 23:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**89.4**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04(05.0-05.5)

K174105-20 (Soil)

Date Sampled
10/12/2017 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/12/2017 23:57	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*103 %*		*60-140*	*10/12/2017*	*10/12/2017 23:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**90.0**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04(07.0-07.5)

K174105-21 (Soil)

Date Sampled
10/12/2017 15:11

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	LC
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/12/2017	10/13/2017 00:19	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*101 %*		*60-140*	*10/12/2017*	*10/13/2017 00:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**92.0**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04(08.5-09.0)

K174105-22 (Soil)

Date Sampled
10/12/2017 15:12

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710017**			
Nitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	LC, M
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	LC, M
RDX	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/12/2017	10/13/2017 00:41	EPA 8095	LC, M
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*75.6 %*		*60-140*	*10/12/2017*	*10/13/2017 00:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710018**			
% Solids	**85.5**	0.00	% by Weight	1	10/12/2017	10/13/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B10-13(01.0-01.5)

K174106-01 (Soil)

Date Sampled
10/13/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 21:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*94.9 %*		*63.7-134*	*10/13/2017*	*10/13/2017 21:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**92.6**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-B10-13(03.0-03.5)

K174106-02 (Soil)

Date Sampled
10/13/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:02	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 21:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*90.8 %*		*63.7-134*	*10/13/2017*	*10/13/2017 21:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**98.2**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-13(05.0-05.5)

K174106-03 (Soil)

Date Sampled
10/13/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:24	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/13/2017 22:18	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*92.9 %*		*63.7-134*	*10/13/2017*	*10/13/2017 22:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**94.7**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B10-13(07.0-07.5)

K174106-04 (Soil)

Date Sampled
10/13/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:46	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:46	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 22:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.2 %*		*63.7-134*	*10/13/2017*	*10/13/2017 22:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**98.0**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-B10-13(09.0-09.5)

K174106-05 (Soil)

Date Sampled
10/13/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:09	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/13/2017*	*10/13/2017 23:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**97.1**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-B10-13(10.0-10.5)

K174106-06 (Soil)

Date Sampled
10/13/2017 08:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:31	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/13/2017	10/13/2017 23:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*92.2 %*		*63.7-134*	*10/13/2017*	*10/13/2017 23:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**97.4**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project Number: 2769

TP-RD-A11-7A(01.0-01.5)

K174106-07 (Soil)

Date Sampled
10/13/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:53	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:53	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:53	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/13/2017	10/13/2017 23:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.4 %*		*63.7-134*	*10/13/2017*	*10/13/2017 23:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**86.7**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-7A(03.0-03.5)

K174106-08 (Soil)

Date Sampled
10/13/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 00:10	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.3 %*		*63.7-134*	*10/13/2017*	*10/14/2017 00:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**89.2**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project Number: 2769

TP-RD-A11-7A(05.0-05.5)

K174106-09 (Soil)

Date Sampled
10/13/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:45	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 01:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.3 %*		*63.7-134*	*10/13/2017*	*10/14/2017 01:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**91.8**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-A11-7A(07.0-07.5)

K174106-10 (Soil)

Date Sampled
10/13/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:07	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:02	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.5 %*		*63.7-134*	*10/13/2017*	*10/14/2017 02:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**91.2**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-A11-7A(08.5-09.0)

K174106-11 (Soil)

Date Sampled
10/13/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:29	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/13/2017*	*10/14/2017 02:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**93.4**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-A11-3A(01.0-01.5)

K174106-12 (Soil)

Date Sampled
10/13/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:52	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 02:46	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.1 %*		*63.7-134*	*10/13/2017*	*10/14/2017 02:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**90.0**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-A11-3A(03.0-03.5)

K174106-13 (Soil)

Date Sampled
10/13/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:14	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/13/2017*	*10/14/2017 03:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**87.0**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-A11-3A(05.0-05.5)

K174106-14 (Soil)

Date Sampled
10/13/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*99.0 %*		*63.7-134*	*10/13/2017*	*10/14/2017 03:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**91.2**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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TP-RD-A11-3A(07.0-07.5)

K174106-15 (Soil)

Date Sampled
10/13/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:59	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 03:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.4 %*		*63.7-134*	*10/13/2017*	*10/14/2017 03:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**90.4**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-3A(08.5-09.0)

K174106-16 (Soil)

Date Sampled
10/13/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:21	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 04:16	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.0 %*		*63.7-134*	*10/13/2017*	*10/14/2017 04:16*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**91.6**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD101317

K174106-17 (Soil)

Date Sampled
10/13/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710020**			
Nitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:06	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/13/2017	10/14/2017 05:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.3 %*		*63.7-134*	*10/13/2017*	*10/14/2017 05:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710021**			
% Solids	**87.1**	0.00	% by Weight	1	10/13/2017	10/14/2017 14:29	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-05(03.0-03.5)

K174201-01 (Soil)

Date Sampled
10/16/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 17:28	EPA 8095	LC, M
Surrogate: 2,2'-Dinitrobiphenyl		*86.9 %*		*63.7-134*	*10/16/2017*	*10/16/2017 17:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**90.5**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C10-01(01.0-01.5)

K174201-02 (Soil)

Date Sampled
10/16/2017 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:35	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*91.0 %*		*63.7-134*	*10/16/2017*	*10/16/2017 18:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**89.4**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C10-01(02.5-03.0)

K174201-03 (Soil)

Date Sampled
10/16/2017 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 18:57	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*86.6 %*		*63.7-134*	*10/16/2017*	*10/16/2017 18:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**87.9**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-C10-01(03.0-03.5)

K174201-04 (Soil)

Date Sampled
10/16/2017 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 19:41	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*89.2 %*		*63.7-134*	*10/16/2017*	*10/16/2017 19:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**89.5**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-12(03.5-04.0)
K174201-05 (Soil)

Date Sampled
10/16/2017 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
2,4,6-Trinitrotoluene	**140**	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	**270**	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	**320**	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:03	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*91.0 %*		*63.7-134*	*10/16/2017*	*10/16/2017 20:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**85.9**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-05A(01.0-01.5)

K174201-08 (Soil)

Date Sampled
10/16/2017 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
2,4,6-Trinitrotoluene	**340**	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	**12000**	1200	ug/kg dry	10	10/16/2017	10/17/2017 14:17	EPA 8095	D
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	**6300**	1200	ug/kg dry	10	10/16/2017	10/17/2017 14:17	EPA 8095	D
Tetryl	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/16/2017	10/16/2017 20:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/16/2017*	*10/16/2017 20:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**85.2**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-05A(03.0-03.5)

K174201-09 (Soil)

Date Sampled
10/16/2017 09:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
2,4,6-Trinitrotoluene	**720**	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	**470**	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	**350**	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 20:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*		*63.7-134*	*10/16/2017*	*10/16/2017 20:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**87.2**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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TP-RD-B11-05A(05.0-05.5)

K174201-10 (Soil)

Date Sampled
10/16/2017 09:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
2,4,6-Trinitrotoluene	**160**	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.3 %*		*63.7-134*	*10/16/2017*	*10/16/2017 21:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**89.9**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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TP-RD-B10-14A(01.0-01.5)

K174201-12 (Soil)

Date Sampled
10/16/2017 10:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.4 %*		*63.7-134*	*10/16/2017*	*10/16/2017 21:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**92.8**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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TP-RD-B11-01B(01.0-01.5)

K174201-14 (Soil)

Date Sampled
10/16/2017 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 21:52	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.7 %*		*63.7-134*	*10/16/2017*	*10/16/2017 21:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**87.4**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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TP-RD-B11-01B(02.0-02.5)

K174201-15 (Soil)

Date Sampled
10/16/2017 14:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:29	EPA 8095	M
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
2,4,6-Trinitrotoluene	**360**	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	M
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:29	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:48	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:29	EPA 8095	X, M
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/19/2017*	*10/21/2017 04:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**87.9**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B11-04A(01.0-01.5)

K174201-16 (Soil)

Date Sampled
10/16/2017 13:54

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
2,4,6-Trinitrotoluene	**830**	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	**290**	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	**220**	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:14	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.6 %*		*63.7-134*	*10/16/2017*	*10/16/2017 22:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**87.1**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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TP-RD-B11-04A(02.0-02.5)

K174201-17 (Soil)

Date Sampled
10/16/2017 13:54

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
2,4,6-Trinitrotoluene	**2100**	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	M1
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	**3300**	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	M1, HC
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	**2600**	110	ug/kg dry	1	10/17/2017	10/19/2017 10:26	EPA 8095	HC
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 10:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*83.8 %*		*63.7-134*	*10/17/2017*	*10/19/2017 10:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**89.5**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-03(09.5-10.0)

K174201-18 (Soil)

Date Sampled
10/16/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710022**			
Nitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/16/2017	10/16/2017 22:36	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*99.4 %*		*63.7-134*	*10/16/2017*	*10/16/2017 22:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710023**			
% Solids	**95.2**	0.00	% by Weight	1	10/16/2017	10/17/2017 11:51	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-03(10.5-11.0)

K174201-19 (Soil)

Date Sampled
10/16/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:34	EPA 8095	
2,4-Dinitrotoluene	**2500**	110	ug/kg dry	1	10/17/2017	10/19/2017 11:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:34	EPA 8095	
2,4,6-Trinitrotoluene	**9200**	1100	ug/kg dry	10	10/17/2017	10/19/2017 18:19	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	110	ug/kg dry	1	10/17/2017	10/19/2017 11:34	EPA 8095	HC
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	**110**	110	ug/kg dry	1	10/17/2017	10/19/2017 11:34	EPA 8095	HC
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 11:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*91.8 %*		*63.7-134*	*10/17/2017*	*10/19/2017 11:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**94.5**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-03(11.5-12.0)

K174201-20 (Soil)

Date Sampled
10/16/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
2,4-Dinitrotoluene	**120**	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
2,4,6-Trinitrotoluene	**770**	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	**150**	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:44	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:34	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/19/2017*	*10/20/2017 22:44*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**94.0**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB101617

K174203-01 (Water)

Date Sampled
10/16/2017 15:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710036**			
Nitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:36	EPA 8095	
PETN	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
RDX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
HMX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*60-140*	*10/21/2017*	*10/22/2017 03:36*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB101717

K174203-02 (Water)

Date Sampled
10/17/2017 15:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710036**			
Nitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:59	EPA 8095	
PETN	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
RDX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
HMX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 03:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*		*60-140*	*10/21/2017*	*10/22/2017 03:59*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB101817

K174203-03 (Water)

Date Sampled
10/18/2017 15:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710036**			
Nitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:05	EPA 8095	
PETN	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
RDX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
HMX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 04:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*60-140*	*10/21/2017*	*10/22/2017 05:05*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB101917

K174203-04 (Water)

Date Sampled
10/19/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710036**			
Nitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:27	EPA 8095	
PETN	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
RDX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
HMX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:15	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.1 %*		*60-140*	*10/21/2017*	*10/22/2017 05:27*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB102017

K174203-05 (Water)

Date Sampled
10/20/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710036**			
Nitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:49	EPA 8095	
PETN	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
RDX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
HMX	ND	0.10	ug/L	1	10/21/2017	10/22/2017 05:36	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*60-140*	*10/21/2017*	*10/22/2017 05:49*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-01A(01.0-01.5)

K174206-01 (Soil)

Date Sampled
10/17/2017 10:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
2-Nitrotoluene	**160**	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
1,3-Dinitrobenzene	**280**	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
2,6-Dinitrotoluene	**210**	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
2,4-Dinitrotoluene	**3600**	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
1,3,5-Trinitrobenzene	**370**	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
2,4,6-Trinitrotoluene	**3300**	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	
PETN	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:54	EPA 8095	
RDX	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:54	EPA 8095	
4-Amino-2,6-dinitrotoluene	**4600**	1300	ug/kg dry	10	10/17/2017	10/19/2017 18:41	EPA 8095	D
3,5-Dinitroaniline	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	**2200**	130	ug/kg dry	1	10/17/2017	10/19/2017 11:56	EPA 8095	HC
Tetryl	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:54	EPA 8095	
HMX	ND	130	ug/kg dry	1	10/17/2017	10/19/2017 11:54	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*87.0 %*		*63.7-134*	*10/17/2017*	*10/19/2017 11:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**78.8**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-01A(02.0-02.5)

K174206-02 (Soil)

Date Sampled
10/17/2017 10:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
2,4-Dinitrotoluene	**290**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
2,4,6-Trinitrotoluene	**4300**	1100	ug/kg dry	10	10/17/2017	10/19/2017 19:04	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:16	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1200**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	HC
3,5-Dinitroaniline	**110**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	**440**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	HC
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:16	EPA 8095	
HMX	**120**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:19	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*87.1 %*		*63.7-134*	*10/17/2017*	*10/19/2017 12:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**87.0**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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TP-RD-C11-01A(03.0-03.5)

K174206-03 (Soil)

Date Sampled
10/17/2017 10:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
2,4,6-Trinitrotoluene	**150**	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:34	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 06:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.7 %*		*63.7-134*	*10/18/2017*	*10/20/2017 06:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**89.1**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-01(02.0-02.5)

K174206-04 (Soil)

Date Sampled
10/17/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:38	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:38	EPA 8095	
3-Nitrotoluene	**110**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
2,4-Dinitrotoluene	**190**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
2,4,6-Trinitrotoluene	**990**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:38	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:38	EPA 8095	
4-Amino-2,6-dinitrotoluene	**530**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	HC
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:38	EPA 8095	
2-Amino-4,6-dinitrotoluene	**230**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	HC
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 12:38	EPA 8095	
HMX	**110**	110	ug/kg dry	1	10/17/2017	10/19/2017 12:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*88.5 %*		*63.7-134*	*10/17/2017*	*10/19/2017 12:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**87.1**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project Number: 2769

TP-RD-C11-01(03.0-03.5)

K174206-05 (Soil)

Date Sampled
10/17/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:40	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:40	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
2,4,6-Trinitrotoluene	**8400**	1200	ug/kg dry	10	10/18/2017	10/20/2017 10:30	EPA 8095	D
PETN	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:40	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	**940**	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	**130**	120	ug/kg dry	1	10/18/2017	10/20/2017 06:57	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:40	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 06:40	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/18/2017*	*10/20/2017 06:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**84.1**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-R-A12-1-1(10.5-11.0)

K174206-06 (Soil)

Date Sampled
10/17/2017 09:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:04	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:00	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*90.8 %*		*63.7-134*	*10/17/2017*	*10/19/2017 13:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**90.5**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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TP-R-A11-504-1(12.0-12.5)

K174206-08 (Soil)

Date Sampled
10/17/2017 08:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
2,4-Dinitrotoluene	**260**	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
2,4,6-Trinitrotoluene	**110**	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:48	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 13:44	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*91.5 %*		*63.7-134*	*10/17/2017*	*10/19/2017 13:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**93.7**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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TP-RD-C10-02(01.0-01.5)

K174206-09 (Soil)

Date Sampled
10/17/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:06	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:06	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:06	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:11	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:06	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:06	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*91.1 %*		*63.7-134*	*10/17/2017*	*10/19/2017 14:11*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**90.6**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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TP-RD-C10-02(03.0-03.5)

K174206-10 (Soil)

Date Sampled
10/17/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:29	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:29	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:33	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:29	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/17/2017*	*10/19/2017 14:33*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**89.3**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C10-02(03.5-04.0)

K174206-11 (Soil)

Date Sampled
10/17/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:51	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 14:51	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.1 %*		*63.7-134*	*10/17/2017*	*10/19/2017 14:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**88.6**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-09(03.0-03.5)

K174206-12 (Soil)

Date Sampled
10/17/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
2,4,6-Trinitrotoluene	**890**	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
2-Amino-4,6-dinitrotoluene	**160**	110	ug/kg dry	1	10/17/2017	10/19/2017 15:18	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:13	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*99.8 %*		*63.7-134*	*10/17/2017*	*10/19/2017 15:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**88.2**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-09(02.0-02.5)

K174206-13 (Soil)

Date Sampled
10/17/2017 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:35	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:35	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:35	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
2,4,6-Trinitrotoluene	**410**	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:35	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	**140**	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	HC
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	**140**	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	HC
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:35	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*10/17/2017*	*10/19/2017 15:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**87.6**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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TP-RD-B10-09(03.5-04.0)

K174206-14 (Soil)

Date Sampled
10/17/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:04	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 15:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/17/2017*	*10/19/2017 16:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**88.9**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-10(03.5-04.0)

K174206-15 (Soil)

Date Sampled
10/17/2017 14:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710025**			
Nitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	**810**	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	HC
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	**620**	110	ug/kg dry	1	10/17/2017	10/19/2017 16:26	EPA 8095	HC
Tetryl	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/17/2017	10/19/2017 16:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*91.6 %*		*63.7-134*	*10/17/2017*	*10/19/2017 16:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710026**			
% Solids	**87.9**	0.00	% by Weight	1	10/17/2017	10/20/2017 10:16	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-05B(01.0-01.5)

K174207-01 (Soil)

Date Sampled
10/18/2017 08:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
2,4-Dinitrotoluene	**150**	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
2,4,6-Trinitrotoluene	**170**	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	**680**	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	**410**	110	ug/kg dry	1	10/18/2017	10/19/2017 22:08	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 21:57	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.5 %*		*63.7-134*	*10/18/2017*	*10/19/2017 22:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**87.8**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-05B(03.0-03.5)

K174207-02 (Soil)

Date Sampled
10/18/2017 08:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	**130**	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	**170**	110	ug/kg dry	1	10/18/2017	10/19/2017 22:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*94.1 %*		*63.7-134*	*10/18/2017*	*10/19/2017 22:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**87.6**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-05B(05.0-05.5)

K174207-03 (Soil)

Date Sampled
10/18/2017 08:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:43	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:43	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:43	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:43	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:43	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:55	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:43	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 22:43	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.7 %*		*63.7-134*	*10/18/2017*	*10/19/2017 22:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**88.9**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-02(09.0-09.5)

K174207-04 (Soil)

Date Sampled
10/18/2017 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
1,3,5-Trinitrobenzene	**500**	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
2,4,6-Trinitrotoluene	**5000**	1200	ug/kg dry	10	10/18/2017	10/20/2017 11:16	EPA 8095	D
PETN	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	**300**	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	**450**	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:06	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:18	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*94.3 %*		*63.7-134*	*10/18/2017*	*10/19/2017 23:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**83.2**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-02A(01.0-01.5)

K174207-05 (Soil)

Date Sampled
10/18/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/19/2017 23:28	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*94.9 %*		*63.7-134*	*10/18/2017*	*10/19/2017 23:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**90.0**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-02A(03.0-03.5)

K174207-06 (Soil)

Date Sampled
10/18/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:51	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:51	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:51	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 00:04	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:51	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/18/2017	10/19/2017 23:51	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.3 %*		*63.7-134*	*10/18/2017*	*10/20/2017 00:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**85.9**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-02A(05.0-05.5)
K174207-07 (Soil)

Date Sampled
10/18/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 00:59	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 00:59	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 00:59	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 00:59	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 00:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:13	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 00:59	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 00:59	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/18/2017*	*10/20/2017 01:13*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**90.3**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-02A(07.0-07.5)

K174207-08 (Soil)

Date Sampled
10/18/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:36	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 01:22	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.3 %*		*63.7-134*	*10/18/2017*	*10/20/2017 01:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**90.4**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-02A(09.0-09.5)

K174207-09 (Soil)

Date Sampled
10/18/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:22	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:07	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.4 %*		*63.7-134*	*10/18/2017*	*10/20/2017 02:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**85.9**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD101817

K174207-10 (Soil)

Date Sampled
10/18/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:45	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/18/2017	10/20/2017 02:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/18/2017*	*10/20/2017 02:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710028**			
% Solids	**85.8**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-01(01.0-01.5)

K174207-11 (Soil)

Date Sampled
10/18/2017 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
2,4,6-Trinitrotoluene	**160**	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	**140**	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	**120**	110	ug/kg dry	1	10/18/2017	10/20/2017 03:08	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 02:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*10/18/2017*	*10/20/2017 03:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**87.5**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-01(03.0-03.5)

K174207-12 (Soil)

Date Sampled
10/18/2017 13:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:16	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:16	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.5 %*		*63.7-134*	*10/18/2017*	*10/20/2017 03:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**91.7**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-01(05.0-05.5)

K174207-13 (Soil)

Date Sampled
10/18/2017 13:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:38	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:38	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:38	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:38	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:38	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:54	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:38	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 03:38	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.3 %*		*63.7-134*	*10/18/2017*	*10/20/2017 03:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**91.6**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03(01.0-01.5)

K174207-14 (Soil)

Date Sampled
10/18/2017 14:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/18/2017*	*10/20/2017 04:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**95.0**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03(03.0-03.5)

K174207-15 (Soil)

Date Sampled
10/18/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
2,4,6-Trinitrotoluene	**310**	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	**210**	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	**200**	110	ug/kg dry	1	10/18/2017	10/20/2017 04:40	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.7 %*		*63.7-134*	*10/18/2017*	*10/20/2017 04:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**87.5**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03(05.0-05.5)

K174207-16 (Soil)

Date Sampled
10/18/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 04:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.6 %*		*63.7-134*	*10/18/2017*	*10/20/2017 05:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**90.1**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03(07.0-07.5)

K174207-17 (Soil)

Date Sampled
10/18/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:26	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*90.9 %*		*63.7-134*	*10/18/2017*	*10/20/2017 05:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**88.6**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03(09.0-09.5)

K174207-18 (Soil)

Date Sampled
10/18/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710027**			
Nitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:49	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/18/2017	10/20/2017 05:32	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.8 %*		*63.7-134*	*10/18/2017*	*10/20/2017 05:49*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710029**			
% Solids	**94.0**	0.00	% by Weight	1	10/18/2017	10/20/2017 10:36	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04A(03.0-03.5)

K174210-01 (Soil)

Date Sampled
10/19/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
2,4,6-Trinitrotoluene	**340**	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	**410**	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	**340**	110	ug/kg dry	1	10/19/2017	10/20/2017 23:06	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/20/2017 22:56	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/19/2017*	*10/20/2017 23:06*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**88.8**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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TP-RD-B11-04A(04.0-04.5)

K174210-02 (Soil)

Date Sampled
10/19/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
2,4,6-Trinitrotoluene	**610**	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1500**	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1300**	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 15:18	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.6 %*		*63.7-134*	*10/23/2017*	*10/23/2017 15:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**84.0**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-B11-04A(05.0-05.5)

K174210-03 (Soil)

Date Sampled
10/19/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
2-Nitrotoluene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
3-Nitrotoluene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
4-Nitrotoluene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
Nitroglycerin	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
1,3-Dinitrobenzene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
2,6-Dinitrotoluene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
2,4-Dinitrotoluene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
2,4,6-Trinitrotoluene	**2300000**	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	D
PETN	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	LC
RDX	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
3,5-Dinitroaniline	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
Tetryl	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	
HMX	ND	120000	ug/kg dry	1000	10/24/2017	10/24/2017 18:25	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl			*%*	*63.7-134*	*10/24/2017*	*10/24/2017 18:25*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**86.2**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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TP-RD-A11-14(01.0-01.5)

K174210-04 (Soil)

Date Sampled
10/19/2017 09:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
2,4-Dinitrotoluene	**120**	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
2,4,6-Trinitrotoluene	**270**	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	**360**	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	**250**	110	ug/kg dry	1	10/19/2017	10/21/2017 00:13	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:03	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*113 %*		*63.7-134*	*10/19/2017*	*10/21/2017 00:13*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**88.1**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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TP-RD-A11-14(03.0-03.5)

K174210-05 (Soil)

Date Sampled
10/19/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:25	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:25	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:25	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
2,4,6-Trinitrotoluene	**460**	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:25	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	**290**	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	**260**	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:25	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:36	EPA 8095	LC
Surrogate: 2,2´-Dinitrobiphenyl		*115 %*		*63.7-134*	*10/19/2017*	*10/21/2017 00:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**88.2**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project Number: 2769

TP-RD-A11-14(05.0-05.5)

K174210-06 (Soil)

Date Sampled
10/19/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
2,4-Dinitrotoluene	**150**	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
2,4,6-Trinitrotoluene	**1100**	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	**400**	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	**220**	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 15:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*99.5 %*		*63.7-134*	*10/23/2017*	*10/23/2017 15:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**95.1**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-A11-13(01.0-01.5)

K174210-07 (Soil)

Date Sampled
10/19/2017 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:59	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 00:48	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*10/19/2017*	*10/21/2017 00:59*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**87.8**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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TP-RD-A11-13(03.0-03.5)

K174210-08 (Soil)

Date Sampled
10/19/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:21	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:10	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*10/19/2017*	*10/21/2017 01:21*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**88.4**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-12(01.0-01.5)

K174210-10 (Soil)

Date Sampled
10/19/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:06	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 01:54	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*111 %*		*63.7-134*	*10/19/2017*	*10/21/2017 02:06*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**88.1**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-12(03.0-03.5)

K174210-11 (Soil)

Date Sampled
10/19/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:28	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:16	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*110 %*		*63.7-134*	*10/19/2017*	*10/21/2017 02:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**88.7**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project Number: 2769

TP-RD-A11-08(01.0-01.5)

K174210-13 (Soil)

Date Sampled
10/19/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:50	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 02:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*108 %*		*63.7-134*	*10/19/2017*	*10/21/2017 02:50*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**89.5**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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TP-RD-A11-08(03.0-03.5)

K174210-14 (Soil)

Date Sampled
10/19/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:12	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*		*63.7-134*	*10/19/2017*	*10/21/2017 03:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**91.9**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-08(05.0-05.5)

K174210-15 (Soil)

Date Sampled
10/19/2017 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:35	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/19/2017	10/21/2017 03:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*110 %*		*63.7-134*	*10/19/2017*	*10/21/2017 03:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**96.3**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project Number: 2769

TP-RD-A11-08(07.0-07.5)

K174210-16 (Soil)

Date Sampled
10/19/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710031**		
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:57	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 03:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/19/2017*	*10/21/2017 03:57*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710032**		
% Solids	**94.3**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project Number: 2769

TP-RD-A11-08(09.0-09.5)

K174210-17 (Soil)

Date Sampled
10/19/2017 13:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710031**			
Nitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:22	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/19/2017	10/21/2017 04:07	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*112 %*		*63.7-134*	*10/19/2017*	*10/21/2017 04:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710032**			
% Solids	**92.4**	0.00	% by Weight	1	10/19/2017	10/21/2017 15:22	SM 2540B	

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Project Number: 2769

TP-RD-A11-09(01.0-01.5)

K174213-01 (Soil)

Date Sampled
10/20/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:48	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 03:16	EPA 8095	X, M
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*92.6 %*		*60-140*	*10/21/2017*	*10/22/2017 03:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**89.2**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-09(03.0-03.5)

K174213-02 (Soil)

Date Sampled
10/20/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:22	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*94.1 %*		*60-140*	*10/21/2017*	*10/22/2017 04:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**92.3**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-09(05.0-05.5)

K174213-03 (Soil)

Date Sampled
10/20/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710034**		
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 04:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*96.9 %*		*60-140*	*10/21/2017*	*10/22/2017 05:17*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710035**		
% Solids	**92.3**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-09(07.0-07.5)

K174213-04 (Soil)

Date Sampled
10/20/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:07	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.7 %*		*60-140*	*10/21/2017*	*10/22/2017 05:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**92.2**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-10(01.0-01.5)

K174213-05 (Soil)

Date Sampled
10/20/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710034**		
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:00	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:00	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:29	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*92.4 %*		*60-140*	*10/21/2017*	*10/22/2017 06:00*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710035**		
% Solids	**89.5**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-10(03.0-03.5)

K174213-06 (Soil)

Date Sampled
10/20/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:22	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 05:51	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.7 %*		*60-140*	*10/21/2017*	*10/22/2017 06:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**88.9**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-10(05.0-05.5)

K174213-07 (Soil)

Date Sampled
10/20/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:06	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:06	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:06	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:06	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.6 %*		*60-140*	*10/21/2017*	*10/22/2017 07:06*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**89.4**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-10(07.0-07.5)

K174213-08 (Soil)

Date Sampled
10/20/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:28	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:28	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 06:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*103 %*		*60-140*	*10/21/2017*	*10/22/2017 07:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**88.9**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-10(08.0-08.5)

K174213-09 (Soil)

Date Sampled
10/20/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:49	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:49	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:49	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:18	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.2 %*		*60-140*	*10/21/2017*	*10/22/2017 07:49*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**90.8**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-11(01.0-01.5)

K174213-10 (Soil)

Date Sampled
10/20/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:11	EPA 8095	
2,4-Dinitrotoluene	**230**	110	ug/kg dry	1	10/21/2017	10/22/2017 08:11	EPA 8095	M, X
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:11	EPA 8095	
2,4,6-Trinitrotoluene	**310**	110	ug/kg dry	1	10/21/2017	10/22/2017 08:11	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	110	ug/kg dry	1	10/21/2017	10/22/2017 08:11	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	**150**	110	ug/kg dry	1	10/21/2017	10/22/2017 08:11	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 07:40	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.5 %*		*60-140*	*10/21/2017*	*10/22/2017 08:11*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**89.0**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-11(03.0-03.5)

K174213-11 (Soil)

Date Sampled
10/20/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:16	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:16	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:16	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:16	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:16	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 08:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.4 %*		*60-140*	*10/21/2017*	*10/22/2017 09:16*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**90.1**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-11(05.0-05.5)

K174213-12 (Soil)

Date Sampled
10/20/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:38	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:38	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:07	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*104 %*		*60-140*	*10/21/2017*	*10/22/2017 09:38*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**91.9**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-11(07.0-07.5)

K174213-13 (Soil)

Date Sampled
10/20/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710034**		
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:00	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:00	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:00	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:29	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.2 %*		*60-140*	*10/21/2017*	*10/22/2017 10:00*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710035**		
% Solids	**89.3**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-11(08.0-08.5)

K174213-14 (Soil)

Date Sampled
10/20/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:22	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:22	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:22	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:22	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 09:51	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*101 %*		*60-140*	*10/21/2017*	*10/22/2017 10:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**95.0**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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BD102017A

K174213-15 (Soil)

Date Sampled
10/20/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: K710034**		
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:06	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:35	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*103 %*		*60-140*	*10/21/2017*	*10/22/2017 11:06*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: K710035**		
% Solids	**92.9**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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Project Number: 2769

BD102017B

K174213-16 (Soil)

Date Sampled
10/20/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:28	EPA 8095	
2,4-Dinitrotoluene	**290**	110	ug/kg dry	1	10/21/2017	10/22/2017 11:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:28	EPA 8095	
2,4,6-Trinitrotoluene	**430**	110	ug/kg dry	1	10/21/2017	10/22/2017 11:28	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	**180**	110	ug/kg dry	1	10/21/2017	10/22/2017 11:28	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	**140**	110	ug/kg dry	1	10/21/2017	10/22/2017 11:28	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 10:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.1 %*		*60-140*	*10/21/2017*	*10/22/2017 11:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**88.4**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-02A(01.0-01.5)

K174213-17 (Soil)

Date Sampled
10/20/2017 13:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:51	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:51	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*102 %*		*60-140*	*10/21/2017*	*10/22/2017 11:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**92.6**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-02A(03.0-03.5)

K174213-18 (Soil)

Date Sampled
10/20/2017 13:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:13	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:13	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:13	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:13	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 11:42	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*105 %*		*60-140*	*10/21/2017*	*10/22/2017 12:13*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**91.3**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-02A(05.0-05.5)

K174213-19 (Soil)

Date Sampled
10/20/2017 13:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:35	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:35	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:05	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*109 %*		*60-140*	*10/21/2017*	*10/22/2017 12:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**90.8**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-A11-02A(07.0-07.5)

K174213-20 (Soil)

Date Sampled
10/20/2017 13:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710034**			
Nitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:58	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/21/2017	10/22/2017 12:27	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*102 %*		*60-140*	*10/21/2017*	*10/22/2017 12:58*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710035**			
% Solids	**93.2**	0.00	% by Weight	1	10/21/2017	10/22/2017 15:50	SM 2540B	

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TP-RD-B11-05C(01.0-01.5)

K174301-01 (Soil)

Date Sampled
10/23/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 16:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.8 %*		*63.7-134*	*10/23/2017*	*10/23/2017 16:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**85.9**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-01(04.0-04.5)

K174301-04 (Soil)

Date Sampled
10/23/2017 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
2,4,6-Trinitrotoluene	**750**	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	**210**	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:26	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/23/2017*	*10/23/2017 16:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**91.1**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-01(05.0-05.5)

K174301-05 (Soil)

Date Sampled
10/23/2017 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
2,4,6-Trinitrotoluene	**810**	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	**210**	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 18:48	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/24/2017*	*10/24/2017 18:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**92.2**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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TP-RD-C11-01(06.0-06.5)

K174301-06 (Soil)

Date Sampled
10/23/2017 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
2,4,6-Trinitrotoluene	**160**	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	LC
RDX	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/24/2017	10/24/2017 19:10	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*108 %*		*63.7-134*	*10/24/2017*	*10/24/2017 19:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**95.4**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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TP-RD-C11-01B(01.0-01.5)

K174301-07 (Soil)

Date Sampled
10/23/2017 09:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	**110**	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 16:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.0 %*		*63.7-134*	*10/23/2017*	*10/23/2017 16:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**87.6**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-01B(03.0-03.5)

K174301-08 (Soil)

Date Sampled
10/23/2017 09:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:10	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.1 %*		*63.7-134*	*10/23/2017*	*10/23/2017 17:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**87.6**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-01B(05.0-05.5)

K174301-09 (Soil)

Date Sampled
10/23/2017 09:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
2,4,6-Trinitrotoluene	**1400**	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
4-Amino-2,6-dinitrotoluene	**180**	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:33	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/23/2017*	*10/23/2017 17:33*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**93.7**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-01B(06.0-06.5)

K174301-10 (Soil)

Date Sampled
10/23/2017 09:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
2,4,6-Trinitrotoluene	**130**	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:32	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*		*63.7-134*	*10/24/2017*	*10/24/2017 19:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**95.0**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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C11-7-02(01.0-01.5)

K174301-11 (Soil)

Date Sampled
10/23/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
2,4-Dinitrotoluene	**220**	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
2,4,6-Trinitrotoluene	**2800**	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1000**	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	**390**	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 17:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/23/2017*	*10/23/2017 17:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**87.9**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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C11-7-02(03.0-03.5)

K174301-12 (Soil)

Date Sampled
10/23/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
2,4-Dinitrotoluene	**240**	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
2,4,6-Trinitrotoluene	**2200**	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	LC
RDX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1400**	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	**380**	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 18:40	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.4 %*		*63.7-134*	*10/23/2017*	*10/23/2017 18:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**85.4**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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C11-7-02(05.0-05.5)

K174301-13 (Soil)

Date Sampled
10/23/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:04	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
2,4,6-Trinitrotoluene	**380**	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:02	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/23/2017*	*10/23/2017 19:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**89.0**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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C11-7-02(06.0-06.5)

K174301-14 (Soil)

Date Sampled
10/23/2017 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:00	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
2,4,6-Trinitrotoluene	**120**	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 19:55	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*10/24/2017*	*10/24/2017 19:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**95.1**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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TP-RD-C11-02(03.0-03.5)

K174301-15 (Soil)

Date Sampled
10/23/2017 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:26	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*10/23/2017*	*10/23/2017 19:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**89.2**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-02(05.0-05.5)

K174301-16 (Soil)

Date Sampled
10/23/2017 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
2,4,6-Trinitrotoluene	**2800**	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	M
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 19:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*10/23/2017*	*10/23/2017 19:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**89.7**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-02(06.0-06.5)

K174301-17 (Soil)

Date Sampled
10/23/2017 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 18:05	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.2 %*		*60-140*	*10/25/2017*	*10/25/2017 18:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**85.9**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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BD102317

K174301-18 (Soil)

Date Sampled
10/23/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
2,4,6-Trinitrotoluene	**19000**	1100	ug/kg dry	10	10/23/2017	10/24/2017 10:59	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	**190**	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	**150**	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 20:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*113 %*		*63.7-134*	*10/23/2017*	*10/23/2017 20:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**89.4**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-03(03.0-03.5)

K174301-19 (Soil)

Date Sampled
10/23/2017 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/23/2017	10/23/2017 21:18	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/23/2017*	*10/23/2017 21:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**94.6**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-03(05.0-05.5)

K174301-20 (Soil)

Date Sampled
10/23/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	LC
RDX	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/23/2017	10/23/2017 21:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/23/2017*	*10/23/2017 21:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**96.5**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-C11-03(06.0-06.5)

K174301-21 (Soil)

Date Sampled
10/23/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:17	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*10/24/2017*	*10/24/2017 20:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**91.6**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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TP-RD-B12-03(09.0-09.5)

K174301-22 (Soil)

Date Sampled
10/23/2017 13:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710037**			
Nitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
2,4,6-Trinitrotoluene	**650**	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	**140**	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
2-Amino-4,6-dinitrotoluene	**230**	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/23/2017	10/23/2017 22:04	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*112 %*		*63.7-134*	*10/23/2017*	*10/23/2017 22:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710038**			
% Solids	**86.4**	0.00	% by Weight	1	10/23/2017	10/24/2017 09:14	SM 2540B	

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TP-RD-B12-03(10.0-10.5)

K174301-23 (Soil)

Date Sampled
10/23/2017 13:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
2,4,6-Trinitrotoluene	**380**	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	LC
RDX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 20:39	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*10/24/2017*	*10/24/2017 20:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**90.9**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-03(12.0-12.5)

K174301-24 (Soil)

Date Sampled
10/23/2017 13:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710040**			
Nitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:07	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
2,4,6-Trinitrotoluene	**520**	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	M
PETN	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	M, LC
RDX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	**110**	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/24/2017	10/24/2017 21:01	EPA 8095	M, LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/24/2017*	*10/24/2017 21:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710041**			
% Solids	**89.2**	0.00	% by Weight	1	10/24/2017	10/24/2017 22:00	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-14(06.0-06.5)

K174305-01 (Soil)

Date Sampled
10/25/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
2,4,6-Trinitrotoluene	**200**	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 18:27	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.4 %*		*60-140*	*10/25/2017*	*10/25/2017 18:27*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**89.0**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-14(07.0-07.5)

K174305-02 (Soil)

Date Sampled
10/25/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
2,4,6-Trinitrotoluene	**880**	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	**200**	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	**150**	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:36	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*10/27/2017*	*10/28/2017 00:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**90.6**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-A11-14(08.5-09.0)

K174305-03 (Soil)

Date Sampled
10/25/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
2,4,6-Trinitrotoluene	**480**	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	**120**	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:41	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*84.1 %*		*63.7-134*	*10/30/2017*	*10/31/2017 01:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**89.9**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project Number: 2769

TP-RD-B11-01C(01.0-01.5)

K174305-04 (Soil)

Date Sampled
10/25/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
2,4,6-Trinitrotoluene	**140**	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/25/2017	10/26/2017 10:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*84.1 %*		*60-140*	*10/25/2017*	*10/26/2017 10:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**84.1**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-01C(03.0-03.5)

K174305-05 (Soil)

Date Sampled
10/25/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 19:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*96.5 %*		*60-140*	*10/25/2017*	*10/25/2017 19:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**87.2**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-01C(05.0-05.5)

K174305-06 (Soil)

Date Sampled
10/25/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
2,4,6-Trinitrotoluene	**330**	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 00:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.6 %*		*63.7-134*	*10/27/2017*	*10/28/2017 00:58*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**88.8**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-01B(03.0-03.5)

K174305-07 (Soil)

Date Sampled
10/25/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
2,4,6-Trinitrotoluene	**560**	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	**420**	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	**480**	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 20:19	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*92.3 %*		*60-140*	*10/25/2017*	*10/25/2017 20:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**86.9**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-01B(05.0-05.5)

K174305-08 (Soil)

Date Sampled
10/25/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 21:05	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
2,4,6-Trinitrotoluene	**2200**	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	**700**	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	**670**	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/27/2017*	*10/28/2017 01:20*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**86.0**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04A(07.0-07.5)

K174305-09 (Soil)

Date Sampled
10/25/2017 10:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
2,4,6-Trinitrotoluene	**11000**	1100	ug/kg dry	10	10/25/2017	10/26/2017 11:09	EPA 8095	D
PETN	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	**890**	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1000**	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 20:41	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*100 %*		*60-140*	*10/25/2017*	*10/25/2017 20:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**87.9**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-04A(08.5-09.0)

K174305-10 (Soil)

Date Sampled
10/25/2017 10:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 21:27	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
2,4,6-Trinitrotoluene	**25000**	1200	ug/kg dry	10	10/27/2017	10/28/2017 08:09	EPA 8095	D
PETN	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1100**	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1500**	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 01:42	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/27/2017*	*10/28/2017 01:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**85.2**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD102517

K174305-11 (Soil)

Date Sampled
10/25/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
2,4,6-Trinitrotoluene	**220**	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 21:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.8 %*		*60-140*	*10/25/2017*	*10/25/2017 21:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**89.7**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-15(01.0-01.5)

K174305-12 (Soil)

Date Sampled
10/25/2017 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
2,4-Dinitrotoluene	**160**	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 22:10	EPA 8095	
2,4,6-Trinitrotoluene	**150**	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 22:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	**290**	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 22:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	**170**	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/25/2017	10/25/2017 21:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.4 %*		*60-140*	*10/25/2017*	*10/25/2017 21:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**86.5**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-15(03.0-03.5)

K174305-13 (Soil)

Date Sampled
10/25/2017 13:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
2,4-Dinitrotoluene	**170**	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2,4,6-Trinitrotoluene	**160**	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
4-Amino-2,6-dinitrotoluene	**280**	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2-Amino-4,6-dinitrotoluene	**180**	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/25/2017	10/25/2017 22:11	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*99.9 %*		*60-140*	*10/25/2017*	*10/25/2017 22:11*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**87.6**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-15(05.0-05.5)

K174305-14 (Soil)

Date Sampled
10/25/2017 13:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2,6-Dinitrotoluene	**200**	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2,4-Dinitrotoluene	**180**	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
2,4,6-Trinitrotoluene	**46000**	10000	ug/kg dry	100	10/25/2017	10/26/2017 13:42	EPA 8095	D
PETN	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	**940**	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	**730**	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/25/2017	10/25/2017 22:33	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*101 %*		*60-140*	*10/25/2017*	*10/25/2017 22:33*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**96.9**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-15(08.0-08.5)

K174305-15 (Soil)

Date Sampled
10/25/2017 13:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710042**			
Nitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:18	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
2,4,6-Trinitrotoluene	**210**	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	**110**	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/25/2017	10/26/2017 10:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*88.4 %*		*60-140*	*10/25/2017*	*10/26/2017 10:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710043**			
% Solids	**88.4**	0.00	% by Weight	1	10/25/2017	10/26/2017 13:49	SM 2540B	

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Project Number: 2769

FB102317

K174306-01 (Water)

Date Sampled
10/23/2017 14:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710049**			
Nitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:23	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
2,4,6-Trinitrotoluene	**0.19**	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
PETN	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
RDX	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:23	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	
HMX	ND	0.10	ug/L	1	10/28/2017	10/28/2017 22:21	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*110 %*		*60-140*	*10/28/2017*	*10/28/2017 22:21*	*EPA 8095*	

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FB102517

K174306-02 (Water)

Date Sampled
10/25/2017 14:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710049**			
Nitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:31	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
2,4,6-Trinitrotoluene	**0.15**	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	M, X
PETN	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
RDX	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:31	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	
HMX	ND	0.10	ug/L	1	10/28/2017	10/28/2017 23:27	EPA 8095	M, LC, X
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*113 %*		*60-140*	*10/28/2017*	*10/28/2017 23:27*	*EPA 8095*	

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FB102617

K174306-03 (Water)

Date Sampled
10/26/2017 14:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710049**			
Nitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:16	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
PETN	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
RDX	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:16	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:11	EPA 8095	
HMX	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:16	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*114 %*		*60-140*	*10/28/2017*	*10/29/2017 00:11*	*EPA 8095*	

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FB102717

K174306-04 (Water)

Date Sampled
10/26/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710049**			
Nitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:39	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
PETN	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
RDX	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:39	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
Tetryl	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:33	EPA 8095	
HMX	ND	0.10	ug/L	1	10/28/2017	10/29/2017 00:39	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*116 %*		*60-140*	*10/28/2017*	*10/29/2017 00:33*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-16(01.0-01.5)

K174309-01 (Soil)

Date Sampled
10/26/2017 08:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 18:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*83.1 %*		*60-140*	*10/26/2017*	*10/26/2017 18:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**86.4**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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TP-RD-A11-16(03.0-03.5)

K174309-02 (Soil)

Date Sampled
10/26/2017 08:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 19:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*85.9 %*		*60-140*	*10/26/2017*	*10/26/2017 19:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**86.7**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project Number: 2769

TP-RD-A11-16(05.0-05.5)

K174309-03 (Soil)

Date Sampled
10/26/2017 08:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 20:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.4 %*		*60-140*	*10/26/2017*	*10/26/2017 20:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**89.8**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-16(07.0-07.5)

K174309-04 (Soil)

Date Sampled
10/26/2017 08:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*85.5 %*		*60-140*	*10/26/2017*	*10/26/2017 21:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**89.7**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-16(08.0-08.5)

K174309-05 (Soil)

Date Sampled
10/26/2017 08:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 21:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*83.5 %*		*60-140*	*10/26/2017*	*10/26/2017 21:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**88.8**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-03(13.0-13.5)

K174309-06 (Soil)

Date Sampled
10/26/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
2,4,6-Trinitrotoluene	**1000**	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	**130**	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	**210**	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 21:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*88.2 %*		*60-140*	*10/26/2017*	*10/26/2017 21:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**86.7**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-03(14.0-14.5)

K174309-07 (Soil)

Date Sampled
10/26/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710050**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
2,4,6-Trinitrotoluene	**560**	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/29/2017 20:59	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.2 %*		*63.7-134*	*10/27/2017*	*10/29/2017 20:59*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710051**			
% Solids	**90.4**	0.00	% by Weight	1	10/29/2017	10/30/2017 09:59	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-03(15.0-15.5)
K174309-08 (Soil)

Date Sampled
10/26/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
2,4,6-Trinitrotoluene	**600**	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 02:03	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*92.5 %*		*63.7-134*	*10/30/2017*	*10/31/2017 02:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**90.1**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-04(01.0-01.5)

K174309-09 (Soil)

Date Sampled
10/26/2017 10:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:07	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*86.5 %*		*60-140*	*10/26/2017*	*10/26/2017 22:07*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**89.5**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-04(03.0-03.5)

K174309-10 (Soil)

Date Sampled
10/26/2017 10:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 22:29	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*83.9 %*		*60-140*	*10/26/2017*	*10/26/2017 22:29*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**87.6**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-04(05.0-05.5)

K174309-11 (Soil)

Date Sampled
10/26/2017 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:00	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 22:51	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*92.1 %*		*60-140*	*10/26/2017*	*10/26/2017 22:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**86.8**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03A(01.0-01.5)

K174309-12 (Soil)

Date Sampled
10/26/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:22	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/26/2017	10/26/2017 23:12	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*89.8 %*		*60-140*	*10/26/2017*	*10/26/2017 23:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**85.9**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03A(03.0-03.5)

K174309-13 (Soil)

Date Sampled
10/26/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.1 %*		*60-140*	*10/26/2017*	*10/26/2017 23:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**90.1**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-03A(05.0-05.5)

K174309-14 (Soil)

Date Sampled
10/26/2017 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/26/2017 23:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*88.7 %*		*60-140*	*10/26/2017*	*10/26/2017 23:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**92.7**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-17(01.0-01.5)

K174309-15 (Soil)

Date Sampled
10/26/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
2-Nitrotoluene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
3-Nitrotoluene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
4-Nitrotoluene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
Nitroglycerin	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
1,3-Dinitrobenzene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
2,6-Dinitrotoluene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
2,4-Dinitrotoluene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
1,3,5-Trinitrobenzene	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
2,4,6-Trinitrotoluene	**7600**	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	D
PETN	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
RDX	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
4-Amino-2,6-dinitrotoluene	**3000**	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	D
3,5-Dinitroaniline	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	**1800**	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	D
Tetryl	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	
HMX	ND	1200	ug/kg dry	10	10/26/2017	10/27/2017 11:50	EPA 8095	LC
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*97.8 %*		*60-140*	*10/26/2017*	*10/27/2017 11:50*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**85.2**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-17(03.0-03.5)

K174309-16 (Soil)

Date Sampled
10/26/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
2,4,6-Trinitrotoluene	**230**	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
PETN	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
RDX	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
4-Amino-2,6-dinitrotoluene	**190**	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	LC
2-Amino-4,6-dinitrotoluene	**150**	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	
HMX	ND	130	ug/kg dry	1	10/26/2017	10/27/2017 12:12	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.5 %*		*60-140*	*10/26/2017*	*10/27/2017 12:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**76.5**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-17(05.0-05.5)

K174309-17 (Soil)

Date Sampled
10/26/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/26/2017	10/27/2017 01:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.2 %*		*60-140*	*10/26/2017*	*10/27/2017 01:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**86.3**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-17(07.0-07.5)

K174309-18 (Soil)

Date Sampled
10/26/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710044**			
Nitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/26/2017	10/27/2017 01:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*97.1 %*		*60-140*	*10/26/2017*	*10/27/2017 01:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710046**			
% Solids	**89.6**	0.00	% by Weight	1	10/26/2017	10/27/2017 15:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-15A(01.0-01.5)

K174310-01 (Soil)

Date Sampled
10/27/2017 08:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*10/27/2017*	*10/28/2017 02:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**90.0**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-15A(03.0-03.5)

K174310-02 (Soil)

Date Sampled
10/27/2017 08:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/27/2017 22:32	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 02:46	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*108 %*		*63.7-134*	*10/27/2017*	*10/28/2017 02:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**94.8**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-15A(05.0-05.5)

K174310-03 (Soil)

Date Sampled
10/27/2017 08:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/27/2017 22:54	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/27/2017	10/27/2017 22:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 03:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*115 %*		*63.7-134*	*10/27/2017*	*10/28/2017 03:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**98.4**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-01C(01.0-01.5)

K174310-04 (Soil)

Date Sampled
10/27/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
2,4-Dinitrotoluene	**310**	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
2,4,6-Trinitrotoluene	**280**	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	X
PETN	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	**490**	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	**370**	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/27/2017 23:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/27/2017*	*10/27/2017 23:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**85.5**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project Number: 2769

TP-RD-C11-01C(03.0-03.5)

K174310-05 (Soil)

Date Sampled
10/27/2017 09:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 03:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*10/27/2017*	*10/28/2017 03:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**85.8**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-01C(05.0-05.5)

K174310-06 (Soil)

Date Sampled
10/27/2017 09:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/27/2017 23:37	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 03:51	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*10/27/2017*	*10/28/2017 03:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**91.4**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-01C(06.0-06.5)

K174310-07 (Soil)

Date Sampled
10/27/2017 09:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 04:13	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*10/27/2017*	*10/28/2017 04:13*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**89.2**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-02A(01.0-01.5)

K174310-08 (Soil)

Date Sampled
10/27/2017 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 00:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*10/27/2017*	*10/28/2017 04:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**81.7**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-02A(03.0-03.5)

K174310-09 (Soil)

Date Sampled
10/27/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 00:42	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 00:42	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 04:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*		*63.7-134*	*10/27/2017*	*10/28/2017 04:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**80.4**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C11-02A(05.0-05.5)

K174310-10 (Soil)

Date Sampled
10/27/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*10/27/2017*	*10/28/2017 05:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**91.3**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-02A(06.0-06.5)

K174310-11 (Soil)

Date Sampled
10/27/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
2,4,6-Trinitrotoluene	**410**	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 05:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.8 %*		*63.7-134*	*10/27/2017*	*10/28/2017 05:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**94.0**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-04(01.0-01.5)

K174310-12 (Soil)

Date Sampled
10/27/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 01:47	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
Nitroglycerin	**120**	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
2,4,6-Trinitrotoluene	**210**	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:00	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 01:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*		*63.7-134*	*10/27/2017*	*10/28/2017 06:00*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**88.4**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-04(03.0-03.5)

K174310-13 (Soil)

Date Sampled
10/27/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/27/2017	10/28/2017 06:43	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*10/27/2017*	*10/28/2017 06:43*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**94.0**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-04(05.0-05.5)

K174310-14 (Soil)

Date Sampled
10/27/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
PETN	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
RDX	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
HMX	ND	100	ug/kg dry	1	10/27/2017	10/28/2017 07:05	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*10/27/2017*	*10/28/2017 07:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**96.7**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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TP-RD-C11-04(06.0-06.5)

K174310-15 (Soil)

Date Sampled
10/27/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710047**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/28/2017 07:26	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.3 %*		*63.7-134*	*10/27/2017*	*10/28/2017 07:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**80.7**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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Project Number: 2769

BD102717

K174310-16 (Soil)

Date Sampled
10/27/2017 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Classical Chemistry Parameters					**Preparation Batch: K710048**			
% Solids	**85.9**	0.00	% by Weight	1	10/27/2017	10/29/2017 18:56	SM 2540B	

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BD102717

K174310-16RE1 (Soil)

Date Sampled
10/27/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710050**			
Nitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
2,4-Dinitrotoluene	**420**	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
2,4,6-Trinitrotoluene	**290**	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	**450**	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	**340**	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/27/2017	10/29/2017 20:36	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*91.3 %*		*63.7-134*	*10/27/2017*	*10/29/2017 20:36*	*EPA 8095*	

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TP-RD-B13-03(01.0-01.5)

K174401-01 (Soil)

Date Sampled
10/30/2017 10:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 17:19	EPA 8095	M, LC
Surrogate: 2,2'-Dinitrobiphenyl		*85.5 %*		*63.7-134*	*10/30/2017*	*10/30/2017 17:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**84.3**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-03(03.0-03.5)

K174401-02 (Soil)

Date Sampled
10/30/2017 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:25	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*84.2 %*		*63.7-134*	*10/30/2017*	*10/30/2017 18:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**93.1**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-03(05.0-05.5)

K174401-03 (Soil)

Date Sampled
10/30/2017 10:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 18:46	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*89.8 %*		*63.7-134*	*10/30/2017*	*10/30/2017 18:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**91.3**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-03(07.0-07.5)

K174401-04 (Soil)

Date Sampled
10/30/2017 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:08	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*90.0 %*		*63.7-134*	*10/30/2017*	*10/30/2017 19:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**82.8**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-04(01.0-01.5)

K174401-05 (Soil)

Date Sampled
10/30/2017 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 19:30	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*87.8 %*		*63.7-134*	*10/30/2017*	*10/30/2017 19:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**82.8**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-04(03.0-03.5)

K174401-06 (Soil)

Date Sampled
10/30/2017 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 19:52	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*89.9 %*		*63.7-134*	*10/30/2017*	*10/30/2017 19:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**87.4**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-04(05.0-05.5)

K174401-07 (Soil)

Date Sampled
10/30/2017 11:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:36	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*88.0 %*		*63.7-134*	*10/30/2017*	*10/30/2017 20:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**94.3**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-04(07.0-07.5)

K174401-08 (Soil)

Date Sampled
10/30/2017 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 20:57	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*88.4 %*		*63.7-134*	*10/30/2017*	*10/30/2017 20:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**92.8**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-02(01.0-01.5)

K174401-09 (Soil)

Date Sampled
10/30/2017 14:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
PETN	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
RDX	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	
HMX	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 21:19	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*92.8 %*		*63.7-134*	*10/30/2017*	*10/30/2017 21:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**76.4**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-02(03.0-03.5)

K174401-10 (Soil)

Date Sampled
10/30/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/30/2017	10/30/2017 21:41	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*90.1 %*		*63.7-134*	*10/30/2017*	*10/30/2017 21:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**80.7**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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TP-RD-B13-02(05.0-05.5)

K174401-11 (Soil)

Date Sampled
10/30/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:03	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*88.7 %*		*63.7-134*	*10/30/2017*	*10/30/2017 22:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**93.8**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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TP-RD-B13-02(07.0-07.5)

K174401-12 (Soil)

Date Sampled
10/30/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	M
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	M
HMX	ND	110	ug/kg dry	1	10/30/2017	10/30/2017 22:24	EPA 8095	LC, M
Surrogate: 2,2'-Dinitrobiphenyl		*87.2 %*		*63.7-134*	*10/30/2017*	*10/30/2017 22:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**93.6**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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TP-RD-B13-01(01.0-01.5)

K174401-13 (Soil)

Date Sampled
10/30/2017 14:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
PETN	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
RDX	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	
HMX	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:30	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*94.0 %*		*63.7-134*	*10/30/2017*	*10/30/2017 23:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**74.9**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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TP-RD-B13-01(03.0-03.5)

K174401-14 (Soil)

Date Sampled
10/30/2017 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
PETN	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
RDX	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	
HMX	ND	130	ug/kg dry	1	10/30/2017	10/30/2017 23:52	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*93.0 %*		*63.7-134*	*10/30/2017*	*10/30/2017 23:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**77.6**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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TP-RD-B13-01(05.0-05.5)

K174401-15 (Soil)

Date Sampled
10/30/2017 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
PETN	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
RDX	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	
HMX	ND	120	ug/kg dry	1	10/30/2017	10/31/2017 00:36	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*92.6 %*		*63.7-134*	*10/30/2017*	*10/31/2017 00:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**83.8**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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TP-RD-B13-01(07.0-07.5)

K174401-16 (Soil)

Date Sampled
10/30/2017 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 00:57	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*86.5 %*		*63.7-134*	*10/30/2017*	*10/31/2017 00:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**93.8**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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BD103017

K174401-17 (Soil)

Date Sampled
10/30/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K710052**			
Nitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
PETN	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
RDX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	
HMX	ND	110	ug/kg dry	1	10/30/2017	10/31/2017 01:19	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*85.9 %*		*63.7-134*	*10/30/2017*	*10/31/2017 01:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K710053**			
% Solids	**93.7**	0.00	% by Weight	1	10/30/2017	10/31/2017 11:13	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-B13-1-1(12.0-12.5)

K174402-01 (Soil)

Date Sampled
11/01/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:32	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
2,4,6-Trinitrotoluene	**83000**	12000	ug/kg dry	100	11/01/2017	11/02/2017 19:08	EPA 8095	D, HC
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	**690**	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	**660**	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.5 %*		*63.7-134*	*11/01/2017*	*11/01/2017 17:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**85.4**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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TP-RD-B13-08(01.0-01.5)

K174402-02 (Soil)

Date Sampled
11/01/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:55	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 17:54	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.6 %*		*63.7-134*	*11/01/2017*	*11/01/2017 17:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**82.0**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-B13-08(03.0-03.5)

K174402-03 (Soil)

Date Sampled
11/01/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:03	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.6 %*		*63.7-134*	*11/01/2017*	*11/01/2017 19:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**86.9**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-B13-08(05.0-05.5)

K174402-04 (Soil)

Date Sampled
11/01/2017 10:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:26	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 19:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*92.3 %*		*63.7-134*	*11/01/2017*	*11/01/2017 19:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**92.7**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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Project Number: 2769

TP-RD-B13-08(07.0-07.5)

K174402-05 (Soil)

Date Sampled
11/01/2017 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 19:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*90.5 %*		*63.7-134*	*11/01/2017*	*11/01/2017 19:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**84.4**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-B13-09(01.0-01.5)

K174402-06 (Soil)

Date Sampled
11/01/2017 10:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:11	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	**380**	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	**310**	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.8 %*		*63.7-134*	*11/01/2017*	*11/01/2017 20:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**86.7**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B13-09(03.0-03.5)

K174402-07 (Soil)

Date Sampled
11/01/2017 10:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:56	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	**320**	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	**270**	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 20:52	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*99.7 %*		*63.7-134*	*11/01/2017*	*11/01/2017 20:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**84.4**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-B13-09(05.0-05.5)

K174402-08 (Soil)

Date Sampled
11/01/2017 10:50

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:18	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/01/2017	11/01/2017 21:14	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*88.5 %*		*63.7-134*	*11/01/2017*	*11/01/2017 21:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**93.1**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-09(07.0-07.5)

K174402-09 (Soil)

Date Sampled
11/01/2017 10:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
2,4,6-Trinitrotoluene	**210**	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 21:36	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*93.9 %*		*63.7-134*	*11/01/2017*	*11/01/2017 21:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**95.5**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-A13-01A(01.0-01.5)

K174402-10 (Soil)

Date Sampled
11/01/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
2-Nitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
3-Nitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
4-Nitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
Nitroglycerin	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
1,3-Dinitrobenzene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
2,6-Dinitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:03	EPA 8095	
2,4-Dinitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
2,4,6-Trinitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
PETN	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
RDX	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
3,5-Dinitroaniline	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
Tetryl	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	
HMX	ND	140	ug/kg dry	1	11/01/2017	11/01/2017 22:00	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*91.5 %*		*63.7-134*	*11/01/2017*	*11/01/2017 22:00*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**73.0**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-A13-01A(03.0-03.5)

K174402-11 (Soil)

Date Sampled
11/01/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
PETN	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:58	EPA 8095	
RDX	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:57	EPA 8095	
HMX	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 12:58	EPA 8095	LC, X
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*11/01/2017*	*11/02/2017 12:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**78.8**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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TP-RD-A13-01A(05.0-05.5)

K174402-12 (Soil)

Date Sampled
11/01/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:26	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 22:22	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*92.9 %*		*63.7-134*	*11/01/2017*	*11/01/2017 22:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**85.1**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-A13-01A(07.0-07.5)

K174402-13 (Soil)

Date Sampled
11/01/2017 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 22:44	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*97.5 %*		*63.7-134*	*11/01/2017*	*11/01/2017 22:44*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**95.3**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-A13-01A(08.0-08.5)

K174402-14 (Soil)

Date Sampled
11/01/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/01/2017	11/01/2017 23:06	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*97.6 %*		*63.7-134*	*11/01/2017*	*11/01/2017 23:06*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**95.4**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-05(01.0-01.5)

K174402-15 (Soil)

Date Sampled
11/01/2017 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:29	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.7 %*		*63.7-134*	*11/01/2017*	*11/01/2017 23:29*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**80.6**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-A12-05(03.0-03.5)

K174402-16 (Soil)

Date Sampled
11/01/2017 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:56	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/01/2017	11/01/2017 23:51	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*		*63.7-134*	*11/01/2017*	*11/01/2017 23:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**82.5**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A12-05(05.0-05.5)

K174402-17 (Soil)

Date Sampled
11/01/2017 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 00:13	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*87.9 %*		*63.7-134*	*11/01/2017*	*11/02/2017 00:13*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**93.8**	0.00	% by Weight	1	11/01/2017	11/02/2017 11:32	SM 2540B	

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TP-RD-A12-05(07.0-07.5)

K174402-18 (Soil)

Date Sampled
11/01/2017 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 14:43	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*108 %*		*63.7-134*	*11/01/2017*	*11/02/2017 14:43*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**95.5**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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Project Number: 2769

TP-RD-A12-05(08.0-08.5)

K174402-19 (Soil)

Date Sampled
11/01/2017 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:10	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 15:09	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*108 %*		*63.7-134*	*11/01/2017*	*11/02/2017 15:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**95.8**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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TP-RD-B13-10(01.0-01.5)

K174402-20 (Soil)

Date Sampled
11/01/2017 14:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
2,4-Dinitrotoluene	**160**	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
2,4,6-Trinitrotoluene	**1000**	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:36	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	**480**	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	**160**	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 15:35	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*113 %*		*63.7-134*	*11/01/2017*	*11/02/2017 15:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**92.0**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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TP-RD-B13-10(03.0-03.5)

K174402-21 (Soil)

Date Sampled
11/01/2017 14:35

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
2-Nitrotoluene	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
3-Nitrotoluene	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
4-Nitrotoluene	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
Nitroglycerin	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
1,3-Dinitrobenzene	**1200**	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	D
2,6-Dinitrotoluene	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
2,4-Dinitrotoluene	**4200**	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	D
1,3,5-Trinitrobenzene	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
2,4,6-Trinitrotoluene	**7900**	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	D
PETN	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
RDX	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	**2600**	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	D
3,5-Dinitroaniline	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	**2600**	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	D
Tetryl	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	
HMX	ND	1200	ug/kg dry	10	11/01/2017	11/02/2017 16:09	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*112 %*		*63.7-134*	*11/01/2017*	*11/02/2017 16:09*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**86.8**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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TP-RD-B13-10(05.0-05.5)

K174402-22 (Soil)

Date Sampled
11/01/2017 14:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
2,4,6-Trinitrotoluene	**2400**	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	**170**	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	**150**	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 16:42	EPA 8095	LC
Surrogate: 2,2´-Dinitrobiphenyl		*116 %*		*63.7-134*	*11/01/2017*	*11/02/2017 16:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**94.6**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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TP-RD-B13-10(07.0-07.5)

K174402-23 (Soil)

Date Sampled
11/01/2017 14:35

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:41	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
2,4,6-Trinitrotoluene	**440**	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	HC
PETN	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:41	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	**130**	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:40	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/01/2017	11/02/2017 17:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*115 %*		*63.7-134*	*11/01/2017*	*11/02/2017 17:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**95.3**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-10(08.0-08.5)

K174402-24 (Soil)

Date Sampled
11/01/2017 14:35

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
2,4,6-Trinitrotoluene	**430**	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	HC
PETN	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:11	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/01/2017	11/02/2017 18:11	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*113 %*		*63.7-134*	*11/01/2017*	*11/02/2017 18:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**94.7**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD110117

K174402-25 (Soil)

Date Sampled
11/01/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711001**			
Nitrobenzene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
PETN	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:41	EPA 8095	
RDX	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:39	EPA 8095	
HMX	ND	130	ug/kg dry	1	11/01/2017	11/02/2017 18:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*110 %*		*63.7-134*	*11/01/2017*	*11/02/2017 18:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711002**			
% Solids	**78.4**	0.00	% by Weight	1	11/01/2017	11/03/2017 11:12	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

FB103017

K174403-01 (Water)

Date Sampled
10/30/2017 15:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711006**			
Nitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
PETN	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
RDX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	
Tetryl	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:15	EPA 8095	
HMX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 19:56	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*115 %*		*60-140*	*11/04/2017*	*11/04/2017 20:15*	*EPA 8095*	

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Project Number: 2769

FB110117

K174403-02 (Water)

Date Sampled
11/01/2017 11:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711006**			
Nitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
PETN	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
RDX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	
Tetryl	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:37	EPA 8095	
HMX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 20:19	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*115 %*		*60-140*	*11/04/2017*	*11/04/2017 20:37*	*EPA 8095*	

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Project Number: 2769

FB110217

K174403-03 (Water)

Date Sampled
11/02/2017 15:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711006**			
Nitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:24	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
PETN	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
RDX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:24	EPA 8095	LC
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:24	EPA 8095	
Tetryl	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:42	EPA 8095	
HMX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:24	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*		*60-140*	*11/04/2017*	*11/04/2017 21:42*	*EPA 8095*	

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Project Number: 2769

FB110317

K174403-04 (Water)

Date Sampled
11/03/2017 08:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711006**			
Nitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:46	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
PETN	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
RDX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:46	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:46	EPA 8095	
Tetryl	ND	0.10	ug/L	1	11/04/2017	11/04/2017 22:04	EPA 8095	
HMX	ND	0.10	ug/L	1	11/04/2017	11/04/2017 21:46	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*114 %*		*60-140*	*11/04/2017*	*11/04/2017 22:04*	*EPA 8095*	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A13-02(01.0-01.5)

K174404-01 (Soil)

Date Sampled
11/02/2017 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:23	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*91.8 %*		*63.7-134*	*11/02/2017*	*11/03/2017 02:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**83.7**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A13-02(03.0-03.5)

K174404-02 (Soil)

Date Sampled
11/02/2017 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:56	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 02:50	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.4 %*		*63.7-134*	*11/02/2017*	*11/03/2017 02:50*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**83.3**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A13-02(05.0-05.5)

K174404-03 (Soil)

Date Sampled
11/02/2017 07:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 03:18	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*		*63.7-134*	*11/02/2017*	*11/03/2017 03:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**81.6**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A13-02(07.0-07.5)

K174404-04 (Soil)

Date Sampled
11/02/2017 07:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 03:45	EPA 8095	LC, M
Surrogate: 2,2'-Dinitrobiphenyl		*97.7 %*		*63.7-134*	*11/02/2017*	*11/03/2017 03:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**90.6**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A13-02(08.0-08.5)

K174404-05 (Soil)

Date Sampled
11/02/2017 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:06	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.0 %*		*63.7-134*	*11/02/2017*	*11/03/2017 05:06*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**91.2**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-R-A13-625-4(08.0-08.5)

K174404-06 (Soil)

Date Sampled
11/02/2017 08:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 05:34	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.6 %*		*63.7-134*	*11/02/2017*	*11/03/2017 05:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**93.7**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-04(01.0-01.5)

K174404-09 (Soil)

Date Sampled
11/02/2017 09:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
Nitroglycerin	**550**	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	**150**	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	**120**	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:28	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*11/02/2017*	*11/03/2017 06:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**81.3**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-04(03.0-03.5)

K174404-10 (Soil)

Date Sampled
11/02/2017 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	**200**	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	**140**	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 06:55	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*99.8 %*		*63.7-134*	*11/02/2017*	*11/03/2017 06:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**82.9**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-04(05.0-05.5)

K174404-11 (Soil)

Date Sampled
11/02/2017 09:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:22	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*98.4 %*		*63.7-134*	*11/02/2017*	*11/03/2017 07:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**85.7**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-04(07.0-07.5)

K174404-12 (Soil)

Date Sampled
11/02/2017 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:59	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
2,4,6-Trinitrotoluene	**320**	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:59	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
2-Amino-4,6-dinitrotoluene	**140**	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 07:49	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*98.5 %*		*63.7-134*	*11/02/2017*	*11/03/2017 07:49*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**86.9**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project Number: 2769

TP-RD-B12-04(09.0-09.5)

K174404-13 (Soil)

Date Sampled
11/02/2017 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 08:17	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*11/02/2017*	*11/03/2017 08:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**90.9**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project Number: 2769

TP-RD-B12-05(01.0-01.5)

K174404-14 (Soil)

Date Sampled
11/02/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
Nitroglycerin	**150**	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:54	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 08:44	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*11/02/2017*	*11/03/2017 08:44*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**82.7**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-05(03.0-03.5)

K174404-15 (Soil)

Date Sampled
11/02/2017 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:11	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*11/02/2017*	*11/03/2017 09:11*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**86.1**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-05(05.0-05.5)

K174404-16 (Soil)

Date Sampled
11/02/2017 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
Nitroglycerin	**120**	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/02/2017	11/03/2017 09:33	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*11/02/2017*	*11/03/2017 09:33*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**86.7**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-05(07.0-07.5)

K174404-17 (Soil)

Date Sampled
11/02/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 09:55	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*98.2 %*		*63.7-134*	*11/02/2017*	*11/03/2017 09:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**96.9**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-05(09.0-09.5)

K174404-18 (Soil)

Date Sampled
11/02/2017 09:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/02/2017	11/03/2017 10:18	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*93.6 %*		*63.7-134*	*11/02/2017*	*11/03/2017 10:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**96.0**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project Number: 2769

BD110217

K174404-19 (Soil)

Date Sampled
11/02/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 11:46	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*93.2 %*		*63.7-134*	*11/02/2017*	*11/03/2017 11:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**91.0**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project Number: 2769

TP-RD-B12-03(16.5-17.0)

K174404-20 (Soil)

Date Sampled
11/02/2017 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:18	EPA 8095	
1,3,5-Trinitrobenzene	**120**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
2,4,6-Trinitrotoluene	**790**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:18	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	**110**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:09	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*11/02/2017*	*11/03/2017 12:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**90.0**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-03(17.5-18.0)

K174404-21 (Soil)

Date Sampled
11/02/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
2,4,6-Trinitrotoluene	**660**	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 18:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:00	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.3 %*		*60-140*	*11/06/2017*	*11/06/2017 19:00*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**89.6**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-03(18.5-19.0)

K174404-22 (Soil)

Date Sampled
11/02/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:40	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
2,4,6-Trinitrotoluene	**490**	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	**120**	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	**120**	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:23	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*11/07/2017*	*11/08/2017 00:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**88.8**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-A12-06(03.0-03.5)

K174404-23 (Soil)

Date Sampled
11/02/2017 14:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
2,4,6-Trinitrotoluene	**2300**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	**480**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	**430**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:31	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*11/02/2017*	*11/03/2017 12:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**89.8**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-A12-06(05.0-05.5)

K174404-24 (Soil)

Date Sampled
11/02/2017 14:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
1,3,5-Trinitrobenzene	**140**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
2,4,6-Trinitrotoluene	**1700**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:04	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	**210**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	**280**	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 12:53	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*11/02/2017*	*11/03/2017 12:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**90.7**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-07(01.0-01.5)

K174404-25 (Soil)

Date Sampled
11/02/2017 14:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:15	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*97.1 %*		*63.7-134*	*11/02/2017*	*11/03/2017 13:15*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**87.6**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-07(03.0-03.5)

K174404-26 (Soil)

Date Sampled
11/02/2017 14:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 13:38	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.7 %*		*63.7-134*	*11/02/2017*	*11/03/2017 13:38*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**88.3**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-07(05.0-05.5)

K174404-27 (Soil)

Date Sampled
11/02/2017 14:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:00	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*94.0 %*		*63.7-134*	*11/02/2017*	*11/03/2017 14:00*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**90.8**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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TP-RD-B12-07(07.0-07.5)

K174404-28 (Soil)

Date Sampled
11/02/2017 14:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 14:22	EPA 8095	M, LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.8 %*		*63.7-134*	*11/02/2017*	*11/03/2017 14:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**91.6**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-07(09.0-09.5)

K174404-29 (Soil)

Date Sampled
11/02/2017 14:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 15:52	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*82.8 %*		*63.7-134*	*11/02/2017*	*11/03/2017 15:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**90.6**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-07(10.0-10.5)

K174404-30 (Soil)

Date Sampled
11/02/2017 14:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:14	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*81.7 %*		*63.7-134*	*11/02/2017*	*11/03/2017 16:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**91.8**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD110217A

K174404-31 (Soil)

Date Sampled
11/02/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711003**			
Nitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/02/2017	11/03/2017 16:37	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*76.2 %*		*63.7-134*	*11/02/2017*	*11/03/2017 16:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711005**			
% Solids	**91.6**	0.00	% by Weight	1	11/03/2017	11/05/2017 13:19	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-18(01.0-01.5)

K174405-01 (Soil)

Date Sampled
11/03/2017 08:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 00:02	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	M
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 00:02	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	**300**	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	**120**	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/03/2017 23:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 00:02	EPA 8095	M
Surrogate: 2,2´-Dinitrobiphenyl		*101 %*		*63.7-134*	*11/03/2017*	*11/03/2017 23:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**87.5**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-18(03.0-03.5)

K174405-02 (Soil)

Date Sampled
11/03/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:09	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
2,4,6-Trinitrotoluene	**6800**	1200	ug/kg dry	10	11/03/2017	11/04/2017 14:18	EPA 8095	D
PETN	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:09	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	**530**	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
2-Amino-4,6-dinitrotoluene	**280**	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:04	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 01:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*11/03/2017*	*11/04/2017 01:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**87.0**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-18(05.0-05.5)

K174405-03 (Soil)

Date Sampled
11/03/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:40	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 14:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.2 %*		*63.7-134*	*11/03/2017*	*11/04/2017 14:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**88.1**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-18(07.0-07.5)

K174405-04 (Soil)

Date Sampled
11/03/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:55	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:55	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:48	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 01:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*11/03/2017*	*11/04/2017 01:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**91.2**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-18(08.0-08.5)

K174405-05 (Soil)

Date Sampled
11/03/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
2,4,6-Trinitrotoluene	**220**	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 02:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*11/03/2017*	*11/04/2017 02:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**88.9**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-20A(01.0-01.5)

K174405-06 (Soil)

Date Sampled
11/03/2017 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:39	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:39	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:32	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 02:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*11/03/2017*	*11/04/2017 02:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**86.5**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-20A(03.0-03.5)

K174405-07 (Soil)

Date Sampled
11/03/2017 09:05

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
2,4,6-Trinitrotoluene	**1300**	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:24	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:24	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:17	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.8 %*		*63.7-134*	*11/03/2017*	*11/04/2017 03:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**82.8**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-20A(05.0-05.5)

K174405-08 (Soil)

Date Sampled
11/03/2017 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:47	EPA 8095	
2,4,6-Trinitrotoluene	**120**	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	**170**	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:39	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 03:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*11/03/2017*	*11/04/2017 03:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**82.1**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-20A(07.0-07.5)

K174405-09 (Soil)

Date Sampled
11/03/2017 09:05

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:09	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*11/03/2017*	*11/04/2017 04:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**92.2**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-20A(08.0-08.5)

K174405-10 (Soil)

Date Sampled
11/03/2017 09:05

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*11/03/2017*	*11/04/2017 04:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**90.5**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-19(01.0-01.5)

K174405-11 (Soil)

Date Sampled
11/03/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:53	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:53	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1100**	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	**980**	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 04:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*11/03/2017*	*11/04/2017 04:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**87.7**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-19(03.0-03.5)

K174405-12 (Soil)

Date Sampled
11/03/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:16	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
2,4,6-Trinitrotoluene	**900**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:16	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	**800**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	**740**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:07	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:16	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*11/03/2017*	*11/04/2017 05:07*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**89.1**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-19(05.0-05.5)

K174405-13 (Soil)

Date Sampled
11/03/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:38	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:38	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
2,4,6-Trinitrotoluene	**1300**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:38	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	**480**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	**550**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:38	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*11/03/2017*	*11/04/2017 05:29*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**91.5**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-19(07.0-07.5)

K174405-14 (Soil)

Date Sampled
11/03/2017 09:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
2,4,6-Trinitrotoluene	**24000**	11000	ug/kg dry	100	11/03/2017	11/04/2017 15:02	EPA 8095	D
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 06:00	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	**300**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	**270**	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 05:51	EPA 8095	
HMX	**110**	110	ug/kg dry	1	11/03/2017	11/04/2017 06:00	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*		*63.7-134*	*11/03/2017*	*11/04/2017 05:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**94.8**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-21(01.0-01.5)

K174405-15 (Soil)

Date Sampled
11/03/2017 10:17

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:23	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:23	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:23	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:13	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*11/03/2017*	*11/04/2017 06:13*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**85.6**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-21(03.0-03.5)

K174405-16 (Soil)

Date Sampled
11/03/2017 10:17

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:45	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:35	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/03/2017	11/04/2017 06:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*11/03/2017*	*11/04/2017 06:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**84.7**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-21(05.0-05.5)

K174405-17 (Soil)

Date Sampled
11/03/2017 10:17

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:14	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*11/03/2017*	*11/04/2017 08:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**88.8**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-21(07.0-07.5)

K174405-18 (Soil)

Date Sampled
11/03/2017 10:17

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:37	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:37	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:37	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*11/03/2017*	*11/04/2017 08:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**91.0**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-21(09.0-09.5)

K174405-19 (Soil)

Date Sampled
11/03/2017 10:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:59	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 08:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*11/03/2017*	*11/04/2017 08:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**89.6**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD110317

K174405-20 (Soil)

Date Sampled
11/03/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:21	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:21	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:21	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	**320**	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	**140**	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*11/03/2017*	*11/04/2017 09:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**87.8**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-06(01.0-01.5)

K174405-21 (Soil)

Date Sampled
11/03/2017 10:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:43	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	X, M
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:43	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 09:30	EPA 8095	M
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*11/03/2017*	*11/04/2017 09:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**88.4**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-06(03.0-03.5)

K174405-22 (Soil)

Date Sampled
11/03/2017 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:50	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:50	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:50	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 10:36	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*11/03/2017*	*11/04/2017 10:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**87.2**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-06(05.0-05.5)

K174405-23 (Soil)

Date Sampled
11/03/2017 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:35	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
2,4-Dinitrotoluene	**110**	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:35	EPA 8095	
2,4,6-Trinitrotoluene	**940**	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:35	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	**940**	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	**660**	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*104 %*		*63.7-134*	*11/03/2017*	*11/04/2017 11:20*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**89.0**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-06(07.0-07.5)

K174405-24 (Soil)

Date Sampled
11/03/2017 10:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
2,4,6-Trinitrotoluene	**29000**	11000	ug/kg dry	100	11/03/2017	11/04/2017 16:10	EPA 8095	D
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:58	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	**190**	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	**180**	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 11:42	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*		*63.7-134*	*11/03/2017*	*11/04/2017 11:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**90.2**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-06(09.0-09.5)

K174405-25 (Soil)

Date Sampled
11/03/2017 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711004**			
Nitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:50	EPA 8095	
2,4,6-Trinitrotoluene	**160**	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	**110**	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/03/2017	11/04/2017 15:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.2 %*		*63.7-134*	*11/03/2017*	*11/04/2017 15:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711007**			
% Solids	**89.9**	0.00	% by Weight	1	11/04/2017	11/05/2017 14:32	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-07(03.0-03.5)

K174501-01 (Soil)

Date Sampled
11/06/2017 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:30	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*86.0 %*		*60-140*	*11/06/2017*	*11/06/2017 17:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**86.1**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-16(01.0-01.5)

K174501-02 (Soil)

Date Sampled
11/06/2017 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:47	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 17:52	EPA 8095	M, LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.8 %*		*60-140*	*11/06/2017*	*11/06/2017 17:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**85.1**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-19A(07.0-07.5)

K174501-03 (Soil)

Date Sampled
11/06/2017 11:10

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
2,4,6-Trinitrotoluene	**130**	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:16	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 19:23	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*88.7 %*		*60-140*	*11/06/2017*	*11/06/2017 19:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**94.8**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-16(02.0-02.5)

K174501-04 (Soil)

Date Sampled
11/06/2017 11:25

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:38	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:38	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:38	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 19:45	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*88.2 %*		*60-140*	*11/06/2017*	*11/06/2017 19:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**84.2**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-19A(08.0-08.5)

K174501-05 (Soil)

Date Sampled
11/06/2017 11:35

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:00	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
2,4,6-Trinitrotoluene	**4900**	1000	ug/kg dry	10	11/06/2017	11/07/2017 10:40	EPA 8095	D
PETN	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:00	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:00	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 20:07	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*89.6 %*		*60-140*	*11/06/2017*	*11/06/2017 20:07*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**95.8**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B11-07(01.0-01.5)

K174501-06 (Soil)

Date Sampled
11/06/2017 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:44	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:44	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 20:52	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.3 %*		*60-140*	*11/06/2017*	*11/06/2017 20:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**87.2**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B10-15(01.0-01.5)

K174501-07 (Soil)

Date Sampled
11/06/2017 08:17

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:14	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.6 %*		*60-140*	*11/06/2017*	*11/06/2017 21:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**85.7**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B10-15(02.0-02.5)

K174501-08 (Soil)

Date Sampled
11/06/2017 08:17

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:28	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 21:37	EPA 8095	LC, M
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.2 %*		*60-140*	*11/06/2017*	*11/06/2017 21:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**84.4**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-20C(01.0-01.5)

K174501-12 (Soil)

Date Sampled
11/06/2017 09:41

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/06/2017 22:43	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*94.6 %*		*60-140*	*11/06/2017*	*11/06/2017 22:43*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**87.5**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-A11-20C(03.0-03.5)

K174501-13 (Soil)

Date Sampled
11/06/2017 09:41

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 22:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 22:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 22:56	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:05	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.1 %*		*60-140*	*11/06/2017*	*11/06/2017 23:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**84.6**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-19(08.0-08.5)

K174501-15 (Soil)

Date Sampled
11/06/2017 10:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:18	EPA 8095	
2,4,6-Trinitrotoluene	**14000**	2100	ug/kg dry	20	11/06/2017	11/07/2017 11:02	EPA 8095	D
PETN	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	**490**	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	**380**	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:18	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/06/2017	11/06/2017 23:28	EPA 8095	LC
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*103 %*		*60-140*	*11/06/2017*	*11/06/2017 23:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**95.8**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

BD110617

K174501-16 (Soil)

Date Sampled
11/06/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/06/2017 23:40	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.7 %*		*60-140*	*11/06/2017*	*11/06/2017 23:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**83.9**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-A11-18A(01.0-01.5)

K174501-17 (Soil)

Date Sampled
11/06/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 00:12	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*92.6 %*		*60-140*	*11/06/2017*	*11/07/2017 00:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**88.3**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project Number: 2769

TP-RD-A11-18A(03.0-03.5)

K174501-18 (Soil)

Date Sampled
11/06/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:41	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.6 %*		*60-140*	*11/06/2017*	*11/07/2017 01:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**91.3**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project Number: 2769

TP-RD-A11-19A(01.0-01.5)

K174501-20 (Soil)

Date Sampled
11/06/2017 10:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 01:52	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:03	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*89.9 %*		*60-140*	*11/06/2017*	*11/07/2017 02:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**94.1**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-A11-19A(03.0-03.5)

K174501-21 (Soil)

Date Sampled
11/06/2017 10:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:25	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*87.9 %*		*60-140*	*11/06/2017*	*11/07/2017 02:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**94.8**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-A11-19A(05.0-05.5)

K174501-22 (Soil)

Date Sampled
11/06/2017 10:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:48	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*90.0 %*		*60-140*	*11/06/2017*	*11/07/2017 02:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**92.6**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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Project Number: 2769

TP-RD-C11-02B(01.0-01.5)

K174501-23 (Soil)

Date Sampled
11/06/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
Nitroglycerin	**130**	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
2,4,6-Trinitrotoluene	**110**	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:57	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 02:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:09	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*92.9 %*		*60-140*	*11/06/2017*	*11/07/2017 03:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**88.0**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-C11-02B(03.0-03.5)

K174501-24 (Soil)

Date Sampled
11/06/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/06/2017	11/07/2017 03:32	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*102 %*		*60-140*	*11/06/2017*	*11/07/2017 03:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**94.2**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-C11-02B(05.0-05.5)

K174501-25 (Soil)

Date Sampled
11/06/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:40	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 03:54	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*109 %*		*60-140*	*11/06/2017*	*11/07/2017 03:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**85.0**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-C11-02B(07.0-07.5)

K174501-26 (Soil)

Date Sampled
11/06/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
PETN	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
RDX	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	
HMX	ND	130	ug/kg dry	1	11/06/2017	11/07/2017 04:15	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*91.6 %*		*60-140*	*11/06/2017*	*11/07/2017 04:15*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**78.1**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-C11-04A(01.0-01.5)

K174501-27 (Soil)

Date Sampled
11/06/2017 14:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 04:45	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 04:45	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 04:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 04:45	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 04:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 04:45	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:00	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*93.7 %*		*60-140*	*11/06/2017*	*11/07/2017 05:00*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**81.5**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-C11-01D(01.0-01.5)

K174501-30 (Soil)

Date Sampled
11/06/2017 14:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711008**			
Nitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:07	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:07	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:07	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/06/2017	11/07/2017 05:22	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*95.6 %*		*60-140*	*11/06/2017*	*11/07/2017 05:22*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711009**			
% Solids	**84.1**	0.00	% by Weight	1	11/06/2017	11/07/2017 10:49	SM 2540B	

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TP-RD-B11-08(01.0-01.5)

K174502-01 (Soil)

Date Sampled
11/07/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 17:50	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.6 %*		*63.7-134*	*11/07/2017*	*11/07/2017 17:50*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**85.4**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B11-08(03.0-03.5)

K174502-02 (Soil)

Date Sampled
11/07/2017 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 18:12	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.8 %*		*63.7-134*	*11/07/2017*	*11/07/2017 18:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**86.6**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-B11-08(05.0-05.5)

K174502-03 (Soil)

Date Sampled
11/07/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.0 %*		*63.7-134*	*11/07/2017*	*11/07/2017 18:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**87.1**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-B11-08(07.0-07.5)

K174502-04 (Soil)

Date Sampled
11/07/2017 09:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 18:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.6 %*		*63.7-134*	*11/07/2017*	*11/07/2017 18:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**90.5**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-B11-08(09.0-09.5)

K174502-05 (Soil)

Date Sampled
11/07/2017 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 19:18	EPA 8095	M
Surrogate: 2,2'-Dinitrobiphenyl		*98.2 %*		*63.7-134*	*11/07/2017*	*11/07/2017 19:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**90.2**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B12-08(01.0-01.5)

K174502-06 (Soil)

Date Sampled
11/07/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
2,4,6-Trinitrotoluene	**120**	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/07/2017	11/07/2017 20:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.2 %*		*63.7-134*	*11/07/2017*	*11/07/2017 20:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**86.1**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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Project Number: 2769

TP-RD-B12-08(03.0-03.5)

K174502-07 (Soil)

Date Sampled
11/07/2017 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:07	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*97.4 %*		*63.7-134*	*11/07/2017*	*11/07/2017 21:07*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**88.5**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-B12-08(05.0-05.5)

K174502-08 (Soil)

Date Sampled
11/07/2017 10:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:29	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.5 %*		*63.7-134*	*11/07/2017*	*11/07/2017 21:29*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**94.1**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-B12-08(07.0-07.5)

K174502-09 (Soil)

Date Sampled
11/07/2017 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:05	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 21:51	EPA 8095	LC, M
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*11/07/2017*	*11/07/2017 21:51*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**89.6**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-B12-08(09.0-09.5)

K174502-10 (Soil)

Date Sampled
11/07/2017 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 22:56	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*11/07/2017*	*11/07/2017 22:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**88.2**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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BD110717A

K174502-14 (Soil)

Date Sampled
11/07/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:17	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*		*63.7-134*	*11/07/2017*	*11/07/2017 23:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**89.2**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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Project Number: 2769

BD110717B

K174502-15 (Soil)

Date Sampled
11/07/2017 00:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/07/2017 23:39	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*93.4 %*		*63.7-134*	*11/07/2017*	*11/07/2017 23:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**90.6**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-B13-10(09.0-09.5)

K174502-16 (Soil)

Date Sampled
11/07/2017 13:20

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
2,4,6-Trinitrotoluene	**230**	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/07/2017	11/08/2017 00:45	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*89.7 %*		*63.7-134*	*11/07/2017*	*11/08/2017 00:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**87.0**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-R-C13-666-1(06.5-07.0)

K174502-17 (Soil)

Date Sampled
11/07/2017 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
2,4,6-Trinitrotoluene	**3700**	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
PETN	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
RDX	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	**730**	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	**790**	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	
HMX	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:06	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*97.2 %*		*63.7-134*	*11/07/2017*	*11/08/2017 01:06*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**78.2**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-C13-02(01.0-01.5)

K174502-18 (Soil)

Date Sampled
11/07/2017 14:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
2,4-Dinitrotoluene	**190**	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
2,4,6-Trinitrotoluene	**15000**	1300	ug/kg dry	10	11/07/2017	11/08/2017 10:11	EPA 8095	D
PETN	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
RDX	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	**8300**	1300	ug/kg dry	10	11/07/2017	11/08/2017 10:11	EPA 8095	D
3,5-Dinitroaniline	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1000**	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	
HMX	ND	130	ug/kg dry	1	11/07/2017	11/08/2017 01:28	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*11/07/2017*	*11/08/2017 01:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**74.8**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-C13-02(03.0-03.5)

K174502-19 (Soil)

Date Sampled
11/07/2017 14:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
2,4,6-Trinitrotoluene	**810**	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 01:50	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*105 %*		*63.7-134*	*11/07/2017*	*11/08/2017 01:50*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**82.9**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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TP-RD-C13-02(05.0-05.5)

K174502-20 (Soil)

Date Sampled
11/07/2017 14:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711010**			
Nitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
2,4,6-Trinitrotoluene	**300**	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/07/2017	11/08/2017 02:11	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*		*63.7-134*	*11/07/2017*	*11/08/2017 02:11*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711011**			
% Solids	**80.0**	0.00	% by Weight	1	11/07/2017	11/08/2017 10:45	SM 2540B	

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FB110617

K174503-01 (Water)

Date Sampled
11/06/2017 15:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711016**			
Nitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
PETN	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
RDX	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
Tetryl	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
HMX	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*108 %*		*60-140*	*11/09/2017*	*11/09/2017 16:01*	*EPA 8095*	

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Project Number: 2769

FB110717

K174503-02 (Water)

Date Sampled
11/07/2017 15:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711016**			
Nitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
PETN	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
RDX	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
Tetryl	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
HMX	ND	0.10	ug/L	1	11/09/2017	11/09/2017 16:27	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.4 %*		*60-140*	*11/09/2017*	*11/09/2017 16:27*	*EPA 8095*	

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Project Number: 2769

FB110817

K174503-03 (Water)

Date Sampled
11/08/2017 15:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711016**			
Nitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
2-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
3-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
4-Nitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
Nitroglycerin	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
1,3-Dinitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
2,6-Dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
2,4-Dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
PETN	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
RDX	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
3,5-Dinitroaniline	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
Tetryl	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
HMX	ND	0.10	ug/L	1	11/09/2017	11/09/2017 17:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.8 %*		*60-140*	*11/09/2017*	*11/09/2017 17:34*	*EPA 8095*	

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Project Number: 2769

TP-RD-C13-04(01.0-01.5)

K174504-01 (Soil)

Date Sampled
11/08/2017 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:55	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
2,4,6-Trinitrotoluene	**1100**	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
PETN	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
RDX	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	**320**	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	**230**	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
HMX	ND	130	ug/kg dry	1	11/08/2017	11/08/2017 16:52	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*		*63.7-134*	*11/08/2017*	*11/08/2017 16:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**79.4**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C13-04(03.0-03.5)

K174504-02 (Soil)

Date Sampled
11/08/2017 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:14	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*97.1 %*		*63.7-134*	*11/08/2017*	*11/08/2017 17:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**88.8**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project Number: 2769

TP-RD-C13-04(05.0-05.5)

K174504-03 (Soil)

Date Sampled
11/08/2017 08:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 17:36	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.3 %*		*63.7-134*	*11/08/2017*	*11/08/2017 17:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**90.7**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C13-01A(01.0-01.5)

K174504-04 (Soil)

Date Sampled
11/08/2017 09:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
2-Nitrotoluene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
3-Nitrotoluene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
4-Nitrotoluene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
Nitroglycerin	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
1,3-Dinitrobenzene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
2,6-Dinitrotoluene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
2,4-Dinitrotoluene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
2,4,6-Trinitrotoluene	**13000**	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	D
PETN	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
RDX	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
3,5-Dinitroaniline	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
Tetryl	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
HMX	ND	1200	ug/kg dry	10	11/08/2017	11/08/2017 17:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*		*63.7-134*	*11/08/2017*	*11/08/2017 17:58*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**81.9**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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TP-RD-C13-01A(03.0-03.5)

K174504-05 (Soil)

Date Sampled
11/08/2017 09:40

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
2-Nitrotoluene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
3-Nitrotoluene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
4-Nitrotoluene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
Nitroglycerin	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
1,3-Dinitrobenzene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
2,6-Dinitrotoluene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:25	EPA 8095	
2,4-Dinitrotoluene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
2,4,6-Trinitrotoluene	**6700**	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	D
PETN	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
RDX	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
3,5-Dinitroaniline	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
Tetryl	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
HMX	ND	1400	ug/kg dry	10	11/08/2017	11/08/2017 18:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*11/08/2017*	*11/08/2017 18:20*	*EPA 8095*	*DO*
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**72.4**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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B13-682-03(05.0-05.5)

K174504-06 (Soil)

Date Sampled
11/08/2017 10:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
2,4,6-Trinitrotoluene	**550**	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 18:42	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*95.8 %*		*63.7-134*	*11/08/2017*	*11/08/2017 18:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**85.8**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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TP-RD-B13-06(01.0-01.5)

K174504-07 (Soil)

Date Sampled
11/08/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:10	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:04	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*98.1 %*		*63.7-134*	*11/08/2017*	*11/08/2017 19:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**83.0**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project Number: 2769

TP-RD-B13-06(03.0-03.5)

K174504-08 (Soil)

Date Sampled
11/08/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 19:26	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*96.9 %*		*63.7-134*	*11/08/2017*	*11/08/2017 19:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**85.8**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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TP-RD-B13-06(05.0-05.5)

K174504-09 (Soil)

Date Sampled
11/08/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:10	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.7 %*		*63.7-134*	*11/08/2017*	*11/08/2017 20:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**89.7**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B13-06(07.0-07.5)

K174504-10 (Soil)

Date Sampled
11/08/2017 11:00

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 20:32	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*97.4 %*		*63.7-134*	*11/08/2017*	*11/08/2017 20:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**87.8**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-C13-04(06.5-07.0)

K174504-11 (Soil)

Date Sampled
11/08/2017 08:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 20:53	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.5 %*		*63.7-134*	*11/08/2017*	*11/08/2017 20:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**81.4**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B14-02(01.0-01.5)

K174504-12 (Soil)

Date Sampled
11/08/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 21:15	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.6 %*		*63.7-134*	*11/08/2017*	*11/08/2017 21:15*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**84.7**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B14-02(03.0-03.5)

K174504-13 (Soil)

Date Sampled
11/08/2017 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:37	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.5 %*		*63.7-134*	*11/08/2017*	*11/08/2017 21:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**87.7**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B14-02(05.0-05.5)

K174504-14 (Soil)

Date Sampled
11/08/2017 13:15

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 21:58	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*90.6 %*		*63.7-134*	*11/08/2017*	*11/08/2017 21:58*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**94.5**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
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TP-RD-B14-01(01.0-01.5)

K174504-15 (Soil)

Date Sampled
11/08/2017 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 22:20	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*93.3 %*		*63.7-134*	*11/08/2017*	*11/08/2017 22:20*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**84.4**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B14-01(03.0-03.5)

K174504-16 (Soil)

Date Sampled
11/08/2017 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/08/2017 22:42	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*93.7 %*		*63.7-134*	*11/08/2017*	*11/08/2017 22:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**93.0**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

TP-RD-B14-01(05.0-05.5)

K174504-17 (Soil)

Date Sampled
11/08/2017 13:45

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
PETN	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
RDX	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	
HMX	ND	100	ug/kg dry	1	11/08/2017	11/08/2017 23:03	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*		*63.7-134*	*11/08/2017*	*11/08/2017 23:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**95.5**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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TP-RD-B13-07(01.0-01.5)

K174504-19 (Soil)

Date Sampled
11/08/2017 14:12

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/08/2017 23:25	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*		*63.7-134*	*11/08/2017*	*11/08/2017 23:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**84.1**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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TP-RD-B13-07(03.0-03.5)

K174504-20 (Soil)

Date Sampled
11/08/2017 14:12

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:08	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*94.4 %*		*63.7-134*	*11/08/2017*	*11/09/2017 00:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**91.2**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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TP-RD-B13-07(05.0-05.5)

K174504-21 (Soil)

Date Sampled
11/08/2017 14:12

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711012**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 00:30	EPA 8095	M, X, LC
Surrogate: 2,2'-Dinitrobiphenyl		*95.4 %*		*63.7-134*	*11/08/2017*	*11/09/2017 00:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711013**			
% Solids	**94.9**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:11	SM 2540B	

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Project Number: 2769

TP-RD-C13-02A(01.0-01.5)

K174504-23 (Soil)

Date Sampled
11/08/2017 14:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Lab #11								
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711014**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
2,4,6-Trinitrotoluene	**420**	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
4-Amino-2,6-dinitrotoluene	**220**	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
2-Amino-4,6-dinitrotoluene	**150**	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 02:38	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*96.0 %*		*63.7-134*	*11/08/2017*	*11/09/2017 02:38*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711015**			
% Solids	**82.3**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:05	SM 2540B	

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TP-RD-C13-02A(03.0-03.5)

K174504-24 (Soil)

Date Sampled
11/08/2017 14:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711014**			
Nitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
PETN	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
RDX	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	
HMX	ND	110	ug/kg dry	1	11/08/2017	11/09/2017 03:00	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*		*63.7-134*	*11/08/2017*	*11/09/2017 03:00*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711015**			
% Solids	**88.6**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:05	SM 2540B	

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TP-RD-C13-02A(05.0-05.5)

K174504-25 (Soil)

Date Sampled
11/08/2017 14:30

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: K711014**			
Nitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
PETN	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
RDX	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	
HMX	ND	120	ug/kg dry	1	11/08/2017	11/09/2017 03:21	EPA 8095	M, LC
Surrogate: 2,2'-Dinitrobiphenyl		*111 %*		*63.7-134*	*11/08/2017*	*11/09/2017 03:21*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: K711015**			
% Solids	**81.5**	0.00	% by Weight	1	11/08/2017	11/09/2017 12:05	SM 2540B	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710001 - EPA 3570										
Blank (K710001-BLK1)				Prepared: 10/03/2017 Analyzed: 10/03/2017 15:34						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*335*		*ug/kg wet*	*400.0*		*83.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*371*		*ug/kg wet*	*400.0*		*92.7*	*60-140*			
LCS (K710001-BS1)				Prepared: 10/03/2017 Analyzed: 10/03/2017 14:26						
Nitrobenzene	364	100	ug/kg wet	400.0		91.0	70-130			
Nitrobenzene [2C]	347	100	ug/kg wet	400.0		86.9	70-130			
2-Nitrotoluene	355	100	ug/kg wet	400.0		88.8	70-130			
2-Nitrotoluene [2C]	343	100	ug/kg wet	400.0		85.6	70-130			
3-Nitrotoluene	359	100	ug/kg wet	400.0		89.7	70-130			
3-Nitrotoluene [2C]	344	100	ug/kg wet	400.0		85.9	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710001 - EPA 3570										
LCS (K710001-BS1)				Prepared: 10/03/2017 Analyzed: 10/03/2017 14:26						
4-Nitrotoluene	363	100	ug/kg wet	400.0		90.7	70-130			
4-Nitrotoluene [2C]	354	100	ug/kg wet	400.0		88.4	70-130			
Nitroglycerin	350	100	ug/kg wet	400.0		87.5	70-130			
Nitroglycerin [2C]	316	100	ug/kg wet	400.0		78.9	70-130			
1,3-Dinitrobenzene	345	100	ug/kg wet	400.0		86.3	70-130			
1,3-Dinitrobenzene [2C]	293	100	ug/kg wet	400.0		73.2	70-130			
2,6-Dinitrotoluene	339	100	ug/kg wet	400.0		84.7	70-130			
2,6-Dinitrotoluene [2C]	327	100	ug/kg wet	400.0		81.8	70-130			
2,4-Dinitrotoluene	344	100	ug/kg wet	400.0		85.9	70-130			
2,4-Dinitrotoluene [2C]	328	100	ug/kg wet	400.0		82.1	70-130			
1,3,5-Trinitrobenzene	367	100	ug/kg wet	400.0		91.8	70-130			
1,3,5-Trinitrobenzene [2C]	348	100	ug/kg wet	400.0		87.1	70-130			
2,4,6-Trinitrotoluene	357	100	ug/kg wet	400.0		89.2	70-130			
2,4,6-Trinitrotoluene [2C]	341	100	ug/kg wet	400.0		85.3	70-130			
PETN	347	100	ug/kg wet	400.0		86.7	70-130			
PETN [2C]	325	100	ug/kg wet	400.0		81.3	70-130			
RDX	367	100	ug/kg wet	400.0		91.8	70-130			
RDX [2C]	336	100	ug/kg wet	400.0		83.9	70-130			
4-Amino-2,6-dinitrotoluene	352	100	ug/kg wet	400.0		88.1	70-130			
4-Amino-2,6-dinitrotoluene [2C]	321	100	ug/kg wet	400.0		80.2	70-130			
3,5-Dinitroaniline	344	100	ug/kg wet	400.0		85.9	70-130			
3,5-Dinitroaniline [2C]	331	100	ug/kg wet	400.0		82.8	70-130			
2-Amino-4,6-dinitrotoluene	346	100	ug/kg wet	400.0		86.5	70-130			
2-Amino-4,6-dinitrotoluene [2C]	337	100	ug/kg wet	400.0		84.2	70-130			
Tetryl	374	100	ug/kg wet	400.0		93.6	70-130			
Tetryl [2C]	347	100	ug/kg wet	400.0		86.7	70-130			
HMX	318	100	ug/kg wet	400.0		79.6	70-130			
HMX [2C]	360	100	ug/kg wet	400.0		89.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*350*		*ug/kg wet*	*400.0*		*87.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*332*		*ug/kg wet*	*400.0*		*83.0*	*60-140*			
Matrix Spike (K710001-MS1)	**Source: K174002-05**			Prepared: 10/03/2017 Analyzed: 10/04/2017 00:14						
Nitrobenzene	481	110	ug/kg dry	454.7	ND	106	70-130			
Nitrobenzene [2C]	465	110	ug/kg dry	454.7	ND	102	70-130			
2-Nitrotoluene	486	110	ug/kg dry	454.7	ND	107	70-130			
2-Nitrotoluene [2C]	451	110	ug/kg dry	454.7	ND	99.1	70-130			
3-Nitrotoluene	483	110	ug/kg dry	454.7	ND	106	70-130			
3-Nitrotoluene [2C]	466	110	ug/kg dry	454.7	ND	103	70-130			
4-Nitrotoluene	490	110	ug/kg dry	454.7	ND	108	70-130			
4-Nitrotoluene [2C]	478	110	ug/kg dry	454.7	ND	105	70-130			
Nitroglycerin	334	110	ug/kg dry	454.7	10.9	71.0	70-130			
Nitroglycerin [2C]	345	110	ug/kg dry	454.7	14.8	72.6	70-130			
1,3-Dinitrobenzene	488	110	ug/kg dry	454.7	17.5	103	70-130			
1,3-Dinitrobenzene [2C]	583	110	ug/kg dry	454.7	ND	128	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710001 - EPA 3570										
Matrix Spike (K710001-MS1)	**Source: K174002-05**			Prepared: 10/03/2017 Analyzed: 10/04/2017 00:14						
2,6-Dinitrotoluene	488	110	ug/kg dry	454.7	33.4	99.9	70-130			
2,6-Dinitrotoluene [2C]	497	110	ug/kg dry	454.7	39.4	101	70-130			
2,4-Dinitrotoluene	875	110	ug/kg dry	454.7	183	152	70-130			M
2,4-Dinitrotoluene [2C]	898	110	ug/kg dry	454.7	192	155	70-130			M
1,3,5-Trinitrobenzene	414	110	ug/kg dry	454.7	20.0	86.6	70-130			
1,3,5-Trinitrobenzene [2C]	432	110	ug/kg dry	454.7	23.3	89.9	70-130			
2,4,6-Trinitrotoluene	1530	110	ug/kg dry	454.7	1190	73.9	70-130			
2,4,6-Trinitrotoluene [2C]	1660	110	ug/kg dry	454.7	1280	84.7	70-130			
PETN	252	110	ug/kg dry	454.7	7.63	53.7	70-130			M
PETN [2C]	266	110	ug/kg dry	454.7	ND	58.5	70-130			M
RDX	339	110	ug/kg dry	454.7	ND	74.5	70-130			
RDX [2C]	371	110	ug/kg dry	454.7	6.86	80.1	70-130			
4-Amino-2,6-dinitrotoluene	1160	110	ug/kg dry	454.7	591	125	70-130			
4-Amino-2,6-dinitrotoluene [2C]	1210	110	ug/kg dry	454.7	631	128	70-130			
3,5-Dinitroaniline	406	110	ug/kg dry	454.7	ND	89.4	70-130			
3,5-Dinitroaniline [2C]	417	110	ug/kg dry	454.7	26.0	85.9	70-130			
2-Amino-4,6-dinitrotoluene	864	110	ug/kg dry	454.7	347	114	70-130			
2-Amino-4,6-dinitrotoluene [2C]	929	110	ug/kg dry	454.7	402	116	70-130			
Tetryl	449	110	ug/kg dry	454.7	ND	98.7	70-130			
Tetryl [2C]	513	110	ug/kg dry	454.7	38.5	104	70-130			
HMX	59.6	110	ug/kg dry	454.7	ND	13.1	70-130			M
HMX [2C]	265	110	ug/kg dry	454.7	68.3	43.3	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*444*		*ug/kg dry*	*454.7*		*97.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*515*		*ug/kg dry*	*454.7*		*113*	*60-140*			
Matrix Spike Dup (K710001-MSD1)	**Source: K174002-05**			Prepared: 10/03/2017 Analyzed: 10/04/2017 00:36						
Nitrobenzene	478	110	ug/kg dry	454.7	ND	105	70-130	0.533	20	
Nitrobenzene [2C]	519	110	ug/kg dry	454.7	ND	114	70-130	10.9	20	
2-Nitrotoluene	480	110	ug/kg dry	454.7	ND	105	70-130	1.21	20	
2-Nitrotoluene [2C]	504	110	ug/kg dry	454.7	ND	111	70-130	11.2	20	
3-Nitrotoluene	486	110	ug/kg dry	454.7	ND	107	70-130	0.746	20	
3-Nitrotoluene [2C]	525	110	ug/kg dry	454.7	ND	116	70-130	11.9	20	
4-Nitrotoluene	495	110	ug/kg dry	454.7	ND	109	70-130	1.07	20	
4-Nitrotoluene [2C]	537	110	ug/kg dry	454.7	ND	118	70-130	11.5	20	
Nitroglycerin	336	110	ug/kg dry	454.7	10.9	71.5	70-130	0.710	20	
Nitroglycerin [2C]	407	110	ug/kg dry	454.7	14.8	86.2	70-130	17.1	20	
1,3-Dinitrobenzene	489	110	ug/kg dry	454.7	17.5	104	70-130	0.241	20	
1,3-Dinitrobenzene [2C]	623	110	ug/kg dry	454.7	ND	137	70-130	6.54	20	M
2,6-Dinitrotoluene	486	110	ug/kg dry	454.7	33.4	99.5	70-130	0.376	20	
2,6-Dinitrotoluene [2C]	558	110	ug/kg dry	454.7	39.4	114	70-130	12.4	20	
2,4-Dinitrotoluene	849	110	ug/kg dry	454.7	183	146	70-130	3.90	20	M
2,4-Dinitrotoluene [2C]	961	110	ug/kg dry	454.7	192	169	70-130	8.51	20	M
1,3,5-Trinitrobenzene	438	110	ug/kg dry	454.7	20.0	91.8	70-130	5.90	20	
1,3,5-Trinitrobenzene [2C]	550	110	ug/kg dry	454.7	23.3	116	70-130	25.3	20	X

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710001 - EPA 3570										
Matrix Spike Dup (K710001-MSD1)	**Source: K174002-05**			Prepared: 10/03/2017 Analyzed: 10/04/2017 00:36						
2,4,6-Trinitrotoluene	2820	110	ug/kg dry	454.7	1190	357	70-130	131	20	X, M
2,4,6-Trinitrotoluene [2C]	3930	110	ug/kg dry	454.7	1280	582	70-130	149	20	M, X
PETN	254	110	ug/kg dry	454.7	7.63	54.2	70-130	0.984	20	M
PETN [2C]	323	110	ug/kg dry	454.7	ND	71.0	70-130	19.3	20	
RDX	356	110	ug/kg dry	454.7	ND	78.3	70-130	4.92	20	
RDX [2C]	449	110	ug/kg dry	454.7	6.86	97.1	70-130	19.3	20	
4-Amino-2,6-dinitrotoluene	1330	110	ug/kg dry	454.7	591	164	70-130	26.7	20	X, M
4-Amino-2,6-dinitrotoluene [2C]	1680	110	ug/kg dry	454.7	631	230	70-130	57.0	20	X, M
3,5-Dinitroaniline	430	110	ug/kg dry	454.7	ND	94.6	70-130	5.67	20	
3,5-Dinitroaniline [2C]	521	110	ug/kg dry	454.7	26.0	109	70-130	23.6	20	X
2-Amino-4,6-dinitrotoluene	1010	110	ug/kg dry	454.7	347	146	70-130	24.8	20	X, M
2-Amino-4,6-dinitrotoluene [2C]	1290	110	ug/kg dry	454.7	402	195	70-130	51.0	20	M, X
Tetryl	451	110	ug/kg dry	454.7	ND	99.3	70-130	0.571	20	
Tetryl [2C]	612	110	ug/kg dry	454.7	38.5	126	70-130	19.0	20	
HMX	93.8	110	ug/kg dry	454.7	ND	20.6	70-130	44.5	20	X, M
HMX [2C]	386	110	ug/kg dry	454.7	68.3	69.8	70-130	46.9	20	X, M
Surrogate: 2,2´-Dinitrobiphenyl	*446*		*ug/kg dry*	*454.7*		*98.0*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*570*		*ug/kg dry*	*454.7*		*125*	*60-140*			
Batch K710003 - EPA 3570										
Blank (K710003-BLK1)				Prepared: 10/04/2017 Analyzed: 10/05/2017 13:57						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710003 - EPA 3570										
Blank (K710003-BLK1)				Prepared: 10/04/2017 Analyzed: 10/05/2017 13:59						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*385*		*ug/kg wet*	*400.0*		*96.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*370*		*ug/kg wet*	*400.0*		*92.6*	*60-140*			
LCS (K710003-BS1)				Prepared: 10/04/2017 Analyzed: 10/05/2017 13:37						
Nitrobenzene	481	100	ug/kg wet	400.0		120	70-130			
Nitrobenzene [2C]	475	100	ug/kg wet	400.0		119	70-130			
2-Nitrotoluene	478	100	ug/kg wet	400.0		119	70-130			
2-Nitrotoluene [2C]	474	100	ug/kg wet	400.0		119	70-130			
3-Nitrotoluene	475	100	ug/kg wet	400.0		119	70-130			
3-Nitrotoluene [2C]	478	100	ug/kg wet	400.0		119	70-130			
4-Nitrotoluene	482	100	ug/kg wet	400.0		121	70-130			
4-Nitrotoluene [2C]	495	100	ug/kg wet	400.0		124	70-130			
Nitroglycerin	433	100	ug/kg wet	400.0		108	70-130			
Nitroglycerin [2C]	440	100	ug/kg wet	400.0		110	70-130			
1,3-Dinitrobenzene	449	100	ug/kg wet	400.0		112	70-130			
1,3-Dinitrobenzene [2C]	424	100	ug/kg wet	400.0		106	70-130			
2,6-Dinitrotoluene	445	100	ug/kg wet	400.0		111	70-130			
2,6-Dinitrotoluene [2C]	462	100	ug/kg wet	400.0		115	70-130			
2,4-Dinitrotoluene	441	100	ug/kg wet	400.0		110	70-130			
2,4-Dinitrotoluene [2C]	459	100	ug/kg wet	400.0		115	70-130			
1,3,5-Trinitrobenzene	460	100	ug/kg wet	400.0		115	70-130			
1,3,5-Trinitrobenzene [2C]	480	100	ug/kg wet	400.0		120	70-130			
2,4,6-Trinitrotoluene	452	100	ug/kg wet	400.0		113	70-130			
2,4,6-Trinitrotoluene [2C]	460	100	ug/kg wet	400.0		115	70-130			
PETN	422	100	ug/kg wet	400.0		106	70-130			
PETN [2C]	456	100	ug/kg wet	400.0		114	70-130			
RDX	468	100	ug/kg wet	400.0		117	70-130			
RDX [2C]	494	100	ug/kg wet	400.0		124	70-130			
4-Amino-2,6-dinitrotoluene	435	100	ug/kg wet	400.0		109	70-130			
4-Amino-2,6-dinitrotoluene [2C]	461	100	ug/kg wet	400.0		115	70-130			
3,5-Dinitroaniline	435	100	ug/kg wet	400.0		109	70-130			
3,5-Dinitroaniline [2C]	467	100	ug/kg wet	400.0		117	70-130			

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710003 - EPA 3570										
LCS (K710003-BS1)				Prepared: 10/04/2017 Analyzed: 10/05/2017 13:37						
2-Amino-4,6-dinitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
2-Amino-4,6-dinitrotoluene [2C]	479	100	ug/kg wet	400.0		120	70-130			
Tetryl	438	100	ug/kg wet	400.0		109	70-130			
Tetryl [2C]	467	100	ug/kg wet	400.0		117	70-130			
HMX	396	100	ug/kg wet	400.0		98.9	70-130			
HMX [2C]	713	100	ug/kg wet	400.0		178	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*395*		*ug/kg wet*	*400.0*		*98.7*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*406*		*ug/kg wet*	*400.0*		*102*	*60-140*			
Matrix Spike (K710003-MS1)	**Source: K174003-09**			Prepared: 10/04/2017 Analyzed: 10/05/2017 19:10						
Nitrobenzene	480	120	ug/kg dry	471.1	ND	102	70-130			
Nitrobenzene [2C]	522	120	ug/kg dry	471.1	ND	111	70-130			
2-Nitrotoluene	485	120	ug/kg dry	471.1	ND	103	70-130			
2-Nitrotoluene [2C]	509	120	ug/kg dry	471.1	ND	108	70-130			
3-Nitrotoluene	473	120	ug/kg dry	471.1	15.9	97.0	70-130			
3-Nitrotoluene [2C]	533	120	ug/kg dry	471.1	ND	113	70-130			
4-Nitrotoluene	475	120	ug/kg dry	471.1	ND	101	70-130			
4-Nitrotoluene [2C]	548	120	ug/kg dry	471.1	ND	116	70-130			
Nitroglycerin	379	120	ug/kg dry	471.1	ND	80.5	70-130			
Nitroglycerin [2C]	458	120	ug/kg dry	471.1	ND	97.1	70-130			
1,3-Dinitrobenzene	419	120	ug/kg dry	471.1	ND	88.9	70-130			
1,3-Dinitrobenzene [2C]	476	120	ug/kg dry	471.1	ND	101	70-130			
2,6-Dinitrotoluene	425	120	ug/kg dry	471.1	ND	90.2	70-130			
2,6-Dinitrotoluene [2C]	523	120	ug/kg dry	471.1	ND	111	70-130			
2,4-Dinitrotoluene	418	120	ug/kg dry	471.1	1.15	88.6	70-130			
2,4-Dinitrotoluene [2C]	519	120	ug/kg dry	471.1	ND	110	70-130			
1,3,5-Trinitrobenzene	419	120	ug/kg dry	471.1	ND	89.0	70-130			
1,3,5-Trinitrobenzene [2C]	543	120	ug/kg dry	471.1	2.71	115	70-130			
2,4,6-Trinitrotoluene	418	120	ug/kg dry	471.1	6.06	87.5	70-130			
2,4,6-Trinitrotoluene [2C]	508	120	ug/kg dry	471.1	3.91	107	70-130			
PETN	353	120	ug/kg dry	471.1	ND	74.9	70-130			
PETN [2C]	435	120	ug/kg dry	471.1	ND	92.4	70-130			
RDX	351	120	ug/kg dry	471.1	1.31	74.3	70-130			
RDX [2C]	461	120	ug/kg dry	471.1	3.46	97.1	70-130			
4-Amino-2,6-dinitrotoluene	374	120	ug/kg dry	471.1	11.7	76.9	70-130			
4-Amino-2,6-dinitrotoluene [2C]	507	120	ug/kg dry	471.1	14.2	105	70-130			
3,5-Dinitroaniline	362	120	ug/kg dry	471.1	ND	76.9	70-130			
3,5-Dinitroaniline [2C]	518	120	ug/kg dry	471.1	ND	110	70-130			
2-Amino-4,6-dinitrotoluene	366	120	ug/kg dry	471.1	ND	77.8	70-130			
2-Amino-4,6-dinitrotoluene [2C]	519	120	ug/kg dry	471.1	6.99	109	70-130			
Tetryl	386	120	ug/kg dry	471.1	ND	81.9	70-130			
Tetryl [2C]	496	120	ug/kg dry	471.1	ND	105	70-130			
HMX	399	120	ug/kg dry	471.1	ND	84.7	70-130			
HMX [2C]	746	120	ug/kg dry	471.1	ND	158	70-130			M

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710003 - EPA 3570										
Matrix Spike (K710003-MS1)	**Source: K174003-09**			Prepared: 10/04/2017 Analyzed: 10/05/2017 19:10						
Surrogate: 2,2´-Dinitrobiphenyl	*416*		*ug/kg dry*	*471.1*		*88.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*532*		*ug/kg dry*	*471.1*		*113*	*60-140*			
Matrix Spike Dup (K710003-MSD1)	**Source: K174003-09**			Prepared: 10/04/2017 Analyzed: 10/05/2017 19:32						
Nitrobenzene	487	120	ug/kg dry	471.1	ND	103	70-130	1.55	20	
Nitrobenzene [2C]	487	120	ug/kg dry	471.1	ND	103	70-130	6.92	20	
2-Nitrotoluene	493	120	ug/kg dry	471.1	ND	105	70-130	1.72	20	
2-Nitrotoluene [2C]	474	120	ug/kg dry	471.1	ND	101	70-130	7.12	20	
3-Nitrotoluene	483	120	ug/kg dry	471.1	15.9	99.2	70-130	2.20	20	
3-Nitrotoluene [2C]	496	120	ug/kg dry	471.1	ND	105	70-130	7.19	20	
4-Nitrotoluene	486	120	ug/kg dry	471.1	ND	103	70-130	2.27	20	
4-Nitrotoluene [2C]	510	120	ug/kg dry	471.1	ND	108	70-130	7.31	20	
Nitroglycerin	390	120	ug/kg dry	471.1	ND	82.9	70-130	2.87	20	
Nitroglycerin [2C]	433	120	ug/kg dry	471.1	ND	91.9	70-130	5.49	20	
1,3-Dinitrobenzene	427	120	ug/kg dry	471.1	ND	90.7	70-130	1.98	20	
1,3-Dinitrobenzene [2C]	522	120	ug/kg dry	471.1	ND	111	70-130	9.28	20	
2,6-Dinitrotoluene	437	120	ug/kg dry	471.1	ND	92.8	70-130	2.85	20	
2,6-Dinitrotoluene [2C]	490	120	ug/kg dry	471.1	ND	104	70-130	6.52	20	
2,4-Dinitrotoluene	424	120	ug/kg dry	471.1	1.15	89.7	70-130	1.25	20	
2,4-Dinitrotoluene [2C]	495	120	ug/kg dry	471.1	ND	105	70-130	4.80	20	
1,3,5-Trinitrobenzene	429	120	ug/kg dry	471.1	ND	91.0	70-130	2.25	20	
1,3,5-Trinitrobenzene [2C]	531	120	ug/kg dry	471.1	2.71	112	70-130	2.26	20	
2,4,6-Trinitrotoluene	437	120	ug/kg dry	471.1	6.06	91.4	70-130	4.40	20	
2,4,6-Trinitrotoluene [2C]	482	120	ug/kg dry	471.1	3.91	102	70-130	5.20	20	
PETN	373	120	ug/kg dry	471.1	ND	79.2	70-130	5.47	20	
PETN [2C]	436	120	ug/kg dry	471.1	ND	92.6	70-130	0.232	20	
RDX	366	120	ug/kg dry	471.1	1.31	77.5	70-130	4.30	20	
RDX [2C]	427	120	ug/kg dry	471.1	3.46	89.8	70-130	7.74	20	
4-Amino-2,6-dinitrotoluene	398	120	ug/kg dry	471.1	11.7	82.0	70-130	6.40	20	
4-Amino-2,6-dinitrotoluene [2C]	499	120	ug/kg dry	471.1	14.2	103	70-130	1.74	20	
3,5-Dinitroaniline	380	120	ug/kg dry	471.1	ND	80.7	70-130	4.81	20	
3,5-Dinitroaniline [2C]	500	120	ug/kg dry	471.1	ND	106	70-130	3.68	20	
2-Amino-4,6-dinitrotoluene	378	120	ug/kg dry	471.1	ND	80.3	70-130	3.23	20	
2-Amino-4,6-dinitrotoluene [2C]	505	120	ug/kg dry	471.1	6.99	106	70-130	2.82	20	
Tetryl	406	120	ug/kg dry	471.1	ND	86.2	70-130	5.12	20	
Tetryl [2C]	484	120	ug/kg dry	471.1	ND	103	70-130	2.38	20	
HMX	378	120	ug/kg dry	471.1	ND	80.2	70-130	5.46	20	
HMX [2C]	677	120	ug/kg dry	471.1	ND	144	70-130	9.79	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*443*		*ug/kg dry*	*471.1*		*94.0*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*515*		*ug/kg dry*	*471.1*		*109*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710006 - EPA 3511										
Blank (K710006-BLK1)				Prepared: 10/05/2017 Analyzed: 10/06/2017 17:18						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*326*		*ug/kg wet*	*400.0*		*81.6*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*367*		*ug/kg wet*	*400.0*		*91.8*	*60-140*			
LCS (K710006-BS1)				Prepared: 10/05/2017 Analyzed: 10/07/2017 01:17						
Nitrobenzene	442	100	ug/kg wet	400.0		111	70-130			
Nitrobenzene [2C]	425	100	ug/kg wet	400.0		106	70-130			
2-Nitrotoluene	456	100	ug/kg wet	400.0		114	70-130			
2-Nitrotoluene [2C]	428	100	ug/kg wet	400.0		107	70-130			
3-Nitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
3-Nitrotoluene [2C]	431	100	ug/kg wet	400.0		108	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710006 - EPA 3511										
LCS (K710006-BS1)				Prepared: 10/05/2017 Analyzed: 10/07/2017 01:17						
4-Nitrotoluene	436	100	ug/kg wet	400.0		109	70-130			
4-Nitrotoluene [2C]	447	100	ug/kg wet	400.0		112	70-130			
Nitroglycerin	396	100	ug/kg wet	400.0		99.1	70-130			
Nitroglycerin [2C]	372	100	ug/kg wet	400.0		93.1	70-130			
1,3-Dinitrobenzene	393	100	ug/kg wet	400.0		98.1	70-130			
1,3-Dinitrobenzene [2C]	384	100	ug/kg wet	400.0		96.0	70-130			
2,6-Dinitrotoluene	400	100	ug/kg wet	400.0		100	70-130			
2,6-Dinitrotoluene [2C]	406	100	ug/kg wet	400.0		101	70-130			
2,4-Dinitrotoluene	385	100	ug/kg wet	400.0		96.4	70-130			
2,4-Dinitrotoluene [2C]	399	100	ug/kg wet	400.0		99.8	70-130			
1,3,5-Trinitrobenzene	391	100	ug/kg wet	400.0		97.7	70-130			
1,3,5-Trinitrobenzene [2C]	408	100	ug/kg wet	400.0		102	70-130			
2,4,6-Trinitrotoluene	385	100	ug/kg wet	400.0		96.3	70-130			
2,4,6-Trinitrotoluene [2C]	389	100	ug/kg wet	400.0		97.1	70-130			
PETN	374	100	ug/kg wet	400.0		93.5	70-130			
PETN [2C]	364	100	ug/kg wet	400.0		90.9	70-130			
RDX	394	100	ug/kg wet	400.0		98.4	70-130			
RDX [2C]	398	100	ug/kg wet	400.0		99.5	70-130			
4-Amino-2,6-dinitrotoluene	374	100	ug/kg wet	400.0		93.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	393	100	ug/kg wet	400.0		98.2	70-130			
3,5-Dinitroaniline	351	100	ug/kg wet	400.0		87.8	70-130			
3,5-Dinitroaniline [2C]	390	100	ug/kg wet	400.0		97.5	70-130			
2-Amino-4,6-dinitrotoluene	364	100	ug/kg wet	400.0		91.0	70-130			
2-Amino-4,6-dinitrotoluene [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
Tetryl	374	100	ug/kg wet	400.0		93.5	70-130			
Tetryl [2C]	386	100	ug/kg wet	400.0		96.5	70-130			
HMX	283	100	ug/kg wet	400.0		70.7	70-130			
HMX [2C]	361	100	ug/kg wet	400.0		90.4	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*415*		*ug/kg wet*	*400.0*		*104*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*418*		*ug/kg wet*	*400.0*		*105*	*60-140*			
Matrix Spike (K710006-MS1)		**Source: K174007-04**		Prepared: 10/05/2017 Analyzed: 10/07/2017 06:29						
Nitrobenzene	451	110	ug/kg dry	433.3	ND	104	70-130			
Nitrobenzene [2C]	432	110	ug/kg dry	433.3	ND	99.7	70-130			
2-Nitrotoluene	456	110	ug/kg dry	433.3	ND	105	70-130			
2-Nitrotoluene [2C]	423	110	ug/kg dry	433.3	ND	97.6	70-130			
3-Nitrotoluene	444	110	ug/kg dry	433.3	ND	102	70-130			
3-Nitrotoluene [2C]	440	110	ug/kg dry	433.3	ND	102	70-130			
4-Nitrotoluene	447	110	ug/kg dry	433.3	ND	103	70-130			
4-Nitrotoluene [2C]	454	110	ug/kg dry	433.3	ND	105	70-130			
Nitroglycerin	357	110	ug/kg dry	433.3	ND	82.5	70-130			
Nitroglycerin [2C]	365	110	ug/kg dry	433.3	ND	84.3	70-130			
1,3-Dinitrobenzene	406	110	ug/kg dry	433.3	ND	93.8	70-130			
1,3-Dinitrobenzene [2C]	486	110	ug/kg dry	433.3	ND	112	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710006 - EPA 3511										
Matrix Spike (K710006-MS1)	**Source: K174007-04**			Prepared: 10/05/2017 Analyzed: 10/07/2017 06:29						
2,6-Dinitrotoluene	410	110	ug/kg dry	433.3	1.03	94.3	70-130			
2,6-Dinitrotoluene [2C]	430	110	ug/kg dry	433.3	ND	99.2	70-130			
2,4-Dinitrotoluene	406	110	ug/kg dry	433.3	7.10	92.1	70-130			
2,4-Dinitrotoluene [2C]	442	110	ug/kg dry	433.3	8.83	100	70-130			
1,3,5-Trinitrobenzene	396	110	ug/kg dry	433.3	3.25	90.5	70-130			
1,3,5-Trinitrobenzene [2C]	436	110	ug/kg dry	433.3	3.19	99.8	70-130			
2,4,6-Trinitrotoluene	422	110	ug/kg dry	433.3	41.1	87.9	70-130			
2,4,6-Trinitrotoluene [2C]	457	110	ug/kg dry	433.3	48.7	94.1	70-130			
PETN	320	110	ug/kg dry	433.3	7.22	72.2	70-130			
PETN [2C]	344	110	ug/kg dry	433.3	ND	79.4	70-130			
RDX	370	110	ug/kg dry	433.3	ND	85.5	70-130			
RDX [2C]	417	110	ug/kg dry	433.3	ND	96.2	70-130			
4-Amino-2,6-dinitrotoluene	396	110	ug/kg dry	433.3	22.5	86.1	70-130			
4-Amino-2,6-dinitrotoluene [2C]	438	110	ug/kg dry	433.3	25.8	95.2	70-130			
3,5-Dinitroaniline	360	110	ug/kg dry	433.3	ND	83.1	70-130			
3,5-Dinitroaniline [2C]	430	110	ug/kg dry	433.3	2.29	98.6	70-130			
2-Amino-4,6-dinitrotoluene	377	110	ug/kg dry	433.3	12.0	84.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	442	110	ug/kg dry	433.3	17.7	97.8	70-130			
Tetryl	363	110	ug/kg dry	433.3	ND	83.8	70-130			
Tetryl [2C]	411	110	ug/kg dry	433.3	ND	94.8	70-130			
HMX	216	110	ug/kg dry	433.3	ND	49.8	70-130			M
HMX [2C]	360	110	ug/kg dry	433.3	ND	83.2	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*407*		*ug/kg dry*	*433.3*		*94.0*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*442*		*ug/kg dry*	*433.3*		*102*	*60-140*			
Matrix Spike Dup (K710006-MSD1)	**Source: K174007-04**			Prepared: 10/05/2017 Analyzed: 10/07/2017 06:51						
Nitrobenzene	437	110	ug/kg dry	433.3	ND	101	70-130	3.24	20	
Nitrobenzene [2C]	466	110	ug/kg dry	433.3	ND	107	70-130	7.49	20	
2-Nitrotoluene	443	110	ug/kg dry	433.3	ND	102	70-130	2.83	20	
2-Nitrotoluene [2C]	456	110	ug/kg dry	433.3	ND	105	70-130	7.48	20	
3-Nitrotoluene	436	110	ug/kg dry	433.3	ND	101	70-130	1.84	20	
3-Nitrotoluene [2C]	476	110	ug/kg dry	433.3	ND	110	70-130	7.82	20	
4-Nitrotoluene	438	110	ug/kg dry	433.3	ND	101	70-130	1.86	20	
4-Nitrotoluene [2C]	492	110	ug/kg dry	433.3	ND	114	70-130	8.12	20	
Nitroglycerin	351	110	ug/kg dry	433.3	ND	81.0	70-130	1.78	20	
Nitroglycerin [2C]	377	110	ug/kg dry	433.3	ND	86.9	70-130	3.00	20	
1,3-Dinitrobenzene	402	110	ug/kg dry	433.3	ND	92.7	70-130	1.16	20	
1,3-Dinitrobenzene [2C]	511	110	ug/kg dry	433.3	ND	118	70-130	4.89	20	
2,6-Dinitrotoluene	402	110	ug/kg dry	433.3	1.03	92.5	70-130	1.95	20	
2,6-Dinitrotoluene [2C]	456	110	ug/kg dry	433.3	ND	105	70-130	5.97	20	
2,4-Dinitrotoluene	401	110	ug/kg dry	433.3	7.10	90.9	70-130	1.24	20	
2,4-Dinitrotoluene [2C]	462	110	ug/kg dry	433.3	8.83	105	70-130	4.39	20	
1,3,5-Trinitrobenzene	388	110	ug/kg dry	433.3	3.25	88.9	70-130	1.85	20	
1,3,5-Trinitrobenzene [2C]	442	110	ug/kg dry	433.3	3.19	101	70-130	1.53	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710006 - EPA 3511										
Matrix Spike Dup (K710006-MSD1)	**Source: K174007-04**			Prepared: 10/05/2017 Analyzed: 10/07/2017 06:51						
2,4,6-Trinitrotoluene	407	110	ug/kg dry	433.3	41.1	84.5	70-130	4.01	20	
2,4,6-Trinitrotoluene [2C]	458	110	ug/kg dry	433.3	48.7	94.4	70-130	0.293	20	
PETN	308	110	ug/kg dry	433.3	7.22	69.4	70-130	3.98	20	M
PETN [2C]	346	110	ug/kg dry	433.3	ND	79.8	70-130	0.548	20	
RDX	351	110	ug/kg dry	433.3	ND	81.0	70-130	5.44	20	
RDX [2C]	412	110	ug/kg dry	433.3	ND	95.0	70-130	1.26	20	
4-Amino-2,6-dinitrotoluene	389	110	ug/kg dry	433.3	22.5	84.5	70-130	1.88	20	
4-Amino-2,6-dinitrotoluene [2C]	454	110	ug/kg dry	433.3	25.8	98.9	70-130	3.78	20	
3,5-Dinitroaniline	357	110	ug/kg dry	433.3	ND	82.5	70-130	0.750	20	
3,5-Dinitroaniline [2C]	426	110	ug/kg dry	433.3	2.29	97.9	70-130	0.771	20	
2-Amino-4,6-dinitrotoluene	371	110	ug/kg dry	433.3	12.0	83.0	70-130	1.62	20	
2-Amino-4,6-dinitrotoluene [2C]	438	110	ug/kg dry	433.3	17.7	97.1	70-130	0.780	20	
Tetryl	356	110	ug/kg dry	433.3	ND	82.0	70-130	2.17	20	
Tetryl [2C]	413	110	ug/kg dry	433.3	ND	95.3	70-130	0.533	20	
HMX	210	110	ug/kg dry	433.3	ND	48.6	70-130	2.54	20	M
HMX [2C]	321	110	ug/kg dry	433.3	ND	74.0	70-130	11.6	20	
Surrogate: 2,2´-Dinitrobiphenyl	*307*		*ug/kg dry*	*433.3*		*70.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*357*		*ug/kg dry*	*433.3*		*82.4*	*60-140*			
Batch K710008 - EPA 3511										
Blank (K710008-BLK1)				Prepared: 10/06/2017 Analyzed: 10/06/2017 16:46						
Nitrobenzene	ND	0.10	ug/L							
Nitrobenzene [2C]	ND	0.10	ug/L							
2-Nitrotoluene	ND	0.10	ug/L							
2-Nitrotoluene [2C]	ND	0.10	ug/L							
3-Nitrotoluene	ND	0.10	ug/L							
3-Nitrotoluene [2C]	ND	0.10	ug/L							
4-Nitrotoluene	ND	0.10	ug/L							
4-Nitrotoluene [2C]	ND	0.10	ug/L							
Nitroglycerin	ND	0.10	ug/L							
Nitroglycerin [2C]	ND	0.10	ug/L							
1,3-Dinitrobenzene	ND	0.10	ug/L							
1,3-Dinitrobenzene [2C]	ND	0.10	ug/L							
2,6-Dinitrotoluene	ND	0.10	ug/L							
2,6-Dinitrotoluene [2C]	ND	0.10	ug/L							
2,4-Dinitrotoluene	ND	0.10	ug/L							
2,4-Dinitrotoluene [2C]	ND	0.10	ug/L							
1,3,5-Trinitrobenzene	ND	0.10	ug/L							
1,3,5-Trinitrobenzene [2C]	ND	0.10	ug/L							
2,4,6-Trinitrotoluene	ND	0.10	ug/L							
2,4,6-Trinitrotoluene [2C]	ND	0.10	ug/L							
PETN	ND	0.10	ug/L							
PETN [2C]	ND	0.10	ug/L							

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710008 - EPA 3511										
Blank (K710008-BLK1)				Prepared: 10/06/2017 Analyzed: 10/06/2017 16:46						
RDX	ND	0.10	ug/L							
RDX [2C]	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene [2C]	ND	0.10	ug/L							
3,5-Dinitroaniline	ND	0.10	ug/L							
3,5-Dinitroaniline [2C]	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene [2C]	ND	0.10	ug/L							
Tetryl	ND	0.10	ug/L							
Tetryl [2C]	ND	0.10	ug/L							
HMX	ND	0.10	ug/L							
HMX [2C]	ND	0.10	ug/L							
Surrogate: 2,2´-Dinitrobiphenyl	*2.43*		*ug/L*	*2.500*		*97.2*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.41*		*ug/L*	*2.500*		*96.3*	*60-140*			
LCS (K710008-BS1)				Prepared: 10/06/2017 Analyzed: 10/06/2017 16:27						
Nitrobenzene	2.27	0.10	ug/L	2.500		90.8	70-130			
Nitrobenzene [2C]	2.33	0.10	ug/L	2.500		93.3	70-130			
2-Nitrotoluene	2.35	0.10	ug/L	2.500		94.1	70-130			
2-Nitrotoluene [2C]	2.37	0.10	ug/L	2.500		94.7	70-130			
3-Nitrotoluene	2.42	0.10	ug/L	2.500		96.8	70-130			
3-Nitrotoluene [2C]	2.38	0.10	ug/L	2.500		95.1	70-130			
4-Nitrotoluene	2.44	0.10	ug/L	2.500		97.5	70-130			
4-Nitrotoluene [2C]	2.22	0.10	ug/L	2.500		88.9	70-130			
Nitroglycerin	2.35	0.10	ug/L	2.500		94.0	70-130			
Nitroglycerin [2C]	2.18	0.10	ug/L	2.500		87.1	70-130			
1,3-Dinitrobenzene	2.16	0.10	ug/L	2.500		86.3	70-130			
1,3-Dinitrobenzene [2C]	2.40	0.10	ug/L	2.500		96.0	70-130			
2,6-Dinitrotoluene	2.29	0.10	ug/L	2.500		91.7	70-130			
2,6-Dinitrotoluene [2C]	2.40	0.10	ug/L	2.500		96.0	70-130			
2,4-Dinitrotoluene	2.36	0.10	ug/L	2.500		94.6	70-130			
2,4-Dinitrotoluene [2C]	2.38	0.10	ug/L	2.500		95.1	70-130			
1,3,5-Trinitrobenzene	2.30	0.10	ug/L	2.500		91.9	70-130			
1,3,5-Trinitrobenzene [2C]	2.22	0.10	ug/L	2.500		89.0	70-130			
2,4,6-Trinitrotoluene	2.38	0.10	ug/L	2.500		95.0	70-130			
2,4,6-Trinitrotoluene [2C]	2.53	0.10	ug/L	2.500		101	70-130			
PETN	2.11	0.10	ug/L	2.500		84.4	70-130			
PETN [2C]	2.14	0.10	ug/L	2.500		85.7	70-130			
RDX	2.27	0.10	ug/L	2.500		90.7	70-130			
RDX [2C]	2.41	0.10	ug/L	2.500		96.4	70-130			
4-Amino-2,6-dinitrotoluene	2.44	0.10	ug/L	2.500		97.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.44	0.10	ug/L	2.500		97.4	70-130			
3,5-Dinitroaniline	2.53	0.10	ug/L	2.500		101	70-130			
3,5-Dinitroaniline [2C]	2.54	0.10	ug/L	2.500		102	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710008 - EPA 3511										
LCS (K710008-BS1)				Prepared: 10/06/2017 Analyzed: 10/06/2017 16:27						
2-Amino-4,6-dinitrotoluene	2.48	0.10	ug/L	2.500		99.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.52	0.10	ug/L	2.500		101	70-130			
Tetryl	2.71	0.10	ug/L	2.500		109	70-130			
Tetryl [2C]	2.45	0.10	ug/L	2.500		98.1	70-130			
HMX	2.26	0.10	ug/L	2.500		90.3	70-130			
HMX [2C]	2.40	0.10	ug/L	2.500		96.1	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*2.48*		*ug/L*	*2.500*		*99.0*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.57*		*ug/L*	*2.500*		*103*	*60-140*			
Matrix Spike (K710008-MS1)		**Source: K174004-04**		Prepared: 10/06/2017 Analyzed: 10/07/2017 16:21						
Nitrobenzene	2.20	0.10	ug/L	2.500	ND	88.2	70-130			
Nitrobenzene [2C]	2.34	0.10	ug/L	2.500	ND	93.7	70-130			
2-Nitrotoluene	2.25	0.10	ug/L	2.500	ND	89.9	70-130			
2-Nitrotoluene [2C]	2.39	0.10	ug/L	2.500	ND	95.8	70-130			
3-Nitrotoluene	2.34	0.10	ug/L	2.500	ND	93.7	70-130			
3-Nitrotoluene [2C]	2.31	0.10	ug/L	2.500	0.0361	91.1	70-130			
4-Nitrotoluene	2.39	0.10	ug/L	2.500	0.00679	95.1	70-130			
4-Nitrotoluene [2C]	2.18	0.10	ug/L	2.500	ND	87.2	70-130			
Nitroglycerin	2.24	0.10	ug/L	2.500	ND	89.5	70-130			
Nitroglycerin [2C]	2.27	0.10	ug/L	2.500	ND	91.0	70-130			
1,3-Dinitrobenzene	2.15	0.10	ug/L	2.500	0.0212	85.1	70-130			
1,3-Dinitrobenzene [2C]	2.10	0.10	ug/L	2.500	ND	83.9	70-130			
2,6-Dinitrotoluene	2.31	0.10	ug/L	2.500	0.00313	92.1	70-130			
2,6-Dinitrotoluene [2C]	2.31	0.10	ug/L	2.500	ND	92.4	70-130			
2,4-Dinitrotoluene	2.37	0.10	ug/L	2.500	0.00299	94.8	70-130			
2,4-Dinitrotoluene [2C]	2.25	0.10	ug/L	2.500	0.00369	89.9	70-130			
1,3,5-Trinitrobenzene	2.33	0.10	ug/L	2.500	ND	93.0	70-130			
1,3,5-Trinitrobenzene [2C]	2.21	0.10	ug/L	2.500	ND	88.4	70-130			
2,4,6-Trinitrotoluene	2.37	0.10	ug/L	2.500	0.00766	94.6	70-130			
2,4,6-Trinitrotoluene [2C]	2.49	0.10	ug/L	2.500	0.0255	98.5	70-130			
PETN	2.11	0.10	ug/L	2.500	ND	84.5	70-130			
PETN [2C]	2.18	0.10	ug/L	2.500	ND	87.3	70-130			
RDX	2.26	0.10	ug/L	2.500	ND	90.5	70-130			
RDX [2C]	2.44	0.10	ug/L	2.500	ND	97.7	70-130			
4-Amino-2,6-dinitrotoluene	2.43	0.10	ug/L	2.500	ND	97.2	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.45	0.10	ug/L	2.500	ND	98.0	70-130			
3,5-Dinitroaniline	2.49	0.10	ug/L	2.500	0.0929	95.8	70-130			
3,5-Dinitroaniline [2C]	2.50	0.10	ug/L	2.500	ND	100	70-130			
2-Amino-4,6-dinitrotoluene	2.50	0.10	ug/L	2.500	ND	100	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.47	0.10	ug/L	2.500	ND	98.8	70-130			
Tetryl	2.80	0.10	ug/L	2.500	ND	112	70-130			
Tetryl [2C]	2.69	0.10	ug/L	2.500	0.0690	105	70-130			
HMX	2.23	0.10	ug/L	2.500	ND	89.0	70-130			
HMX [2C]	2.64	0.10	ug/L	2.500	ND	106	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710008 - EPA 3511										
Matrix Spike (K710008-MS1)		**Source: K174004-04**		Prepared: 10/06/2017 Analyzed: 10/07/2017 16:21						
Surrogate: 2,2´-Dinitrobiphenyl	*2.40*		*ug/L*	*2.500*		*96.0*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.47*		*ug/L*	*2.500*		*98.8*	*60-140*			
Matrix Spike Dup (K710008-MSD1)		**Source: K174004-04**		Prepared: 10/06/2017 Analyzed: 10/07/2017 16:44						
Nitrobenzene	2.20	0.10	ug/L	2.500	ND	88.0	70-130	0.251	20	
Nitrobenzene [2C]	2.34	0.10	ug/L	2.500	ND	93.7	70-130	0.0196	20	
2-Nitrotoluene	2.28	0.10	ug/L	2.500	ND	91.1	70-130	1.32	20	
2-Nitrotoluene [2C]	2.40	0.10	ug/L	2.500	ND	96.2	70-130	0.415	20	
3-Nitrotoluene	2.36	0.10	ug/L	2.500	ND	94.6	70-130	0.904	20	
3-Nitrotoluene [2C]	2.32	0.10	ug/L	2.500	0.0361	91.4	70-130	0.272	20	
4-Nitrotoluene	2.40	0.10	ug/L	2.500	0.00679	95.7	70-130	0.539	20	
4-Nitrotoluene [2C]	2.20	0.10	ug/L	2.500	ND	87.8	70-130	0.768	20	
Nitroglycerin	2.25	0.10	ug/L	2.500	ND	90.1	70-130	0.708	20	
Nitroglycerin [2C]	2.26	0.10	ug/L	2.500	ND	90.4	70-130	0.587	20	
1,3-Dinitrobenzene	2.15	0.10	ug/L	2.500	0.0212	85.1	70-130	0.0340	20	
1,3-Dinitrobenzene [2C]	2.24	0.10	ug/L	2.500	ND	89.5	70-130	6.49	20	
2,6-Dinitrotoluene	2.30	0.10	ug/L	2.500	0.00313	91.7	70-130	0.454	20	
2,6-Dinitrotoluene [2C]	2.31	0.10	ug/L	2.500	ND	92.2	70-130	0.226	20	
2,4-Dinitrotoluene	2.36	0.10	ug/L	2.500	0.00299	94.3	70-130	0.561	20	
2,4-Dinitrotoluene [2C]	2.29	0.10	ug/L	2.500	0.00369	91.3	70-130	1.58	20	
1,3,5-Trinitrobenzene	2.23	0.10	ug/L	2.500	ND	89.1	70-130	4.27	20	
1,3,5-Trinitrobenzene [2C]	2.15	0.10	ug/L	2.500	ND	86.2	70-130	2.60	20	
2,4,6-Trinitrotoluene	2.32	0.10	ug/L	2.500	0.00766	92.6	70-130	2.15	20	
2,4,6-Trinitrotoluene [2C]	2.49	0.10	ug/L	2.500	0.0255	98.6	70-130	0.0513	20	
PETN	2.10	0.10	ug/L	2.500	ND	83.9	70-130	0.723	20	
PETN [2C]	2.11	0.10	ug/L	2.500	ND	84.6	70-130	3.25	20	
RDX	2.22	0.10	ug/L	2.500	ND	88.8	70-130	1.81	20	
RDX [2C]	2.35	0.10	ug/L	2.500	ND	94.1	70-130	3.69	20	
4-Amino-2,6-dinitrotoluene	2.39	0.10	ug/L	2.500	ND	95.5	70-130	1.80	20	
4-Amino-2,6-dinitrotoluene [2C]	2.46	0.10	ug/L	2.500	ND	98.3	70-130	0.291	20	
3,5-Dinitroaniline	2.46	0.10	ug/L	2.500	0.0929	94.7	70-130	1.13	20	
3,5-Dinitroaniline [2C]	2.50	0.10	ug/L	2.500	ND	99.8	70-130	0.229	20	
2-Amino-4,6-dinitrotoluene	2.46	0.10	ug/L	2.500	ND	98.3	70-130	1.81	20	
2-Amino-4,6-dinitrotoluene [2C]	2.45	0.10	ug/L	2.500	ND	97.9	70-130	0.960	20	
Tetryl	2.73	0.10	ug/L	2.500	ND	109	70-130	2.55	20	
Tetryl [2C]	2.70	0.10	ug/L	2.500	0.0690	105	70-130	0.209	20	
HMX	2.20	0.10	ug/L	2.500	ND	88.1	70-130	1.06	20	
HMX [2C]	2.68	0.10	ug/L	2.500	ND	107	70-130	1.56	20	
Surrogate: 2,2´-Dinitrobiphenyl	*2.36*		*ug/L*	*2.500*		*94.5*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.44*		*ug/L*	*2.500*		*97.5*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710009 - EPA 3511										
Blank (K710009-BLK1)				Prepared: 10/09/2017 Analyzed: 10/09/2017 13:55						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*406*		*ug/kg wet*	*400.0*		*102*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*428*		*ug/kg wet*	*400.0*		*107*	*60-140*			
LCS (K710009-BS1)				Prepared: 10/09/2017 Analyzed: 10/09/2017 13:33						
Nitrobenzene	411	100	ug/kg wet	400.0		103	70-130			
Nitrobenzene [2C]	377	100	ug/kg wet	400.0		94.3	70-130			
2-Nitrotoluene	402	100	ug/kg wet	400.0		100	70-130			
2-Nitrotoluene [2C]	386	100	ug/kg wet	400.0		96.6	70-130			
3-Nitrotoluene	406	100	ug/kg wet	400.0		102	70-130			
3-Nitrotoluene [2C]	382	100	ug/kg wet	400.0		95.6	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710009 - EPA 3511										
LCS (K710009-BS1)				Prepared: 10/09/2017 Analyzed: 10/09/2017 13:33						
4-Nitrotoluene	412	100	ug/kg wet	400.0		103	70-130			
4-Nitrotoluene [2C]	395	100	ug/kg wet	400.0		98.8	70-130			
Nitroglycerin	393	100	ug/kg wet	400.0		98.2	70-130			
Nitroglycerin [2C]	358	100	ug/kg wet	400.0		89.6	70-130			
1,3-Dinitrobenzene	394	100	ug/kg wet	400.0		98.5	70-130			
1,3-Dinitrobenzene [2C]	429	100	ug/kg wet	400.0		107	70-130			
2,6-Dinitrotoluene	395	100	ug/kg wet	400.0		98.7	70-130			
2,6-Dinitrotoluene [2C]	371	100	ug/kg wet	400.0		92.8	70-130			
2,4-Dinitrotoluene	391	100	ug/kg wet	400.0		97.7	70-130			
2,4-Dinitrotoluene [2C]	370	100	ug/kg wet	400.0		92.5	70-130			
1,3,5-Trinitrobenzene	416	100	ug/kg wet	400.0		104	70-130			
1,3,5-Trinitrobenzene [2C]	372	100	ug/kg wet	400.0		93.1	70-130			
2,4,6-Trinitrotoluene	395	100	ug/kg wet	400.0		98.9	70-130			
2,4,6-Trinitrotoluene [2C]	364	100	ug/kg wet	400.0		91.0	70-130			
PETN	392	100	ug/kg wet	400.0		97.9	70-130			
PETN [2C]	356	100	ug/kg wet	400.0		89.0	70-130			
RDX	406	100	ug/kg wet	400.0		102	70-130			
RDX [2C]	401	100	ug/kg wet	400.0		100	70-130			
4-Amino-2,6-dinitrotoluene	398	100	ug/kg wet	400.0		99.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	359	100	ug/kg wet	400.0		89.9	70-130			
3,5-Dinitroaniline	389	100	ug/kg wet	400.0		97.3	70-130			
3,5-Dinitroaniline [2C]	323	100	ug/kg wet	400.0		80.8	70-130			
2-Amino-4,6-dinitrotoluene	398	100	ug/kg wet	400.0		99.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	354	100	ug/kg wet	400.0		88.6	70-130			
Tetryl	407	100	ug/kg wet	400.0		102	70-130			
Tetryl [2C]	372	100	ug/kg wet	400.0		93.1	70-130			
HMX	442	100	ug/kg wet	400.0		110	70-130			
HMX [2C]	430	100	ug/kg wet	400.0		107	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*422*		*ug/kg wet*	*400.0*		*105*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*400*		*ug/kg wet*	*400.0*		*100*	*60-140*			
Matrix Spike (K710009-MS1)	**Source: K174101-03**			Prepared: 10/09/2017 Analyzed: 10/09/2017 15:24						
Nitrobenzene	498	110	ug/kg dry	454.9	ND	110	70-130			
Nitrobenzene [2C]	496	110	ug/kg dry	454.9	ND	109	70-130			
2-Nitrotoluene	502	110	ug/kg dry	454.9	ND	110	70-130			
2-Nitrotoluene [2C]	490	110	ug/kg dry	454.9	ND	108	70-130			
3-Nitrotoluene	491	110	ug/kg dry	454.9	ND	108	70-130			
3-Nitrotoluene [2C]	504	110	ug/kg dry	454.9	ND	111	70-130			
4-Nitrotoluene	490	110	ug/kg dry	454.9	ND	108	70-130			
4-Nitrotoluene [2C]	519	110	ug/kg dry	454.9	ND	114	70-130			
Nitroglycerin	449	110	ug/kg dry	454.9	ND	98.6	70-130			
Nitroglycerin [2C]	441	110	ug/kg dry	454.9	ND	97.0	70-130			
1,3-Dinitrobenzene	448	110	ug/kg dry	454.9	ND	98.5	70-130			
1,3-Dinitrobenzene [2C]	519	110	ug/kg dry	454.9	ND	114	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710009 - EPA 3511										
Matrix Spike (K710009-MS1)	**Source: K174101-03**			Prepared: 10/09/2017 Analyzed: 10/09/2017 15:24						
2,6-Dinitrotoluene	457	110	ug/kg dry	454.9	0.713	100	70-130			
2,6-Dinitrotoluene [2C]	479	110	ug/kg dry	454.9	ND	105	70-130			
2,4-Dinitrotoluene	450	110	ug/kg dry	454.9	1.75	98.5	70-130			
2,4-Dinitrotoluene [2C]	483	110	ug/kg dry	454.9	2.29	106	70-130			
1,3,5-Trinitrobenzene	460	110	ug/kg dry	454.9	ND	101	70-130			
1,3,5-Trinitrobenzene [2C]	488	110	ug/kg dry	454.9	3.31	107	70-130			
2,4,6-Trinitrotoluene	440	110	ug/kg dry	454.9	6.36	95.3	70-130			
2,4,6-Trinitrotoluene [2C]	476	110	ug/kg dry	454.9	9.16	103	70-130			
PETN	412	110	ug/kg dry	454.9	ND	90.7	70-130			
PETN [2C]	420	110	ug/kg dry	454.9	ND	92.3	70-130			
RDX	430	110	ug/kg dry	454.9	ND	94.5	70-130			
RDX [2C]	489	110	ug/kg dry	454.9	ND	108	70-130			
4-Amino-2,6-dinitrotoluene	434	110	ug/kg dry	454.9	7.72	93.7	70-130			
4-Amino-2,6-dinitrotoluene [2C]	482	110	ug/kg dry	454.9	5.16	105	70-130			
3,5-Dinitroaniline	420	110	ug/kg dry	454.9	ND	92.4	70-130			
3,5-Dinitroaniline [2C]	478	110	ug/kg dry	454.9	ND	105	70-130			
2-Amino-4,6-dinitrotoluene	426	110	ug/kg dry	454.9	1.63	93.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	489	110	ug/kg dry	454.9	ND	108	70-130			
Tetryl	446	110	ug/kg dry	454.9	ND	98.0	70-130			
Tetryl [2C]	482	110	ug/kg dry	454.9	2.52	105	70-130			
HMX	381	110	ug/kg dry	454.9	ND	83.7	70-130			
HMX [2C]	463	110	ug/kg dry	454.9	ND	102	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*466*		*ug/kg dry*	*454.9*		*102*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*504*		*ug/kg dry*	*454.9*		*111*	*60-140*			
Matrix Spike Dup (K710009-MSD1)	**Source: K174101-03**			Prepared: 10/09/2017 Analyzed: 10/09/2017 15:47						
Nitrobenzene	482	110	ug/kg dry	454.9	ND	106	70-130	3.41	20	
Nitrobenzene [2C]	442	110	ug/kg dry	454.9	ND	97.2	70-130	11.5	20	
2-Nitrotoluene	490	110	ug/kg dry	454.9	ND	108	70-130	2.37	20	
2-Nitrotoluene [2C]	431	110	ug/kg dry	454.9	ND	94.7	70-130	12.9	20	
3-Nitrotoluene	475	110	ug/kg dry	454.9	ND	104	70-130	3.39	20	
3-Nitrotoluene [2C]	443	110	ug/kg dry	454.9	ND	97.5	70-130	12.9	20	
4-Nitrotoluene	474	110	ug/kg dry	454.9	ND	104	70-130	3.32	20	
4-Nitrotoluene [2C]	459	110	ug/kg dry	454.9	ND	101	70-130	12.3	20	
Nitroglycerin	431	110	ug/kg dry	454.9	ND	94.7	70-130	4.05	20	
Nitroglycerin [2C]	385	110	ug/kg dry	454.9	ND	84.7	70-130	13.5	20	
1,3-Dinitrobenzene	440	110	ug/kg dry	454.9	ND	96.7	70-130	1.91	20	
1,3-Dinitrobenzene [2C]	492	110	ug/kg dry	454.9	ND	108	70-130	5.34	20	
2,6-Dinitrotoluene	440	110	ug/kg dry	454.9	0.713	96.6	70-130	3.87	20	
2,6-Dinitrotoluene [2C]	439	110	ug/kg dry	454.9	ND	96.6	70-130	8.55	20	
2,4-Dinitrotoluene	443	110	ug/kg dry	454.9	1.75	97.0	70-130	1.57	20	
2,4-Dinitrotoluene [2C]	441	110	ug/kg dry	454.9	2.29	96.5	70-130	9.14	20	
1,3,5-Trinitrobenzene	454	110	ug/kg dry	454.9	ND	99.9	70-130	1.20	20	
1,3,5-Trinitrobenzene [2C]	448	110	ug/kg dry	454.9	3.31	97.8	70-130	8.63	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710009 - EPA 3511										
Matrix Spike Dup (K710009-MSD1)	**Source: K174101-03**			Prepared: 10/09/2017 Analyzed: 10/09/2017 15:47						
2,4,6-Trinitrotoluene	438	110	ug/kg dry	454.9	6.36	95.0	70-130	0.288	20	
2,4,6-Trinitrotoluene [2C]	435	110	ug/kg dry	454.9	9.16	93.7	70-130	9.06	20	
PETN	406	110	ug/kg dry	454.9	ND	89.2	70-130	1.61	20	
PETN [2C]	367	110	ug/kg dry	454.9	ND	80.6	70-130	13.5	20	
RDX	420	110	ug/kg dry	454.9	ND	92.4	70-130	2.26	20	
RDX [2C]	442	110	ug/kg dry	454.9	ND	97.2	70-130	10.0	20	
4-Amino-2,6-dinitrotoluene	426	110	ug/kg dry	454.9	7.72	91.9	70-130	1.92	20	
4-Amino-2,6-dinitrotoluene [2C]	445	110	ug/kg dry	454.9	5.16	96.7	70-130	8.16	20	
3,5-Dinitroaniline	406	110	ug/kg dry	454.9	ND	89.4	70-130	3.30	20	
3,5-Dinitroaniline [2C]	443	110	ug/kg dry	454.9	ND	97.5	70-130	7.61	20	
2-Amino-4,6-dinitrotoluene	408	110	ug/kg dry	454.9	1.63	89.3	70-130	4.42	20	
2-Amino-4,6-dinitrotoluene [2C]	448	110	ug/kg dry	454.9	ND	98.6	70-130	8.71	20	
Tetryl	429	110	ug/kg dry	454.9	ND	94.3	70-130	3.86	20	
Tetryl [2C]	438	110	ug/kg dry	454.9	2.52	95.7	70-130	9.71	20	
HMX	381	110	ug/kg dry	454.9	ND	83.8	70-130	0.0535	20	
HMX [2C]	438	110	ug/kg dry	454.9	ND	96.4	70-130	5.43	20	
Surrogate: 2,2´-Dinitrobiphenyl	*556*		*ug/kg dry*	*454.9*		*122*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*564*		*ug/kg dry*	*454.9*		*124*	*60-140*			
Batch K710011 - EPA 3511										
Blank (K710011-BLK1)				Prepared: 10/10/2017 Analyzed: 10/10/2017 21:34						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710011 - EPA 3511										
Blank (K710011-BLK1)				Prepared: 10/10/2017 Analyzed: 10/10/2017 21:34						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*353*		*ug/kg wet*	*400.0*		*88.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*386*		*ug/kg wet*	*400.0*		*96.5*	*60-140*			
LCS (K710011-BS1)				Prepared: 10/10/2017 Analyzed: 10/10/2017 21:12						
Nitrobenzene	399	100	ug/kg wet	400.0		99.6	70-130			
Nitrobenzene [2C]	409	100	ug/kg wet	400.0		102	70-130			
2-Nitrotoluene	401	100	ug/kg wet	400.0		100	70-130			
2-Nitrotoluene [2C]	419	100	ug/kg wet	400.0		105	70-130			
3-Nitrotoluene	393	100	ug/kg wet	400.0		98.3	70-130			
3-Nitrotoluene [2C]	412	100	ug/kg wet	400.0		103	70-130			
4-Nitrotoluene	398	100	ug/kg wet	400.0		99.4	70-130			
4-Nitrotoluene [2C]	428	100	ug/kg wet	400.0		107	70-130			
Nitroglycerin	382	100	ug/kg wet	400.0		95.5	70-130			
Nitroglycerin [2C]	365	100	ug/kg wet	400.0		91.2	70-130			
1,3-Dinitrobenzene	368	100	ug/kg wet	400.0		92.0	70-130			
1,3-Dinitrobenzene [2C]	424	100	ug/kg wet	400.0		106	70-130			
2,6-Dinitrotoluene	371	100	ug/kg wet	400.0		92.7	70-130			
2,6-Dinitrotoluene [2C]	392	100	ug/kg wet	400.0		98.1	70-130			
2,4-Dinitrotoluene	362	100	ug/kg wet	400.0		90.6	70-130			
2,4-Dinitrotoluene [2C]	385	100	ug/kg wet	400.0		96.2	70-130			
1,3,5-Trinitrobenzene	393	100	ug/kg wet	400.0		98.2	70-130			
1,3,5-Trinitrobenzene [2C]	385	100	ug/kg wet	400.0		96.2	70-130			
2,4,6-Trinitrotoluene	349	100	ug/kg wet	400.0		87.2	70-130			
2,4,6-Trinitrotoluene [2C]	366	100	ug/kg wet	400.0		91.4	70-130			
PETN	388	100	ug/kg wet	400.0		97.0	70-130			
PETN [2C]	359	100	ug/kg wet	400.0		89.7	70-130			
RDX	400	100	ug/kg wet	400.0		100	70-130			
RDX [2C]	386	100	ug/kg wet	400.0		96.5	70-130			
4-Amino-2,6-dinitrotoluene	372	100	ug/kg wet	400.0		92.9	70-130			
4-Amino-2,6-dinitrotoluene [2C]	375	100	ug/kg wet	400.0		93.8	70-130			
3,5-Dinitroaniline	372	100	ug/kg wet	400.0		93.0	70-130			
3,5-Dinitroaniline [2C]	370	100	ug/kg wet	400.0		92.4	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710011 - EPA 3511										
LCS (K710011-BS1)				Prepared: 10/10/2017 Analyzed: 10/10/2017 21:12						
2-Amino-4,6-dinitrotoluene	377	100	ug/kg wet	400.0		94.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	370	100	ug/kg wet	400.0		92.6	70-130			
Tetryl	398	100	ug/kg wet	400.0		99.6	70-130			
Tetryl [2C]	336	100	ug/kg wet	400.0		83.9	70-130			
HMX	404	100	ug/kg wet	400.0		101	70-130			
HMX [2C]	360	100	ug/kg wet	400.0		89.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*405*		*ug/kg wet*	*400.0*		*101*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*410*		*ug/kg wet*	*400.0*		*103*	*60-140*			
Matrix Spike (K710011-MS1)	**Source: K174103-09**			Prepared: 10/10/2017 Analyzed: 10/10/2017 23:45						
Nitrobenzene	413	100	ug/kg dry	419.0	ND	98.6	70-130			
Nitrobenzene [2C]	421	100	ug/kg dry	419.0	ND	100	70-130			
2-Nitrotoluene	413	100	ug/kg dry	419.0	ND	98.5	70-130			
2-Nitrotoluene [2C]	423	100	ug/kg dry	419.0	ND	101	70-130			
3-Nitrotoluene	414	100	ug/kg dry	419.0	ND	98.9	70-130			
3-Nitrotoluene [2C]	427	100	ug/kg dry	419.0	ND	102	70-130			
4-Nitrotoluene	419	100	ug/kg dry	419.0	ND	100	70-130			
4-Nitrotoluene [2C]	439	100	ug/kg dry	419.0	ND	105	70-130			
Nitroglycerin	363	100	ug/kg dry	419.0	ND	86.7	70-130			
Nitroglycerin [2C]	369	100	ug/kg dry	419.0	ND	88.1	70-130			
1,3-Dinitrobenzene	385	100	ug/kg dry	419.0	ND	92.0	70-130			
1,3-Dinitrobenzene [2C]	437	100	ug/kg dry	419.0	ND	104	70-130			
2,6-Dinitrotoluene	388	100	ug/kg dry	419.0	0.527	92.4	70-130			
2,6-Dinitrotoluene [2C]	414	100	ug/kg dry	419.0	ND	98.7	70-130			
2,4-Dinitrotoluene	672	100	ug/kg dry	419.0	3.42	159	70-130			M
2,4-Dinitrotoluene [2C]	732	100	ug/kg dry	419.0	5.23	173	70-130			M
1,3,5-Trinitrobenzene	393	100	ug/kg dry	419.0	ND	93.7	70-130			
1,3,5-Trinitrobenzene [2C]	403	100	ug/kg dry	419.0	1.23	95.9	70-130			
2,4,6-Trinitrotoluene	472	100	ug/kg dry	419.0	19.7	108	70-130			
2,4,6-Trinitrotoluene [2C]	520	100	ug/kg dry	419.0	27.7	118	70-130			
PETN	347	100	ug/kg dry	419.0	1.08	82.5	70-130			
PETN [2C]	356	100	ug/kg dry	419.0	ND	85.0	70-130			
RDX	394	100	ug/kg dry	419.0	ND	94.0	70-130			
RDX [2C]	394	100	ug/kg dry	419.0	ND	93.9	70-130			
4-Amino-2,6-dinitrotoluene	437	100	ug/kg dry	419.0	13.7	101	70-130			
4-Amino-2,6-dinitrotoluene [2C]	468	100	ug/kg dry	419.0	22.6	106	70-130			
3,5-Dinitroaniline	376	100	ug/kg dry	419.0	ND	89.8	70-130			
3,5-Dinitroaniline [2C]	393	100	ug/kg dry	419.0	ND	93.9	70-130			
2-Amino-4,6-dinitrotoluene	417	100	ug/kg dry	419.0	4.97	98.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	450	100	ug/kg dry	419.0	7.54	106	70-130			
Tetryl	385	100	ug/kg dry	419.0	ND	91.9	70-130			
Tetryl [2C]	356	100	ug/kg dry	419.0	ND	84.9	70-130			
HMX	333	100	ug/kg dry	419.0	ND	79.5	70-130			
HMX [2C]	361	100	ug/kg dry	419.0	ND	86.1	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710011 - EPA 3511										
Matrix Spike (K710011-MS1)	**Source: K174103-09**			Prepared: 10/10/2017 Analyzed: 10/10/2017 23:45						
Surrogate: 2,2´-Dinitrobiphenyl	*406*		*ug/kg dry*	*419.0*		*96.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*417*		*ug/kg dry*	*419.0*		*99.6*	*60-140*			
Matrix Spike Dup (K710011-MSD1)	**Source: K174103-09**			Prepared: 10/10/2017 Analyzed: 10/11/2017 00:07						
Nitrobenzene	422	100	ug/kg dry	419.0	ND	101	70-130	2.05	20	
Nitrobenzene [2C]	432	100	ug/kg dry	419.0	ND	103	70-130	2.59	20	
2-Nitrotoluene	423	100	ug/kg dry	419.0	ND	101	70-130	2.40	20	
2-Nitrotoluene [2C]	436	100	ug/kg dry	419.0	ND	104	70-130	3.07	20	
3-Nitrotoluene	422	100	ug/kg dry	419.0	ND	101	70-130	1.83	20	
3-Nitrotoluene [2C]	440	100	ug/kg dry	419.0	ND	105	70-130	2.98	20	
4-Nitrotoluene	429	100	ug/kg dry	419.0	ND	102	70-130	2.26	20	
4-Nitrotoluene [2C]	451	100	ug/kg dry	419.0	ND	108	70-130	2.69	20	
Nitroglycerin	372	100	ug/kg dry	419.0	ND	88.8	70-130	2.40	20	
Nitroglycerin [2C]	373	100	ug/kg dry	419.0	ND	89.0	70-130	1.00	20	
1,3-Dinitrobenzene	385	100	ug/kg dry	419.0	ND	91.9	70-130	0.0968	20	
1,3-Dinitrobenzene [2C]	498	100	ug/kg dry	419.0	ND	119	70-130	12.9	20	
2,6-Dinitrotoluene	397	100	ug/kg dry	419.0	0.527	94.5	70-130	2.19	20	
2,6-Dinitrotoluene [2C]	426	100	ug/kg dry	419.0	ND	102	70-130	2.81	20	
2,4-Dinitrotoluene	632	100	ug/kg dry	419.0	3.42	150	70-130	6.19	20	M
2,4-Dinitrotoluene [2C]	697	100	ug/kg dry	419.0	5.23	165	70-130	4.96	20	M
1,3,5-Trinitrobenzene	394	100	ug/kg dry	419.0	ND	94.1	70-130	0.490	20	
1,3,5-Trinitrobenzene [2C]	415	100	ug/kg dry	419.0	1.23	98.7	70-130	2.87	20	
2,4,6-Trinitrotoluene	942	100	ug/kg dry	419.0	19.7	220	70-130	68.5	20	M, X
2,4,6-Trinitrotoluene [2C]	1030	100	ug/kg dry	419.0	27.7	239	70-130	68.0	20	M, X
PETN	351	100	ug/kg dry	419.0	1.08	83.6	70-130	1.22	20	
PETN [2C]	351	100	ug/kg dry	419.0	ND	83.9	70-130	1.39	20	
RDX	388	100	ug/kg dry	419.0	ND	92.5	70-130	1.53	20	
RDX [2C]	396	100	ug/kg dry	419.0	ND	94.5	70-130	0.597	20	
4-Amino-2,6-dinitrotoluene	450	100	ug/kg dry	419.0	13.7	104	70-130	3.08	20	
4-Amino-2,6-dinitrotoluene [2C]	483	100	ug/kg dry	419.0	22.6	110	70-130	3.41	20	
3,5-Dinitroaniline	370	100	ug/kg dry	419.0	ND	88.3	70-130	1.67	20	
3,5-Dinitroaniline [2C]	394	100	ug/kg dry	419.0	ND	94.1	70-130	0.174	20	
2-Amino-4,6-dinitrotoluene	422	100	ug/kg dry	419.0	4.97	99.4	70-130	1.01	20	
2-Amino-4,6-dinitrotoluene [2C]	456	100	ug/kg dry	419.0	7.54	107	70-130	1.28	20	
Tetryl	378	100	ug/kg dry	419.0	ND	90.2	70-130	1.88	20	
Tetryl [2C]	358	100	ug/kg dry	419.0	ND	85.5	70-130	0.788	20	
HMX	310	100	ug/kg dry	419.0	ND	73.9	70-130	7.27	20	
HMX [2C]	320	100	ug/kg dry	419.0	ND	76.5	70-130	11.8	20	
Surrogate: 2,2´-Dinitrobiphenyl	*399*		*ug/kg dry*	*419.0*		*95.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*423*		*ug/kg dry*	*419.0*		*101*	*60-140*			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710013 - EPA 3511										
Blank (K710013-BLK1)				Prepared: 10/11/2017 Analyzed: 10/11/2017 23:12						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							LC
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							LC
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*367*		*ug/kg wet*	*400.0*		*91.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*346*		*ug/kg wet*	*400.0*		*86.4*	*60-140*			
LCS (K710013-BS1)				Prepared: 10/11/2017 Analyzed: 10/11/2017 15:01						
Nitrobenzene	420	100	ug/kg wet	400.0		105	70-130			
Nitrobenzene [2C]	401	100	ug/kg wet	400.0		100	70-130			
2-Nitrotoluene	424	100	ug/kg wet	400.0		106	70-130			
2-Nitrotoluene [2C]	412	100	ug/kg wet	400.0		103	70-130			
3-Nitrotoluene	411	100	ug/kg wet	400.0		103	70-130			
3-Nitrotoluene [2C]	408	100	ug/kg wet	400.0		102	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710013 - EPA 3511										
LCS (K710013-BS1)				Prepared: 10/11/2017 Analyzed: 10/11/2017 15:01						
4-Nitrotoluene	424	100	ug/kg wet	400.0		106	70-130			
4-Nitrotoluene [2C]	424	100	ug/kg wet	400.0		106	70-130			
Nitroglycerin	376	100	ug/kg wet	400.0		94.0	70-130			
Nitroglycerin [2C]	349	100	ug/kg wet	400.0		87.4	70-130			
1,3-Dinitrobenzene	381	100	ug/kg wet	400.0		95.3	70-130			
1,3-Dinitrobenzene [2C]	390	100	ug/kg wet	400.0		97.5	70-130			
2,6-Dinitrotoluene	387	100	ug/kg wet	400.0		96.7	70-130			
2,6-Dinitrotoluene [2C]	388	100	ug/kg wet	400.0		97.1	70-130			
2,4-Dinitrotoluene	384	100	ug/kg wet	400.0		96.0	70-130			
2,4-Dinitrotoluene [2C]	381	100	ug/kg wet	400.0		95.2	70-130			
1,3,5-Trinitrobenzene	381	100	ug/kg wet	400.0		95.3	70-130			
1,3,5-Trinitrobenzene [2C]	379	100	ug/kg wet	400.0		94.7	70-130			
2,4,6-Trinitrotoluene	375	100	ug/kg wet	400.0		93.8	70-130			
2,4,6-Trinitrotoluene [2C]	361	100	ug/kg wet	400.0		90.3	70-130			
PETN	362	100	ug/kg wet	400.0		90.6	70-130			
PETN [2C]	348	100	ug/kg wet	400.0		87.0	70-130			
RDX	387	100	ug/kg wet	400.0		96.7	70-130			
RDX [2C]	374	100	ug/kg wet	400.0		93.6	70-130			
4-Amino-2,6-dinitrotoluene	372	100	ug/kg wet	400.0		93.1	70-130			
4-Amino-2,6-dinitrotoluene [2C]	371	100	ug/kg wet	400.0		92.7	70-130			
3,5-Dinitroaniline	361	100	ug/kg wet	400.0		90.3	70-130			
3,5-Dinitroaniline [2C]	364	100	ug/kg wet	400.0		91.1	70-130			
2-Amino-4,6-dinitrotoluene	368	100	ug/kg wet	400.0		92.1	70-130			
2-Amino-4,6-dinitrotoluene [2C]	369	100	ug/kg wet	400.0		92.1	70-130			
Tetryl	375	100	ug/kg wet	400.0		93.8	70-130			
Tetryl [2C]	324	100	ug/kg wet	400.0		81.1	70-130			
HMX	362	100	ug/kg wet	400.0		90.5	70-130			
HMX [2C]	351	100	ug/kg wet	400.0		87.8	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*399*		*ug/kg wet*	*400.0*		*99.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*405*		*ug/kg wet*	*400.0*		*101*	*60-140*			
Matrix Spike (K710013-MS1)	**Source: K174104-10**			Prepared: 10/11/2017 Analyzed: 10/11/2017 19:50						
Nitrobenzene	468	110	ug/kg dry	438.4	ND	107	70-130			
Nitrobenzene [2C]	454	110	ug/kg dry	438.4	ND	104	70-130			
2-Nitrotoluene	469	110	ug/kg dry	438.4	ND	107	70-130			
2-Nitrotoluene [2C]	463	110	ug/kg dry	438.4	ND	106	70-130			
3-Nitrotoluene	458	110	ug/kg dry	438.4	ND	104	70-130			
3-Nitrotoluene [2C]	460	110	ug/kg dry	438.4	ND	105	70-130			
4-Nitrotoluene	473	110	ug/kg dry	438.4	ND	108	70-130			
4-Nitrotoluene [2C]	481	110	ug/kg dry	438.4	ND	110	70-130			
Nitroglycerin	366	110	ug/kg dry	438.4	ND	83.5	70-130			
Nitroglycerin [2C]	386	110	ug/kg dry	438.4	ND	88.1	70-130			
1,3-Dinitrobenzene	415	110	ug/kg dry	438.4	ND	94.7	70-130			
1,3-Dinitrobenzene [2C]	488	110	ug/kg dry	438.4	ND	111	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710013 - EPA 3511										
Matrix Spike (K710013-MS1)	**Source: K174104-10**			Prepared: 10/11/2017 Analyzed: 10/11/2017 19:50						
2,6-Dinitrotoluene	420	110	ug/kg dry	438.4	0.536	95.6	70-130			
2,6-Dinitrotoluene [2C]	440	110	ug/kg dry	438.4	ND	100	70-130			
2,4-Dinitrotoluene	409	110	ug/kg dry	438.4	1.50	92.9	70-130			
2,4-Dinitrotoluene [2C]	441	110	ug/kg dry	438.4	ND	101	70-130			
1,3,5-Trinitrobenzene	391	110	ug/kg dry	438.4	ND	89.2	70-130			
1,3,5-Trinitrobenzene [2C]	434	110	ug/kg dry	438.4	1.63	98.6	70-130			
2,4,6-Trinitrotoluene	396	110	ug/kg dry	438.4	28.0	84.0	70-130			
2,4,6-Trinitrotoluene [2C]	421	110	ug/kg dry	438.4	31.3	88.8	70-130			
PETN	337	110	ug/kg dry	438.4	1.52	76.5	70-130			
PETN [2C]	360	110	ug/kg dry	438.4	ND	82.1	70-130			
RDX	394	110	ug/kg dry	438.4	ND	89.8	70-130			
RDX [2C]	443	110	ug/kg dry	438.4	7.67	99.3	70-130			
4-Amino-2,6-dinitrotoluene	394	110	ug/kg dry	438.4	11.2	87.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	438	110	ug/kg dry	438.4	14.4	96.7	70-130			
3,5-Dinitroaniline	379	110	ug/kg dry	438.4	ND	86.5	70-130			
3,5-Dinitroaniline [2C]	434	110	ug/kg dry	438.4	ND	99.0	70-130			
2-Amino-4,6-dinitrotoluene	386	110	ug/kg dry	438.4	7.74	86.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	437	110	ug/kg dry	438.4	8.06	97.9	70-130			
Tetryl	367	110	ug/kg dry	438.4	ND	83.6	70-130			
Tetryl [2C]	392	110	ug/kg dry	438.4	ND	89.4	70-130			
HMX	342	110	ug/kg dry	438.4	ND	77.9	70-130			
HMX [2C]	418	110	ug/kg dry	438.4	ND	95.3	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*423*		*ug/kg dry*	*438.4*		*96.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*473*		*ug/kg dry*	*438.4*		*108*	*60-140*			
Matrix Spike Dup (K710013-MSD1)	**Source: K174104-10**			Prepared: 10/11/2017 Analyzed: 10/11/2017 20:13						
Nitrobenzene	467	110	ug/kg dry	438.4	ND	106	70-130	0.164	20	
Nitrobenzene [2C]	480	110	ug/kg dry	438.4	ND	110	70-130	5.59	20	
2-Nitrotoluene	472	110	ug/kg dry	438.4	ND	108	70-130	0.550	20	
2-Nitrotoluene [2C]	487	110	ug/kg dry	438.4	ND	111	70-130	4.97	20	
3-Nitrotoluene	455	110	ug/kg dry	438.4	ND	104	70-130	0.678	20	
3-Nitrotoluene [2C]	486	110	ug/kg dry	438.4	ND	111	70-130	5.42	20	
4-Nitrotoluene	469	110	ug/kg dry	438.4	ND	107	70-130	0.973	20	
4-Nitrotoluene [2C]	504	110	ug/kg dry	438.4	ND	115	70-130	4.68	20	
Nitroglycerin	356	110	ug/kg dry	438.4	ND	81.3	70-130	2.76	20	
Nitroglycerin [2C]	394	110	ug/kg dry	438.4	ND	89.9	70-130	2.04	20	
1,3-Dinitrobenzene	401	110	ug/kg dry	438.4	ND	91.4	70-130	3.60	20	
1,3-Dinitrobenzene [2C]	401	110	ug/kg dry	438.4	ND	91.5	70-130	19.5	20	
2,6-Dinitrotoluene	413	110	ug/kg dry	438.4	0.536	94.2	70-130	1.47	20	
2,6-Dinitrotoluene [2C]	465	110	ug/kg dry	438.4	ND	106	70-130	5.37	20	
2,4-Dinitrotoluene	402	110	ug/kg dry	438.4	1.50	91.4	70-130	1.65	20	
2,4-Dinitrotoluene [2C]	463	110	ug/kg dry	438.4	ND	106	70-130	4.85	20	
1,3,5-Trinitrobenzene	367	110	ug/kg dry	438.4	ND	83.6	70-130	6.52	20	
1,3,5-Trinitrobenzene [2C]	452	110	ug/kg dry	438.4	1.63	103	70-130	4.02	20	

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710013 - EPA 3511										
Matrix Spike Dup (K710013-MSD1)	**Source: K174104-10**			Prepared: 10/11/2017 Analyzed: 10/11/2017 20:13						
2,4,6-Trinitrotoluene	374	110	ug/kg dry	438.4	28.0	79.0	70-130	6.13	20	
2,4,6-Trinitrotoluene [2C]	428	110	ug/kg dry	438.4	31.3	90.5	70-130	1.91	20	
PETN	317	110	ug/kg dry	438.4	1.52	72.0	70-130	6.07	20	
PETN [2C]	358	110	ug/kg dry	438.4	ND	81.7	70-130	0.379	20	
RDX	357	110	ug/kg dry	438.4	ND	81.5	70-130	9.72	20	
RDX [2C]	445	110	ug/kg dry	438.4	7.67	99.7	70-130	0.410	20	
4-Amino-2,6-dinitrotoluene	360	110	ug/kg dry	438.4	11.2	79.5	70-130	9.35	20	
4-Amino-2,6-dinitrotoluene [2C]	453	110	ug/kg dry	438.4	14.4	100	70-130	3.53	20	
3,5-Dinitroaniline	340	110	ug/kg dry	438.4	ND	77.5	70-130	10.9	20	
3,5-Dinitroaniline [2C]	444	110	ug/kg dry	438.4	ND	101	70-130	2.34	20	
2-Amino-4,6-dinitrotoluene	353	110	ug/kg dry	438.4	7.74	78.8	70-130	9.01	20	
2-Amino-4,6-dinitrotoluene [2C]	453	110	ug/kg dry	438.4	8.06	101	70-130	3.50	20	
Tetryl	338	110	ug/kg dry	438.4	ND	77.1	70-130	8.11	20	
Tetryl [2C]	394	110	ug/kg dry	438.4	ND	89.9	70-130	0.638	20	
HMX	272	110	ug/kg dry	438.4	ND	62.0	70-130	22.7	20	M, X
HMX [2C]	399	110	ug/kg dry	438.4	ND	91.0	70-130	4.54	20	
Surrogate: 2,2´-Dinitrobiphenyl	*398*		*ug/kg dry*	*438.4*		*90.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*489*		*ug/kg dry*	*438.4*		*112*	*60-140*			
Batch K710015 - EPA 3511										
Blank (K710015-BLK1)				Prepared: 10/12/2017 Analyzed: 10/12/2017 13:23						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710015 - EPA 3511										
Blank (K710015-BLK1)				Prepared: 10/12/2017 Analyzed: 10/12/2017 13:23						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*323*		*ug/kg wet*	*400.0*		*80.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*355*		*ug/kg wet*	*400.0*		*88.9*	*60-140*			
LCS (K710015-BS1)				Prepared: 10/12/2017 Analyzed: 10/12/2017 19:43						
Nitrobenzene	440	100	ug/kg wet	400.0		110	70-130			
Nitrobenzene [2C]	399	100	ug/kg wet	400.0		99.8	70-130			
2-Nitrotoluene	447	100	ug/kg wet	400.0		112	70-130			
2-Nitrotoluene [2C]	417	100	ug/kg wet	400.0		104	70-130			
3-Nitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
3-Nitrotoluene [2C]	408	100	ug/kg wet	400.0		102	70-130			
4-Nitrotoluene	448	100	ug/kg wet	400.0		112	70-130			
4-Nitrotoluene [2C]	425	100	ug/kg wet	400.0		106	70-130			
Nitroglycerin	342	100	ug/kg wet	400.0		85.4	70-130			
Nitroglycerin [2C]	329	100	ug/kg wet	400.0		82.2	70-130			
1,3-Dinitrobenzene	383	100	ug/kg wet	400.0		95.6	70-130			
1,3-Dinitrobenzene [2C]	330	100	ug/kg wet	400.0		82.5	70-130			
2,6-Dinitrotoluene	398	100	ug/kg wet	400.0		99.6	70-130			
2,6-Dinitrotoluene [2C]	385	100	ug/kg wet	400.0		96.2	70-130			
2,4-Dinitrotoluene	384	100	ug/kg wet	400.0		96.0	70-130			
2,4-Dinitrotoluene [2C]	380	100	ug/kg wet	400.0		94.9	70-130			
1,3,5-Trinitrobenzene	378	100	ug/kg wet	400.0		94.5	70-130			
1,3,5-Trinitrobenzene [2C]	369	100	ug/kg wet	400.0		92.3	70-130			
2,4,6-Trinitrotoluene	373	100	ug/kg wet	400.0		93.3	70-130			
2,4,6-Trinitrotoluene [2C]	360	100	ug/kg wet	400.0		90.0	70-130			
PETN	308	100	ug/kg wet	400.0		76.9	70-130			
PETN [2C]	304	100	ug/kg wet	400.0		76.0	70-130			
RDX	374	100	ug/kg wet	400.0		93.4	70-130			
RDX [2C]	374	100	ug/kg wet	400.0		93.5	70-130			
4-Amino-2,6-dinitrotoluene	362	100	ug/kg wet	400.0		90.4	70-130			
4-Amino-2,6-dinitrotoluene [2C]	361	100	ug/kg wet	400.0		90.2	70-130			
3,5-Dinitroaniline	349	100	ug/kg wet	400.0		87.2	70-130			
3,5-Dinitroaniline [2C]	346	100	ug/kg wet	400.0		86.6	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710015 - EPA 3511										
LCS (K710015-BS1)				Prepared: 10/12/2017 Analyzed: 10/12/2017 19:43						
2-Amino-4,6-dinitrotoluene	354	100	ug/kg wet	400.0		88.6	70-130			
2-Amino-4,6-dinitrotoluene [2C]	362	100	ug/kg wet	400.0		90.6	70-130			
Tetryl	349	100	ug/kg wet	400.0		87.2	70-130			
Tetryl [2C]	328	100	ug/kg wet	400.0		81.9	70-130			
HMX	311	100	ug/kg wet	400.0		77.8	70-130			
HMX [2C]	304	100	ug/kg wet	400.0		75.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*392*		*ug/kg wet*	*400.0*		*98.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*391*		*ug/kg wet*	*400.0*		*97.7*	*60-140*			
Matrix Spike (K710015-MS1)	**Source: K174105-01**			Prepared: 10/12/2017 Analyzed: 10/12/2017 17:36						
Nitrobenzene	495	120	ug/kg dry	466.0	ND	106	70-130			
Nitrobenzene [2C]	469	120	ug/kg dry	466.0	ND	101	70-130			
2-Nitrotoluene	505	120	ug/kg dry	466.0	ND	108	70-130			
2-Nitrotoluene [2C]	477	120	ug/kg dry	466.0	ND	102	70-130			
3-Nitrotoluene	493	120	ug/kg dry	466.0	ND	106	70-130			
3-Nitrotoluene [2C]	480	120	ug/kg dry	466.0	ND	103	70-130			
4-Nitrotoluene	503	120	ug/kg dry	466.0	ND	108	70-130			
4-Nitrotoluene [2C]	494	120	ug/kg dry	466.0	ND	106	70-130			
Nitroglycerin	405	120	ug/kg dry	466.0	6.58	85.5	70-130			
Nitroglycerin [2C]	401	120	ug/kg dry	466.0	8.64	84.2	70-130			
1,3-Dinitrobenzene	438	120	ug/kg dry	466.0	ND	94.1	70-130			
1,3-Dinitrobenzene [2C]	509	120	ug/kg dry	466.0	ND	109	70-130			
2,6-Dinitrotoluene	452	120	ug/kg dry	466.0	ND	97.0	70-130			
2,6-Dinitrotoluene [2C]	471	120	ug/kg dry	466.0	ND	101	70-130			
2,4-Dinitrotoluene	440	120	ug/kg dry	466.0	ND	94.5	70-130			
2,4-Dinitrotoluene [2C]	468	120	ug/kg dry	466.0	ND	100	70-130			
1,3,5-Trinitrobenzene	432	120	ug/kg dry	466.0	ND	92.7	70-130			
1,3,5-Trinitrobenzene [2C]	458	120	ug/kg dry	466.0	ND	98.3	70-130			
2,4,6-Trinitrotoluene	455	120	ug/kg dry	466.0	26.2	92.0	70-130			
2,4,6-Trinitrotoluene [2C]	463	120	ug/kg dry	466.0	26.8	93.5	70-130			
PETN	364	120	ug/kg dry	466.0	ND	78.0	70-130			
PETN [2C]	371	120	ug/kg dry	466.0	ND	79.6	70-130			
RDX	398	120	ug/kg dry	466.0	ND	85.4	70-130			
RDX [2C]	422	120	ug/kg dry	466.0	4.07	89.7	70-130			
4-Amino-2,6-dinitrotoluene	459	120	ug/kg dry	466.0	36.3	90.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	478	120	ug/kg dry	466.0	38.4	94.3	70-130			
3,5-Dinitroaniline	399	120	ug/kg dry	466.0	ND	85.5	70-130			
3,5-Dinitroaniline [2C]	424	120	ug/kg dry	466.0	2.38	90.5	70-130			
2-Amino-4,6-dinitrotoluene	425	120	ug/kg dry	466.0	18.8	87.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	454	120	ug/kg dry	466.0	19.5	93.3	70-130			
Tetryl	405	120	ug/kg dry	466.0	ND	87.0	70-130			
Tetryl [2C]	419	120	ug/kg dry	466.0	ND	89.8	70-130			
HMX	276	120	ug/kg dry	466.0	ND	59.2	70-130			M
HMX [2C]	301	120	ug/kg dry	466.0	ND	64.6	70-130			M

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710015 - EPA 3511										
Matrix Spike (K710015-MS1)	**Source: K174105-01**			Prepared: 10/12/2017 Analyzed: 10/12/2017 17:36						
Surrogate: 2,2´-Dinitrobiphenyl	*453*		*ug/kg dry*	*466.0*		*97.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*482*		*ug/kg dry*	*466.0*		*104*	*60-140*			
Matrix Spike Dup (K710015-MSD1)	**Source: K174105-01**			Prepared: 10/12/2017 Analyzed: 10/12/2017 17:58						
Nitrobenzene	508	120	ug/kg dry	466.0	ND	109	70-130	2.61	20	
Nitrobenzene [2C]	515	120	ug/kg dry	466.0	ND	111	70-130	9.44	20	
2-Nitrotoluene	512	120	ug/kg dry	466.0	ND	110	70-130	1.50	20	
2-Nitrotoluene [2C]	524	120	ug/kg dry	466.0	ND	112	70-130	9.53	20	
3-Nitrotoluene	507	120	ug/kg dry	466.0	ND	109	70-130	2.82	20	
3-Nitrotoluene [2C]	531	120	ug/kg dry	466.0	ND	114	70-130	9.97	20	
4-Nitrotoluene	519	120	ug/kg dry	466.0	ND	111	70-130	3.16	20	
4-Nitrotoluene [2C]	545	120	ug/kg dry	466.0	ND	117	70-130	9.71	20	
Nitroglycerin	421	120	ug/kg dry	466.0	6.58	89.0	70-130	3.91	20	
Nitroglycerin [2C]	430	120	ug/kg dry	466.0	8.64	90.5	70-130	7.21	20	
1,3-Dinitrobenzene	447	120	ug/kg dry	466.0	ND	95.8	70-130	1.86	20	
1,3-Dinitrobenzene [2C]	544	120	ug/kg dry	466.0	ND	117	70-130	6.64	20	
2,6-Dinitrotoluene	463	120	ug/kg dry	466.0	ND	99.4	70-130	2.41	20	
2,6-Dinitrotoluene [2C]	508	120	ug/kg dry	466.0	ND	109	70-130	7.62	20	
2,4-Dinitrotoluene	469	120	ug/kg dry	466.0	ND	101	70-130	6.27	20	
2,4-Dinitrotoluene [2C]	505	120	ug/kg dry	466.0	ND	108	70-130	7.65	20	
1,3,5-Trinitrobenzene	459	120	ug/kg dry	466.0	ND	98.6	70-130	6.20	20	
1,3,5-Trinitrobenzene [2C]	503	120	ug/kg dry	466.0	ND	108	70-130	9.27	20	
2,4,6-Trinitrotoluene	461	120	ug/kg dry	466.0	26.2	93.4	70-130	1.45	20	
2,4,6-Trinitrotoluene [2C]	496	120	ug/kg dry	466.0	26.8	101	70-130	7.35	20	
PETN	381	120	ug/kg dry	466.0	ND	81.7	70-130	4.62	20	
PETN [2C]	394	120	ug/kg dry	466.0	ND	84.6	70-130	6.06	20	
RDX	440	120	ug/kg dry	466.0	ND	94.3	70-130	9.95	20	
RDX [2C]	474	120	ug/kg dry	466.0	4.07	101	70-130	11.6	20	
4-Amino-2,6-dinitrotoluene	487	120	ug/kg dry	466.0	36.3	96.8	70-130	6.53	20	
4-Amino-2,6-dinitrotoluene [2C]	524	120	ug/kg dry	466.0	38.4	104	70-130	9.95	20	
3,5-Dinitroaniline	437	120	ug/kg dry	466.0	ND	93.7	70-130	9.09	20	
3,5-Dinitroaniline [2C]	468	120	ug/kg dry	466.0	2.38	100	70-130	9.96	20	
2-Amino-4,6-dinitrotoluene	463	120	ug/kg dry	466.0	18.8	95.4	70-130	8.96	20	
2-Amino-4,6-dinitrotoluene [2C]	496	120	ug/kg dry	466.0	19.5	102	70-130	9.25	20	
Tetryl	452	120	ug/kg dry	466.0	ND	96.9	70-130	10.8	20	
Tetryl [2C]	454	120	ug/kg dry	466.0	ND	97.4	70-130	8.06	20	
HMX	351	120	ug/kg dry	466.0	ND	75.4	70-130	24.0	20	X
HMX [2C]	395	120	ug/kg dry	466.0	ND	84.8	70-130	26.9	20	X
Surrogate: 2,2´-Dinitrobiphenyl	*467*		*ug/kg dry*	*466.0*		*100*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*527*		*ug/kg dry*	*466.0*		*113*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710017 - EPA 3511										
Blank (K710017-BLK1)				Prepared: 10/12/2017 Analyzed: 10/12/2017 21:45						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*377*		*ug/kg wet*	*400.0*		*94.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*402*		*ug/kg wet*	*400.0*		*101*	*60-140*			
LCS (K710017-BS1)				Prepared: 10/12/2017 Analyzed: 10/13/2017 00:08						
Nitrobenzene	429	100	ug/kg wet	400.0		107	70-130			
Nitrobenzene [2C]	418	100	ug/kg wet	400.0		105	70-130			
2-Nitrotoluene	437	100	ug/kg wet	400.0		109	70-130			
2-Nitrotoluene [2C]	424	100	ug/kg wet	400.0		106	70-130			
3-Nitrotoluene	424	100	ug/kg wet	400.0		106	70-130			
3-Nitrotoluene [2C]	424	100	ug/kg wet	400.0		106	70-130			

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710017 - EPA 3511										
LCS (K710017-BS1)				Prepared: 10/12/2017 Analyzed: 10/13/2017 00:08						
4-Nitrotoluene	435	100	ug/kg wet	400.0		109	70-130			
4-Nitrotoluene [2C]	439	100	ug/kg wet	400.0		110	70-130			
Nitroglycerin	343	100	ug/kg wet	400.0		85.8	70-130			
Nitroglycerin [2C]	315	100	ug/kg wet	400.0		78.8	70-130			
1,3-Dinitrobenzene	390	100	ug/kg wet	400.0		97.5	70-130			
1,3-Dinitrobenzene [2C]	486	100	ug/kg wet	400.0		121	70-130			
2,6-Dinitrotoluene	399	100	ug/kg wet	400.0		99.8	70-130			
2,6-Dinitrotoluene [2C]	418	100	ug/kg wet	400.0		105	70-130			
2,4-Dinitrotoluene	393	100	ug/kg wet	400.0		98.3	70-130			
2,4-Dinitrotoluene [2C]	419	100	ug/kg wet	400.0		105	70-130			
1,3,5-Trinitrobenzene	402	100	ug/kg wet	400.0		100	70-130			
1,3,5-Trinitrobenzene [2C]	413	100	ug/kg wet	400.0		103	70-130			
2,4,6-Trinitrotoluene	396	100	ug/kg wet	400.0		98.9	70-130			
2,4,6-Trinitrotoluene [2C]	397	100	ug/kg wet	400.0		99.2	70-130			
PETN	315	100	ug/kg wet	400.0		78.7	70-130			
PETN [2C]	281	100	ug/kg wet	400.0		70.2	70-130			
RDX	403	100	ug/kg wet	400.0		101	70-130			
RDX [2C]	413	100	ug/kg wet	400.0		103	70-130			
4-Amino-2,6-dinitrotoluene	400	100	ug/kg wet	400.0		100	70-130			
4-Amino-2,6-dinitrotoluene [2C]	408	100	ug/kg wet	400.0		102	70-130			
3,5-Dinitroaniline	387	100	ug/kg wet	400.0		96.6	70-130			
3,5-Dinitroaniline [2C]	391	100	ug/kg wet	400.0		97.7	70-130			
2-Amino-4,6-dinitrotoluene	395	100	ug/kg wet	400.0		98.7	70-130			
2-Amino-4,6-dinitrotoluene [2C]	401	100	ug/kg wet	400.0		100	70-130			
Tetryl	392	100	ug/kg wet	400.0		98.0	70-130			
Tetryl [2C]	368	100	ug/kg wet	400.0		91.9	70-130			
HMX	328	100	ug/kg wet	400.0		82.0	70-130			
HMX [2C]	342	100	ug/kg wet	400.0		85.5	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*422*		*ug/kg wet*	*400.0*		*105*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*450*		*ug/kg wet*	*400.0*		*113*	*60-140*			
Matrix Spike (K710017-MS1)	**Source: K174105-22**			Prepared: 10/12/2017 Analyzed: 10/13/2017 09:31						
Nitrobenzene	503	120	ug/kg dry	467.8	ND	107	70-130			
Nitrobenzene [2C]	497	120	ug/kg dry	467.8	ND	106	70-130			
2-Nitrotoluene	506	120	ug/kg dry	467.8	ND	108	70-130			
2-Nitrotoluene [2C]	507	120	ug/kg dry	467.8	ND	108	70-130			
3-Nitrotoluene	493	120	ug/kg dry	467.8	ND	105	70-130			
3-Nitrotoluene [2C]	510	120	ug/kg dry	467.8	ND	109	70-130			
4-Nitrotoluene	501	120	ug/kg dry	467.8	ND	107	70-130			
4-Nitrotoluene [2C]	526	120	ug/kg dry	467.8	ND	113	70-130			
Nitroglycerin	346	120	ug/kg dry	467.8	0.846	73.8	70-130			
Nitroglycerin [2C]	329	120	ug/kg dry	467.8	ND	70.3	70-130			
1,3-Dinitrobenzene	460	120	ug/kg dry	467.8	ND	98.4	70-130			
1,3-Dinitrobenzene [2C]	423	120	ug/kg dry	467.8	ND	90.5	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710017 - EPA 3511										
Matrix Spike (K710017-MS1)	**Source: K174105-22**			Prepared: 10/12/2017 Analyzed: 10/13/2017 09:31						
2,6-Dinitrotoluene	460	120	ug/kg dry	467.8	ND	98.3	70-130			
2,6-Dinitrotoluene [2C]	490	120	ug/kg dry	467.8	ND	105	70-130			
2,4-Dinitrotoluene	461	120	ug/kg dry	467.8	3.56	97.8	70-130			
2,4-Dinitrotoluene [2C]	489	120	ug/kg dry	467.8	2.73	104	70-130			
1,3,5-Trinitrobenzene	444	120	ug/kg dry	467.8	3.01	94.2	70-130			
1,3,5-Trinitrobenzene [2C]	460	120	ug/kg dry	467.8	3.84	97.6	70-130			
2,4,6-Trinitrotoluene	483	120	ug/kg dry	467.8	50.9	92.4	70-130			
2,4,6-Trinitrotoluene [2C]	483	120	ug/kg dry	467.8	51.5	92.2	70-130			
PETN	315	120	ug/kg dry	467.8	ND	67.3	70-130			M
PETN [2C]	269	120	ug/kg dry	467.8	ND	57.5	70-130			M
RDX	380	120	ug/kg dry	467.8	ND	81.2	70-130			
RDX [2C]	414	120	ug/kg dry	467.8	4.26	87.6	70-130			
4-Amino-2,6-dinitrotoluene	455	120	ug/kg dry	467.8	11.5	94.8	70-130			
4-Amino-2,6-dinitrotoluene [2C]	463	120	ug/kg dry	467.8	10.6	96.7	70-130			
3,5-Dinitroaniline	423	120	ug/kg dry	467.8	ND	90.4	70-130			
3,5-Dinitroaniline [2C]	440	120	ug/kg dry	467.8	ND	94.0	70-130			
2-Amino-4,6-dinitrotoluene	446	120	ug/kg dry	467.8	10.3	93.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	464	120	ug/kg dry	467.8	10.2	97.0	70-130			
Tetryl	416	120	ug/kg dry	467.8	ND	88.9	70-130			
Tetryl [2C]	443	120	ug/kg dry	467.8	ND	94.6	70-130			
HMX	149	120	ug/kg dry	467.8	ND	31.9	70-130			M
HMX [2C]	130	120	ug/kg dry	467.8	ND	27.9	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*458*		*ug/kg dry*	*467.8*		*97.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*500*		*ug/kg dry*	*467.8*		*107*	*60-140*			
Matrix Spike Dup (K710017-MSD1)	**Source: K174105-22**			Prepared: 10/12/2017 Analyzed: 10/13/2017 09:53						
Nitrobenzene	480	120	ug/kg dry	467.8	ND	103	70-130	4.60	20	
Nitrobenzene [2C]	480	120	ug/kg dry	467.8	ND	103	70-130	3.48	20	
2-Nitrotoluene	489	120	ug/kg dry	467.8	ND	104	70-130	3.43	20	
2-Nitrotoluene [2C]	486	120	ug/kg dry	467.8	ND	104	70-130	4.13	20	
3-Nitrotoluene	474	120	ug/kg dry	467.8	ND	101	70-130	3.94	20	
3-Nitrotoluene [2C]	492	120	ug/kg dry	467.8	ND	105	70-130	3.64	20	
4-Nitrotoluene	478	120	ug/kg dry	467.8	ND	102	70-130	4.71	20	
4-Nitrotoluene [2C]	507	120	ug/kg dry	467.8	ND	108	70-130	3.69	20	
Nitroglycerin	311	120	ug/kg dry	467.8	0.846	66.3	70-130	10.8	20	M
Nitroglycerin [2C]	311	120	ug/kg dry	467.8	ND	66.4	70-130	5.69	20	M
1,3-Dinitrobenzene	420	120	ug/kg dry	467.8	ND	89.7	70-130	9.18	20	
1,3-Dinitrobenzene [2C]	517	120	ug/kg dry	467.8	ND	110	70-130	19.9	20	
2,6-Dinitrotoluene	436	120	ug/kg dry	467.8	ND	93.2	70-130	5.31	20	
2,6-Dinitrotoluene [2C]	470	120	ug/kg dry	467.8	ND	101	70-130	4.19	20	
2,4-Dinitrotoluene	425	120	ug/kg dry	467.8	3.56	90.0	70-130	8.32	20	
2,4-Dinitrotoluene [2C]	470	120	ug/kg dry	467.8	2.73	99.9	70-130	3.88	20	
1,3,5-Trinitrobenzene	409	120	ug/kg dry	467.8	3.01	86.7	70-130	8.31	20	
1,3,5-Trinitrobenzene [2C]	446	120	ug/kg dry	467.8	3.84	94.4	70-130	3.28	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710017 - EPA 3511										
Matrix Spike Dup (K710017-MSD1)	**Source: K174105-22**			Prepared: 10/12/2017 Analyzed: 10/13/2017 09:53						
2,4,6-Trinitrotoluene	446	120	ug/kg dry	467.8	50.9	84.4	70-130	9.09	20	
2,4,6-Trinitrotoluene [2C]	462	120	ug/kg dry	467.8	51.5	87.6	70-130	5.05	20	
PETN	266	120	ug/kg dry	467.8	ND	56.8	70-130	16.9	20	M
PETN [2C]	262	120	ug/kg dry	467.8	ND	56.1	70-130	2.46	20	M
RDX	344	120	ug/kg dry	467.8	ND	73.4	70-130	10.0	20	
RDX [2C]	392	120	ug/kg dry	467.8	4.26	82.9	70-130	5.48	20	
4-Amino-2,6-dinitrotoluene	413	120	ug/kg dry	467.8	11.5	85.8	70-130	9.98	20	
4-Amino-2,6-dinitrotoluene [2C]	446	120	ug/kg dry	467.8	10.6	93.1	70-130	3.76	20	
3,5-Dinitroaniline	378	120	ug/kg dry	467.8	ND	80.8	70-130	11.2	20	
3,5-Dinitroaniline [2C]	428	120	ug/kg dry	467.8	ND	91.4	70-130	2.83	20	
2-Amino-4,6-dinitrotoluene	397	120	ug/kg dry	467.8	10.3	82.7	70-130	11.9	20	
2-Amino-4,6-dinitrotoluene [2C]	439	120	ug/kg dry	467.8	10.2	91.7	70-130	5.67	20	
Tetryl	356	120	ug/kg dry	467.8	ND	76.1	70-130	15.6	20	
Tetryl [2C]	418	120	ug/kg dry	467.8	ND	89.4	70-130	5.66	20	
HMX	109	120	ug/kg dry	467.8	ND	23.3	70-130	31.2	20	M, X
HMX [2C]	139	120	ug/kg dry	467.8	ND	29.8	70-130	6.47	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*427*		*ug/kg dry*	*467.8*		*91.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*474*		*ug/kg dry*	*467.8*		*101*	*60-140*			
Batch K710019 - EPA 3511										
Blank (K710019-BLK1)				Prepared: 10/13/2017 Analyzed: 10/13/2017 14:42						
Nitrobenzene	ND	0.10	ug/L							
Nitrobenzene [2C]	ND	0.10	ug/L							
2-Nitrotoluene	ND	0.10	ug/L							
2-Nitrotoluene [2C]	ND	0.10	ug/L							
3-Nitrotoluene	ND	0.10	ug/L							
3-Nitrotoluene [2C]	ND	0.10	ug/L							
4-Nitrotoluene	ND	0.10	ug/L							
4-Nitrotoluene [2C]	ND	0.10	ug/L							
Nitroglycerin	ND	0.10	ug/L							
Nitroglycerin [2C]	ND	0.10	ug/L							
1,3-Dinitrobenzene	ND	0.10	ug/L							
1,3-Dinitrobenzene [2C]	ND	0.10	ug/L							
2,6-Dinitrotoluene	ND	0.10	ug/L							
2,6-Dinitrotoluene [2C]	ND	0.10	ug/L							
2,4-Dinitrotoluene	ND	0.10	ug/L							
2,4-Dinitrotoluene [2C]	ND	0.10	ug/L							
1,3,5-Trinitrobenzene	ND	0.10	ug/L							
1,3,5-Trinitrobenzene [2C]	ND	0.10	ug/L							
2,4,6-Trinitrotoluene	ND	0.10	ug/L							
2,4,6-Trinitrotoluene [2C]	ND	0.10	ug/L							
PETN	ND	0.10	ug/L							
PETN [2C]	ND	0.10	ug/L							

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710019 - EPA 3511										
Blank (K710019-BLK1)				Prepared: 10/13/2017 Analyzed: 10/13/2017 14:42						
RDX	ND	0.10	ug/L							
RDX [2C]	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene [2C]	ND	0.10	ug/L							
3,5-Dinitroaniline	0.10	0.10	ug/L							
3,5-Dinitroaniline [2C]	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene [2C]	ND	0.10	ug/L							
Tetryl	ND	0.10	ug/L							
Tetryl [2C]	ND	0.10	ug/L							
HMX	ND	0.10	ug/L							
HMX [2C]	ND	0.10	ug/L							
Surrogate: 2,2'-Dinitrobiphenyl	*4.14*		*ug/L*	*5.000*		*82.8*	*60-140*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*4.03*		*ug/L*	*5.000*		*80.6*	*60-140*			
LCS (K710019-BS1)				Prepared: 10/13/2017 Analyzed: 10/13/2017 14:34						
Nitrobenzene	4.66	0.10	ug/L	5.000		93.2	70-130			
Nitrobenzene [2C]	4.48	0.10	ug/L	5.000		89.5	70-130			
2-Nitrotoluene	4.87	0.10	ug/L	5.000		97.5	70-130			
2-Nitrotoluene [2C]	4.57	0.10	ug/L	5.000		91.5	70-130			
3-Nitrotoluene	4.78	0.10	ug/L	5.000		95.6	70-130			
3-Nitrotoluene [2C]	4.71	0.10	ug/L	5.000		94.1	70-130			
4-Nitrotoluene	4.99	0.10	ug/L	5.000		99.8	70-130			
4-Nitrotoluene [2C]	4.73	0.10	ug/L	5.000		94.7	70-130			
Nitroglycerin	4.46	0.10	ug/L	5.000		89.2	70-130			
Nitroglycerin [2C]	3.86	0.10	ug/L	5.000		77.2	70-130			
1,3-Dinitrobenzene	4.55	0.10	ug/L	5.000		91.1	70-130			
1,3-Dinitrobenzene [2C]	4.38	0.10	ug/L	5.000		87.6	70-130			
2,6-Dinitrotoluene	4.75	0.10	ug/L	5.000		94.9	70-130			
2,6-Dinitrotoluene [2C]	4.50	0.10	ug/L	5.000		90.1	70-130			
2,4-Dinitrotoluene	4.67	0.10	ug/L	5.000		93.4	70-130			
2,4-Dinitrotoluene [2C]	4.41	0.10	ug/L	5.000		88.2	70-130			
1,3,5-Trinitrobenzene	4.36	0.10	ug/L	5.000		87.2	70-130			
1,3,5-Trinitrobenzene [2C]	3.92	0.10	ug/L	5.000		78.4	70-130			
2,4,6-Trinitrotoluene	4.45	0.10	ug/L	5.000		89.1	70-130			
2,4,6-Trinitrotoluene [2C]	4.14	0.10	ug/L	5.000		82.8	70-130			
PETN	4.22	0.10	ug/L	5.000		84.4	70-130			
PETN [2C]	3.68	0.10	ug/L	5.000		73.5	70-130			
RDX	4.35	0.10	ug/L	5.000		87.1	70-130			
RDX [2C]	4.08	0.10	ug/L	5.000		81.5	70-130			
4-Amino-2,6-dinitrotoluene	4.77	0.10	ug/L	5.000		95.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	4.50	0.10	ug/L	5.000		90.0	70-130			
3,5-Dinitroaniline	4.82	0.10	ug/L	5.000		96.5	70-130			B
3,5-Dinitroaniline [2C]	4.43	0.10	ug/L	5.000		88.5	70-130			

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710019 - EPA 3511										
LCS (K710019-BS1)				Prepared: 10/13/2017 Analyzed: 10/13/2017 14:34						
2-Amino-4,6-dinitrotoluene	4.65	0.10	ug/L	5.000		93.0	70-130			
2-Amino-4,6-dinitrotoluene [2C]	4.48	0.10	ug/L	5.000		89.5	70-130			
Tetryl	4.40	0.10	ug/L	5.000		88.1	70-130			
Tetryl [2C]	4.07	0.10	ug/L	5.000		81.4	70-130			
HMX	3.82	0.10	ug/L	5.000		76.4	70-130			
HMX [2C]	3.84	0.10	ug/L	5.000		76.8	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*4.46*		*ug/L*	*5.000*		*89.1*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*4.78*		*ug/L*	*5.000*		*95.6*	*60-140*			
Matrix Spike (K710019-MS1)	**Source: K174102-05**			Prepared: 10/13/2017 Analyzed: 10/13/2017 16:46						
Nitrobenzene	4.29	0.10	ug/L	5.000	ND	85.9	70-130			
Nitrobenzene [2C]	4.27	0.10	ug/L	5.000	ND	85.4	70-130			
2-Nitrotoluene	4.48	0.10	ug/L	5.000	ND	89.6	70-130			
2-Nitrotoluene [2C]	4.36	0.10	ug/L	5.000	ND	87.2	70-130			
3-Nitrotoluene	4.46	0.10	ug/L	5.000	ND	89.2	70-130			
3-Nitrotoluene [2C]	4.62	0.10	ug/L	5.000	0.0282	91.8	70-130			
4-Nitrotoluene	4.63	0.10	ug/L	5.000	0.00642	92.5	70-130			
4-Nitrotoluene [2C]	4.62	0.10	ug/L	5.000	ND	92.5	70-130			
Nitroglycerin	4.22	0.10	ug/L	5.000	ND	84.3	70-130			
Nitroglycerin [2C]	3.50	0.10	ug/L	5.000	ND	69.9	70-130			M
1,3-Dinitrobenzene	4.26	0.10	ug/L	5.000	0.0260	84.7	70-130			
1,3-Dinitrobenzene [2C]	4.33	0.10	ug/L	5.000	ND	86.5	70-130			
2,6-Dinitrotoluene	4.34	0.10	ug/L	5.000	ND	86.8	70-130			
2,6-Dinitrotoluene [2C]	4.46	0.10	ug/L	5.000	ND	89.2	70-130			
2,4-Dinitrotoluene	4.39	0.10	ug/L	5.000	0.00386	87.8	70-130			
2,4-Dinitrotoluene [2C]	4.37	0.10	ug/L	5.000	0.00381	87.3	70-130			
1,3,5-Trinitrobenzene	4.10	0.10	ug/L	5.000	ND	82.1	70-130			
1,3,5-Trinitrobenzene [2C]	3.91	0.10	ug/L	5.000	ND	78.2	70-130			
2,4,6-Trinitrotoluene	4.20	0.10	ug/L	5.000	0.0285	83.5	70-130			
2,4,6-Trinitrotoluene [2C]	4.12	0.10	ug/L	5.000	0.0327	81.8	70-130			
PETN	3.90	0.10	ug/L	5.000	ND	77.9	70-130			
PETN [2C]	3.35	0.10	ug/L	5.000	0.0121	66.8	70-130			M
RDX	4.18	0.10	ug/L	5.000	ND	83.6	70-130			
RDX [2C]	3.83	0.10	ug/L	5.000	ND	76.5	70-130			
4-Amino-2,6-dinitrotoluene	4.56	0.10	ug/L	5.000	ND	91.2	70-130			
4-Amino-2,6-dinitrotoluene [2C]	4.51	0.10	ug/L	5.000	0.0438	89.3	70-130			
3,5-Dinitroaniline	4.73	0.10	ug/L	5.000	0.160	91.3	70-130			B
3,5-Dinitroaniline [2C]	4.45	0.10	ug/L	5.000	ND	89.0	70-130			
2-Amino-4,6-dinitrotoluene	4.59	0.10	ug/L	5.000	ND	91.9	70-130			
2-Amino-4,6-dinitrotoluene [2C]	4.46	0.10	ug/L	5.000	ND	89.2	70-130			
Tetryl	4.37	0.10	ug/L	5.000	ND	87.5	70-130			
Tetryl [2C]	4.03	0.10	ug/L	5.000	ND	80.6	70-130			
HMX	3.84	0.10	ug/L	5.000	ND	76.7	70-130			
HMX [2C]	3.77	0.10	ug/L	5.000	ND	75.3	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710019 - EPA 3511										
Matrix Spike (K710019-MS1)		**Source: K174102-05**		Prepared: 10/13/2017 Analyzed: 10/13/2017 16:46						
Surrogate: 2,2´-Dinitrobiphenyl	*4.48*		*ug/L*	*5.000*		*89.6*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*4.67*		*ug/L*	*5.000*		*93.5*	*60-140*			
Matrix Spike Dup (K710019-MSD1)		**Source: K174102-05**		Prepared: 10/13/2017 Analyzed: 10/13/2017 17:08						
Nitrobenzene	4.41	0.10	ug/L	5.000	ND	88.2	70-130	2.69	20	
Nitrobenzene [2C]	4.33	0.10	ug/L	5.000	ND	86.6	70-130	1.48	20	
2-Nitrotoluene	4.62	0.10	ug/L	5.000	ND	92.4	70-130	3.07	20	
2-Nitrotoluene [2C]	4.42	0.10	ug/L	5.000	ND	88.4	70-130	1.34	20	
3-Nitrotoluene	4.54	0.10	ug/L	5.000	ND	90.9	70-130	1.90	20	
3-Nitrotoluene [2C]	4.78	0.10	ug/L	5.000	0.0282	95.0	70-130	3.41	20	
4-Nitrotoluene	4.72	0.10	ug/L	5.000	0.00642	94.2	70-130	1.81	20	
4-Nitrotoluene [2C]	4.74	0.10	ug/L	5.000	ND	94.9	70-130	2.55	20	
Nitroglycerin	4.34	0.10	ug/L	5.000	ND	86.9	70-130	2.99	20	
Nitroglycerin [2C]	3.56	0.10	ug/L	5.000	ND	71.3	70-130	1.90	20	
1,3-Dinitrobenzene	4.35	0.10	ug/L	5.000	0.0260	86.4	70-130	1.97	20	
1,3-Dinitrobenzene [2C]	4.73	0.10	ug/L	5.000	ND	94.6	70-130	8.88	20	
2,6-Dinitrotoluene	4.51	0.10	ug/L	5.000	ND	90.3	70-130	3.97	20	
2,6-Dinitrotoluene [2C]	4.65	0.10	ug/L	5.000	ND	93.1	70-130	4.31	20	
2,4-Dinitrotoluene	4.56	0.10	ug/L	5.000	0.00386	91.1	70-130	3.64	20	
2,4-Dinitrotoluene [2C]	4.56	0.10	ug/L	5.000	0.00381	91.2	70-130	4.34	20	
1,3,5-Trinitrobenzene	4.20	0.10	ug/L	5.000	ND	84.0	70-130	2.28	20	
1,3,5-Trinitrobenzene [2C]	4.00	0.10	ug/L	5.000	ND	80.1	70-130	2.43	20	
2,4,6-Trinitrotoluene	4.37	0.10	ug/L	5.000	0.0285	86.8	70-130	3.90	20	
2,4,6-Trinitrotoluene [2C]	4.23	0.10	ug/L	5.000	0.0327	84.0	70-130	2.64	20	
PETN	3.99	0.10	ug/L	5.000	ND	79.8	70-130	2.33	20	
PETN [2C]	3.33	0.10	ug/L	5.000	0.0121	66.4	70-130	0.666	20	M
RDX	4.25	0.10	ug/L	5.000	ND	84.9	70-130	1.57	20	
RDX [2C]	3.72	0.10	ug/L	5.000	ND	74.4	70-130	2.79	20	
4-Amino-2,6-dinitrotoluene	4.69	0.10	ug/L	5.000	ND	93.8	70-130	2.84	20	
4-Amino-2,6-dinitrotoluene [2C]	4.58	0.10	ug/L	5.000	0.0438	90.7	70-130	1.55	20	
3,5-Dinitroaniline	4.82	0.10	ug/L	5.000	0.160	93.2	70-130	1.98	20	B
3,5-Dinitroaniline [2C]	4.42	0.10	ug/L	5.000	ND	88.4	70-130	0.675	20	
2-Amino-4,6-dinitrotoluene	4.68	0.10	ug/L	5.000	ND	93.6	70-130	1.81	20	
2-Amino-4,6-dinitrotoluene [2C]	4.48	0.10	ug/L	5.000	ND	89.7	70-130	0.513	20	
Tetryl	4.44	0.10	ug/L	5.000	ND	88.8	70-130	1.52	20	
Tetryl [2C]	4.15	0.10	ug/L	5.000	ND	82.9	70-130	2.86	20	
HMX	3.84	0.10	ug/L	5.000	ND	76.7	70-130	0.00	20	
HMX [2C]	3.43	0.10	ug/L	5.000	ND	68.6	70-130	9.35	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*4.61*		*ug/L*	*5.000*		*92.1*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*4.85*		*ug/L*	*5.000*		*97.1*	*60-140*			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710020 - EPA 3511										
Blank (K710020-BLK1)				Prepared: 10/13/2017 Analyzed: 10/13/2017 21:12						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*394*		*ug/kg wet*	*400.0*		*98.6*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*374*		*ug/kg wet*	*400.0*		*93.4*	*60-140*			
LCS (K710020-BS1)				Prepared: 10/13/2017 Analyzed: 10/13/2017 20:50						
Nitrobenzene	413	100	ug/kg wet	400.0		103	70-130			
Nitrobenzene [2C]	435	100	ug/kg wet	400.0		109	70-130			
2-Nitrotoluene	409	100	ug/kg wet	400.0		102	70-130			
2-Nitrotoluene [2C]	448	100	ug/kg wet	400.0		112	70-130			
3-Nitrotoluene	405	100	ug/kg wet	400.0		101	70-130			
3-Nitrotoluene [2C]	445	100	ug/kg wet	400.0		111	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710020 - EPA 3511										
LCS (K710020-BS1)				Prepared: 10/13/2017 Analyzed: 10/13/2017 20:50						
4-Nitrotoluene	416	100	ug/kg wet	400.0		104	70-130			
4-Nitrotoluene [2C]	457	100	ug/kg wet	400.0		114	70-130			
Nitroglycerin	411	100	ug/kg wet	400.0		103	70-130			
Nitroglycerin [2C]	423	100	ug/kg wet	400.0		106	70-130			
1,3-Dinitrobenzene	390	100	ug/kg wet	400.0		97.5	70-130			
1,3-Dinitrobenzene [2C]	387	100	ug/kg wet	400.0		96.8	70-130			
2,6-Dinitrotoluene	389	100	ug/kg wet	400.0		97.2	70-130			
2,6-Dinitrotoluene [2C]	417	100	ug/kg wet	400.0		104	70-130			
2,4-Dinitrotoluene	387	100	ug/kg wet	400.0		96.8	70-130			
2,4-Dinitrotoluene [2C]	412	100	ug/kg wet	400.0		103	70-130			
1,3,5-Trinitrobenzene	401	100	ug/kg wet	400.0		100	70-130			
1,3,5-Trinitrobenzene [2C]	410	100	ug/kg wet	400.0		102	70-130			
2,4,6-Trinitrotoluene	392	100	ug/kg wet	400.0		97.9	70-130			
2,4,6-Trinitrotoluene [2C]	406	100	ug/kg wet	400.0		102	70-130			
PETN	415	100	ug/kg wet	400.0		104	70-130			
PETN [2C]	436	100	ug/kg wet	400.0		109	70-130			
RDX	415	100	ug/kg wet	400.0		104	70-130			
RDX [2C]	441	100	ug/kg wet	400.0		110	70-130			
4-Amino-2,6-dinitrotoluene	397	100	ug/kg wet	400.0		99.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	410	100	ug/kg wet	400.0		103	70-130			
3,5-Dinitroaniline	397	100	ug/kg wet	400.0		99.2	70-130			
3,5-Dinitroaniline [2C]	407	100	ug/kg wet	400.0		102	70-130			
2-Amino-4,6-dinitrotoluene	398	100	ug/kg wet	400.0		99.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	410	100	ug/kg wet	400.0		103	70-130			
Tetryl	410	100	ug/kg wet	400.0		102	70-130			
Tetryl [2C]	387	100	ug/kg wet	400.0		96.9	70-130			
HMX	373	100	ug/kg wet	400.0		93.2	70-130			
HMX [2C]	449	100	ug/kg wet	400.0		112	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*408*		*ug/kg wet*	*400.0*		*102*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*444*		*ug/kg wet*	*400.0*		*111*	*60-140*			
Matrix Spike (K710020-MS1)	**Source: K174106-08**			Prepared: 10/13/2017 Analyzed: 10/14/2017 00:55						
Nitrobenzene	453	110	ug/kg dry	448.5	ND	101	70-130			
Nitrobenzene [2C]	439	110	ug/kg dry	448.5	ND	97.8	70-130			
2-Nitrotoluene	450	110	ug/kg dry	448.5	ND	100	70-130			
2-Nitrotoluene [2C]	441	110	ug/kg dry	448.5	ND	98.3	70-130			
3-Nitrotoluene	442	110	ug/kg dry	448.5	ND	98.6	70-130			
3-Nitrotoluene [2C]	438	110	ug/kg dry	448.5	ND	97.6	70-130			
4-Nitrotoluene	452	110	ug/kg dry	448.5	ND	101	70-130			
4-Nitrotoluene [2C]	442	110	ug/kg dry	448.5	ND	98.6	70-130			
Nitroglycerin	434	110	ug/kg dry	448.5	ND	96.7	70-130			
Nitroglycerin [2C]	405	110	ug/kg dry	448.5	ND	90.4	70-130			
1,3-Dinitrobenzene	413	110	ug/kg dry	448.5	ND	92.0	70-130			
1,3-Dinitrobenzene [2C]	398	110	ug/kg dry	448.5	ND	88.7	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710020 - EPA 3511										
Matrix Spike (K710020-MS1)	**Source: K174106-08**			Prepared: 10/13/2017 Analyzed: 10/14/2017 00:55						
2,6-Dinitrotoluene	414	110	ug/kg dry	448.5	ND	92.3	70-130			
2,6-Dinitrotoluene [2C]	414	110	ug/kg dry	448.5	ND	92.3	70-130			
2,4-Dinitrotoluene	416	110	ug/kg dry	448.5	2.09	92.3	70-130			
2,4-Dinitrotoluene [2C]	411	110	ug/kg dry	448.5	2.02	91.3	70-130			
1,3,5-Trinitrobenzene	413	110	ug/kg dry	448.5	ND	92.0	70-130			
1,3,5-Trinitrobenzene [2C]	397	110	ug/kg dry	448.5	ND	88.5	70-130			
2,4,6-Trinitrotoluene	419	110	ug/kg dry	448.5	2.65	92.8	70-130			
2,4,6-Trinitrotoluene [2C]	403	110	ug/kg dry	448.5	3.24	89.0	70-130			
PETN	444	110	ug/kg dry	448.5	ND	99.0	70-130			
PETN [2C]	416	110	ug/kg dry	448.5	ND	92.7	70-130			
RDX	417	110	ug/kg dry	448.5	0.822	92.7	70-130			
RDX [2C]	404	110	ug/kg dry	448.5	4.32	89.1	70-130			
4-Amino-2,6-dinitrotoluene	418	110	ug/kg dry	448.5	6.02	91.8	70-130			
4-Amino-2,6-dinitrotoluene [2C]	396	110	ug/kg dry	448.5	4.95	87.3	70-130			
3,5-Dinitroaniline	420	110	ug/kg dry	448.5	ND	93.7	70-130			
3,5-Dinitroaniline [2C]	396	110	ug/kg dry	448.5	ND	88.3	70-130			
2-Amino-4,6-dinitrotoluene	415	110	ug/kg dry	448.5	ND	92.6	70-130			
2-Amino-4,6-dinitrotoluene [2C]	403	110	ug/kg dry	448.5	ND	89.8	70-130			
Tetryl	415	110	ug/kg dry	448.5	ND	92.6	70-130			
Tetryl [2C]	357	110	ug/kg dry	448.5	ND	79.6	70-130			
HMX	344	110	ug/kg dry	448.5	ND	76.7	70-130			
HMX [2C]	343	110	ug/kg dry	448.5	ND	76.5	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*435*		*ug/kg dry*	*448.5*		*97.0*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*425*		*ug/kg dry*	*448.5*		*94.8*	*60-140*			
Matrix Spike Dup (K710020-MSD1)	**Source: K174106-08**			Prepared: 10/13/2017 Analyzed: 10/14/2017 01:17						
Nitrobenzene	461	110	ug/kg dry	448.5	ND	103	70-130	1.66	20	
Nitrobenzene [2C]	440	110	ug/kg dry	448.5	ND	98.1	70-130	0.264	20	
2-Nitrotoluene	462	110	ug/kg dry	448.5	ND	103	70-130	2.61	20	
2-Nitrotoluene [2C]	441	110	ug/kg dry	448.5	ND	98.4	70-130	0.150	20	
3-Nitrotoluene	455	110	ug/kg dry	448.5	ND	101	70-130	2.76	20	
3-Nitrotoluene [2C]	442	110	ug/kg dry	448.5	ND	98.6	70-130	1.00	20	
4-Nitrotoluene	474	110	ug/kg dry	448.5	ND	106	70-130	4.75	20	
4-Nitrotoluene [2C]	443	110	ug/kg dry	448.5	ND	98.7	70-130	0.0626	20	
Nitroglycerin	475	110	ug/kg dry	448.5	ND	106	70-130	9.17	20	
Nitroglycerin [2C]	407	110	ug/kg dry	448.5	ND	90.7	70-130	0.362	20	
1,3-Dinitrobenzene	419	110	ug/kg dry	448.5	ND	93.5	70-130	1.63	20	
1,3-Dinitrobenzene [2C]	395	110	ug/kg dry	448.5	ND	88.1	70-130	0.676	20	
2,6-Dinitrotoluene	431	110	ug/kg dry	448.5	ND	96.0	70-130	3.93	20	
2,6-Dinitrotoluene [2C]	416	110	ug/kg dry	448.5	ND	92.7	70-130	0.417	20	
2,4-Dinitrotoluene	433	110	ug/kg dry	448.5	2.09	96.0	70-130	3.90	20	
2,4-Dinitrotoluene [2C]	406	110	ug/kg dry	448.5	2.02	90.1	70-130	1.24	20	
1,3,5-Trinitrobenzene	431	110	ug/kg dry	448.5	ND	96.1	70-130	4.29	20	
1,3,5-Trinitrobenzene [2C]	395	110	ug/kg dry	448.5	ND	88.1	70-130	0.440	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710020 - EPA 3511										
Matrix Spike Dup (K710020-MSD1)	**Source: K174106-08**			Prepared: 10/13/2017 Analyzed: 10/14/2017 01:17						
2,4,6-Trinitrotoluene	435	110	ug/kg dry	448.5	2.65	96.5	70-130	3.85	20	
2,4,6-Trinitrotoluene [2C]	406	110	ug/kg dry	448.5	3.24	89.7	70-130	0.743	20	
PETN	510	110	ug/kg dry	448.5	ND	114	70-130	13.7	20	
PETN [2C]	415	110	ug/kg dry	448.5	ND	92.6	70-130	0.0635	20	
RDX	419	110	ug/kg dry	448.5	0.822	93.1	70-130	0.454	20	
RDX [2C]	389	110	ug/kg dry	448.5	4.32	85.8	70-130	3.80	20	
4-Amino-2,6-dinitrotoluene	428	110	ug/kg dry	448.5	6.02	94.1	70-130	2.43	20	
4-Amino-2,6-dinitrotoluene [2C]	399	110	ug/kg dry	448.5	4.95	88.0	70-130	0.749	20	
3,5-Dinitroaniline	434	110	ug/kg dry	448.5	ND	96.8	70-130	3.22	20	
3,5-Dinitroaniline [2C]	383	110	ug/kg dry	448.5	ND	85.5	70-130	3.28	20	
2-Amino-4,6-dinitrotoluene	429	110	ug/kg dry	448.5	ND	95.6	70-130	3.19	20	
2-Amino-4,6-dinitrotoluene [2C]	388	110	ug/kg dry	448.5	ND	86.5	70-130	3.73	20	
Tetryl	428	110	ug/kg dry	448.5	ND	95.4	70-130	3.04	20	
Tetryl [2C]	351	110	ug/kg dry	448.5	ND	78.3	70-130	1.69	20	
HMX	387	110	ug/kg dry	448.5	ND	86.4	70-130	11.8	20	
HMX [2C]	324	110	ug/kg dry	448.5	ND	72.2	70-130	5.73	20	
Surrogate: 2,2´-Dinitrobiphenyl	*441*		*ug/kg dry*	*448.5*		*98.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*436*		*ug/kg dry*	*448.5*		*97.3*	*60-140*			
Batch K710022 - EPA 3511										
Blank (K710022-BLK1)				Prepared: 10/16/2017 Analyzed: 10/16/2017 15:37						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710022 - EPA 3511										
Blank (K710022-BLK1)				Prepared: 10/16/2017 Analyzed: 10/16/2017 15:37						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*360*		*ug/kg wet*	*400.0*		*90.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*355*		*ug/kg wet*	*400.0*		*88.8*	*60-140*			
LCS (K710022-BS1)				Prepared: 10/16/2017 Analyzed: 10/16/2017 15:59						
Nitrobenzene	431	100	ug/kg wet	400.0		108	70-130			
Nitrobenzene [2C]	405	100	ug/kg wet	400.0		101	70-130			
2-Nitrotoluene	435	100	ug/kg wet	400.0		109	70-130			
2-Nitrotoluene [2C]	407	100	ug/kg wet	400.0		102	70-130			
3-Nitrotoluene	423	100	ug/kg wet	400.0		106	70-130			
3-Nitrotoluene [2C]	405	100	ug/kg wet	400.0		101	70-130			
4-Nitrotoluene	441	100	ug/kg wet	400.0		110	70-130			
4-Nitrotoluene [2C]	420	100	ug/kg wet	400.0		105	70-130			
Nitroglycerin	396	100	ug/kg wet	400.0		99.0	70-130			
Nitroglycerin [2C]	364	100	ug/kg wet	400.0		91.0	70-130			
1,3-Dinitrobenzene	406	100	ug/kg wet	400.0		101	70-130			
1,3-Dinitrobenzene [2C]	326	100	ug/kg wet	400.0		81.5	70-130			
2,6-Dinitrotoluene	400	100	ug/kg wet	400.0		100	70-130			
2,6-Dinitrotoluene [2C]	385	100	ug/kg wet	400.0		96.2	70-130			
2,4-Dinitrotoluene	396	100	ug/kg wet	400.0		99.0	70-130			
2,4-Dinitrotoluene [2C]	383	100	ug/kg wet	400.0		95.8	70-130			
1,3,5-Trinitrobenzene	403	100	ug/kg wet	400.0		101	70-130			
1,3,5-Trinitrobenzene [2C]	387	100	ug/kg wet	400.0		96.7	70-130			
2,4,6-Trinitrotoluene	389	100	ug/kg wet	400.0		97.1	70-130			
2,4,6-Trinitrotoluene [2C]	369	100	ug/kg wet	400.0		92.3	70-130			
PETN	377	100	ug/kg wet	400.0		94.3	70-130			
PETN [2C]	362	100	ug/kg wet	400.0		90.4	70-130			
RDX	406	100	ug/kg wet	400.0		102	70-130			
RDX [2C]	397	100	ug/kg wet	400.0		99.2	70-130			
4-Amino-2,6-dinitrotoluene	385	100	ug/kg wet	400.0		96.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	391	100	ug/kg wet	400.0		97.8	70-130			
3,5-Dinitroaniline	385	100	ug/kg wet	400.0		96.2	70-130			
3,5-Dinitroaniline [2C]	395	100	ug/kg wet	400.0		98.8	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710022 - EPA 3511										
LCS (K710022-BS1)				Prepared: 10/16/2017 Analyzed: 10/16/2017 15:59						
2-Amino-4,6-dinitrotoluene	383	100	ug/kg wet	400.0		95.7	70-130			
2-Amino-4,6-dinitrotoluene [2C]	396	100	ug/kg wet	400.0		98.9	70-130			
Tetryl	388	100	ug/kg wet	400.0		97.1	70-130			
Tetryl [2C]	372	100	ug/kg wet	400.0		93.1	70-130			
HMX	372	100	ug/kg wet	400.0		92.9	70-130			
HMX [2C]	421	100	ug/kg wet	400.0		105	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*397*		*ug/kg wet*	*400.0*		*99.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*405*		*ug/kg wet*	*400.0*		*101*	*60-140*			
Matrix Spike (K710022-MS1)	**Source: K174201-01**			Prepared: 10/16/2017 Analyzed: 10/16/2017 17:50						
Nitrobenzene	456	110	ug/kg dry	442.1	ND	103	70-130			
Nitrobenzene [2C]	475	110	ug/kg dry	442.1	ND	107	70-130			
2-Nitrotoluene	464	110	ug/kg dry	442.1	ND	105	70-130			
2-Nitrotoluene [2C]	475	110	ug/kg dry	442.1	ND	107	70-130			
3-Nitrotoluene	441	110	ug/kg dry	442.1	ND	99.8	70-130			
3-Nitrotoluene [2C]	475	110	ug/kg dry	442.1	ND	108	70-130			
4-Nitrotoluene	462	110	ug/kg dry	442.1	ND	104	70-130			
4-Nitrotoluene [2C]	492	110	ug/kg dry	442.1	ND	111	70-130			
Nitroglycerin	417	110	ug/kg dry	442.1	ND	94.4	70-130			
Nitroglycerin [2C]	392	110	ug/kg dry	442.1	ND	88.8	70-130			
1,3-Dinitrobenzene	415	110	ug/kg dry	442.1	ND	93.8	70-130			
1,3-Dinitrobenzene [2C]	502	110	ug/kg dry	442.1	ND	114	70-130			
2,6-Dinitrotoluene	418	110	ug/kg dry	442.1	ND	94.6	70-130			
2,6-Dinitrotoluene [2C]	443	110	ug/kg dry	442.1	ND	100	70-130			
2,4-Dinitrotoluene	410	110	ug/kg dry	442.1	0.671	92.7	70-130			
2,4-Dinitrotoluene [2C]	434	110	ug/kg dry	442.1	ND	98.2	70-130			
1,3,5-Trinitrobenzene	402	110	ug/kg dry	442.1	ND	90.9	70-130			
1,3,5-Trinitrobenzene [2C]	409	110	ug/kg dry	442.1	ND	92.4	70-130			
2,4,6-Trinitrotoluene	400	110	ug/kg dry	442.1	ND	90.4	70-130			
2,4,6-Trinitrotoluene [2C]	399	110	ug/kg dry	442.1	ND	90.2	70-130			
PETN	410	110	ug/kg dry	442.1	ND	92.8	70-130			
PETN [2C]	369	110	ug/kg dry	442.1	ND	83.5	70-130			
RDX	390	110	ug/kg dry	442.1	ND	88.3	70-130			
RDX [2C]	409	110	ug/kg dry	442.1	ND	92.4	70-130			
4-Amino-2,6-dinitrotoluene	396	110	ug/kg dry	442.1	5.66	88.4	70-130			
4-Amino-2,6-dinitrotoluene [2C]	412	110	ug/kg dry	442.1	1.79	92.8	70-130			
3,5-Dinitroaniline	384	110	ug/kg dry	442.1	2.49	86.2	70-130			
3,5-Dinitroaniline [2C]	412	110	ug/kg dry	442.1	ND	93.2	70-130			
2-Amino-4,6-dinitrotoluene	380	110	ug/kg dry	442.1	ND	85.8	70-130			
2-Amino-4,6-dinitrotoluene [2C]	419	110	ug/kg dry	442.1	ND	94.8	70-130			
Tetryl	365	110	ug/kg dry	442.1	ND	82.5	70-130			
Tetryl [2C]	380	110	ug/kg dry	442.1	ND	85.9	70-130			
HMX	203	110	ug/kg dry	442.1	ND	45.9	70-130			M
HMX [2C]	229	110	ug/kg dry	442.1	ND	51.7	70-130			M

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710022 - EPA 3511										
Matrix Spike (K710022-MS1)	**Source: K174201-01**			Prepared: 10/16/2017 Analyzed: 10/16/2017 17:50						
Surrogate: 2,2´-Dinitrobiphenyl	*416*		*ug/kg dry*	*442.1*		*94.2*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*446*		*ug/kg dry*	*442.1*		*101*	*60-140*			
Matrix Spike Dup (K710022-MSD1)	**Source: K174201-01**			Prepared: 10/16/2017 Analyzed: 10/16/2017 18:13						
Nitrobenzene	465	110	ug/kg dry	442.1	ND	105	70-130	1.93	20	
Nitrobenzene [2C]	440	110	ug/kg dry	442.1	ND	99.5	70-130	7.56	20	
2-Nitrotoluene	472	110	ug/kg dry	442.1	ND	107	70-130	1.72	20	
2-Nitrotoluene [2C]	439	110	ug/kg dry	442.1	ND	99.3	70-130	7.80	20	
3-Nitrotoluene	452	110	ug/kg dry	442.1	ND	102	70-130	2.41	20	
3-Nitrotoluene [2C]	439	110	ug/kg dry	442.1	ND	99.4	70-130	7.88	20	
4-Nitrotoluene	470	110	ug/kg dry	442.1	ND	106	70-130	1.90	20	
4-Nitrotoluene [2C]	454	110	ug/kg dry	442.1	ND	103	70-130	8.01	20	
Nitroglycerin	424	110	ug/kg dry	442.1	ND	96.0	70-130	1.64	20	
Nitroglycerin [2C]	380	110	ug/kg dry	442.1	ND	86.0	70-130	3.11	20	
1,3-Dinitrobenzene	420	110	ug/kg dry	442.1	ND	94.9	70-130	1.13	20	
1,3-Dinitrobenzene [2C]	368	110	ug/kg dry	442.1	ND	83.2	70-130	30.9	20	X
2,6-Dinitrotoluene	426	110	ug/kg dry	442.1	ND	96.4	70-130	1.85	20	
2,6-Dinitrotoluene [2C]	415	110	ug/kg dry	442.1	ND	93.9	70-130	6.37	20	
2,4-Dinitrotoluene	419	110	ug/kg dry	442.1	0.671	94.6	70-130	2.07	20	
2,4-Dinitrotoluene [2C]	416	110	ug/kg dry	442.1	ND	94.0	70-130	4.33	20	
1,3,5-Trinitrobenzene	406	110	ug/kg dry	442.1	ND	91.9	70-130	1.04	20	
1,3,5-Trinitrobenzene [2C]	389	110	ug/kg dry	442.1	ND	87.9	70-130	5.02	20	
2,4,6-Trinitrotoluene	409	110	ug/kg dry	442.1	ND	92.6	70-130	2.33	20	
2,4,6-Trinitrotoluene [2C]	389	110	ug/kg dry	442.1	ND	87.9	70-130	2.54	20	
PETN	399	110	ug/kg dry	442.1	ND	90.3	70-130	2.73	20	
PETN [2C]	376	110	ug/kg dry	442.1	ND	85.1	70-130	1.94	20	
RDX	391	110	ug/kg dry	442.1	ND	88.4	70-130	0.0854	20	
RDX [2C]	384	110	ug/kg dry	442.1	ND	86.7	70-130	6.36	20	
4-Amino-2,6-dinitrotoluene	397	110	ug/kg dry	442.1	5.66	88.5	70-130	0.139	20	
4-Amino-2,6-dinitrotoluene [2C]	400	110	ug/kg dry	442.1	1.79	90.1	70-130	2.92	20	
3,5-Dinitroaniline	382	110	ug/kg dry	442.1	2.49	85.7	70-130	0.574	20	
3,5-Dinitroaniline [2C]	402	110	ug/kg dry	442.1	ND	90.8	70-130	2.59	20	
2-Amino-4,6-dinitrotoluene	384	110	ug/kg dry	442.1	ND	86.8	70-130	1.15	20	
2-Amino-4,6-dinitrotoluene [2C]	403	110	ug/kg dry	442.1	ND	91.1	70-130	3.97	20	
Tetryl	357	110	ug/kg dry	442.1	ND	80.8	70-130	2.07	20	
Tetryl [2C]	362	110	ug/kg dry	442.1	ND	81.9	70-130	4.74	20	
HMX	236	110	ug/kg dry	442.1	ND	53.3	70-130	14.9	20	M
HMX [2C]	147	110	ug/kg dry	442.1	ND	33.2	70-130	43.6	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*416*		*ug/kg dry*	*442.1*		*94.0*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*429*		*ug/kg dry*	*442.1*		*97.0*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710025 - EPA 3511										
Blank (K710025-BLK1)				Prepared: 10/17/2017 Analyzed: 10/19/2017 09:40						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*335*		*ug/kg wet*	*400.0*		*83.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*349*		*ug/kg wet*	*400.0*		*87.2*	*60-140*			
LCS (K710025-BS1)				Prepared: 10/17/2017 Analyzed: 10/19/2017 10:04						
Nitrobenzene	340	100	ug/kg wet	400.0		85.0	70-130			
Nitrobenzene [2C]	445	100	ug/kg wet	400.0		111	70-130			
2-Nitrotoluene	349	100	ug/kg wet	400.0		87.2	70-130			
2-Nitrotoluene [2C]	428	100	ug/kg wet	400.0		107	70-130			
3-Nitrotoluene	339	100	ug/kg wet	400.0		84.7	70-130			
3-Nitrotoluene [2C]	427	100	ug/kg wet	400.0		107	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710025 - EPA 3511										
LCS (K710025-BS1)				Prepared: 10/17/2017 Analyzed: 10/19/2017 10:04						
4-Nitrotoluene	343	100	ug/kg wet	400.0		85.9	70-130			
4-Nitrotoluene [2C]	419	100	ug/kg wet	400.0		105	70-130			
Nitroglycerin	372	100	ug/kg wet	400.0		93.0	70-130			
Nitroglycerin [2C]	383	100	ug/kg wet	400.0		95.7	70-130			
1,3-Dinitrobenzene	323	100	ug/kg wet	400.0		80.8	70-130			
1,3-Dinitrobenzene [2C]	362	100	ug/kg wet	400.0		90.6	70-130			
2,6-Dinitrotoluene	330	100	ug/kg wet	400.0		82.4	70-130			
2,6-Dinitrotoluene [2C]	395	100	ug/kg wet	400.0		98.7	70-130			
2,4-Dinitrotoluene	333	100	ug/kg wet	400.0		83.3	70-130			
2,4-Dinitrotoluene [2C]	388	100	ug/kg wet	400.0		97.0	70-130			
1,3,5-Trinitrobenzene	335	100	ug/kg wet	400.0		83.7	70-130			
1,3,5-Trinitrobenzene [2C]	381	100	ug/kg wet	400.0		95.4	70-130			
2,4,6-Trinitrotoluene	335	100	ug/kg wet	400.0		83.7	70-130			
2,4,6-Trinitrotoluene [2C]	365	100	ug/kg wet	400.0		91.2	70-130			
PETN	359	100	ug/kg wet	400.0		89.9	70-130			
PETN [2C]	378	100	ug/kg wet	400.0		94.6	70-130			
RDX	358	100	ug/kg wet	400.0		89.4	70-130			
RDX [2C]	395	100	ug/kg wet	400.0		98.8	70-130			
4-Amino-2,6-dinitrotoluene	329	100	ug/kg wet	400.0		82.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	387	100	ug/kg wet	400.0		96.7	70-130			
3,5-Dinitroaniline	333	100	ug/kg wet	400.0		83.1	70-130			
3,5-Dinitroaniline [2C]	375	100	ug/kg wet	400.0		93.8	70-130			
2-Amino-4,6-dinitrotoluene	337	100	ug/kg wet	400.0		84.1	70-130			
2-Amino-4,6-dinitrotoluene [2C]	395	100	ug/kg wet	400.0		98.7	70-130			
Tetryl	341	100	ug/kg wet	400.0		85.2	70-130			
Tetryl [2C]	369	100	ug/kg wet	400.0		92.2	70-130			
HMX	333	100	ug/kg wet	400.0		83.3	70-130			
HMX [2C]	382	100	ug/kg wet	400.0		95.6	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*351*		*ug/kg wet*	*400.0*		*87.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*376*		*ug/kg wet*	*400.0*		*94.0*	*60-140*			
Matrix Spike (K710025-MS1)	**Source: K174201-17**			Prepared: 10/17/2017 Analyzed: 10/19/2017 10:49						
Nitrobenzene	384	110	ug/kg dry	447.1	ND	86.0	70-130			
Nitrobenzene [2C]	562	110	ug/kg dry	447.1	1.53	125	70-130			
2-Nitrotoluene	392	110	ug/kg dry	447.1	ND	87.7	70-130			
2-Nitrotoluene [2C]	555	110	ug/kg dry	447.1	ND	124	70-130			
3-Nitrotoluene	384	110	ug/kg dry	447.1	1.92	85.5	70-130			
3-Nitrotoluene [2C]	577	110	ug/kg dry	447.1	ND	129	70-130			
4-Nitrotoluene	388	110	ug/kg dry	447.1	ND	86.8	70-130			
4-Nitrotoluene [2C]	560	110	ug/kg dry	447.1	ND	125	70-130			
Nitroglycerin	433	110	ug/kg dry	447.1	3.18	96.1	70-130			
Nitroglycerin [2C]	494	110	ug/kg dry	447.1	3.50	110	70-130			
1,3-Dinitrobenzene	381	110	ug/kg dry	447.1	20.7	80.5	70-130			
1,3-Dinitrobenzene [2C]	640	110	ug/kg dry	447.1	16.3	140	70-130			M

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710025 - EPA 3511										
Matrix Spike (K710025-MS1)	**Source: K174201-17**			Prepared: 10/17/2017 Analyzed: 10/19/2017 10:49						
2,6-Dinitrotoluene	383	110	ug/kg dry	447.1	10.2	83.3	70-130			
2,6-Dinitrotoluene [2C]	544	110	ug/kg dry	447.1	14.1	118	70-130			
2,4-Dinitrotoluene	453	110	ug/kg dry	447.1	82.2	82.9	70-130			
2,4-Dinitrotoluene [2C]	604	110	ug/kg dry	447.1	108	111	70-130			
1,3,5-Trinitrobenzene	404	110	ug/kg dry	447.1	ND	90.3	70-130			
1,3,5-Trinitrobenzene [2C]	492	110	ug/kg dry	447.1	3.44	109	70-130			
2,4,6-Trinitrotoluene	1460	110	ug/kg dry	447.1	2100	NR	70-130			M1
2,4,6-Trinitrotoluene [2C]	1810	110	ug/kg dry	447.1	2490	NR	70-130			M1
PETN	404	110	ug/kg dry	447.1	ND	90.4	70-130			
PETN [2C]	356	110	ug/kg dry	447.1	ND	79.7	70-130			
RDX	390	110	ug/kg dry	447.1	ND	87.3	70-130			
RDX [2C]	519	110	ug/kg dry	447.1	72.1	100	70-130			
4-Amino-2,6-dinitrotoluene	4180	1100	ug/kg dry	447.1	3300	196	70-130			D, M1
4-Amino-2,6-dinitrotoluene [2C]	6700	1100	ug/kg dry	447.1	5950	167	70-130			D, M1
3,5-Dinitroaniline	677	110	ug/kg dry	447.1	ND	151	70-130			M
3,5-Dinitroaniline [2C]	542	110	ug/kg dry	447.1	54.1	109	70-130			
2-Amino-4,6-dinitrotoluene	3150	110	ug/kg dry	447.1	2620	118	70-130			
2-Amino-4,6-dinitrotoluene [2C]	5490	1100	ug/kg dry	447.1	3420	462	70-130			D, M1
Tetryl	366	110	ug/kg dry	447.1	ND	81.8	70-130			
Tetryl [2C]	561	110	ug/kg dry	447.1	144	93.2	70-130			
HMX	417	110	ug/kg dry	447.1	ND	93.4	70-130			
HMX [2C]	517	110	ug/kg dry	447.1	5.09	115	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*375*		*ug/kg dry*	*447.1*		*83.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*505*		*ug/kg dry*	*447.1*		*113*	*60-140*			
Matrix Spike Dup (K710025-MSD1)	**Source: K174201-17**			Prepared: 10/17/2017 Analyzed: 10/19/2017 11:11						
Nitrobenzene	413	110	ug/kg dry	447.1	ND	92.4	70-130	7.23	20	
Nitrobenzene [2C]	600	110	ug/kg dry	447.1	1.53	134	70-130	6.52	20	M
2-Nitrotoluene	419	110	ug/kg dry	447.1	ND	93.7	70-130	6.53	20	
2-Nitrotoluene [2C]	587	110	ug/kg dry	447.1	ND	131	70-130	5.49	20	M
3-Nitrotoluene	412	110	ug/kg dry	447.1	1.92	91.8	70-130	7.17	20	
3-Nitrotoluene [2C]	620	110	ug/kg dry	447.1	ND	139	70-130	7.24	20	M
4-Nitrotoluene	419	110	ug/kg dry	447.1	ND	93.6	70-130	7.57	20	
4-Nitrotoluene [2C]	601	110	ug/kg dry	447.1	ND	134	70-130	7.11	20	M
Nitroglycerin	444	110	ug/kg dry	447.1	3.18	98.6	70-130	2.60	20	
Nitroglycerin [2C]	506	110	ug/kg dry	447.1	3.50	112	70-130	2.34	20	
1,3-Dinitrobenzene	408	110	ug/kg dry	447.1	20.7	86.7	70-130	7.37	20	
1,3-Dinitrobenzene [2C]	714	110	ug/kg dry	447.1	16.3	156	70-130	11.2	20	M
2,6-Dinitrotoluene	406	110	ug/kg dry	447.1	10.2	88.6	70-130	6.19	20	
2,6-Dinitrotoluene [2C]	601	110	ug/kg dry	447.1	14.1	131	70-130	10.2	20	M
2,4-Dinitrotoluene	488	110	ug/kg dry	447.1	82.2	90.7	70-130	9.05	20	
2,4-Dinitrotoluene [2C]	670	110	ug/kg dry	447.1	108	126	70-130	12.4	20	
1,3,5-Trinitrobenzene	442	110	ug/kg dry	447.1	ND	98.9	70-130	9.09	20	
1,3,5-Trinitrobenzene [2C]	535	110	ug/kg dry	447.1	3.44	119	70-130	8.40	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710025 - EPA 3511										
Matrix Spike Dup (K710025-MSD1)	**Source: K174201-17**			Prepared: 10/17/2017 Analyzed: 10/19/2017 11:11						
2,4,6-Trinitrotoluene	1940	110	ug/kg dry	447.1	2100	NR	70-130	NR	20	M1
2,4,6-Trinitrotoluene [2C]	2570	110	ug/kg dry	447.1	2490	17.3	70-130	NR	20	M1
PETN	423	110	ug/kg dry	447.1	ND	94.6	70-130	4.48	20	
PETN [2C]	369	110	ug/kg dry	447.1	ND	82.6	70-130	3.66	20	
RDX	429	110	ug/kg dry	447.1	ND	96.0	70-130	9.53	20	
RDX [2C]	551	110	ug/kg dry	447.1	72.1	107	70-130	6.94	20	
4-Amino-2,6-dinitrotoluene	4150	1100	ug/kg dry	447.1	3300	190	70-130	3.39	20	D, M1
4-Amino-2,6-dinitrotoluene [2C]	6580	1100	ug/kg dry	447.1	5950	141	70-130	16.8	20	D, M1
3,5-Dinitroaniline	878	110	ug/kg dry	447.1	ND	196	70-130	25.9	20	M
3,5-Dinitroaniline [2C]	580	110	ug/kg dry	447.1	54.1	118	70-130	7.53	20	
2-Amino-4,6-dinitrotoluene	3560	110	ug/kg dry	447.1	2620	211	70-130	56.1	20	M1
2-Amino-4,6-dinitrotoluene [2C]	5300	1100	ug/kg dry	447.1	3420	420	70-130	9.66	20	D, M1
Tetryl	396	110	ug/kg dry	447.1	ND	88.6	70-130	8.02	20	
Tetryl [2C]	633	110	ug/kg dry	447.1	144	109	70-130	15.9	20	
HMX	451	110	ug/kg dry	447.1	ND	101	70-130	7.74	20	
HMX [2C]	600	110	ug/kg dry	447.1	5.09	133	70-130	15.0	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*410*		*ug/kg dry*	*447.1*		*91.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*544*		*ug/kg dry*	*447.1*		*122*	*60-140*			
Batch K710027 - EPA 3511										
Blank (K710027-BLK1)				Prepared: 10/18/2017 Analyzed: 10/19/2017 20:49						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710027 - EPA 3511										
Blank (K710027-BLK1)				Prepared: 10/18/2017 Analyzed: 10/19/2017 20:49						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*383*		*ug/kg wet*	*400.0*		*95.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*575*		*ug/kg wet*	*400.0*		*144*	*60-140*			*HC*
LCS (K710027-BS1)				Prepared: 10/18/2017 Analyzed: 10/19/2017 21:22						
Nitrobenzene	375	100	ug/kg wet	400.0		93.7	70-130			
Nitrobenzene [2C]	573	100	ug/kg wet	400.0		143	70-130			HC
2-Nitrotoluene	380	100	ug/kg wet	400.0		94.9	70-130			
2-Nitrotoluene [2C]	565	100	ug/kg wet	400.0		141	70-130			HC
3-Nitrotoluene	373	100	ug/kg wet	400.0		93.3	70-130			
3-Nitrotoluene [2C]	601	100	ug/kg wet	400.0		150	70-130			HC
4-Nitrotoluene	374	100	ug/kg wet	400.0		93.4	70-130			
4-Nitrotoluene [2C]	606	100	ug/kg wet	400.0		151	70-130			HC
Nitroglycerin	407	100	ug/kg wet	400.0		102	70-130			
Nitroglycerin [2C]	483	100	ug/kg wet	400.0		121	70-130			HC
1,3-Dinitrobenzene	368	100	ug/kg wet	400.0		92.1	70-130			
1,3-Dinitrobenzene [2C]	573	100	ug/kg wet	400.0		143	70-130			HC
2,6-Dinitrotoluene	362	100	ug/kg wet	400.0		90.6	70-130			
2,6-Dinitrotoluene [2C]	610	100	ug/kg wet	400.0		152	70-130			HC
2,4-Dinitrotoluene	387	100	ug/kg wet	400.0		96.8	70-130			
2,4-Dinitrotoluene [2C]	603	100	ug/kg wet	400.0		151	70-130			HC
1,3,5-Trinitrobenzene	379	100	ug/kg wet	400.0		94.8	70-130			
1,3,5-Trinitrobenzene [2C]	568	100	ug/kg wet	400.0		142	70-130			HC
2,4,6-Trinitrotoluene	355	100	ug/kg wet	400.0		88.9	70-130			
2,4,6-Trinitrotoluene [2C]	514	100	ug/kg wet	400.0		128	70-130			HC
PETN	357	100	ug/kg wet	400.0		89.2	70-130			
PETN [2C]	469	100	ug/kg wet	400.0		117	70-130			HC
RDX	410	100	ug/kg wet	400.0		103	70-130			
RDX [2C]	560	100	ug/kg wet	400.0		140	70-130			HC
4-Amino-2,6-dinitrotoluene	390	100	ug/kg wet	400.0		97.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	586	100	ug/kg wet	400.0		146	70-130			HC
3,5-Dinitroaniline	395	100	ug/kg wet	400.0		98.8	70-130			
3,5-Dinitroaniline [2C]	566	100	ug/kg wet	400.0		141	70-130			HC

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710027 - EPA 3511										
LCS (K710027-BS1)				Prepared: 10/18/2017 Analyzed: 10/19/2017 21:22						
2-Amino-4,6-dinitrotoluene	390	100	ug/kg wet	400.0		97.6	70-130			
2-Amino-4,6-dinitrotoluene [2C]	579	100	ug/kg wet	400.0		145	70-130			HC
Tetryl	398	100	ug/kg wet	400.0		99.6	70-130			
Tetryl [2C]	542	100	ug/kg wet	400.0		135	70-130			HC
HMX	418	100	ug/kg wet	400.0		104	70-130			
HMX [2C]	432	100	ug/kg wet	400.0		108	70-130			HC
Surrogate: 2,2'-Dinitrobiphenyl	*387*		*ug/kg wet*	*400.0*		*96.7*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*573*		*ug/kg wet*	*400.0*		*143*	*60-140*			*HC*
Matrix Spike (K710027-MS1)	**Source: K174207-06**			Prepared: 10/18/2017 Analyzed: 10/20/2017 00:27						
Nitrobenzene	445	120	ug/kg dry	465.7	ND	95.7	70-130			
Nitrobenzene [2C]	742	120	ug/kg dry	465.7	30.1	153	70-130			
2-Nitrotoluene	444	120	ug/kg dry	465.7	ND	95.4	70-130			
2-Nitrotoluene [2C]	687	120	ug/kg dry	465.7	ND	148	70-130			
3-Nitrotoluene	444	120	ug/kg dry	465.7	2.43	94.8	70-130			
3-Nitrotoluene [2C]	772	120	ug/kg dry	465.7	3.02	165	70-130			
4-Nitrotoluene	453	120	ug/kg dry	465.7	ND	97.2	70-130			
4-Nitrotoluene [2C]	783	120	ug/kg dry	465.7	38.3	160	70-130			
Nitroglycerin	468	120	ug/kg dry	465.7	6.85	99.0	70-130			
Nitroglycerin [2C]	581	120	ug/kg dry	465.7	ND	125	70-130			
1,3-Dinitrobenzene	443	120	ug/kg dry	465.7	12.3	92.5	70-130			
1,3-Dinitrobenzene [2C]	1030	120	ug/kg dry	465.7	1.96	222	70-130			
2,6-Dinitrotoluene	429	120	ug/kg dry	465.7	0.607	91.9	70-130			
2,6-Dinitrotoluene [2C]	812	120	ug/kg dry	465.7	ND	174	70-130			
2,4-Dinitrotoluene	458	120	ug/kg dry	465.7	4.26	97.4	70-130			
2,4-Dinitrotoluene [2C]	844	120	ug/kg dry	465.7	9.80	179	70-130			
1,3,5-Trinitrobenzene	453	120	ug/kg dry	465.7	1.29	97.0	70-130			
1,3,5-Trinitrobenzene [2C]	793	120	ug/kg dry	465.7	3.95	169	70-130			
2,4,6-Trinitrotoluene	431	120	ug/kg dry	465.7	20.1	88.3	70-130			
2,4,6-Trinitrotoluene [2C]	720	120	ug/kg dry	465.7	40.1	146	70-130			
PETN	402	120	ug/kg dry	465.7	2.49	85.9	70-130			
PETN [2C]	584	120	ug/kg dry	465.7	ND	125	70-130			
RDX	453	120	ug/kg dry	465.7	ND	97.2	70-130			
RDX [2C]	664	120	ug/kg dry	465.7	4.51	142	70-130			
4-Amino-2,6-dinitrotoluene	472	120	ug/kg dry	465.7	21.7	96.7	70-130			
4-Amino-2,6-dinitrotoluene [2C]	808	120	ug/kg dry	465.7	44.4	164	70-130			
3,5-Dinitroaniline	461	120	ug/kg dry	465.7	ND	99.0	70-130			
3,5-Dinitroaniline [2C]	764	120	ug/kg dry	465.7	2.63	163	70-130			
2-Amino-4,6-dinitrotoluene	474	120	ug/kg dry	465.7	18.8	97.7	70-130			
2-Amino-4,6-dinitrotoluene [2C]	800	120	ug/kg dry	465.7	32.8	165	70-130			
Tetryl	462	120	ug/kg dry	465.7	ND	99.2	70-130			
Tetryl [2C]	777	120	ug/kg dry	465.7	3.98	166	70-130			
HMX	387	120	ug/kg dry	465.7	ND	83.0	70-130			
HMX [2C]	426	120	ug/kg dry	465.7	ND	91.4	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710027 - EPA 3511										
Matrix Spike (K710027-MS1)	**Source: K174207-06**			Prepared: 10/18/2017 Analyzed: 10/20/2017 00:27						
Surrogate: 2,2´-Dinitrobiphenyl	*449*		*ug/kg dry*	*465.7*		*96.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*802*		*ug/kg dry*	*465.7*		*172*	*60-140*			*X*
Matrix Spike Dup (K710027-MSD1)	**Source: K174207-06**			Prepared: 10/18/2017 Analyzed: 10/20/2017 00:50						
Nitrobenzene	547	120	ug/kg dry	465.7	ND	117	70-130	20.5	20	X
Nitrobenzene [2C]	916	120	ug/kg dry	465.7	30.1	190	70-130	21.7	20	X
2-Nitrotoluene	552	120	ug/kg dry	465.7	ND	119	70-130	21.6	20	X
2-Nitrotoluene [2C]	865	120	ug/kg dry	465.7	ND	186	70-130	22.9	20	X
3-Nitrotoluene	553	120	ug/kg dry	465.7	2.43	118	70-130	22.0	20	X
3-Nitrotoluene [2C]	971	120	ug/kg dry	465.7	3.02	208	70-130	22.9	20	X
4-Nitrotoluene	559	120	ug/kg dry	465.7	ND	120	70-130	20.9	20	X
4-Nitrotoluene [2C]	990	120	ug/kg dry	465.7	38.3	204	70-130	24.5	20	X
Nitroglycerin	598	120	ug/kg dry	465.7	6.85	127	70-130	24.8	20	X
Nitroglycerin [2C]	711	120	ug/kg dry	465.7	ND	153	70-130	20.1	20	X
1,3-Dinitrobenzene	557	120	ug/kg dry	465.7	12.3	117	70-130	23.4	20	X
1,3-Dinitrobenzene [2C]	1230	120	ug/kg dry	465.7	1.96	264	70-130	17.3	20	
2,6-Dinitrotoluene	531	120	ug/kg dry	465.7	0.607	114	70-130	21.3	20	X
2,6-Dinitrotoluene [2C]	1010	120	ug/kg dry	465.7	ND	217	70-130	21.7	20	X
2,4-Dinitrotoluene	563	120	ug/kg dry	465.7	4.26	120	70-130	20.8	20	X
2,4-Dinitrotoluene [2C]	1020	120	ug/kg dry	465.7	9.80	218	70-130	19.4	20	
1,3,5-Trinitrobenzene	559	120	ug/kg dry	465.7	1.29	120	70-130	21.0	20	X
1,3,5-Trinitrobenzene [2C]	994	120	ug/kg dry	465.7	3.95	212	70-130	22.6	20	X
2,4,6-Trinitrotoluene	523	120	ug/kg dry	465.7	20.1	108	70-130	20.0	20	
2,4,6-Trinitrotoluene [2C]	870	120	ug/kg dry	465.7	40.1	178	70-130	19.8	20	
PETN	496	120	ug/kg dry	465.7	2.49	106	70-130	20.9	20	
PETN [2C]	715	120	ug/kg dry	465.7	ND	154	70-130	20.2	20	X
RDX	564	120	ug/kg dry	465.7	ND	121	70-130	21.9	20	X
RDX [2C]	815	120	ug/kg dry	465.7	4.51	174	70-130	20.6	20	X
4-Amino-2,6-dinitrotoluene	575	120	ug/kg dry	465.7	21.7	119	70-130	20.5	20	X
4-Amino-2,6-dinitrotoluene [2C]	992	120	ug/kg dry	465.7	44.4	204	70-130	21.5	20	X
3,5-Dinitroaniline	583	120	ug/kg dry	465.7	ND	125	70-130	23.4	20	X
3,5-Dinitroaniline [2C]	929	120	ug/kg dry	465.7	2.63	199	70-130	19.6	20	
2-Amino-4,6-dinitrotoluene	584	120	ug/kg dry	465.7	18.8	121	70-130	21.6	20	X
2-Amino-4,6-dinitrotoluene [2C]	988	120	ug/kg dry	465.7	32.8	205	70-130	21.8	20	X
Tetryl	569	120	ug/kg dry	465.7	ND	122	70-130	20.8	20	X
Tetryl [2C]	951	120	ug/kg dry	465.7	3.98	203	70-130	20.3	20	X
HMX	524	120	ug/kg dry	465.7	ND	112	70-130	30.1	20	X
HMX [2C]	568	120	ug/kg dry	465.7	ND	122	70-130	28.7	20	X
Surrogate: 2,2´-Dinitrobiphenyl	*458*		*ug/kg dry*	*465.7*		*98.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*808*		*ug/kg dry*	*465.7*		*174*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710031 - EPA 3511										
Blank (K710031-BLK1)				Prepared: 10/19/2017 Analyzed: 10/20/2017 21:49						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*404*		*ug/kg wet*	*400.0*		*101*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*349*		*ug/kg wet*	*400.0*		*87.1*	*60-140*			
Blank (K710031-BLK2)				Prepared: 10/20/2017 Analyzed: 10/21/2017 06:26						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710031 - EPA 3511										
Blank (K710031-BLK2)				Prepared: 10/20/2017 Analyzed: 10/21/2017 06:26						
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*412*		*ug/kg wet*	*400.0*		*103*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*428*		*ug/kg wet*	*400.0*		*107*	*60-140*			
LCS (K710031-BS1)				Prepared: 10/19/2017 Analyzed: 10/20/2017 22:21						
Nitrobenzene	490	100	ug/kg wet	400.0		123	70-130			
Nitrobenzene [2C]	407	100	ug/kg wet	400.0		102	70-130			
2-Nitrotoluene	493	100	ug/kg wet	400.0		123	70-130			
2-Nitrotoluene [2C]	402	100	ug/kg wet	400.0		101	70-130			
3-Nitrotoluene	485	100	ug/kg wet	400.0		121	70-130			
3-Nitrotoluene [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
4-Nitrotoluene	489	100	ug/kg wet	400.0		122	70-130			
4-Nitrotoluene [2C]	400	100	ug/kg wet	400.0		100	70-130			
Nitroglycerin	467	100	ug/kg wet	400.0		117	70-130			
Nitroglycerin [2C]	383	100	ug/kg wet	400.0		95.8	70-130			
1,3-Dinitrobenzene	450	100	ug/kg wet	400.0		113	70-130			
1,3-Dinitrobenzene [2C]	416	100	ug/kg wet	400.0		104	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710031 - EPA 3511										
LCS (K710031-BS1)				Prepared: 10/19/2017 Analyzed: 10/20/2017 22:21						
2,6-Dinitrotoluene	456	100	ug/kg wet	400.0		114	70-130			
2,6-Dinitrotoluene [2C]	373	100	ug/kg wet	400.0		93.4	70-130			
2,4-Dinitrotoluene	458	100	ug/kg wet	400.0		115	70-130			
2,4-Dinitrotoluene [2C]	366	100	ug/kg wet	400.0		91.5	70-130			
1,3,5-Trinitrobenzene	450	100	ug/kg wet	400.0		112	70-130			
1,3,5-Trinitrobenzene [2C]	364	100	ug/kg wet	400.0		91.0	70-130			
2,4,6-Trinitrotoluene	412	100	ug/kg wet	400.0		103	70-130			
2,4,6-Trinitrotoluene [2C]	337	100	ug/kg wet	400.0		84.2	70-130			
PETN	445	100	ug/kg wet	400.0		111	70-130			
PETN [2C]	372	100	ug/kg wet	400.0		93.1	70-130			
RDX	458	100	ug/kg wet	400.0		115	70-130			
RDX [2C]	381	100	ug/kg wet	400.0		95.3	70-130			
4-Amino-2,6-dinitrotoluene	445	100	ug/kg wet	400.0		111	70-130			
4-Amino-2,6-dinitrotoluene [2C]	352	100	ug/kg wet	400.0		88.0	70-130			
3,5-Dinitroaniline	455	100	ug/kg wet	400.0		114	70-130			
3,5-Dinitroaniline [2C]	351	100	ug/kg wet	400.0		87.9	70-130			
2-Amino-4,6-dinitrotoluene	447	100	ug/kg wet	400.0		112	70-130			
2-Amino-4,6-dinitrotoluene [2C]	356	100	ug/kg wet	400.0		89.1	70-130			
Tetryl	442	100	ug/kg wet	400.0		110	70-130			
Tetryl [2C]	355	100	ug/kg wet	400.0		88.8	70-130			
HMX	399	100	ug/kg wet	400.0		99.7	70-130			
HMX [2C]	304	100	ug/kg wet	400.0		76.0	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*467*		*ug/kg wet*	*400.0*		*117*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*357*		*ug/kg wet*	*400.0*		*89.3*	*60-140*			
LCS (K710031-BS2)				Prepared: 10/20/2017 Analyzed: 10/21/2017 06:51						
Nitrobenzene	498	100	ug/kg wet	400.0		124	70-130			
Nitrobenzene [2C]	438	100	ug/kg wet	400.0		109	70-130			
2-Nitrotoluene	513	100	ug/kg wet	400.0		128	70-130			
2-Nitrotoluene [2C]	422	100	ug/kg wet	400.0		105	70-130			
3-Nitrotoluene	501	100	ug/kg wet	400.0		125	70-130			
3-Nitrotoluene [2C]	432	100	ug/kg wet	400.0		108	70-130			
4-Nitrotoluene	504	100	ug/kg wet	400.0		126	70-130			
4-Nitrotoluene [2C]	436	100	ug/kg wet	400.0		109	70-130			
Nitroglycerin	458	100	ug/kg wet	400.0		115	70-130			
Nitroglycerin [2C]	386	100	ug/kg wet	400.0		96.6	70-130			
1,3-Dinitrobenzene	455	100	ug/kg wet	400.0		114	70-130			
1,3-Dinitrobenzene [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
2,6-Dinitrotoluene	463	100	ug/kg wet	400.0		116	70-130			
2,6-Dinitrotoluene [2C]	442	100	ug/kg wet	400.0		111	70-130			
2,4-Dinitrotoluene	464	100	ug/kg wet	400.0		116	70-130			
2,4-Dinitrotoluene [2C]	450	100	ug/kg wet	400.0		112	70-130			
1,3,5-Trinitrobenzene	461	100	ug/kg wet	400.0		115	70-130			
1,3,5-Trinitrobenzene [2C]	470	100	ug/kg wet	400.0		117	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710031 - EPA 3511										
LCS (K710031-BS2)				Prepared: 10/20/2017 Analyzed: 10/21/2017 06:51						
2,4,6-Trinitrotoluene	416	100	ug/kg wet	400.0		104	70-130			
2,4,6-Trinitrotoluene [2C]	417	100	ug/kg wet	400.0		104	70-130			
PETN	403	100	ug/kg wet	400.0		101	70-130			
PETN [2C]	370	100	ug/kg wet	400.0		92.6	70-130			
RDX	454	100	ug/kg wet	400.0		114	70-130			
RDX [2C]	419	100	ug/kg wet	400.0		105	70-130			
4-Amino-2,6-dinitrotoluene	441	100	ug/kg wet	400.0		110	70-130			
4-Amino-2,6-dinitrotoluene [2C]	440	100	ug/kg wet	400.0		110	70-130			
3,5-Dinitroaniline	445	100	ug/kg wet	400.0		111	70-130			
3,5-Dinitroaniline [2C]	456	100	ug/kg wet	400.0		114	70-130			
2-Amino-4,6-dinitrotoluene	452	100	ug/kg wet	400.0		113	70-130			
2-Amino-4,6-dinitrotoluene [2C]	458	100	ug/kg wet	400.0		115	70-130			
Tetryl	435	100	ug/kg wet	400.0		109	70-130			
Tetryl [2C]	434	100	ug/kg wet	400.0		108	70-130			
HMX	321	100	ug/kg wet	400.0		80.1	70-130			
HMX [2C]	295	100	ug/kg wet	400.0		73.8	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*460*		*ug/kg wet*	*400.0*		*115*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*442*		*ug/kg wet*	*400.0*		*111*	*60-140*			
Matrix Spike (K710031-MS1)	**Source: K174210-01**			Prepared: 10/19/2017 Analyzed: 10/20/2017 23:29						
Nitrobenzene	536	110	ug/kg dry	450.5	ND	119	70-130			
Nitrobenzene [2C]	472	110	ug/kg dry	450.5	ND	105	70-130			
2-Nitrotoluene	542	110	ug/kg dry	450.5	ND	120	70-130			
2-Nitrotoluene [2C]	461	110	ug/kg dry	450.5	2.89	102	70-130			
3-Nitrotoluene	531	110	ug/kg dry	450.5	1.12	118	70-130			
3-Nitrotoluene [2C]	461	110	ug/kg dry	450.5	2.33	102	70-130			
4-Nitrotoluene	530	110	ug/kg dry	450.5	ND	118	70-130			
4-Nitrotoluene [2C]	461	110	ug/kg dry	450.5	ND	102	70-130			
Nitroglycerin	562	110	ug/kg dry	450.5	25.4	119	70-130			
Nitroglycerin [2C]	491	110	ug/kg dry	450.5	19.7	105	70-130			
1,3-Dinitrobenzene	495	110	ug/kg dry	450.5	17.2	106	70-130			
1,3-Dinitrobenzene [2C]	403	110	ug/kg dry	450.5	4.07	88.6	70-130			
2,6-Dinitrotoluene	496	110	ug/kg dry	450.5	1.93	110	70-130			
2,6-Dinitrotoluene [2C]	442	110	ug/kg dry	450.5	1.27	97.8	70-130			
2,4-Dinitrotoluene	529	110	ug/kg dry	450.5	28.0	111	70-130			
2,4-Dinitrotoluene [2C]	446	110	ug/kg dry	450.5	21.4	94.3	70-130			
1,3,5-Trinitrobenzene	470	110	ug/kg dry	450.5	ND	104	70-130			
1,3,5-Trinitrobenzene [2C]	420	110	ug/kg dry	450.5	4.59	92.2	70-130			
2,4,6-Trinitrotoluene	840	110	ug/kg dry	450.5	337	112	70-130			
2,4,6-Trinitrotoluene [2C]	733	110	ug/kg dry	450.5	303	95.4	70-130			
PETN	481	110	ug/kg dry	450.5	ND	107	70-130			
PETN [2C]	456	110	ug/kg dry	450.5	ND	101	70-130			
RDX	432	110	ug/kg dry	450.5	ND	96.0	70-130			
RDX [2C]	410	110	ug/kg dry	450.5	15.5	87.6	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710031 - EPA 3511										
Matrix Spike (K710031-MS1)	**Source: K174210-01**			Prepared: 10/19/2017 Analyzed: 10/20/2017 23:29						
4-Amino-2,6-dinitrotoluene	920	110	ug/kg dry	450.5	408	114	70-130			
4-Amino-2,6-dinitrotoluene [2C]	804	110	ug/kg dry	450.5	377	94.8	70-130			
3,5-Dinitroaniline	539	110	ug/kg dry	450.5	ND	120	70-130			
3,5-Dinitroaniline [2C]	403	110	ug/kg dry	450.5	22.3	84.6	70-130			
2-Amino-4,6-dinitrotoluene	879	110	ug/kg dry	450.5	338	120	70-130			
2-Amino-4,6-dinitrotoluene [2C]	749	110	ug/kg dry	450.5	312	97.1	70-130			
Tetryl	433	110	ug/kg dry	450.5	ND	96.1	70-130			
Tetryl [2C]	391	110	ug/kg dry	450.5	ND	86.9	70-130			
HMX	400	110	ug/kg dry	450.5	ND	88.9	70-130			
HMX [2C]	435	110	ug/kg dry	450.5	117	70.6	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*480*		*ug/kg dry*	*450.5*		*106*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*422*		*ug/kg dry*	*450.5*		*93.6*	*60-140*			
Matrix Spike (K710031-MS2)	**Source: K174201-15**			Prepared: 10/20/2017 Analyzed: 10/21/2017 05:14						
Nitrobenzene	580	110	ug/kg dry	454.9	ND	127	70-130			
Nitrobenzene [2C]	490	110	ug/kg dry	454.9	2.11	107	70-130			
2-Nitrotoluene	606	110	ug/kg dry	454.9	ND	133	70-130			M
2-Nitrotoluene [2C]	474	110	ug/kg dry	454.9	2.43	104	70-130			
3-Nitrotoluene	581	110	ug/kg dry	454.9	1.42	127	70-130			
3-Nitrotoluene [2C]	488	110	ug/kg dry	454.9	2.37	107	70-130			
4-Nitrotoluene	589	110	ug/kg dry	454.9	0.993	129	70-130			
4-Nitrotoluene [2C]	489	110	ug/kg dry	454.9	ND	108	70-130			
Nitroglycerin	537	110	ug/kg dry	454.9	14.2	115	70-130			
Nitroglycerin [2C]	454	110	ug/kg dry	454.9	6.38	98.4	70-130			
1,3-Dinitrobenzene	541	110	ug/kg dry	454.9	17.1	115	70-130			
1,3-Dinitrobenzene [2C]	569	110	ug/kg dry	454.9	10.6	123	70-130			
2,6-Dinitrotoluene	535	110	ug/kg dry	454.9	3.99	117	70-130			
2,6-Dinitrotoluene [2C]	493	110	ug/kg dry	454.9	2.10	108	70-130			
2,4-Dinitrotoluene	587	110	ug/kg dry	454.9	43.1	120	70-130			
2,4-Dinitrotoluene [2C]	552	110	ug/kg dry	454.9	40.7	112	70-130			
1,3,5-Trinitrobenzene	482	110	ug/kg dry	454.9	17.1	102	70-130			
1,3,5-Trinitrobenzene [2C]	483	110	ug/kg dry	454.9	7.85	104	70-130			
2,4,6-Trinitrotoluene	623	110	ug/kg dry	454.9	359	57.9	70-130			M
2,4,6-Trinitrotoluene [2C]	608	110	ug/kg dry	454.9	163	97.8	70-130			
PETN	460	110	ug/kg dry	454.9	ND	101	70-130			
PETN [2C]	451	110	ug/kg dry	454.9	ND	99.1	70-130			
RDX	439	110	ug/kg dry	454.9	ND	96.4	70-130			
RDX [2C]	443	110	ug/kg dry	454.9	6.62	96.0	70-130			
4-Amino-2,6-dinitrotoluene	566	110	ug/kg dry	454.9	101	102	70-130			
4-Amino-2,6-dinitrotoluene [2C]	545	110	ug/kg dry	454.9	104	97.0	70-130			
3,5-Dinitroaniline	473	110	ug/kg dry	454.9	ND	104	70-130			
3,5-Dinitroaniline [2C]	471	110	ug/kg dry	454.9	9.21	102	70-130			
2-Amino-4,6-dinitrotoluene	546	110	ug/kg dry	454.9	91.0	100	70-130			
2-Amino-4,6-dinitrotoluene [2C]	563	110	ug/kg dry	454.9	92.6	103	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710031 - EPA 3511										
Matrix Spike (K710031-MS2)	**Source: K174201-15**			Prepared: 10/20/2017 Analyzed: 10/21/2017 05:14						
Tetryl	426	110	ug/kg dry	454.9	ND	93.7	70-130			
Tetryl [2C]	475	110	ug/kg dry	454.9	2.39	104	70-130			
HMX	182	110	ug/kg dry	454.9	ND	40.1	70-130			M
HMX [2C]	182	110	ug/kg dry	454.9	ND	40.1	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*509*		*ug/kg dry*	*454.9*		*112*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*510*		*ug/kg dry*	*454.9*		*112*	*60-140*			
Matrix Spike Dup (K710031-MSD1)	**Source: K174210-01**			Prepared: 10/19/2017 Analyzed: 10/20/2017 23:51						
Nitrobenzene	513	110	ug/kg dry	450.5	ND	114	70-130	4.35	20	
Nitrobenzene [2C]	468	110	ug/kg dry	450.5	ND	104	70-130	0.816	20	
2-Nitrotoluene	517	110	ug/kg dry	450.5	ND	115	70-130	4.72	20	
2-Nitrotoluene [2C]	457	110	ug/kg dry	450.5	2.89	101	70-130	0.931	20	
3-Nitrotoluene	505	110	ug/kg dry	450.5	1.12	112	70-130	5.02	20	
3-Nitrotoluene [2C]	459	110	ug/kg dry	450.5	2.33	101	70-130	0.531	20	
4-Nitrotoluene	515	110	ug/kg dry	450.5	ND	114	70-130	2.81	20	
4-Nitrotoluene [2C]	466	110	ug/kg dry	450.5	ND	104	70-130	1.10	20	
Nitroglycerin	509	110	ug/kg dry	450.5	25.4	107	70-130	10.5	20	
Nitroglycerin [2C]	479	110	ug/kg dry	450.5	19.7	102	70-130	2.69	20	
1,3-Dinitrobenzene	481	110	ug/kg dry	450.5	17.2	103	70-130	3.00	20	
1,3-Dinitrobenzene [2C]	405	110	ug/kg dry	450.5	4.07	88.9	70-130	0.408	20	
2,6-Dinitrotoluene	481	110	ug/kg dry	450.5	1.93	106	70-130	3.11	20	
2,6-Dinitrotoluene [2C]	442	110	ug/kg dry	450.5	1.27	97.8	70-130	0.0234	20	
2,4-Dinitrotoluene	510	110	ug/kg dry	450.5	28.0	107	70-130	3.85	20	
2,4-Dinitrotoluene [2C]	458	110	ug/kg dry	450.5	21.4	96.9	70-130	2.69	20	
1,3,5-Trinitrobenzene	454	110	ug/kg dry	450.5	ND	101	70-130	3.58	20	
1,3,5-Trinitrobenzene [2C]	428	110	ug/kg dry	450.5	4.59	94.0	70-130	1.88	20	
2,4,6-Trinitrotoluene	790	110	ug/kg dry	450.5	337	101	70-130	10.6	20	
2,4,6-Trinitrotoluene [2C]	740	110	ug/kg dry	450.5	303	97.0	70-130	1.64	20	
PETN	444	110	ug/kg dry	450.5	ND	98.4	70-130	8.15	20	
PETN [2C]	444	110	ug/kg dry	450.5	ND	98.5	70-130	2.86	20	
RDX	438	110	ug/kg dry	450.5	ND	97.2	70-130	1.30	20	
RDX [2C]	455	110	ug/kg dry	450.5	15.5	97.6	70-130	10.8	20	
4-Amino-2,6-dinitrotoluene	856	110	ug/kg dry	450.5	408	99.5	70-130	13.4	20	
4-Amino-2,6-dinitrotoluene [2C]	824	110	ug/kg dry	450.5	377	99.2	70-130	4.54	20	
3,5-Dinitroaniline	510	110	ug/kg dry	450.5	ND	113	70-130	5.54	20	
3,5-Dinitroaniline [2C]	446	110	ug/kg dry	450.5	22.3	94.1	70-130	10.6	20	
2-Amino-4,6-dinitrotoluene	847	110	ug/kg dry	450.5	338	113	70-130	6.02	20	
2-Amino-4,6-dinitrotoluene [2C]	805	110	ug/kg dry	450.5	312	110	70-130	12.0	20	
Tetryl	423	110	ug/kg dry	450.5	ND	93.9	70-130	2.30	20	
Tetryl [2C]	411	110	ug/kg dry	450.5	ND	91.2	70-130	4.80	20	
HMX	459	110	ug/kg dry	450.5	ND	102	70-130	13.5	20	
HMX [2C]	566	110	ug/kg dry	450.5	117	99.6	70-130	34.1	20	X
Surrogate: 2,2´-Dinitrobiphenyl	*475*		*ug/kg dry*	*450.5*		*105*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*441*		*ug/kg dry*	*450.5*		*97.8*	*60-140*			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710031 - EPA 3511										
Matrix Spike Dup (K710031-MSD2)	**Source: K174201-15**			Prepared: 10/20/2017 Analyzed: 10/21/2017 05:38						
Nitrobenzene	525	110	ug/kg dry	454.9	ND	115	70-130	9.97	20	
Nitrobenzene [2C]	564	110	ug/kg dry	454.9	2.11	123	70-130	14.1	20	
2-Nitrotoluene	539	110	ug/kg dry	454.9	ND	119	70-130	11.7	20	
2-Nitrotoluene [2C]	545	110	ug/kg dry	454.9	2.43	119	70-130	14.1	20	
3-Nitrotoluene	526	110	ug/kg dry	454.9	1.42	115	70-130	10.0	20	
3-Nitrotoluene [2C]	566	110	ug/kg dry	454.9	2.37	124	70-130	14.9	20	
4-Nitrotoluene	528	110	ug/kg dry	454.9	0.993	116	70-130	10.9	20	
4-Nitrotoluene [2C]	564	110	ug/kg dry	454.9	ND	124	70-130	14.2	20	
Nitroglycerin	498	110	ug/kg dry	454.9	14.2	106	70-130	7.78	20	
Nitroglycerin [2C]	527	110	ug/kg dry	454.9	6.38	115	70-130	15.1	20	
1,3-Dinitrobenzene	496	110	ug/kg dry	454.9	17.1	105	70-130	9.02	20	
1,3-Dinitrobenzene [2C]	623	110	ug/kg dry	454.9	10.6	135	70-130	9.15	20	M
2,6-Dinitrotoluene	486	110	ug/kg dry	454.9	3.99	106	70-130	9.73	20	
2,6-Dinitrotoluene [2C]	569	110	ug/kg dry	454.9	2.10	125	70-130	14.3	20	
2,4-Dinitrotoluene	542	110	ug/kg dry	454.9	43.1	110	70-130	8.71	20	
2,4-Dinitrotoluene [2C]	633	110	ug/kg dry	454.9	40.7	130	70-130	14.8	20	
1,3,5-Trinitrobenzene	455	110	ug/kg dry	454.9	17.1	96.3	70-130	5.84	20	
1,3,5-Trinitrobenzene [2C]	594	110	ug/kg dry	454.9	7.85	129	70-130	20.9	20	X
2,4,6-Trinitrotoluene	626	110	ug/kg dry	454.9	359	58.5	70-130	1.15	20	M
2,4,6-Trinitrotoluene [2C]	746	110	ug/kg dry	454.9	163	128	70-130	27.0	20	X
PETN	426	110	ug/kg dry	454.9	ND	93.6	70-130	7.64	20	
PETN [2C]	502	110	ug/kg dry	454.9	ND	110	70-130	10.8	20	
RDX	442	110	ug/kg dry	454.9	ND	97.2	70-130	0.774	20	
RDX [2C]	522	110	ug/kg dry	454.9	6.62	113	70-130	16.4	20	
4-Amino-2,6-dinitrotoluene	589	110	ug/kg dry	454.9	101	107	70-130	4.93	20	
4-Amino-2,6-dinitrotoluene [2C]	702	110	ug/kg dry	454.9	104	132	70-130	30.2	20	M, X
3,5-Dinitroaniline	479	110	ug/kg dry	454.9	ND	105	70-130	1.39	20	
3,5-Dinitroaniline [2C]	573	110	ug/kg dry	454.9	9.21	124	70-130	19.8	20	
2-Amino-4,6-dinitrotoluene	583	110	ug/kg dry	454.9	91.0	108	70-130	7.92	20	
2-Amino-4,6-dinitrotoluene [2C]	702	110	ug/kg dry	454.9	92.6	134	70-130	25.7	20	X, M
Tetryl	433	110	ug/kg dry	454.9	ND	95.2	70-130	1.61	20	
Tetryl [2C]	584	110	ug/kg dry	454.9	2.39	128	70-130	20.7	20	X
HMX	280	110	ug/kg dry	454.9	ND	61.6	70-130	42.3	20	X, M
HMX [2C]	334	110	ug/kg dry	454.9	ND	73.5	70-130	58.8	20	X
Surrogate: 2,2´-Dinitrobiphenyl	*476*		*ug/kg dry*	*454.9*		*105*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*614*		*ug/kg dry*	*454.9*		*135*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710034 - EPA 3511										
Blank (K710034-BLK1)				Prepared: 10/21/2017 Analyzed: 10/22/2017 02:54						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*400*		*ug/kg wet*	*400.0*		*100*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*394*		*ug/kg wet*	*400.0*		*98.5*	*60-140*			
LCS (K710034-BS1)				Prepared: 10/21/2017 Analyzed: 10/22/2017 02:32						
Nitrobenzene	445	100	ug/kg wet	400.0		111	70-130			
Nitrobenzene [2C]	447	100	ug/kg wet	400.0		112	70-130			
2-Nitrotoluene	432	100	ug/kg wet	400.0		108	70-130			
2-Nitrotoluene [2C]	449	100	ug/kg wet	400.0		112	70-130			
3-Nitrotoluene	425	100	ug/kg wet	400.0		106	70-130			
3-Nitrotoluene [2C]	451	100	ug/kg wet	400.0		113	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710034 - EPA 3511										
LCS (K710034-BS1)				Prepared: 10/21/2017 Analyzed: 10/22/2017 02:32						
4-Nitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
4-Nitrotoluene [2C]	447	100	ug/kg wet	400.0		112	70-130			
Nitroglycerin	419	100	ug/kg wet	400.0		105	70-130			
Nitroglycerin [2C]	394	100	ug/kg wet	400.0		98.4	70-130			
1,3-Dinitrobenzene	402	100	ug/kg wet	400.0		101	70-130			
1,3-Dinitrobenzene [2C]	423	100	ug/kg wet	400.0		106	70-130			
2,6-Dinitrotoluene	401	100	ug/kg wet	400.0		100	70-130			
2,6-Dinitrotoluene [2C]	413	100	ug/kg wet	400.0		103	70-130			
2,4-Dinitrotoluene	396	100	ug/kg wet	400.0		99.1	70-130			
2,4-Dinitrotoluene [2C]	417	100	ug/kg wet	400.0		104	70-130			
1,3,5-Trinitrobenzene	408	100	ug/kg wet	400.0		102	70-130			
1,3,5-Trinitrobenzene [2C]	398	100	ug/kg wet	400.0		99.5	70-130			
2,4,6-Trinitrotoluene	356	100	ug/kg wet	400.0		89.0	70-130			
2,4,6-Trinitrotoluene [2C]	354	100	ug/kg wet	400.0		88.5	70-130			
PETN	408	100	ug/kg wet	400.0		102	70-130			
PETN [2C]	375	100	ug/kg wet	400.0		93.7	70-130			
RDX	407	100	ug/kg wet	400.0		102	70-130			
RDX [2C]	408	100	ug/kg wet	400.0		102	70-130			
4-Amino-2,6-dinitrotoluene	405	100	ug/kg wet	400.0		101	70-130			
4-Amino-2,6-dinitrotoluene [2C]	391	100	ug/kg wet	400.0		97.7	70-130			
3,5-Dinitroaniline	407	100	ug/kg wet	400.0		102	70-130			
3,5-Dinitroaniline [2C]	408	100	ug/kg wet	400.0		102	70-130			
2-Amino-4,6-dinitrotoluene	406	100	ug/kg wet	400.0		102	70-130			
2-Amino-4,6-dinitrotoluene [2C]	405	100	ug/kg wet	400.0		101	70-130			
Tetryl	389	100	ug/kg wet	400.0		97.1	70-130			
Tetryl [2C]	354	100	ug/kg wet	400.0		88.4	70-130			
HMX	398	100	ug/kg wet	400.0		99.4	70-130			
HMX [2C]	411	100	ug/kg wet	400.0		103	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*412*		*ug/kg wet*	*400.0*		*103*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*426*		*ug/kg wet*	*400.0*		*106*	*60-140*			
Matrix Spike (K710034-MS1)	**Source: K174213-01**			Prepared: 10/21/2017 Analyzed: 10/22/2017 03:38						
Nitrobenzene	518	110	ug/kg dry	448.4	ND	116	70-130			
Nitrobenzene [2C]	473	110	ug/kg dry	448.4	ND	105	70-130			
2-Nitrotoluene	502	110	ug/kg dry	448.4	ND	112	70-130			
2-Nitrotoluene [2C]	475	110	ug/kg dry	448.4	ND	106	70-130			
3-Nitrotoluene	498	110	ug/kg dry	448.4	ND	111	70-130			
3-Nitrotoluene [2C]	472	110	ug/kg dry	448.4	ND	105	70-130			
4-Nitrotoluene	513	110	ug/kg dry	448.4	ND	114	70-130			
4-Nitrotoluene [2C]	469	110	ug/kg dry	448.4	ND	104	70-130			
Nitroglycerin	469	110	ug/kg dry	448.4	ND	105	70-130			
Nitroglycerin [2C]	406	110	ug/kg dry	448.4	ND	90.6	70-130			
1,3-Dinitrobenzene	469	110	ug/kg dry	448.4	ND	105	70-130			
1,3-Dinitrobenzene [2C]	426	110	ug/kg dry	448.4	ND	94.9	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710034 - EPA 3511										
Matrix Spike (K710034-MS1)	**Source: K174213-01**			Prepared: 10/21/2017 Analyzed: 10/22/2017 03:38						
2,6-Dinitrotoluene	463	110	ug/kg dry	448.4	1.14	103	70-130			
2,6-Dinitrotoluene [2C]	419	110	ug/kg dry	448.4	ND	93.5	70-130			
2,4-Dinitrotoluene	465	110	ug/kg dry	448.4	4.93	103	70-130			
2,4-Dinitrotoluene [2C]	430	110	ug/kg dry	448.4	3.17	95.3	70-130			
1,3,5-Trinitrobenzene	451	110	ug/kg dry	448.4	ND	101	70-130			
1,3,5-Trinitrobenzene [2C]	411	110	ug/kg dry	448.4	ND	91.7	70-130			
2,4,6-Trinitrotoluene	410	110	ug/kg dry	448.4	14.7	88.2	70-130			
2,4,6-Trinitrotoluene [2C]	381	110	ug/kg dry	448.4	35.4	77.0	70-130			
PETN	451	110	ug/kg dry	448.4	ND	101	70-130			
PETN [2C]	382	110	ug/kg dry	448.4	ND	85.2	70-130			
RDX	452	110	ug/kg dry	448.4	ND	101	70-130			
RDX [2C]	401	110	ug/kg dry	448.4	3.04	88.8	70-130			
4-Amino-2,6-dinitrotoluene	447	110	ug/kg dry	448.4	3.95	98.8	70-130			
4-Amino-2,6-dinitrotoluene [2C]	396	110	ug/kg dry	448.4	4.83	87.1	70-130			
3,5-Dinitroaniline	443	110	ug/kg dry	448.4	2.62	98.3	70-130			
3,5-Dinitroaniline [2C]	387	110	ug/kg dry	448.4	1.68	85.9	70-130			
2-Amino-4,6-dinitrotoluene	441	110	ug/kg dry	448.4	ND	98.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	404	110	ug/kg dry	448.4	ND	90.1	70-130			
Tetryl	410	110	ug/kg dry	448.4	ND	91.3	70-130			
Tetryl [2C]	349	110	ug/kg dry	448.4	ND	77.8	70-130			
HMX	440	110	ug/kg dry	448.4	ND	98.1	70-130			
HMX [2C]	393	110	ug/kg dry	448.4	6.71	86.2	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*474*		*ug/kg dry*	*448.4*		*106*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*433*		*ug/kg dry*	*448.4*		*96.6*	*60-140*			
Matrix Spike (K710034-MS2)	**Source: K174213-10**			Prepared: 10/21/2017 Analyzed: 10/22/2017 08:02						
Nitrobenzene	578	110	ug/kg dry	449.2	ND	129	70-130			
Nitrobenzene [2C]	456	110	ug/kg dry	449.2	ND	102	70-130			
2-Nitrotoluene	563	110	ug/kg dry	449.2	ND	125	70-130			
2-Nitrotoluene [2C]	458	110	ug/kg dry	449.2	ND	102	70-130			
3-Nitrotoluene	561	110	ug/kg dry	449.2	ND	125	70-130			
3-Nitrotoluene [2C]	463	110	ug/kg dry	449.2	ND	103	70-130			
4-Nitrotoluene	573	110	ug/kg dry	449.2	ND	128	70-130			
4-Nitrotoluene [2C]	464	110	ug/kg dry	449.2	ND	103	70-130			
Nitroglycerin	503	110	ug/kg dry	449.2	ND	112	70-130			
Nitroglycerin [2C]	420	110	ug/kg dry	449.2	ND	93.5	70-130			
1,3-Dinitrobenzene	552	110	ug/kg dry	449.2	6.20	121	70-130			
1,3-Dinitrobenzene [2C]	532	110	ug/kg dry	449.2	ND	118	70-130			
2,6-Dinitrotoluene	609	110	ug/kg dry	449.2	104	112	70-130			
2,6-Dinitrotoluene [2C]	505	110	ug/kg dry	449.2	85.0	93.5	70-130			
2,4-Dinitrotoluene	823	110	ug/kg dry	449.2	270	123	70-130			
2,4-Dinitrotoluene [2C]	697	110	ug/kg dry	449.2	228	104	70-130			
1,3,5-Trinitrobenzene	531	110	ug/kg dry	449.2	13.0	115	70-130			
1,3,5-Trinitrobenzene [2C]	465	110	ug/kg dry	449.2	10.6	101	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710034 - EPA 3511										
Matrix Spike (K710034-MS2)	**Source: K174213-10**			Prepared: 10/21/2017 Analyzed: 10/22/2017 08:02						
2,4,6-Trinitrotoluene	793	110	ug/kg dry	449.2	349	98.7	70-130			
2,4,6-Trinitrotoluene [2C]	719	110	ug/kg dry	449.2	306	92.1	70-130			
PETN	459	110	ug/kg dry	449.2	ND	102	70-130			
PETN [2C]	404	110	ug/kg dry	449.2	ND	90.0	70-130			
RDX	499	110	ug/kg dry	449.2	ND	111	70-130			
RDX [2C]	437	110	ug/kg dry	449.2	4.18	96.4	70-130			
4-Amino-2,6-dinitrotoluene	663	110	ug/kg dry	449.2	199	103	70-130			
4-Amino-2,6-dinitrotoluene [2C]	566	110	ug/kg dry	449.2	162	89.9	70-130			
3,5-Dinitroaniline	525	110	ug/kg dry	449.2	ND	117	70-130			
3,5-Dinitroaniline [2C]	441	110	ug/kg dry	449.2	7.78	96.5	70-130			
2-Amino-4,6-dinitrotoluene	641	110	ug/kg dry	449.2	166	106	70-130			
2-Amino-4,6-dinitrotoluene [2C]	564	110	ug/kg dry	449.2	145	93.2	70-130			
Tetryl	488	110	ug/kg dry	449.2	ND	109	70-130			
Tetryl [2C]	395	110	ug/kg dry	449.2	ND	87.9	70-130			
HMX	393	110	ug/kg dry	449.2	ND	87.5	70-130			
HMX [2C]	371	110	ug/kg dry	449.2	13.6	79.6	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*521*		*ug/kg dry*	*449.2*		*116*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*462*		*ug/kg dry*	*449.2*		*103*	*60-140*			
Matrix Spike Dup (K710034-MSD1)	**Source: K174213-01**			Prepared: 10/21/2017 Analyzed: 10/22/2017 04:00						
Nitrobenzene	521	110	ug/kg dry	448.4	ND	116	70-130	0.604	20	
Nitrobenzene [2C]	487	110	ug/kg dry	448.4	ND	109	70-130	2.96	20	
2-Nitrotoluene	507	110	ug/kg dry	448.4	ND	113	70-130	0.906	20	
2-Nitrotoluene [2C]	494	110	ug/kg dry	448.4	ND	110	70-130	3.90	20	
3-Nitrotoluene	504	110	ug/kg dry	448.4	ND	112	70-130	1.37	20	
3-Nitrotoluene [2C]	490	110	ug/kg dry	448.4	ND	109	70-130	3.70	20	
4-Nitrotoluene	521	110	ug/kg dry	448.4	ND	116	70-130	1.44	20	
4-Nitrotoluene [2C]	487	110	ug/kg dry	448.4	ND	109	70-130	3.93	20	
Nitroglycerin	465	110	ug/kg dry	448.4	ND	104	70-130	0.752	20	
Nitroglycerin [2C]	443	110	ug/kg dry	448.4	ND	98.8	70-130	8.61	20	
1,3-Dinitrobenzene	473	110	ug/kg dry	448.4	ND	105	70-130	0.927	20	
1,3-Dinitrobenzene [2C]	467	110	ug/kg dry	448.4	ND	104	70-130	9.18	20	
2,6-Dinitrotoluene	467	110	ug/kg dry	448.4	1.14	104	70-130	0.862	20	
2,6-Dinitrotoluene [2C]	450	110	ug/kg dry	448.4	ND	100	70-130	7.03	20	
2,4-Dinitrotoluene	472	110	ug/kg dry	448.4	4.93	104	70-130	1.38	20	
2,4-Dinitrotoluene [2C]	461	110	ug/kg dry	448.4	3.17	102	70-130	6.92	20	
1,3,5-Trinitrobenzene	466	110	ug/kg dry	448.4	ND	104	70-130	3.24	20	
1,3,5-Trinitrobenzene [2C]	451	110	ug/kg dry	448.4	ND	101	70-130	9.24	20	
2,4,6-Trinitrotoluene	418	110	ug/kg dry	448.4	14.7	89.9	70-130	1.90	20	
2,4,6-Trinitrotoluene [2C]	491	110	ug/kg dry	448.4	35.4	102	70-130	27.5	20	X
PETN	452	110	ug/kg dry	448.4	ND	101	70-130	0.194	20	
PETN [2C]	445	110	ug/kg dry	448.4	ND	99.3	70-130	15.4	20	
RDX	417	110	ug/kg dry	448.4	ND	92.9	70-130	8.14	20	
RDX [2C]	418	110	ug/kg dry	448.4	3.04	92.6	70-130	4.16	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710034 - EPA 3511										
Matrix Spike Dup (K710034-MSD1)	**Source: K174213-01**			Prepared: 10/21/2017 Analyzed: 10/22/2017 04:00						
4-Amino-2,6-dinitrotoluene	451	110	ug/kg dry	448.4	3.95	99.6	70-130	0.886	20	
4-Amino-2,6-dinitrotoluene [2C]	436	110	ug/kg dry	448.4	4.83	96.2	70-130	9.91	20	
3,5-Dinitroaniline	453	110	ug/kg dry	448.4	2.62	100	70-130	2.16	20	
3,5-Dinitroaniline [2C]	450	110	ug/kg dry	448.4	1.68	100	70-130	15.2	20	
2-Amino-4,6-dinitrotoluene	451	110	ug/kg dry	448.4	ND	100	70-130	2.22	20	
2-Amino-4,6-dinitrotoluene [2C]	446	110	ug/kg dry	448.4	ND	99.6	70-130	9.97	20	
Tetryl	436	110	ug/kg dry	448.4	ND	97.2	70-130	6.27	20	
Tetryl [2C]	390	110	ug/kg dry	448.4	ND	86.9	70-130	11.0	20	
HMX	302	110	ug/kg dry	448.4	ND	67.3	70-130	37.2	20	M, X
HMX [2C]	309	110	ug/kg dry	448.4	6.71	67.4	70-130	24.5	20	M, X
Surrogate: 2,2'-Dinitrobiphenyl	*479*		*ug/kg dry*	*448.4*		*107*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*479*		*ug/kg dry*	*448.4*		*107*	*60-140*			
Matrix Spike Dup (K710034-MSD2)	**Source: K174213-10**			Prepared: 10/21/2017 Analyzed: 10/22/2017 08:24						
Nitrobenzene	585	110	ug/kg dry	449.2	ND	130	70-130	1.31	20	
Nitrobenzene [2C]	475	110	ug/kg dry	449.2	ND	106	70-130	4.04	20	
2-Nitrotoluene	568	110	ug/kg dry	449.2	ND	126	70-130	0.816	20	
2-Nitrotoluene [2C]	485	110	ug/kg dry	449.2	ND	108	70-130	5.70	20	
3-Nitrotoluene	575	110	ug/kg dry	449.2	ND	128	70-130	2.52	20	
3-Nitrotoluene [2C]	488	110	ug/kg dry	449.2	ND	109	70-130	5.15	20	
4-Nitrotoluene	597	110	ug/kg dry	449.2	ND	133	70-130	4.00	20	M
4-Nitrotoluene [2C]	492	110	ug/kg dry	449.2	ND	109	70-130	5.72	20	
Nitroglycerin	490	110	ug/kg dry	449.2	ND	109	70-130	2.65	20	
Nitroglycerin [2C]	410	110	ug/kg dry	449.2	ND	91.3	70-130	2.34	20	
1,3-Dinitrobenzene	581	110	ug/kg dry	449.2	6.20	128	70-130	5.14	20	
1,3-Dinitrobenzene [2C]	514	110	ug/kg dry	449.2	ND	114	70-130	3.44	20	
2,6-Dinitrotoluene	665	110	ug/kg dry	449.2	104	125	70-130	10.6	20	
2,6-Dinitrotoluene [2C]	568	110	ug/kg dry	449.2	85.0	108	70-130	14.0	20	
2,4-Dinitrotoluene	1010	110	ug/kg dry	449.2	270	165	70-130	28.9	20	X, M
2,4-Dinitrotoluene [2C]	896	110	ug/kg dry	449.2	228	149	70-130	35.1	20	M, X
1,3,5-Trinitrobenzene	548	110	ug/kg dry	449.2	13.0	119	70-130	3.21	20	
1,3,5-Trinitrobenzene [2C]	482	110	ug/kg dry	449.2	10.6	105	70-130	3.56	20	
2,4,6-Trinitrotoluene	873	110	ug/kg dry	449.2	349	117	70-130	16.6	20	
2,4,6-Trinitrotoluene [2C]	803	110	ug/kg dry	449.2	306	111	70-130	18.5	20	
PETN	459	110	ug/kg dry	449.2	ND	102	70-130	0.0812	20	
PETN [2C]	376	110	ug/kg dry	449.2	ND	83.8	70-130	7.16	20	
RDX	504	110	ug/kg dry	449.2	ND	112	70-130	0.973	20	
RDX [2C]	446	110	ug/kg dry	449.2	4.18	98.3	70-130	1.96	20	
4-Amino-2,6-dinitrotoluene	712	110	ug/kg dry	449.2	199	114	70-130	10.0	20	
4-Amino-2,6-dinitrotoluene [2C]	614	110	ug/kg dry	449.2	162	101	70-130	11.2	20	
3,5-Dinitroaniline	544	110	ug/kg dry	449.2	ND	121	70-130	3.66	20	
3,5-Dinitroaniline [2C]	459	110	ug/kg dry	449.2	7.78	100	70-130	3.98	20	
2-Amino-4,6-dinitrotoluene	688	110	ug/kg dry	449.2	166	116	70-130	9.34	20	
2-Amino-4,6-dinitrotoluene [2C]	617	110	ug/kg dry	449.2	145	105	70-130	12.0	20	

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Project: Hercules Inc. - Kenvil Works Facility
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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710034 - EPA 3511										
Matrix Spike Dup (K710034-MSD2)	**Source: K174213-10**			Prepared: 10/21/2017 Analyzed: 10/22/2017 08:24						
Tetryl	500	110	ug/kg dry	449.2	ND	111	70-130	2.34	20	
Tetryl [2C]	368	110	ug/kg dry	449.2	ND	81.8	70-130	7.15	20	
HMX	431	110	ug/kg dry	449.2	ND	95.9	70-130	9.23	20	
HMX [2C]	389	110	ug/kg dry	449.2	13.6	83.5	70-130	4.86	20	
Surrogate: 2,2´-Dinitrobiphenyl	*534*		*ug/kg dry*	*449.2*		*119*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*486*		*ug/kg dry*	*449.2*		*108*	*60-140*			
Batch K710036 - EPA 3511										
Blank (K710036-BLK1)				Prepared: 10/21/2017 Analyzed: 10/22/2017 03:04						
Nitrobenzene	ND	0.10	ug/L							
Nitrobenzene [2C]	ND	0.10	ug/L							
2-Nitrotoluene	ND	0.10	ug/L							
2-Nitrotoluene [2C]	ND	0.10	ug/L							
3-Nitrotoluene	ND	0.10	ug/L							
3-Nitrotoluene [2C]	ND	0.10	ug/L							
4-Nitrotoluene	ND	0.10	ug/L							
4-Nitrotoluene [2C]	ND	0.10	ug/L							
Nitroglycerin	ND	0.10	ug/L							
Nitroglycerin [2C]	ND	0.10	ug/L							
1,3-Dinitrobenzene	ND	0.10	ug/L							
1,3-Dinitrobenzene [2C]	ND	0.10	ug/L							
2,6-Dinitrotoluene	ND	0.10	ug/L							
2,6-Dinitrotoluene [2C]	ND	0.10	ug/L							
2,4-Dinitrotoluene	ND	0.10	ug/L							
2,4-Dinitrotoluene [2C]	ND	0.10	ug/L							
1,3,5-Trinitrobenzene	ND	0.10	ug/L							
1,3,5-Trinitrobenzene [2C]	ND	0.10	ug/L							
2,4,6-Trinitrotoluene	ND	0.10	ug/L							
2,4,6-Trinitrotoluene [2C]	ND	0.10	ug/L							
PETN	ND	0.10	ug/L							
PETN [2C]	ND	0.10	ug/L							
RDX	ND	0.10	ug/L							
RDX [2C]	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene [2C]	ND	0.10	ug/L							
3,5-Dinitroaniline	ND	0.10	ug/L							
3,5-Dinitroaniline [2C]	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene [2C]	ND	0.10	ug/L							
Tetryl	ND	0.10	ug/L							
Tetryl [2C]	0.11	0.10	ug/L							
HMX	ND	0.10	ug/L							
HMX [2C]	ND	0.10	ug/L							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710036 - EPA 3511										
Blank (K710036-BLK1)				Prepared: 10/21/2017 Analyzed: 10/22/2017 03:15						
Surrogate: 2,2´-Dinitrobiphenyl	*2.61*		*ug/L*	*2.500*		*105*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.62*		*ug/L*	*2.500*		*105*	*60-140*			
LCS (K710036-BS1)				Prepared: 10/21/2017 Analyzed: 10/22/2017 02:53						
Nitrobenzene	2.33	0.10	ug/L	2.500		93.4	70-130			
Nitrobenzene [2C]	2.35	0.10	ug/L	2.500		94.0	70-130			
2-Nitrotoluene	2.31	0.10	ug/L	2.500		92.3	70-130			
2-Nitrotoluene [2C]	2.31	0.10	ug/L	2.500		92.3	70-130			
3-Nitrotoluene	2.28	0.10	ug/L	2.500		91.2	70-130			
3-Nitrotoluene [2C]	2.26	0.10	ug/L	2.500		90.5	70-130			
4-Nitrotoluene	2.41	0.10	ug/L	2.500		96.2	70-130			
4-Nitrotoluene [2C]	2.31	0.10	ug/L	2.500		92.4	70-130			
Nitroglycerin	2.64	0.10	ug/L	2.500		105	70-130			
Nitroglycerin [2C]	2.32	0.10	ug/L	2.500		92.7	70-130			
1,3-Dinitrobenzene	2.12	0.10	ug/L	2.500		84.8	70-130			
1,3-Dinitrobenzene [2C]	2.25	0.10	ug/L	2.500		90.1	70-130			
2,6-Dinitrotoluene	2.43	0.10	ug/L	2.500		97.3	70-130			
2,6-Dinitrotoluene [2C]	2.34	0.10	ug/L	2.500		93.6	70-130			
2,4-Dinitrotoluene	2.34	0.10	ug/L	2.500		93.5	70-130			
2,4-Dinitrotoluene [2C]	2.37	0.10	ug/L	2.500		95.0	70-130			
1,3,5-Trinitrobenzene	2.21	0.10	ug/L	2.500		88.4	70-130			
1,3,5-Trinitrobenzene [2C]	2.29	0.10	ug/L	2.500		91.7	70-130			
2,4,6-Trinitrotoluene	2.19	0.10	ug/L	2.500		87.5	70-130			
2,4,6-Trinitrotoluene [2C]	2.13	0.10	ug/L	2.500		85.2	70-130			
PETN	2.45	0.10	ug/L	2.500		98.2	70-130			
PETN [2C]	2.29	0.10	ug/L	2.500		91.7	70-130			
RDX	2.41	0.10	ug/L	2.500		96.4	70-130			
RDX [2C]	2.38	0.10	ug/L	2.500		95.2	70-130			
4-Amino-2,6-dinitrotoluene	2.44	0.10	ug/L	2.500		97.7	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.43	0.10	ug/L	2.500		97.0	70-130			
3,5-Dinitroaniline	2.50	0.10	ug/L	2.500		99.9	70-130			
3,5-Dinitroaniline [2C]	2.32	0.10	ug/L	2.500		92.9	70-130			
2-Amino-4,6-dinitrotoluene	2.43	0.10	ug/L	2.500		97.0	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.36	0.10	ug/L	2.500		94.6	70-130			
Tetryl	2.66	0.10	ug/L	2.500		106	70-130			
Tetryl [2C]	2.61	0.10	ug/L	2.500		104	70-130			B
HMX	1.85	0.10	ug/L	2.500		73.9	70-130			
HMX [2C]	1.51	0.10	ug/L	2.500		60.3	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*2.63*		*ug/L*	*2.500*		*105*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.65*		*ug/L*	*2.500*		*106*	*60-140*			
Matrix Spike (K710036-MS1)	**Source: K174203-02**			Prepared: 10/21/2017 Analyzed: 10/22/2017 04:21						
Nitrobenzene	2.37	0.10	ug/L	2.500	ND	94.7	70-130			
Nitrobenzene [2C]	2.35	0.10	ug/L	2.500	ND	93.9	70-130			

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710036 - EPA 3511										
Matrix Spike (K710036-MS1)	**Source: K174203-02**			Prepared: 10/21/2017 Analyzed: 10/22/2017 04:21						
2-Nitrotoluene	2.33	0.10	ug/L	2.500	ND	93.0	70-130			
2-Nitrotoluene [2C]	2.29	0.10	ug/L	2.500	ND	91.5	70-130			
3-Nitrotoluene	2.35	0.10	ug/L	2.500	ND	94.0	70-130			
3-Nitrotoluene [2C]	2.28	0.10	ug/L	2.500	0.0198	90.6	70-130			
4-Nitrotoluene	2.43	0.10	ug/L	2.500	0.00691	97.1	70-130			
4-Nitrotoluene [2C]	2.29	0.10	ug/L	2.500	ND	91.8	70-130			
Nitroglycerin	2.51	0.10	ug/L	2.500	ND	101	70-130			
Nitroglycerin [2C]	2.36	0.10	ug/L	2.500	ND	94.3	70-130			
1,3-Dinitrobenzene	2.18	0.10	ug/L	2.500	0.0299	85.9	70-130			
1,3-Dinitrobenzene [2C]	2.27	0.10	ug/L	2.500	ND	90.6	70-130			
2,6-Dinitrotoluene	2.44	0.10	ug/L	2.500	ND	97.5	70-130			
2,6-Dinitrotoluene [2C]	2.41	0.10	ug/L	2.500	ND	96.3	70-130			
2,4-Dinitrotoluene	2.36	0.10	ug/L	2.500	ND	94.5	70-130			
2,4-Dinitrotoluene [2C]	2.35	0.10	ug/L	2.500	0.00195	94.0	70-130			
1,3,5-Trinitrobenzene	2.23	0.10	ug/L	2.500	ND	89.4	70-130			
1,3,5-Trinitrobenzene [2C]	2.31	0.10	ug/L	2.500	ND	92.5	70-130			
2,4,6-Trinitrotoluene	2.21	0.10	ug/L	2.500	0.0359	87.1	70-130			
2,4,6-Trinitrotoluene [2C]	2.18	0.10	ug/L	2.500	0.0424	85.7	70-130			
PETN	2.46	0.10	ug/L	2.500	ND	98.4	70-130			
PETN [2C]	2.32	0.10	ug/L	2.500	ND	92.6	70-130			
RDX	2.27	0.10	ug/L	2.500	ND	90.9	70-130			
RDX [2C]	2.49	0.10	ug/L	2.500	ND	99.6	70-130			
4-Amino-2,6-dinitrotoluene	2.28	0.10	ug/L	2.500	ND	91.2	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.55	0.10	ug/L	2.500	ND	102	70-130			
3,5-Dinitroaniline	2.43	0.10	ug/L	2.500	0.217	88.4	70-130			
3,5-Dinitroaniline [2C]	2.48	0.10	ug/L	2.500	ND	99.0	70-130			
2-Amino-4,6-dinitrotoluene	2.28	0.10	ug/L	2.500	ND	91.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.49	0.10	ug/L	2.500	ND	99.6	70-130			
Tetryl	2.66	0.10	ug/L	2.500	ND	107	70-130			
Tetryl [2C]	2.71	0.10	ug/L	2.500	0.0880	105	70-130			B
HMX	1.89	0.10	ug/L	2.500	ND	75.5	70-130			
HMX [2C]	1.26	0.10	ug/L	2.500	ND	50.5	70-130			M
Surrogate: 2,2'-Dinitrobiphenyl	*2.43*		*ug/L*	*2.500*		*97.3*	*60-140*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*2.56*		*ug/L*	*2.500*		*102*	*60-140*			
Matrix Spike Dup (K710036-MSD1)	**Source: K174203-02**			Prepared: 10/21/2017 Analyzed: 10/22/2017 04:43						
Nitrobenzene	2.38	0.10	ug/L	2.500	ND	95.3	70-130	0.635	20	
Nitrobenzene [2C]	2.46	0.10	ug/L	2.500	ND	98.3	70-130	4.58	20	
2-Nitrotoluene	2.37	0.10	ug/L	2.500	ND	94.6	70-130	1.70	20	
2-Nitrotoluene [2C]	2.35	0.10	ug/L	2.500	ND	94.0	70-130	2.68	20	
3-Nitrotoluene	2.36	0.10	ug/L	2.500	ND	94.3	70-130	0.288	20	
3-Nitrotoluene [2C]	2.34	0.10	ug/L	2.500	0.0198	92.9	70-130	2.53	20	
4-Nitrotoluene	2.46	0.10	ug/L	2.500	0.00691	98.1	70-130	0.997	20	
4-Nitrotoluene [2C]	2.36	0.10	ug/L	2.500	ND	94.4	70-130	2.82	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710036 - EPA 3511										
Matrix Spike Dup (K710036-MSD1)	**Source: K174203-02**			Prepared: 10/21/2017 Analyzed: 10/22/2017 04:43						
Nitroglycerin	2.72	0.10	ug/L	2.500	ND	109	70-130	7.86	20	
Nitroglycerin [2C]	2.43	0.10	ug/L	2.500	ND	97.1	70-130	2.90	20	
1,3-Dinitrobenzene	2.16	0.10	ug/L	2.500	0.0299	85.3	70-130	0.684	20	
1,3-Dinitrobenzene [2C]	2.36	0.10	ug/L	2.500	ND	94.3	70-130	4.00	20	
2,6-Dinitrotoluene	2.48	0.10	ug/L	2.500	ND	99.3	70-130	1.75	20	
2,6-Dinitrotoluene [2C]	2.47	0.10	ug/L	2.500	ND	98.7	70-130	2.42	20	
2,4-Dinitrotoluene	2.36	0.10	ug/L	2.500	ND	94.5	70-130	0.0376	20	
2,4-Dinitrotoluene [2C]	2.42	0.10	ug/L	2.500	0.00195	96.7	70-130	2.84	20	
1,3,5-Trinitrobenzene	2.34	0.10	ug/L	2.500	ND	93.5	70-130	4.46	20	
1,3,5-Trinitrobenzene [2C]	2.37	0.10	ug/L	2.500	ND	95.0	70-130	2.67	20	
2,4,6-Trinitrotoluene	2.26	0.10	ug/L	2.500	0.0359	89.1	70-130	2.25	20	
2,4,6-Trinitrotoluene [2C]	2.28	0.10	ug/L	2.500	0.0424	89.5	70-130	4.26	20	
PETN	2.77	0.10	ug/L	2.500	ND	111	70-130	11.8	20	
PETN [2C]	2.34	0.10	ug/L	2.500	ND	93.5	70-130	0.987	20	
RDX	2.38	0.10	ug/L	2.500	ND	95.0	70-130	4.41	20	
RDX [2C]	2.47	0.10	ug/L	2.500	ND	98.8	70-130	0.787	20	
4-Amino-2,6-dinitrotoluene	2.41	0.10	ug/L	2.500	ND	96.2	70-130	5.34	20	
4-Amino-2,6-dinitrotoluene [2C]	2.51	0.10	ug/L	2.500	ND	100	70-130	1.58	20	
3,5-Dinitroaniline	2.43	0.10	ug/L	2.500	0.217	88.5	70-130	0.139	20	
3,5-Dinitroaniline [2C]	2.51	0.10	ug/L	2.500	ND	100	70-130	1.28	20	
2-Amino-4,6-dinitrotoluene	2.32	0.10	ug/L	2.500	ND	92.9	70-130	1.65	20	
2-Amino-4,6-dinitrotoluene [2C]	2.50	0.10	ug/L	2.500	ND	100	70-130	0.598	20	
Tetryl	2.75	0.10	ug/L	2.500	ND	110	70-130	3.21	20	
Tetryl [2C]	2.73	0.10	ug/L	2.500	0.0880	106	70-130	0.628	20	B
HMX	2.03	0.10	ug/L	2.500	ND	81.2	70-130	7.28	20	
HMX [2C]	1.59	0.10	ug/L	2.500	ND	63.6	70-130	23.0	20	M, X
Surrogate: 2,2'-Dinitrobiphenyl	*2.60*		*ug/L*	*2.500*		*104*	*60-140*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*2.78*		*ug/L*	*2.500*		*111*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710037 - EPA 3511										
Blank (K710037-BLK1)				Prepared: 10/23/2017 Analyzed: 10/23/2017 14:56						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*386*		*ug/kg wet*	*400.0*		*96.6*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*352*		*ug/kg wet*	*400.0*		*88.0*	*60-140*			
LCS (K710037-BS1)				Prepared: 10/23/2017 Analyzed: 10/23/2017 14:34						
Nitrobenzene	424	100	ug/kg wet	400.0		106	70-130			
Nitrobenzene [2C]	390	100	ug/kg wet	400.0		97.6	70-130			
2-Nitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
2-Nitrotoluene [2C]	390	100	ug/kg wet	400.0		97.6	70-130			
3-Nitrotoluene	421	100	ug/kg wet	400.0		105	70-130			
3-Nitrotoluene [2C]	389	100	ug/kg wet	400.0		97.2	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710037 - EPA 3511										
LCS (K710037-BS1)				Prepared: 10/23/2017 Analyzed: 10/23/2017 14:34						
4-Nitrotoluene	439	100	ug/kg wet	400.0		110	70-130			
4-Nitrotoluene [2C]	399	100	ug/kg wet	400.0		99.8	70-130			
Nitroglycerin	402	100	ug/kg wet	400.0		100	70-130			
Nitroglycerin [2C]	350	100	ug/kg wet	400.0		87.5	70-130			
1,3-Dinitrobenzene	422	100	ug/kg wet	400.0		105	70-130			
1,3-Dinitrobenzene [2C]	348	100	ug/kg wet	400.0		87.1	70-130			
2,6-Dinitrotoluene	393	100	ug/kg wet	400.0		98.3	70-130			
2,6-Dinitrotoluene [2C]	362	100	ug/kg wet	400.0		90.4	70-130			
2,4-Dinitrotoluene	393	100	ug/kg wet	400.0		98.2	70-130			
2,4-Dinitrotoluene [2C]	360	100	ug/kg wet	400.0		90.0	70-130			
1,3,5-Trinitrobenzene	396	100	ug/kg wet	400.0		99.0	70-130			
1,3,5-Trinitrobenzene [2C]	360	100	ug/kg wet	400.0		89.9	70-130			
2,4,6-Trinitrotoluene	394	100	ug/kg wet	400.0		98.5	70-130			
2,4,6-Trinitrotoluene [2C]	353	100	ug/kg wet	400.0		88.2	70-130			
PETN	407	100	ug/kg wet	400.0		102	70-130			
PETN [2C]	335	100	ug/kg wet	400.0		83.7	70-130			
RDX	403	100	ug/kg wet	400.0		101	70-130			
RDX [2C]	351	100	ug/kg wet	400.0		87.8	70-130			
4-Amino-2,6-dinitrotoluene	393	100	ug/kg wet	400.0		98.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	344	100	ug/kg wet	400.0		86.0	70-130			
3,5-Dinitroaniline	396	100	ug/kg wet	400.0		98.9	70-130			
3,5-Dinitroaniline [2C]	334	100	ug/kg wet	400.0		83.4	70-130			
2-Amino-4,6-dinitrotoluene	393	100	ug/kg wet	400.0		98.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	344	100	ug/kg wet	400.0		86.1	70-130			
Tetryl	410	100	ug/kg wet	400.0		102	70-130			
Tetryl [2C]	358	100	ug/kg wet	400.0		89.5	70-130			
HMX	387	100	ug/kg wet	400.0		96.7	70-130			
HMX [2C]	320	100	ug/kg wet	400.0		80.1	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*411*		*ug/kg wet*	*400.0*		*103*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*373*		*ug/kg wet*	*400.0*		*93.2*	*60-140*			
Matrix Spike (K710037-MS1)		**Source: K174301-16**		Prepared: 10/23/2017 Analyzed: 10/23/2017 20:10						
Nitrobenzene	515	110	ug/kg dry	445.9	ND	116	70-130			
Nitrobenzene [2C]	459	110	ug/kg dry	445.9	ND	103	70-130			
2-Nitrotoluene	533	110	ug/kg dry	445.9	22.2	115	70-130			
2-Nitrotoluene [2C]	450	110	ug/kg dry	445.9	ND	101	70-130			
3-Nitrotoluene	508	110	ug/kg dry	445.9	ND	114	70-130			
3-Nitrotoluene [2C]	457	110	ug/kg dry	445.9	ND	103	70-130			
4-Nitrotoluene	532	110	ug/kg dry	445.9	ND	119	70-130			
4-Nitrotoluene [2C]	473	110	ug/kg dry	445.9	ND	106	70-130			
Nitroglycerin	438	110	ug/kg dry	445.9	23.3	93.1	70-130			
Nitroglycerin [2C]	424	110	ug/kg dry	445.9	28.4	88.7	70-130			
1,3-Dinitrobenzene	515	110	ug/kg dry	445.9	ND	115	70-130			
1,3-Dinitrobenzene [2C]	509	110	ug/kg dry	445.9	ND	114	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710037 - EPA 3511										
Matrix Spike (K710037-MS1)	**Source: K174301-16**			Prepared: 10/23/2017 Analyzed: 10/23/2017 20:10						
2,6-Dinitrotoluene	507	110	ug/kg dry	445.9	9.91	111	70-130			
2,6-Dinitrotoluene [2C]	470	110	ug/kg dry	445.9	10.7	103	70-130			
2,4-Dinitrotoluene	534	110	ug/kg dry	445.9	20.1	115	70-130			
2,4-Dinitrotoluene [2C]	494	110	ug/kg dry	445.9	21.8	106	70-130			
1,3,5-Trinitrobenzene	493	110	ug/kg dry	445.9	3.71	110	70-130			
1,3,5-Trinitrobenzene [2C]	483	110	ug/kg dry	445.9	8.60	106	70-130			
2,4,6-Trinitrotoluene	11100	1100	ug/kg dry	445.9	2850	NR	70-130			D, M
2,4,6-Trinitrotoluene [2C]	9890	1100	ug/kg dry	445.9	2970	NR	70-130			D, M
PETN	370	110	ug/kg dry	445.9	ND	83.0	70-130			
PETN [2C]	350	110	ug/kg dry	445.9	ND	78.4	70-130			
RDX	459	110	ug/kg dry	445.9	ND	103	70-130			
RDX [2C]	444	110	ug/kg dry	445.9	3.62	98.7	70-130			
4-Amino-2,6-dinitrotoluene	634	110	ug/kg dry	445.9	84.5	123	70-130			
4-Amino-2,6-dinitrotoluene [2C]	629	110	ug/kg dry	445.9	87.1	122	70-130			
3,5-Dinitroaniline	493	110	ug/kg dry	445.9	ND	111	70-130			
3,5-Dinitroaniline [2C]	475	110	ug/kg dry	445.9	ND	107	70-130			
2-Amino-4,6-dinitrotoluene	567	110	ug/kg dry	445.9	64.7	113	70-130			
2-Amino-4,6-dinitrotoluene [2C]	558	110	ug/kg dry	445.9	63.4	111	70-130			
Tetryl	521	110	ug/kg dry	445.9	ND	117	70-130			
Tetryl [2C]	502	110	ug/kg dry	445.9	ND	113	70-130			
HMX	374	110	ug/kg dry	445.9	ND	83.8	70-130			
HMX [2C]	413	110	ug/kg dry	445.9	46.5	82.2	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*492*		*ug/kg dry*	*445.9*		*110*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*482*		*ug/kg dry*	*445.9*		*108*	*60-140*			
Matrix Spike Dup (K710037-MSD1)	**Source: K174301-16**			Prepared: 10/23/2017 Analyzed: 10/23/2017 20:33						
Nitrobenzene	510	110	ug/kg dry	445.9	ND	114	70-130	1.04	20	
Nitrobenzene [2C]	502	110	ug/kg dry	445.9	ND	113	70-130	8.93	20	
2-Nitrotoluene	536	110	ug/kg dry	445.9	22.2	115	70-130	0.561	20	
2-Nitrotoluene [2C]	488	110	ug/kg dry	445.9	ND	109	70-130	8.02	20	
3-Nitrotoluene	503	110	ug/kg dry	445.9	ND	113	70-130	1.06	20	
3-Nitrotoluene [2C]	495	110	ug/kg dry	445.9	ND	111	70-130	7.96	20	
4-Nitrotoluene	532	110	ug/kg dry	445.9	ND	119	70-130	0.0670	20	
4-Nitrotoluene [2C]	512	110	ug/kg dry	445.9	ND	115	70-130	7.93	20	
Nitroglycerin	495	110	ug/kg dry	445.9	23.3	106	70-130	12.7	20	
Nitroglycerin [2C]	508	110	ug/kg dry	445.9	28.4	108	70-130	19.2	20	
1,3-Dinitrobenzene	512	110	ug/kg dry	445.9	ND	115	70-130	0.492	20	
1,3-Dinitrobenzene [2C]	549	110	ug/kg dry	445.9	ND	123	70-130	7.57	20	
2,6-Dinitrotoluene	496	110	ug/kg dry	445.9	9.91	109	70-130	2.21	20	
2,6-Dinitrotoluene [2C]	500	110	ug/kg dry	445.9	10.7	110	70-130	6.33	20	
2,4-Dinitrotoluene	520	110	ug/kg dry	445.9	20.1	112	70-130	2.69	20	
2,4-Dinitrotoluene [2C]	517	110	ug/kg dry	445.9	21.8	111	70-130	4.61	20	
1,3,5-Trinitrobenzene	479	110	ug/kg dry	445.9	3.71	107	70-130	2.93	20	
1,3,5-Trinitrobenzene [2C]	493	110	ug/kg dry	445.9	8.60	109	70-130	2.16	20	

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710037 - EPA 3511										
Matrix Spike Dup (K710037-MSD1)		**Source: K174301-16**		Prepared: 10/23/2017 Analyzed: 10/24/2017 10:36						
2,4,6-Trinitrotoluene	10100	1100	ug/kg dry	445.9	2850	NR	70-130	12.4	20	D, M
2,4,6-Trinitrotoluene [2C]	9460	1100	ug/kg dry	445.9	2970	NR	70-130	6.42	20	D, M
PETN	324	110	ug/kg dry	445.9	ND	72.7	70-130	13.2	20	
PETN [2C]	348	110	ug/kg dry	445.9	ND	78.1	70-130	0.408	20	
RDX	446	110	ug/kg dry	445.9	ND	100	70-130	2.95	20	
RDX [2C]	445	110	ug/kg dry	445.9	3.62	98.9	70-130	0.253	20	
4-Amino-2,6-dinitrotoluene	605	110	ug/kg dry	445.9	84.5	117	70-130	5.45	20	
4-Amino-2,6-dinitrotoluene [2C]	628	110	ug/kg dry	445.9	87.1	121	70-130	0.252	20	
3,5-Dinitroaniline	484	110	ug/kg dry	445.9	ND	109	70-130	1.93	20	
3,5-Dinitroaniline [2C]	481	110	ug/kg dry	445.9	ND	108	70-130	1.17	20	
2-Amino-4,6-dinitrotoluene	562	110	ug/kg dry	445.9	64.7	111	70-130	0.941	20	
2-Amino-4,6-dinitrotoluene [2C]	575	110	ug/kg dry	445.9	63.4	115	70-130	3.46	20	
Tetryl	510	110	ug/kg dry	445.9	ND	114	70-130	2.23	20	
Tetryl [2C]	518	110	ug/kg dry	445.9	ND	116	70-130	3.24	20	
HMX	355	110	ug/kg dry	445.9	ND	79.5	70-130	5.21	20	
HMX [2C]	433	110	ug/kg dry	445.9	46.5	86.7	70-130	5.38	20	
Surrogate: 2,2´-Dinitrobiphenyl	*484*		*ug/kg dry*	*445.9*		*109*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*508*		*ug/kg dry*	*445.9*		*114*	*60-140*			
Batch K710040 - EPA 3511										
Blank (K710040-BLK1)				Prepared: 10/24/2017 Analyzed: 10/24/2017 17:24						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710040 - EPA 3511										
Blank (K710040-BLK1)				Prepared: 10/24/2017 Analyzed: 10/24/2017 17:24						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*394*		*ug/kg wet*	*400.0*		*98.6*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*380*		*ug/kg wet*	*400.0*		*95.0*	*60-140*			
LCS (K710040-BS1)				Prepared: 10/24/2017 Analyzed: 10/24/2017 17:02						
Nitrobenzene	454	100	ug/kg wet	400.0		113	70-130			
Nitrobenzene [2C]	401	100	ug/kg wet	400.0		100	70-130			
2-Nitrotoluene	456	100	ug/kg wet	400.0		114	70-130			
2-Nitrotoluene [2C]	385	100	ug/kg wet	400.0		96.3	70-130			
3-Nitrotoluene	428	100	ug/kg wet	400.0		107	70-130			
3-Nitrotoluene [2C]	392	100	ug/kg wet	400.0		98.0	70-130			
4-Nitrotoluene	459	100	ug/kg wet	400.0		115	70-130			
4-Nitrotoluene [2C]	395	100	ug/kg wet	400.0		98.7	70-130			
Nitroglycerin	369	100	ug/kg wet	400.0		92.3	70-130			
Nitroglycerin [2C]	302	100	ug/kg wet	400.0		75.6	70-130			
1,3-Dinitrobenzene	461	100	ug/kg wet	400.0		115	70-130			
1,3-Dinitrobenzene [2C]	383	100	ug/kg wet	400.0		95.7	70-130			
2,6-Dinitrotoluene	423	100	ug/kg wet	400.0		106	70-130			
2,6-Dinitrotoluene [2C]	372	100	ug/kg wet	400.0		93.1	70-130			
2,4-Dinitrotoluene	426	100	ug/kg wet	400.0		107	70-130			
2,4-Dinitrotoluene [2C]	373	100	ug/kg wet	400.0		93.2	70-130			
1,3,5-Trinitrobenzene	423	100	ug/kg wet	400.0		106	70-130			
1,3,5-Trinitrobenzene [2C]	360	100	ug/kg wet	400.0		90.0	70-130			
2,4,6-Trinitrotoluene	423	100	ug/kg wet	400.0		106	70-130			
2,4,6-Trinitrotoluene [2C]	360	100	ug/kg wet	400.0		89.9	70-130			
PETN	318	100	ug/kg wet	400.0		79.5	70-130			
PETN [2C]	272	100	ug/kg wet	400.0		68.1	70-130			
RDX	421	100	ug/kg wet	400.0		105	70-130			
RDX [2C]	353	100	ug/kg wet	400.0		88.3	70-130			
4-Amino-2,6-dinitrotoluene	409	100	ug/kg wet	400.0		102	70-130			
4-Amino-2,6-dinitrotoluene [2C]	362	100	ug/kg wet	400.0		90.6	70-130			
3,5-Dinitroaniline	415	100	ug/kg wet	400.0		104	70-130			
3,5-Dinitroaniline [2C]	359	100	ug/kg wet	400.0		89.7	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710040 - EPA 3511										
LCS (K710040-BS1)				Prepared: 10/24/2017 Analyzed: 10/24/2017 17:02						
2-Amino-4,6-dinitrotoluene	419	100	ug/kg wet	400.0		105	70-130			
2-Amino-4,6-dinitrotoluene [2C]	362	100	ug/kg wet	400.0		90.5	70-130			
Tetryl	433	100	ug/kg wet	400.0		108	70-130			
Tetryl [2C]	412	100	ug/kg wet	400.0		103	70-130			
HMX	312	100	ug/kg wet	400.0		78.0	70-130			
HMX [2C]	266	100	ug/kg wet	400.0		66.4	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*400*		*ug/kg wet*	*400.0*		*100*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*368*		*ug/kg wet*	*400.0*		*92.0*	*60-140*			
Matrix Spike (K710040-MS1)	**Source: K174301-24**			Prepared: 10/24/2017 Analyzed: 10/24/2017 21:56						
Nitrobenzene	397	110	ug/kg dry	448.5	ND	88.6	70-130			
Nitrobenzene [2C]	348	110	ug/kg dry	448.5	ND	77.6	70-130			
2-Nitrotoluene	454	110	ug/kg dry	448.5	ND	101	70-130			
2-Nitrotoluene [2C]	354	110	ug/kg dry	448.5	ND	78.9	70-130			
3-Nitrotoluene	418	110	ug/kg dry	448.5	ND	93.1	70-130			
3-Nitrotoluene [2C]	345	110	ug/kg dry	448.5	ND	77.0	70-130			
4-Nitrotoluene	463	110	ug/kg dry	448.5	ND	103	70-130			
4-Nitrotoluene [2C]	366	110	ug/kg dry	448.5	ND	81.7	70-130			
Nitroglycerin	326	110	ug/kg dry	448.5	ND	72.7	70-130			
Nitroglycerin [2C]	278	110	ug/kg dry	448.5	ND	62.0	70-130			M
1,3-Dinitrobenzene	425	110	ug/kg dry	448.5	ND	94.8	70-130			
1,3-Dinitrobenzene [2C]	352	110	ug/kg dry	448.5	ND	78.4	70-130			
2,6-Dinitrotoluene	388	110	ug/kg dry	448.5	1.37	86.3	70-130			
2,6-Dinitrotoluene [2C]	343	110	ug/kg dry	448.5	0.880	76.3	70-130			
2,4-Dinitrotoluene	395	110	ug/kg dry	448.5	5.98	86.6	70-130			
2,4-Dinitrotoluene [2C]	333	110	ug/kg dry	448.5	5.74	73.0	70-130			
1,3,5-Trinitrobenzene	419	110	ug/kg dry	448.5	32.1	86.3	70-130			
1,3,5-Trinitrobenzene [2C]	369	110	ug/kg dry	448.5	34.8	74.5	70-130			
2,4,6-Trinitrotoluene	845	110	ug/kg dry	448.5	515	73.6	70-130			
2,4,6-Trinitrotoluene [2C]	733	110	ug/kg dry	448.5	469	58.9	70-130			M
PETN	288	110	ug/kg dry	448.5	ND	64.2	70-130			M
PETN [2C]	251	110	ug/kg dry	448.5	ND	55.9	70-130			M
RDX	341	110	ug/kg dry	448.5	ND	76.1	70-130			
RDX [2C]	304	110	ug/kg dry	448.5	5.88	66.5	70-130			M
4-Amino-2,6-dinitrotoluene	449	110	ug/kg dry	448.5	96.7	78.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	412	110	ug/kg dry	448.5	95.0	70.6	70-130			
3,5-Dinitroaniline	375	110	ug/kg dry	448.5	ND	83.7	70-130			
3,5-Dinitroaniline [2C]	335	110	ug/kg dry	448.5	5.94	73.4	70-130			
2-Amino-4,6-dinitrotoluene	475	110	ug/kg dry	448.5	114	80.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	427	110	ug/kg dry	448.5	111	70.5	70-130			
Tetryl	392	110	ug/kg dry	448.5	ND	87.3	70-130			
Tetryl [2C]	391	110	ug/kg dry	448.5	ND	87.1	70-130			
HMX	205	110	ug/kg dry	448.5	ND	45.8	70-130			M
HMX [2C]	172	110	ug/kg dry	448.5	ND	38.3	70-130			M

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Project: Hercules Inc. - Kenvil Works Facility
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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710040 - EPA 3511										
Matrix Spike (K710040-MS1)	**Source: K174301-24**			Prepared: 10/24/2017 Analyzed: 10/24/2017 21:56						
Surrogate: 2,2´-Dinitrobiphenyl	*441*		*ug/kg dry*	*448.5*		*98.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*405*		*ug/kg dry*	*448.5*		*90.3*	*60-140*			
Matrix Spike Dup (K710040-MSD1)	**Source: K174301-24**			Prepared: 10/24/2017 Analyzed: 10/24/2017 22:32						
Nitrobenzene	407	110	ug/kg dry	448.5	ND	90.7	70-130	2.39	20	
Nitrobenzene [2C]	350	110	ug/kg dry	448.5	ND	78.1	70-130	0.678	20	
2-Nitrotoluene	394	110	ug/kg dry	448.5	ND	87.9	70-130	14.2	20	
2-Nitrotoluene [2C]	343	110	ug/kg dry	448.5	ND	76.4	70-130	3.20	20	
3-Nitrotoluene	446	110	ug/kg dry	448.5	ND	99.4	70-130	6.54	20	
3-Nitrotoluene [2C]	344	110	ug/kg dry	448.5	ND	76.8	70-130	0.274	20	
4-Nitrotoluene	431	110	ug/kg dry	448.5	ND	96.1	70-130	7.20	20	
4-Nitrotoluene [2C]	351	110	ug/kg dry	448.5	ND	78.3	70-130	4.21	20	
Nitroglycerin	319	110	ug/kg dry	448.5	ND	71.0	70-130	2.34	20	
Nitroglycerin [2C]	267	110	ug/kg dry	448.5	ND	59.6	70-130	3.92	20	M
1,3-Dinitrobenzene	413	110	ug/kg dry	448.5	ND	92.1	70-130	2.81	20	
1,3-Dinitrobenzene [2C]	352	110	ug/kg dry	448.5	ND	78.6	70-130	0.238	20	
2,6-Dinitrotoluene	345	110	ug/kg dry	448.5	1.37	76.6	70-130	12.0	20	
2,6-Dinitrotoluene [2C]	335	110	ug/kg dry	448.5	0.880	74.4	70-130	2.51	20	
2,4-Dinitrotoluene	346	110	ug/kg dry	448.5	5.98	75.9	70-130	13.2	20	
2,4-Dinitrotoluene [2C]	341	110	ug/kg dry	448.5	5.74	74.8	70-130	2.42	20	
1,3,5-Trinitrobenzene	415	110	ug/kg dry	448.5	32.1	85.3	70-130	1.25	20	
1,3,5-Trinitrobenzene [2C]	351	110	ug/kg dry	448.5	34.8	70.5	70-130	5.40	20	
2,4,6-Trinitrotoluene	807	110	ug/kg dry	448.5	515	65.0	70-130	12.5	20	M
2,4,6-Trinitrotoluene [2C]	734	110	ug/kg dry	448.5	469	59.1	70-130	0.395	20	M
PETN	273	110	ug/kg dry	448.5	ND	60.9	70-130	5.33	20	M
PETN [2C]	245	110	ug/kg dry	448.5	ND	54.5	70-130	2.54	20	M
RDX	342	110	ug/kg dry	448.5	ND	76.3	70-130	0.294	20	
RDX [2C]	292	110	ug/kg dry	448.5	5.88	63.8	70-130	4.15	20	M
4-Amino-2,6-dinitrotoluene	456	110	ug/kg dry	448.5	96.7	80.1	70-130	2.04	20	
4-Amino-2,6-dinitrotoluene [2C]	394	110	ug/kg dry	448.5	95.0	66.7	70-130	5.67	20	M
3,5-Dinitroaniline	366	110	ug/kg dry	448.5	ND	81.5	70-130	2.61	20	
3,5-Dinitroaniline [2C]	318	110	ug/kg dry	448.5	5.94	69.6	70-130	5.24	20	M
2-Amino-4,6-dinitrotoluene	475	110	ug/kg dry	448.5	114	80.4	70-130	0.0548	20	
2-Amino-4,6-dinitrotoluene [2C]	415	110	ug/kg dry	448.5	111	67.7	70-130	4.06	20	M
Tetryl	394	110	ug/kg dry	448.5	ND	87.9	70-130	0.655	20	
Tetryl [2C]	357	110	ug/kg dry	448.5	ND	79.6	70-130	9.04	20	
HMX	210	110	ug/kg dry	448.5	ND	46.9	70-130	2.47	20	M
HMX [2C]	186	110	ug/kg dry	448.5	ND	41.5	70-130	8.03	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*431*		*ug/kg dry*	*448.5*		*96.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*387*		*ug/kg dry*	*448.5*		*86.3*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710042 - EPA 3511										
Blank (K710042-BLK1)				Prepared: 10/25/2017 Analyzed: 10/25/2017 17:20						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*359*		*ug/kg wet*	*400.0*		*89.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*365*		*ug/kg wet*	*400.0*		*91.2*	*60-140*			
LCS (K710042-BS1)				Prepared: 10/25/2017 Analyzed: 10/25/2017 15:50						
Nitrobenzene	403	100	ug/kg wet	400.0		101	70-130			
Nitrobenzene [2C]	383	100	ug/kg wet	400.0		95.6	70-130			
2-Nitrotoluene	399	100	ug/kg wet	400.0		99.8	70-130			
2-Nitrotoluene [2C]	382	100	ug/kg wet	400.0		95.4	70-130			
3-Nitrotoluene	386	100	ug/kg wet	400.0		96.4	70-130			
3-Nitrotoluene [2C]	377	100	ug/kg wet	400.0		94.2	70-130			

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710042 - EPA 3511										
LCS (K710042-BS1)				Prepared: 10/25/2017 Analyzed: 10/25/2017 15:50						
4-Nitrotoluene	401	100	ug/kg wet	400.0		100	70-130			
4-Nitrotoluene [2C]	400	100	ug/kg wet	400.0		99.9	70-130			
Nitroglycerin	373	100	ug/kg wet	400.0		93.3	70-130			
Nitroglycerin [2C]	351	100	ug/kg wet	400.0		87.7	70-130			
1,3-Dinitrobenzene	374	100	ug/kg wet	400.0		93.6	70-130			
1,3-Dinitrobenzene [2C]	442	100	ug/kg wet	400.0		111	70-130			
2,6-Dinitrotoluene	367	100	ug/kg wet	400.0		91.8	70-130			
2,6-Dinitrotoluene [2C]	364	100	ug/kg wet	400.0		91.0	70-130			
2,4-Dinitrotoluene	370	100	ug/kg wet	400.0		92.6	70-130			
2,4-Dinitrotoluene [2C]	366	100	ug/kg wet	400.0		91.5	70-130			
1,3,5-Trinitrobenzene	377	100	ug/kg wet	400.0		94.3	70-130			
1,3,5-Trinitrobenzene [2C]	361	100	ug/kg wet	400.0		90.3	70-130			
2,4,6-Trinitrotoluene	376	100	ug/kg wet	400.0		94.0	70-130			
2,4,6-Trinitrotoluene [2C]	365	100	ug/kg wet	400.0		91.3	70-130			
PETN	365	100	ug/kg wet	400.0		91.2	70-130			
PETN [2C]	338	100	ug/kg wet	400.0		84.6	70-130			
RDX	381	100	ug/kg wet	400.0		95.1	70-130			
RDX [2C]	365	100	ug/kg wet	400.0		91.3	70-130			
4-Amino-2,6-dinitrotoluene	361	100	ug/kg wet	400.0		90.2	70-130			
4-Amino-2,6-dinitrotoluene [2C]	351	100	ug/kg wet	400.0		87.8	70-130			
3,5-Dinitroaniline	363	100	ug/kg wet	400.0		90.8	70-130			
3,5-Dinitroaniline [2C]	355	100	ug/kg wet	400.0		88.8	70-130			
2-Amino-4,6-dinitrotoluene	366	100	ug/kg wet	400.0		91.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	351	100	ug/kg wet	400.0		87.8	70-130			
Tetryl	385	100	ug/kg wet	400.0		96.3	70-130			
Tetryl [2C]	367	100	ug/kg wet	400.0		91.8	70-130			
HMX	339	100	ug/kg wet	400.0		84.7	70-130			
HMX [2C]	343	100	ug/kg wet	400.0		85.7	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*378*		*ug/kg wet*	*400.0*		*94.5*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*370*		*ug/kg wet*	*400.0*		*92.5*	*60-140*			
Matrix Spike (K710042-MS1)	**Source: K174305-01**			Prepared: 10/25/2017 Analyzed: 10/25/2017 18:50						
Nitrobenzene	446	110	ug/kg dry	449.6	ND	99.2	70-130			
Nitrobenzene [2C]	417	110	ug/kg dry	449.6	2.60	92.1	70-130			
2-Nitrotoluene	447	110	ug/kg dry	449.6	ND	99.4	70-130			
2-Nitrotoluene [2C]	417	110	ug/kg dry	449.6	ND	92.6	70-130			
3-Nitrotoluene	440	110	ug/kg dry	449.6	ND	97.9	70-130			
3-Nitrotoluene [2C]	416	110	ug/kg dry	449.6	ND	92.5	70-130			
4-Nitrotoluene	459	110	ug/kg dry	449.6	ND	102	70-130			
4-Nitrotoluene [2C]	426	110	ug/kg dry	449.6	ND	94.7	70-130			
Nitroglycerin	411	110	ug/kg dry	449.6	ND	91.5	70-130			
Nitroglycerin [2C]	369	110	ug/kg dry	449.6	ND	82.1	70-130			
1,3-Dinitrobenzene	419	110	ug/kg dry	449.6	ND	93.2	70-130			
1,3-Dinitrobenzene [2C]	448	110	ug/kg dry	449.6	9.47	97.6	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710042 - EPA 3511										
Matrix Spike (K710042-MS1)	**Source: K174305-01**			Prepared: 10/25/2017 Analyzed: 10/25/2017 18:50						
2,6-Dinitrotoluene	408	110	ug/kg dry	449.6	3.35	90.0	70-130			
2,6-Dinitrotoluene [2C]	394	110	ug/kg dry	449.6	ND	87.6	70-130			
2,4-Dinitrotoluene	444	110	ug/kg dry	449.6	41.8	89.3	70-130			
2,4-Dinitrotoluene [2C]	429	110	ug/kg dry	449.6	ND	95.5	70-130			
1,3,5-Trinitrobenzene	408	110	ug/kg dry	449.6	2.25	90.3	70-130			
1,3,5-Trinitrobenzene [2C]	400	110	ug/kg dry	449.6	2.22	88.5	70-130			
2,4,6-Trinitrotoluene	559	110	ug/kg dry	449.6	199	80.1	70-130			
2,4,6-Trinitrotoluene [2C]	541	110	ug/kg dry	449.6	203	75.1	70-130			
PETN	401	110	ug/kg dry	449.6	ND	89.2	70-130			
PETN [2C]	375	110	ug/kg dry	449.6	ND	83.4	70-130			
RDX	410	110	ug/kg dry	449.6	ND	91.3	70-130			
RDX [2C]	384	110	ug/kg dry	449.6	5.19	84.3	70-130			
4-Amino-2,6-dinitrotoluene	425	110	ug/kg dry	449.6	38.8	85.8	70-130			
4-Amino-2,6-dinitrotoluene [2C]	410	110	ug/kg dry	449.6	41.9	82.0	70-130			
3,5-Dinitroaniline	392	110	ug/kg dry	449.6	ND	87.2	70-130			
3,5-Dinitroaniline [2C]	386	110	ug/kg dry	449.6	3.03	85.2	70-130			
2-Amino-4,6-dinitrotoluene	416	110	ug/kg dry	449.6	29.5	85.9	70-130			
2-Amino-4,6-dinitrotoluene [2C]	406	110	ug/kg dry	449.6	31.5	83.3	70-130			
Tetryl	415	110	ug/kg dry	449.6	ND	92.3	70-130			
Tetryl [2C]	402	110	ug/kg dry	449.6	ND	89.3	70-130			
HMX	342	110	ug/kg dry	449.6	ND	76.1	70-130			
HMX [2C]	351	110	ug/kg dry	449.6	ND	78.1	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*417*		*ug/kg dry*	*449.6*		*92.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*402*		*ug/kg dry*	*449.6*		*89.5*	*60-140*			
Matrix Spike Dup (K710042-MSD1)	**Source: K174305-01**			Prepared: 10/25/2017 Analyzed: 10/25/2017 19:12						
Nitrobenzene	452	110	ug/kg dry	449.6	ND	101	70-130	1.38	20	
Nitrobenzene [2C]	462	110	ug/kg dry	449.6	2.60	102	70-130	10.2	20	
2-Nitrotoluene	455	110	ug/kg dry	449.6	ND	101	70-130	1.79	20	
2-Nitrotoluene [2C]	461	110	ug/kg dry	449.6	ND	102	70-130	10.1	20	
3-Nitrotoluene	448	110	ug/kg dry	449.6	ND	99.6	70-130	1.82	20	
3-Nitrotoluene [2C]	462	110	ug/kg dry	449.6	ND	103	70-130	10.5	20	
4-Nitrotoluene	464	110	ug/kg dry	449.6	ND	103	70-130	1.11	20	
4-Nitrotoluene [2C]	472	110	ug/kg dry	449.6	ND	105	70-130	10.3	20	
Nitroglycerin	407	110	ug/kg dry	449.6	ND	90.4	70-130	1.19	20	
Nitroglycerin [2C]	417	110	ug/kg dry	449.6	ND	92.7	70-130	12.1	20	
1,3-Dinitrobenzene	423	110	ug/kg dry	449.6	ND	94.1	70-130	0.944	20	
1,3-Dinitrobenzene [2C]	476	110	ug/kg dry	449.6	9.47	104	70-130	6.11	20	
2,6-Dinitrotoluene	414	110	ug/kg dry	449.6	3.35	91.2	70-130	1.32	20	
2,6-Dinitrotoluene [2C]	440	110	ug/kg dry	449.6	ND	97.8	70-130	11.0	20	
2,4-Dinitrotoluene	451	110	ug/kg dry	449.6	41.8	91.0	70-130	1.81	20	
2,4-Dinitrotoluene [2C]	477	110	ug/kg dry	449.6	ND	106	70-130	10.6	20	
1,3,5-Trinitrobenzene	412	110	ug/kg dry	449.6	2.25	91.1	70-130	0.896	20	
1,3,5-Trinitrobenzene [2C]	431	110	ug/kg dry	449.6	2.22	95.3	70-130	7.37	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710042 - EPA 3511										
Matrix Spike Dup (K710042-MSD1)	**Source: K174305-01**			Prepared: 10/25/2017 Analyzed: 10/25/2017 19:12						
2,4,6-Trinitrotoluene	583	110	ug/kg dry	449.6	199	85.6	70-130	6.61	20	
2,4,6-Trinitrotoluene [2C]	597	110	ug/kg dry	449.6	203	87.5	70-130	15.3	20	
PETN	385	110	ug/kg dry	449.6	ND	85.6	70-130	4.12	20	
PETN [2C]	402	110	ug/kg dry	449.6	ND	89.4	70-130	6.99	20	
RDX	412	110	ug/kg dry	449.6	ND	91.6	70-130	0.313	20	
RDX [2C]	426	110	ug/kg dry	449.6	5.19	93.5	70-130	10.4	20	
4-Amino-2,6-dinitrotoluene	426	110	ug/kg dry	449.6	38.8	86.1	70-130	0.283	20	
4-Amino-2,6-dinitrotoluene [2C]	457	110	ug/kg dry	449.6	41.9	92.3	70-130	11.9	20	
3,5-Dinitroaniline	394	110	ug/kg dry	449.6	ND	87.6	70-130	0.484	20	
3,5-Dinitroaniline [2C]	417	110	ug/kg dry	449.6	3.03	92.0	70-130	7.63	20	
2-Amino-4,6-dinitrotoluene	418	110	ug/kg dry	449.6	29.5	86.4	70-130	0.624	20	
2-Amino-4,6-dinitrotoluene [2C]	442	110	ug/kg dry	449.6	31.5	91.3	70-130	9.17	20	
Tetryl	405	110	ug/kg dry	449.6	ND	90.1	70-130	2.46	20	
Tetryl [2C]	428	110	ug/kg dry	449.6	ND	95.2	70-130	6.38	20	
HMX	332	110	ug/kg dry	449.6	ND	73.9	70-130	2.97	20	
HMX [2C]	381	110	ug/kg dry	449.6	ND	84.7	70-130	8.15	20	
Surrogate: 2,2'-Dinitrobiphenyl	*421*		*ug/kg dry*	*449.6*		*93.6*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*452*		*ug/kg dry*	*449.6*		*101*	*60-140*			
Batch K710044 - EPA 3511										
Blank (K710044-BLK1)				Prepared: 10/26/2017 Analyzed: 10/26/2017 17:19						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Project: Hercules Inc. - Kenvil Works Facility
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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710044 - EPA 3511										
Blank (K710044-BLK1)				Prepared: 10/26/2017 Analyzed: 10/26/2017 17:19						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*347*		*ug/kg wet*	*400.0*		*86.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*321*		*ug/kg wet*	*400.0*		*80.3*	*60-140*			
LCS (K710044-BS1)				Prepared: 10/26/2017 Analyzed: 10/26/2017 16:57						
Nitrobenzene	337	100	ug/kg wet	400.0		84.2	70-130			
Nitrobenzene [2C]	357	100	ug/kg wet	400.0		89.2	70-130			
2-Nitrotoluene	353	100	ug/kg wet	400.0		88.3	70-130			
2-Nitrotoluene [2C]	358	100	ug/kg wet	400.0		89.5	70-130			
3-Nitrotoluene	316	100	ug/kg wet	400.0		79.1	70-130			
3-Nitrotoluene [2C]	349	100	ug/kg wet	400.0		87.4	70-130			
4-Nitrotoluene	346	100	ug/kg wet	400.0		86.5	70-130			
4-Nitrotoluene [2C]	360	100	ug/kg wet	400.0		89.9	70-130			
Nitroglycerin	309	100	ug/kg wet	400.0		77.3	70-130			
Nitroglycerin [2C]	313	100	ug/kg wet	400.0		78.3	70-130			
1,3-Dinitrobenzene	289	100	ug/kg wet	400.0		72.2	70-130			
1,3-Dinitrobenzene [2C]	355	100	ug/kg wet	400.0		88.7	70-130			
2,6-Dinitrotoluene	292	100	ug/kg wet	400.0		73.1	70-130			
2,6-Dinitrotoluene [2C]	332	100	ug/kg wet	400.0		83.0	70-130			
2,4-Dinitrotoluene	283	100	ug/kg wet	400.0		70.8	70-130			
2,4-Dinitrotoluene [2C]	327	100	ug/kg wet	400.0		81.8	70-130			
1,3,5-Trinitrobenzene	347	100	ug/kg wet	400.0		86.7	70-130			
1,3,5-Trinitrobenzene [2C]	324	100	ug/kg wet	400.0		80.9	70-130			
2,4,6-Trinitrotoluene	335	100	ug/kg wet	400.0		83.7	70-130			
2,4,6-Trinitrotoluene [2C]	322	100	ug/kg wet	400.0		80.4	70-130			
PETN	383	100	ug/kg wet	400.0		95.7	70-130			
PETN [2C]	319	100	ug/kg wet	400.0		79.7	70-130			
RDX	351	100	ug/kg wet	400.0		87.7	70-130			
RDX [2C]	345	100	ug/kg wet	400.0		86.3	70-130			
4-Amino-2,6-dinitrotoluene	333	100	ug/kg wet	400.0		83.1	70-130			
4-Amino-2,6-dinitrotoluene [2C]	322	100	ug/kg wet	400.0		80.6	70-130			
3,5-Dinitroaniline	323	100	ug/kg wet	400.0		80.9	70-130			
3,5-Dinitroaniline [2C]	341	100	ug/kg wet	400.0		85.2	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710044 - EPA 3511										
LCS (K710044-BS1)				Prepared: 10/26/2017 Analyzed: 10/26/2017 16:57						
2-Amino-4,6-dinitrotoluene	327	100	ug/kg wet	400.0		81.7	70-130			
2-Amino-4,6-dinitrotoluene [2C]	338	100	ug/kg wet	400.0		84.4	70-130			
Tetryl	331	100	ug/kg wet	400.0		82.6	70-130			
Tetryl [2C]	333	100	ug/kg wet	400.0		83.3	70-130			
HMX	325	100	ug/kg wet	400.0		81.2	70-130			
HMX [2C]	312	100	ug/kg wet	400.0		77.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*345*		*ug/kg wet*	*400.0*		*86.2*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*340*		*ug/kg wet*	*400.0*		*85.0*	*60-140*			
Matrix Spike (K710044-MS1)	**Source: K174309-01**			Prepared: 10/26/2017 Analyzed: 10/26/2017 19:20						
Nitrobenzene	457	120	ug/kg dry	463.0	ND	98.6	70-130			
Nitrobenzene [2C]	415	120	ug/kg dry	463.0	4.14	88.7	70-130			
2-Nitrotoluene	470	120	ug/kg dry	463.0	ND	101	70-130			
2-Nitrotoluene [2C]	412	120	ug/kg dry	463.0	ND	89.0	70-130			
3-Nitrotoluene	441	120	ug/kg dry	463.0	ND	95.3	70-130			
3-Nitrotoluene [2C]	415	120	ug/kg dry	463.0	ND	89.6	70-130			
4-Nitrotoluene	484	120	ug/kg dry	463.0	ND	104	70-130			
4-Nitrotoluene [2C]	419	120	ug/kg dry	463.0	ND	90.5	70-130			
Nitroglycerin	409	120	ug/kg dry	463.0	ND	88.3	70-130			
Nitroglycerin [2C]	407	120	ug/kg dry	463.0	ND	87.9	70-130			
1,3-Dinitrobenzene	379	120	ug/kg dry	463.0	ND	81.9	70-130			
1,3-Dinitrobenzene [2C]	452	120	ug/kg dry	463.0	13.7	94.6	70-130			
2,6-Dinitrotoluene	411	120	ug/kg dry	463.0	4.84	87.8	70-130			
2,6-Dinitrotoluene [2C]	404	120	ug/kg dry	463.0	ND	87.3	70-130			
2,4-Dinitrotoluene	427	120	ug/kg dry	463.0	29.3	85.9	70-130			
2,4-Dinitrotoluene [2C]	417	120	ug/kg dry	463.0	ND	90.0	70-130			
1,3,5-Trinitrobenzene	414	120	ug/kg dry	463.0	ND	89.5	70-130			
1,3,5-Trinitrobenzene [2C]	382	120	ug/kg dry	463.0	ND	82.5	70-130			
2,4,6-Trinitrotoluene	413	120	ug/kg dry	463.0	7.56	87.5	70-130			
2,4,6-Trinitrotoluene [2C]	386	120	ug/kg dry	463.0	7.83	81.6	70-130			
PETN	403	120	ug/kg dry	463.0	ND	87.0	70-130			
PETN [2C]	405	120	ug/kg dry	463.0	ND	87.5	70-130			
RDX	416	120	ug/kg dry	463.0	ND	89.8	70-130			
RDX [2C]	390	120	ug/kg dry	463.0	4.12	83.4	70-130			
4-Amino-2,6-dinitrotoluene	404	120	ug/kg dry	463.0	5.71	85.9	70-130			
4-Amino-2,6-dinitrotoluene [2C]	385	120	ug/kg dry	463.0	5.84	81.9	70-130			
3,5-Dinitroaniline	394	120	ug/kg dry	463.0	ND	85.0	70-130			
3,5-Dinitroaniline [2C]	385	120	ug/kg dry	463.0	ND	83.1	70-130			
2-Amino-4,6-dinitrotoluene	396	120	ug/kg dry	463.0	ND	85.5	70-130			
2-Amino-4,6-dinitrotoluene [2C]	384	120	ug/kg dry	463.0	ND	82.8	70-130			
Tetryl	398	120	ug/kg dry	463.0	ND	86.1	70-130			
Tetryl [2C]	383	120	ug/kg dry	463.0	ND	82.7	70-130			
HMX	374	120	ug/kg dry	463.0	ND	80.7	70-130			
HMX [2C]	440	120	ug/kg dry	463.0	ND	95.1	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710044 - EPA 3511										
Matrix Spike (K710044-MS1)	**Source: K174309-01**			Prepared: 10/26/2017 Analyzed: 10/26/2017 19:20						
Surrogate: 2,2´-Dinitrobiphenyl	*423*		*ug/kg dry*	*463.0*		*91.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*405*		*ug/kg dry*	*463.0*		*87.5*	*60-140*			
Matrix Spike Dup (K710044-MSD1)	**Source: K174309-01**			Prepared: 10/26/2017 Analyzed: 10/26/2017 19:42						
Nitrobenzene	469	120	ug/kg dry	463.0	ND	101	70-130	2.75	20	
Nitrobenzene [2C]	413	120	ug/kg dry	463.0	4.14	88.2	70-130	0.570	20	
2-Nitrotoluene	474	120	ug/kg dry	463.0	ND	102	70-130	0.989	20	
2-Nitrotoluene [2C]	404	120	ug/kg dry	463.0	ND	87.2	70-130	2.04	20	
3-Nitrotoluene	466	120	ug/kg dry	463.0	ND	101	70-130	5.38	20	
3-Nitrotoluene [2C]	410	120	ug/kg dry	463.0	ND	88.5	70-130	1.25	20	
4-Nitrotoluene	483	120	ug/kg dry	463.0	ND	104	70-130	0.102	20	
4-Nitrotoluene [2C]	414	120	ug/kg dry	463.0	ND	89.4	70-130	1.19	20	
Nitroglycerin	416	120	ug/kg dry	463.0	ND	89.8	70-130	1.64	20	
Nitroglycerin [2C]	410	120	ug/kg dry	463.0	ND	88.5	70-130	0.599	20	
1,3-Dinitrobenzene	401	120	ug/kg dry	463.0	ND	86.7	70-130	5.67	20	
1,3-Dinitrobenzene [2C]	450	120	ug/kg dry	463.0	13.7	94.2	70-130	0.440	20	
2,6-Dinitrotoluene	428	120	ug/kg dry	463.0	4.84	91.5	70-130	4.11	20	
2,6-Dinitrotoluene [2C]	404	120	ug/kg dry	463.0	ND	87.2	70-130	0.0560	20	
2,4-Dinitrotoluene	439	120	ug/kg dry	463.0	29.3	88.5	70-130	2.99	20	
2,4-Dinitrotoluene [2C]	415	120	ug/kg dry	463.0	ND	89.6	70-130	0.395	20	
1,3,5-Trinitrobenzene	427	120	ug/kg dry	463.0	ND	92.2	70-130	2.94	20	
1,3,5-Trinitrobenzene [2C]	390	120	ug/kg dry	463.0	ND	84.2	70-130	2.05	20	
2,4,6-Trinitrotoluene	420	120	ug/kg dry	463.0	7.56	89.1	70-130	1.81	20	
2,4,6-Trinitrotoluene [2C]	387	120	ug/kg dry	463.0	7.83	82.0	70-130	0.432	20	
PETN	416	120	ug/kg dry	463.0	ND	89.8	70-130	3.10	20	
PETN [2C]	423	120	ug/kg dry	463.0	ND	91.3	70-130	4.26	20	
RDX	433	120	ug/kg dry	463.0	ND	93.5	70-130	4.09	20	
RDX [2C]	395	120	ug/kg dry	463.0	4.12	84.3	70-130	1.17	20	
4-Amino-2,6-dinitrotoluene	422	120	ug/kg dry	463.0	5.71	89.8	70-130	4.39	20	
4-Amino-2,6-dinitrotoluene [2C]	390	120	ug/kg dry	463.0	5.84	83.1	70-130	1.47	20	
3,5-Dinitroaniline	413	120	ug/kg dry	463.0	ND	89.2	70-130	4.87	20	
3,5-Dinitroaniline [2C]	401	120	ug/kg dry	463.0	ND	86.6	70-130	4.19	20	
2-Amino-4,6-dinitrotoluene	411	120	ug/kg dry	463.0	ND	88.8	70-130	3.89	20	
2-Amino-4,6-dinitrotoluene [2C]	394	120	ug/kg dry	463.0	ND	85.1	70-130	2.72	20	
Tetryl	416	120	ug/kg dry	463.0	ND	89.8	70-130	4.24	20	
Tetryl [2C]	386	120	ug/kg dry	463.0	ND	83.4	70-130	0.817	20	
HMX	404	120	ug/kg dry	463.0	ND	87.2	70-130	7.73	20	
HMX [2C]	462	120	ug/kg dry	463.0	ND	99.7	70-130	4.70	20	
Surrogate: 2,2´-Dinitrobiphenyl	*434*		*ug/kg dry*	*463.0*		*93.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*409*		*ug/kg dry*	*463.0*		*88.3*	*60-140*			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710047 - EPA 3511										
Blank (K710047-BLK1)				Prepared: 10/27/2017 Analyzed: 10/27/2017 23:09						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*390*		*ug/kg wet*	*400.0*		*97.6*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*356*		*ug/kg wet*	*400.0*		*88.9*	*60-140*			
LCS (K710047-BS1)				Prepared: 10/27/2017 Analyzed: 10/27/2017 22:48						
Nitrobenzene	408	100	ug/kg wet	400.0		102	70-130			
Nitrobenzene [2C]	416	100	ug/kg wet	400.0		104	70-130			
2-Nitrotoluene	412	100	ug/kg wet	400.0		103	70-130			
2-Nitrotoluene [2C]	431	100	ug/kg wet	400.0		108	70-130			
3-Nitrotoluene	402	100	ug/kg wet	400.0		100	70-130			
3-Nitrotoluene [2C]	421	100	ug/kg wet	400.0		105	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710047 - EPA 3511										
LCS (K710047-BS1)				Prepared: 10/27/2017 Analyzed: 10/27/2017 22:48						
4-Nitrotoluene	425	100	ug/kg wet	400.0		106	70-130			
4-Nitrotoluene [2C]	446	100	ug/kg wet	400.0		111	70-130			
Nitroglycerin	406	100	ug/kg wet	400.0		102	70-130			
Nitroglycerin [2C]	362	100	ug/kg wet	400.0		90.4	70-130			
1,3-Dinitrobenzene	388	100	ug/kg wet	400.0		96.9	70-130			
1,3-Dinitrobenzene [2C]	392	100	ug/kg wet	400.0		98.1	70-130			
2,6-Dinitrotoluene	376	100	ug/kg wet	400.0		94.1	70-130			
2,6-Dinitrotoluene [2C]	386	100	ug/kg wet	400.0		96.6	70-130			
2,4-Dinitrotoluene	384	100	ug/kg wet	400.0		95.9	70-130			
2,4-Dinitrotoluene [2C]	373	100	ug/kg wet	400.0		93.4	70-130			
1,3,5-Trinitrobenzene	390	100	ug/kg wet	400.0		97.6	70-130			
1,3,5-Trinitrobenzene [2C]	390	100	ug/kg wet	400.0		97.6	70-130			
2,4,6-Trinitrotoluene	366	100	ug/kg wet	400.0		91.4	70-130			
2,4,6-Trinitrotoluene [2C]	363	100	ug/kg wet	400.0		90.8	70-130			
PETN	429	100	ug/kg wet	400.0		107	70-130			
PETN [2C]	360	100	ug/kg wet	400.0		90.1	70-130			
RDX	400	100	ug/kg wet	400.0		99.9	70-130			
RDX [2C]	393	100	ug/kg wet	400.0		98.2	70-130			
4-Amino-2,6-dinitrotoluene	382	100	ug/kg wet	400.0		95.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	390	100	ug/kg wet	400.0		97.5	70-130			
3,5-Dinitroaniline	382	100	ug/kg wet	400.0		95.6	70-130			
3,5-Dinitroaniline [2C]	405	100	ug/kg wet	400.0		101	70-130			
2-Amino-4,6-dinitrotoluene	380	100	ug/kg wet	400.0		94.9	70-130			
2-Amino-4,6-dinitrotoluene [2C]	394	100	ug/kg wet	400.0		98.4	70-130			
Tetryl	382	100	ug/kg wet	400.0		95.6	70-130			
Tetryl [2C]	388	100	ug/kg wet	400.0		97.0	70-130			
HMX	352	100	ug/kg wet	400.0		88.0	70-130			
HMX [2C]	329	100	ug/kg wet	400.0		82.3	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*396*		*ug/kg wet*	*400.0*		*99.0*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*415*		*ug/kg wet*	*400.0*		*104*	*60-140*			
Matrix Spike (K710047-MS1)		**Source: K174310-04**		Prepared: 10/27/2017 Analyzed: 10/27/2017 23:53						
Nitrobenzene	475	120	ug/kg dry	467.6	ND	101	70-130			
Nitrobenzene [2C]	520	120	ug/kg dry	467.6	ND	111	70-130			
2-Nitrotoluene	491	120	ug/kg dry	467.6	ND	105	70-130			
2-Nitrotoluene [2C]	529	120	ug/kg dry	467.6	ND	113	70-130			
3-Nitrotoluene	480	120	ug/kg dry	467.6	ND	103	70-130			
3-Nitrotoluene [2C]	539	120	ug/kg dry	467.6	ND	115	70-130			
4-Nitrotoluene	509	120	ug/kg dry	467.6	ND	109	70-130			
4-Nitrotoluene [2C]	566	120	ug/kg dry	467.6	ND	121	70-130			
Nitroglycerin	509	120	ug/kg dry	467.6	54.6	97.3	70-130			
Nitroglycerin [2C]	566	120	ug/kg dry	467.6	46.0	111	70-130			
1,3-Dinitrobenzene	496	120	ug/kg dry	467.6	8.26	104	70-130			
1,3-Dinitrobenzene [2C]	445	120	ug/kg dry	467.6	34.6	87.7	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710047 - EPA 3511										
Matrix Spike (K710047-MS1)	**Source: K174310-04**			Prepared: 10/27/2017 Analyzed: 10/27/2017 23:53						
2,6-Dinitrotoluene	461	120	ug/kg dry	467.6	18.2	94.7	70-130			
2,6-Dinitrotoluene [2C]	517	120	ug/kg dry	467.6	15.6	107	70-130			
2,4-Dinitrotoluene	780	120	ug/kg dry	467.6	309	101	70-130			
2,4-Dinitrotoluene [2C]	868	120	ug/kg dry	467.6	260	130	70-130			
1,3,5-Trinitrobenzene	473	120	ug/kg dry	467.6	ND	101	70-130			
1,3,5-Trinitrobenzene [2C]	483	120	ug/kg dry	467.6	9.11	101	70-130			
2,4,6-Trinitrotoluene	814	120	ug/kg dry	467.6	282	114	70-130			
2,4,6-Trinitrotoluene [2C]	906	120	ug/kg dry	467.6	240	143	70-130			M
PETN	436	120	ug/kg dry	467.6	ND	93.2	70-130			
PETN [2C]	370	120	ug/kg dry	467.6	ND	79.2	70-130			
RDX	440	120	ug/kg dry	467.6	ND	94.0	70-130			
RDX [2C]	513	120	ug/kg dry	467.6	5.18	109	70-130			
4-Amino-2,6-dinitrotoluene	921	120	ug/kg dry	467.6	490	92.2	70-130			
4-Amino-2,6-dinitrotoluene [2C]	1100	120	ug/kg dry	467.6	412	146	70-130			M
3,5-Dinitroaniline	484	120	ug/kg dry	467.6	ND	103	70-130			
3,5-Dinitroaniline [2C]	560	120	ug/kg dry	467.6	19.7	116	70-130			
2-Amino-4,6-dinitrotoluene	806	120	ug/kg dry	467.6	370	93.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	979	120	ug/kg dry	467.6	301	145	70-130			M
Tetryl	447	120	ug/kg dry	467.6	ND	95.6	70-130			
Tetryl [2C]	507	120	ug/kg dry	467.6	ND	108	70-130			
HMX	565	120	ug/kg dry	467.6	ND	121	70-130			
HMX [2C]	470	120	ug/kg dry	467.6	15.3	97.3	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*462*		*ug/kg dry*	*467.6*		*98.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*552*		*ug/kg dry*	*467.6*		*118*	*60-140*			
Matrix Spike Dup (K710047-MSD1)	**Source: K174310-04**			Prepared: 10/27/2017 Analyzed: 10/28/2017 00:15						
Nitrobenzene	464	120	ug/kg dry	467.6	ND	99.3	70-130	2.16	20	
Nitrobenzene [2C]	523	120	ug/kg dry	467.6	ND	112	70-130	0.660	20	
2-Nitrotoluene	479	120	ug/kg dry	467.6	ND	102	70-130	2.55	20	
2-Nitrotoluene [2C]	539	120	ug/kg dry	467.6	ND	115	70-130	1.79	20	
3-Nitrotoluene	472	120	ug/kg dry	467.6	ND	101	70-130	1.59	20	
3-Nitrotoluene [2C]	542	120	ug/kg dry	467.6	ND	116	70-130	0.644	20	
4-Nitrotoluene	498	120	ug/kg dry	467.6	ND	106	70-130	2.23	20	
4-Nitrotoluene [2C]	568	120	ug/kg dry	467.6	ND	121	70-130	0.303	20	
Nitroglycerin	509	120	ug/kg dry	467.6	54.6	97.2	70-130	0.0700	20	
Nitroglycerin [2C]	562	120	ug/kg dry	467.6	46.0	110	70-130	0.725	20	
1,3-Dinitrobenzene	495	120	ug/kg dry	467.6	8.26	104	70-130	0.191	20	
1,3-Dinitrobenzene [2C]	459	120	ug/kg dry	467.6	34.6	90.7	70-130	3.35	20	
2,6-Dinitrotoluene	454	120	ug/kg dry	467.6	18.2	93.2	70-130	1.68	20	
2,6-Dinitrotoluene [2C]	511	120	ug/kg dry	467.6	15.6	106	70-130	1.12	20	
2,4-Dinitrotoluene	739	120	ug/kg dry	467.6	309	92.0	70-130	9.06	20	
2,4-Dinitrotoluene [2C]	854	120	ug/kg dry	467.6	260	127	70-130	2.34	20	
1,3,5-Trinitrobenzene	461	120	ug/kg dry	467.6	ND	98.6	70-130	2.64	20	
1,3,5-Trinitrobenzene [2C]	495	120	ug/kg dry	467.6	9.11	104	70-130	2.52	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710047 - EPA 3511										
Matrix Spike Dup (K710047-MSD1)	**Source: K174310-04**			Prepared: 10/27/2017 Analyzed: 10/28/2017 00:15						
2,4,6-Trinitrotoluene	649	120	ug/kg dry	467.6	282	78.5	70-130	36.8	20	X
2,4,6-Trinitrotoluene [2C]	751	120	ug/kg dry	467.6	240	109	70-130	26.4	20	X
PETN	447	120	ug/kg dry	467.6	ND	95.6	70-130	2.54	20	
PETN [2C]	403	120	ug/kg dry	467.6	ND	86.2	70-130	8.40	20	
RDX	421	120	ug/kg dry	467.6	ND	90.0	70-130	4.34	20	
RDX [2C]	518	120	ug/kg dry	467.6	5.18	110	70-130	1.02	20	
4-Amino-2,6-dinitrotoluene	870	120	ug/kg dry	467.6	490	81.2	70-130	12.7	20	
4-Amino-2,6-dinitrotoluene [2C]	1080	120	ug/kg dry	467.6	412	142	70-130	2.71	20	M
3,5-Dinitroaniline	472	120	ug/kg dry	467.6	ND	101	70-130	2.40	20	
3,5-Dinitroaniline [2C]	577	120	ug/kg dry	467.6	19.7	119	70-130	3.10	20	
2-Amino-4,6-dinitrotoluene	745	120	ug/kg dry	467.6	370	80.3	70-130	15.0	20	
2-Amino-4,6-dinitrotoluene [2C]	942	120	ug/kg dry	467.6	301	137	70-130	5.55	20	M
Tetryl	439	120	ug/kg dry	467.6	ND	93.9	70-130	1.78	20	
Tetryl [2C]	533	120	ug/kg dry	467.6	ND	114	70-130	4.98	20	
HMX	473	120	ug/kg dry	467.6	ND	101	70-130	17.7	20	
HMX [2C]	490	120	ug/kg dry	467.6	15.3	101	70-130	4.17	20	
Surrogate: 2,2´-Dinitrobiphenyl	*464*		*ug/kg dry*	*467.6*		*99.2*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*570*		*ug/kg dry*	*467.6*		*122*	*60-140*			
Batch K710049 - EPA 3511										
Blank (K710049-BLK1)				Prepared: 10/28/2017 Analyzed: 10/28/2017 22:01						
Nitrobenzene	ND	0.10	ug/L							
Nitrobenzene [2C]	ND	0.10	ug/L							
2-Nitrotoluene	ND	0.10	ug/L							
2-Nitrotoluene [2C]	ND	0.10	ug/L							
3-Nitrotoluene	ND	0.10	ug/L							
3-Nitrotoluene [2C]	ND	0.10	ug/L							
4-Nitrotoluene	ND	0.10	ug/L							
4-Nitrotoluene [2C]	ND	0.10	ug/L							
Nitroglycerin	ND	0.10	ug/L							
Nitroglycerin [2C]	ND	0.10	ug/L							
1,3-Dinitrobenzene	ND	0.10	ug/L							
1,3-Dinitrobenzene [2C]	ND	0.10	ug/L							
2,6-Dinitrotoluene	ND	0.10	ug/L							
2,6-Dinitrotoluene [2C]	ND	0.10	ug/L							
2,4-Dinitrotoluene	ND	0.10	ug/L							
2,4-Dinitrotoluene [2C]	ND	0.10	ug/L							
1,3,5-Trinitrobenzene	ND	0.10	ug/L							
1,3,5-Trinitrobenzene [2C]	ND	0.10	ug/L							
2,4,6-Trinitrotoluene	ND	0.10	ug/L							
2,4,6-Trinitrotoluene [2C]	ND	0.10	ug/L							
PETN	ND	0.10	ug/L							
PETN [2C]	ND	0.10	ug/L							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710049 - EPA 3511										
Blank (K710049-BLK1)				Prepared: 10/28/2017 Analyzed: 10/28/2017 22:01						
RDX	ND	0.10	ug/L							
RDX [2C]	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene [2C]	ND	0.10	ug/L							
3,5-Dinitroaniline	ND	0.10	ug/L							
3,5-Dinitroaniline [2C]	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene [2C]	ND	0.10	ug/L							
Tetryl	ND	0.10	ug/L							
Tetryl [2C]	ND	0.10	ug/L							
HMX	ND	0.10	ug/L							
HMX [2C]	ND	0.10	ug/L							
Surrogate: 2,2´-Dinitrobiphenyl	*2.69*		*ug/L*	*2.500*		*108*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.69*		*ug/L*	*2.500*		*107*	*60-140*			
LCS (K710049-BS1)				Prepared: 10/28/2017 Analyzed: 10/28/2017 20:08						
Nitrobenzene	2.56	0.10	ug/L	2.500		102	70-130			
Nitrobenzene [2C]	2.39	0.10	ug/L	2.500		95.7	70-130			
2-Nitrotoluene	2.80	0.10	ug/L	2.500		112	70-130			
2-Nitrotoluene [2C]	2.40	0.10	ug/L	2.500		96.1	70-130			
3-Nitrotoluene	2.65	0.10	ug/L	2.500		106	70-130			
3-Nitrotoluene [2C]	2.39	0.10	ug/L	2.500		95.7	70-130			
4-Nitrotoluene	2.80	0.10	ug/L	2.500		112	70-130			
4-Nitrotoluene [2C]	2.48	0.10	ug/L	2.500		99.1	70-130			
Nitroglycerin	2.89	0.10	ug/L	2.500		116	70-130			
Nitroglycerin [2C]	2.20	0.10	ug/L	2.500		87.9	70-130			
1,3-Dinitrobenzene	2.33	0.10	ug/L	2.500		93.2	70-130			
1,3-Dinitrobenzene [2C]	2.24	0.10	ug/L	2.500		89.4	70-130			
2,6-Dinitrotoluene	2.47	0.10	ug/L	2.500		98.7	70-130			
2,6-Dinitrotoluene [2C]	2.38	0.10	ug/L	2.500		95.2	70-130			
2,4-Dinitrotoluene	2.53	0.10	ug/L	2.500		101	70-130			
2,4-Dinitrotoluene [2C]	2.33	0.10	ug/L	2.500		93.2	70-130			
1,3,5-Trinitrobenzene	2.52	0.10	ug/L	2.500		101	70-130			
1,3,5-Trinitrobenzene [2C]	2.29	0.10	ug/L	2.500		91.5	70-130			
2,4,6-Trinitrotoluene	2.25	0.10	ug/L	2.500		90.2	70-130			
2,4,6-Trinitrotoluene [2C]	2.05	0.10	ug/L	2.500		81.9	70-130			
PETN	2.96	0.10	ug/L	2.500		118	70-130			
PETN [2C]	2.12	0.10	ug/L	2.500		84.8	70-130			
RDX	2.59	0.10	ug/L	2.500		104	70-130			
RDX [2C]	2.65	0.10	ug/L	2.500		106	70-130			
4-Amino-2,6-dinitrotoluene	2.68	0.10	ug/L	2.500		107	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.49	0.10	ug/L	2.500		99.5	70-130			
3,5-Dinitroaniline	3.27	0.10	ug/L	2.500		131	70-130			
3,5-Dinitroaniline [2C]	2.39	0.10	ug/L	2.500		95.6	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710049 - EPA 3511										
LCS (K710049-BS1)				Prepared: 10/28/2017 Analyzed: 10/28/2017 20:08						
2-Amino-4,6-dinitrotoluene	2.58	0.10	ug/L	2.500		103	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.48	0.10	ug/L	2.500		99.1	70-130			
Tetryl	2.98	0.10	ug/L	2.500		119	70-130			
Tetryl [2C]	2.61	0.10	ug/L	2.500		104	70-130			
HMX	2.20	0.10	ug/L	2.500		88.1	70-130			
HMX [2C]	1.89	0.10	ug/L	2.500		75.8	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*2.79*		*ug/L*	*2.500*		*111*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.70*		*ug/L*	*2.500*		*108*	*60-140*			
Matrix Spike (K710049-MS1)		**Source: K174306-02**		Prepared: 10/28/2017 Analyzed: 10/28/2017 22:46						
Nitrobenzene	2.44	0.10	ug/L	2.500	0.00803	97.4	70-130			
Nitrobenzene [2C]	2.34	0.10	ug/L	2.500	ND	93.8	70-130			
2-Nitrotoluene	2.62	0.10	ug/L	2.500	ND	105	70-130			
2-Nitrotoluene [2C]	2.35	0.10	ug/L	2.500	ND	94.0	70-130			
3-Nitrotoluene	2.52	0.10	ug/L	2.500	ND	101	70-130			
3-Nitrotoluene [2C]	2.41	0.10	ug/L	2.500	0.0378	94.8	70-130			
4-Nitrotoluene	2.60	0.10	ug/L	2.500	ND	104	70-130			
4-Nitrotoluene [2C]	2.47	0.10	ug/L	2.500	ND	98.9	70-130			
Nitroglycerin	2.71	0.10	ug/L	2.500	ND	109	70-130			
Nitroglycerin [2C]	2.07	0.10	ug/L	2.500	ND	83.0	70-130			
1,3-Dinitrobenzene	2.28	0.10	ug/L	2.500	ND	91.2	70-130			
1,3-Dinitrobenzene [2C]	2.37	0.10	ug/L	2.500	ND	94.9	70-130			
2,6-Dinitrotoluene	2.45	0.10	ug/L	2.500	0.00444	98.0	70-130			
2,6-Dinitrotoluene [2C]	2.46	0.10	ug/L	2.500	ND	98.4	70-130			
2,4-Dinitrotoluene	2.50	0.10	ug/L	2.500	ND	100	70-130			
2,4-Dinitrotoluene [2C]	2.47	0.10	ug/L	2.500	ND	98.9	70-130			
1,3,5-Trinitrobenzene	2.47	0.10	ug/L	2.500	ND	98.8	70-130			
1,3,5-Trinitrobenzene [2C]	2.41	0.10	ug/L	2.500	ND	96.4	70-130			
2,4,6-Trinitrotoluene	4.64	0.10	ug/L	2.500	0.134	180	70-130			M
2,4,6-Trinitrotoluene [2C]	5.07	0.10	ug/L	2.500	0.153	197	70-130			M
PETN	2.62	0.10	ug/L	2.500	ND	105	70-130			
PETN [2C]	2.00	0.10	ug/L	2.500	ND	79.9	70-130			
RDX	2.46	0.10	ug/L	2.500	ND	98.2	70-130			
RDX [2C]	2.72	0.10	ug/L	2.500	ND	109	70-130			
4-Amino-2,6-dinitrotoluene	2.56	0.10	ug/L	2.500	ND	102	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.61	0.10	ug/L	2.500	0.124	99.4	70-130			
3,5-Dinitroaniline	3.15	0.10	ug/L	2.500	1.34	72.6	70-130			
3,5-Dinitroaniline [2C]	2.52	0.10	ug/L	2.500	ND	101	70-130			
2-Amino-4,6-dinitrotoluene	2.52	0.10	ug/L	2.500	ND	101	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.54	0.10	ug/L	2.500	ND	102	70-130			
Tetryl	2.83	0.10	ug/L	2.500	ND	113	70-130			
Tetryl [2C]	2.71	0.10	ug/L	2.500	ND	109	70-130			
HMX	2.12	0.10	ug/L	2.500	0.753	54.9	70-130			M
HMX [2C]	1.69	0.10	ug/L	2.500	0.0595	65.3	70-130			M

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710049 - EPA 3511										
Matrix Spike (K710049-MS1)	**Source: K174306-02**			Prepared: 10/28/2017 Analyzed: 10/28/2017 22:46						
Surrogate: 2,2´-Dinitrobiphenyl	*2.67*		*ug/L*	*2.500*		*107*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.87*		*ug/L*	*2.500*		*115*	*60-140*			
Matrix Spike Dup (K710049-MSD1)	**Source: K174306-02**			Prepared: 10/28/2017 Analyzed: 10/28/2017 23:09						
Nitrobenzene	2.45	0.10	ug/L	2.500	0.00803	97.8	70-130	0.479	20	
Nitrobenzene [2C]	2.35	0.10	ug/L	2.500	ND	94.0	70-130	0.211	20	
2-Nitrotoluene	2.63	0.10	ug/L	2.500	ND	105	70-130	0.232	20	
2-Nitrotoluene [2C]	2.35	0.10	ug/L	2.500	ND	94.1	70-130	0.0838	20	
3-Nitrotoluene	2.53	0.10	ug/L	2.500	ND	101	70-130	0.399	20	
3-Nitrotoluene [2C]	2.42	0.10	ug/L	2.500	0.0378	95.5	70-130	0.736	20	
4-Nitrotoluene	2.64	0.10	ug/L	2.500	ND	106	70-130	1.43	20	
4-Nitrotoluene [2C]	2.48	0.10	ug/L	2.500	ND	99.2	70-130	0.240	20	
Nitroglycerin	2.89	0.10	ug/L	2.500	ND	116	70-130	6.24	20	
Nitroglycerin [2C]	2.23	0.10	ug/L	2.500	ND	89.0	70-130	7.00	20	
1,3-Dinitrobenzene	2.30	0.10	ug/L	2.500	ND	92.1	70-130	0.930	20	
1,3-Dinitrobenzene [2C]	2.36	0.10	ug/L	2.500	ND	94.3	70-130	0.635	20	
2,6-Dinitrotoluene	2.41	0.10	ug/L	2.500	0.00444	96.4	70-130	1.62	20	
2,6-Dinitrotoluene [2C]	2.50	0.10	ug/L	2.500	ND	100	70-130	1.73	20	
2,4-Dinitrotoluene	2.50	0.10	ug/L	2.500	ND	99.9	70-130	0.209	20	
2,4-Dinitrotoluene [2C]	2.46	0.10	ug/L	2.500	ND	98.2	70-130	0.728	20	
1,3,5-Trinitrobenzene	2.43	0.10	ug/L	2.500	ND	97.1	70-130	1.74	20	
1,3,5-Trinitrobenzene [2C]	2.28	0.10	ug/L	2.500	ND	91.4	70-130	5.32	20	
2,4,6-Trinitrotoluene	2.34	0.10	ug/L	2.500	0.134	88.4	70-130	65.8	20	X
2,4,6-Trinitrotoluene [2C]	2.31	0.10	ug/L	2.500	0.153	86.2	70-130	74.9	20	X
PETN	2.79	0.10	ug/L	2.500	ND	112	70-130	6.40	20	
PETN [2C]	2.15	0.10	ug/L	2.500	ND	85.9	70-130	7.16	20	
RDX	2.39	0.10	ug/L	2.500	ND	95.6	70-130	2.67	20	
RDX [2C]	2.59	0.10	ug/L	2.500	ND	104	70-130	4.83	20	
4-Amino-2,6-dinitrotoluene	2.46	0.10	ug/L	2.500	ND	98.4	70-130	4.01	20	
4-Amino-2,6-dinitrotoluene [2C]	2.40	0.10	ug/L	2.500	0.124	91.0	70-130	8.40	20	
3,5-Dinitroaniline	3.07	0.10	ug/L	2.500	1.34	69.1	70-130	2.80	20	M
3,5-Dinitroaniline [2C]	2.22	0.10	ug/L	2.500	ND	88.7	70-130	12.9	20	
2-Amino-4,6-dinitrotoluene	2.38	0.10	ug/L	2.500	ND	95.1	70-130	5.79	20	
2-Amino-4,6-dinitrotoluene [2C]	2.27	0.10	ug/L	2.500	ND	90.6	70-130	11.5	20	
Tetryl	2.81	0.10	ug/L	2.500	ND	112	70-130	0.898	20	
Tetryl [2C]	2.39	0.10	ug/L	2.500	ND	95.7	70-130	12.6	20	
HMX	2.17	0.10	ug/L	2.500	0.753	56.9	70-130	2.37	20	M
HMX [2C]	1.31	0.10	ug/L	2.500	0.0595	50.1	70-130	25.3	20	M, X
Surrogate: 2,2´-Dinitrobiphenyl	*2.63*		*ug/L*	*2.500*		*105*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.81*		*ug/L*	*2.500*		*112*	*60-140*			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710050 - EPA 3511										
Blank (K710050-BLK1)				Prepared: 10/29/2017 Analyzed: 10/29/2017 20:14						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*367*		*ug/kg wet*	*400.0*		*91.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*366*		*ug/kg wet*	*400.0*		*91.6*	*60-140*			
LCS (K710050-BS1)				Prepared: 10/29/2017 Analyzed: 10/29/2017 19:52						
Nitrobenzene	400	100	ug/kg wet	400.0		100	70-130			
Nitrobenzene [2C]	360	100	ug/kg wet	400.0		90.1	70-130			
2-Nitrotoluene	409	100	ug/kg wet	400.0		102	70-130			
2-Nitrotoluene [2C]	365	100	ug/kg wet	400.0		91.2	70-130			
3-Nitrotoluene	387	100	ug/kg wet	400.0		96.8	70-130			
3-Nitrotoluene [2C]	363	100	ug/kg wet	400.0		90.7	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710050 - EPA 3511										
LCS (K710050-BS1)				Prepared: 10/29/2017 Analyzed: 10/29/2017 19:52						
4-Nitrotoluene	394	100	ug/kg wet	400.0		98.4	70-130			
4-Nitrotoluene [2C]	371	100	ug/kg wet	400.0		92.8	70-130			
Nitroglycerin	388	100	ug/kg wet	400.0		96.9	70-130			
Nitroglycerin [2C]	339	100	ug/kg wet	400.0		84.7	70-130			
1,3-Dinitrobenzene	384	100	ug/kg wet	400.0		96.0	70-130			
1,3-Dinitrobenzene [2C]	367	100	ug/kg wet	400.0		91.8	70-130			
2,6-Dinitrotoluene	373	100	ug/kg wet	400.0		93.2	70-130			
2,6-Dinitrotoluene [2C]	353	100	ug/kg wet	400.0		88.3	70-130			
2,4-Dinitrotoluene	372	100	ug/kg wet	400.0		93.1	70-130			
2,4-Dinitrotoluene [2C]	351	100	ug/kg wet	400.0		87.7	70-130			
1,3,5-Trinitrobenzene	384	100	ug/kg wet	400.0		96.1	70-130			
1,3,5-Trinitrobenzene [2C]	373	100	ug/kg wet	400.0		93.3	70-130			
2,4,6-Trinitrotoluene	360	100	ug/kg wet	400.0		90.1	70-130			
2,4,6-Trinitrotoluene [2C]	343	100	ug/kg wet	400.0		85.9	70-130			
PETN	412	100	ug/kg wet	400.0		103	70-130			
PETN [2C]	349	100	ug/kg wet	400.0		87.2	70-130			
RDX	397	100	ug/kg wet	400.0		99.2	70-130			
RDX [2C]	371	100	ug/kg wet	400.0		92.8	70-130			
4-Amino-2,6-dinitrotoluene	374	100	ug/kg wet	400.0		93.4	70-130			
4-Amino-2,6-dinitrotoluene [2C]	362	100	ug/kg wet	400.0		90.4	70-130			
3,5-Dinitroaniline	374	100	ug/kg wet	400.0		93.6	70-130			
3,5-Dinitroaniline [2C]	369	100	ug/kg wet	400.0		92.3	70-130			
2-Amino-4,6-dinitrotoluene	369	100	ug/kg wet	400.0		92.1	70-130			
2-Amino-4,6-dinitrotoluene [2C]	374	100	ug/kg wet	400.0		93.4	70-130			
Tetryl	379	100	ug/kg wet	400.0		94.9	70-130			
Tetryl [2C]	330	100	ug/kg wet	400.0		82.4	70-130			
HMX	385	100	ug/kg wet	400.0		96.4	70-130			
HMX [2C]	367	100	ug/kg wet	400.0		91.7	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*377*		*ug/kg wet*	*400.0*		*94.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*376*		*ug/kg wet*	*400.0*		*94.0*	*60-140*			
Matrix Spike (K710050-MS1)	**Source: K174309-07**			Prepared: 10/29/2017 Analyzed: 10/29/2017 21:22						
Nitrobenzene	435	110	ug/kg dry	442.5	ND	98.3	70-130			
Nitrobenzene [2C]	470	110	ug/kg dry	442.5	ND	106	70-130			
2-Nitrotoluene	447	110	ug/kg dry	442.5	ND	101	70-130			
2-Nitrotoluene [2C]	478	110	ug/kg dry	442.5	ND	108	70-130			
3-Nitrotoluene	423	110	ug/kg dry	442.5	ND	95.6	70-130			
3-Nitrotoluene [2C]	478	110	ug/kg dry	442.5	ND	108	70-130			
4-Nitrotoluene	425	110	ug/kg dry	442.5	ND	96.1	70-130			
4-Nitrotoluene [2C]	487	110	ug/kg dry	442.5	ND	110	70-130			
Nitroglycerin	414	110	ug/kg dry	442.5	ND	93.5	70-130			
Nitroglycerin [2C]	456	110	ug/kg dry	442.5	ND	103	70-130			
1,3-Dinitrobenzene	415	110	ug/kg dry	442.5	ND	93.8	70-130			
1,3-Dinitrobenzene [2C]	450	110	ug/kg dry	442.5	ND	102	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710050 - EPA 3511										
Matrix Spike (K710050-MS1)	**Source: K174309-07**			Prepared: 10/29/2017 Analyzed: 10/29/2017 21:22						
2,6-Dinitrotoluene	413	110	ug/kg dry	442.5	1.05	93.1	70-130			
2,6-Dinitrotoluene [2C]	471	110	ug/kg dry	442.5	ND	106	70-130			
2,4-Dinitrotoluene	424	110	ug/kg dry	442.5	6.08	94.5	70-130			
2,4-Dinitrotoluene [2C]	470	110	ug/kg dry	442.5	5.18	105	70-130			
1,3,5-Trinitrobenzene	507	110	ug/kg dry	442.5	91.1	94.1	70-130			
1,3,5-Trinitrobenzene [2C]	592	110	ug/kg dry	442.5	81.7	115	70-130			
2,4,6-Trinitrotoluene	904	110	ug/kg dry	442.5	562	77.4	70-130			
2,4,6-Trinitrotoluene [2C]	1060	110	ug/kg dry	442.5	541	117	70-130			
PETN	409	110	ug/kg dry	442.5	ND	92.3	70-130			
PETN [2C]	471	110	ug/kg dry	442.5	ND	106	70-130			
RDX	390	110	ug/kg dry	442.5	ND	88.1	70-130			
RDX [2C]	461	110	ug/kg dry	442.5	4.51	103	70-130			
4-Amino-2,6-dinitrotoluene	459	110	ug/kg dry	442.5	67.9	88.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	584	110	ug/kg dry	442.5	64.8	117	70-130			
3,5-Dinitroaniline	395	110	ug/kg dry	442.5	ND	89.3	70-130			
3,5-Dinitroaniline [2C]	501	110	ug/kg dry	442.5	3.72	112	70-130			
2-Amino-4,6-dinitrotoluene	474	110	ug/kg dry	442.5	90.3	86.8	70-130			
2-Amino-4,6-dinitrotoluene [2C]	632	110	ug/kg dry	442.5	87.0	123	70-130			
Tetryl	406	110	ug/kg dry	442.5	ND	91.7	70-130			
Tetryl [2C]	462	110	ug/kg dry	442.5	ND	104	70-130			
HMX	357	110	ug/kg dry	442.5	ND	80.6	70-130			
HMX [2C]	404	110	ug/kg dry	442.5	ND	91.4	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*409*		*ug/kg dry*	*442.5*		*92.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*487*		*ug/kg dry*	*442.5*		*110*	*60-140*			
Matrix Spike Dup (K710050-MSD1)	**Source: K174309-07**			Prepared: 10/29/2017 Analyzed: 10/29/2017 21:44						
Nitrobenzene	454	110	ug/kg dry	442.5	ND	103	70-130	4.29	20	
Nitrobenzene [2C]	391	110	ug/kg dry	442.5	ND	88.4	70-130	18.3	20	
2-Nitrotoluene	462	110	ug/kg dry	442.5	ND	104	70-130	3.25	20	
2-Nitrotoluene [2C]	390	110	ug/kg dry	442.5	ND	88.2	70-130	20.2	20	X
3-Nitrotoluene	440	110	ug/kg dry	442.5	ND	99.4	70-130	3.81	20	
3-Nitrotoluene [2C]	394	110	ug/kg dry	442.5	ND	89.1	70-130	19.2	20	
4-Nitrotoluene	446	110	ug/kg dry	442.5	ND	101	70-130	4.86	20	
4-Nitrotoluene [2C]	402	110	ug/kg dry	442.5	ND	91.0	70-130	19.1	20	
Nitroglycerin	440	110	ug/kg dry	442.5	ND	99.5	70-130	6.21	20	
Nitroglycerin [2C]	367	110	ug/kg dry	442.5	ND	82.9	70-130	21.6	20	X
1,3-Dinitrobenzene	442	110	ug/kg dry	442.5	ND	99.9	70-130	6.35	20	
1,3-Dinitrobenzene [2C]	437	110	ug/kg dry	442.5	ND	98.8	70-130	2.86	20	
2,6-Dinitrotoluene	426	110	ug/kg dry	442.5	1.05	96.0	70-130	3.03	20	
2,6-Dinitrotoluene [2C]	391	110	ug/kg dry	442.5	ND	88.5	70-130	18.4	20	
2,4-Dinitrotoluene	433	110	ug/kg dry	442.5	6.08	96.5	70-130	2.14	20	
2,4-Dinitrotoluene [2C]	395	110	ug/kg dry	442.5	5.18	88.1	70-130	17.5	20	
1,3,5-Trinitrobenzene	521	110	ug/kg dry	442.5	91.1	97.2	70-130	3.29	20	
1,3,5-Trinitrobenzene [2C]	485	110	ug/kg dry	442.5	81.7	91.2	70-130	23.4	20	X

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710050 - EPA 3511										
Matrix Spike Dup (K710050-MSD1)	**Source: K174309-07**			Prepared: 10/29/2017 Analyzed: 10/29/2017 21:44						
2,4,6-Trinitrotoluene	910	110	ug/kg dry	442.5	562	78.8	70-130	1.78	20	
2,4,6-Trinitrotoluene [2C]	850	110	ug/kg dry	442.5	541	69.8	70-130	50.9	20	M, X
PETN	452	110	ug/kg dry	442.5	ND	102	70-130	9.99	20	
PETN [2C]	377	110	ug/kg dry	442.5	ND	85.3	70-130	22.1	20	X
RDX	403	110	ug/kg dry	442.5	ND	91.1	70-130	3.31	20	
RDX [2C]	370	110	ug/kg dry	442.5	4.51	82.5	70-130	22.3	20	X
4-Amino-2,6-dinitrotoluene	474	110	ug/kg dry	442.5	67.9	91.9	70-130	3.91	20	
4-Amino-2,6-dinitrotoluene [2C]	470	110	ug/kg dry	442.5	64.8	91.5	70-130	24.8	20	X
3,5-Dinitroaniline	414	110	ug/kg dry	442.5	ND	93.6	70-130	4.72	20	
3,5-Dinitroaniline [2C]	412	110	ug/kg dry	442.5	3.72	92.3	70-130	19.7	20	
2-Amino-4,6-dinitrotoluene	498	110	ug/kg dry	442.5	90.3	92.1	70-130	5.89	20	
2-Amino-4,6-dinitrotoluene [2C]	507	110	ug/kg dry	442.5	87.0	95.0	70-130	25.8	20	X
Tetryl	436	110	ug/kg dry	442.5	ND	98.5	70-130	7.06	20	
Tetryl [2C]	369	110	ug/kg dry	442.5	ND	83.5	70-130	22.3	20	X
HMX	338	110	ug/kg dry	442.5	ND	76.4	70-130	5.29	20	
HMX [2C]	288	110	ug/kg dry	442.5	ND	65.0	70-130	33.8	20	X
Surrogate: 2,2´-Dinitrobiphenyl	*415*		*ug/kg dry*	*442.5*		*93.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*405*		*ug/kg dry*	*442.5*		*91.5*	*60-140*			
Batch K710052 - EPA 3511										
Blank (K710052-BLK1)				Prepared: 10/30/2017 Analyzed: 10/30/2017 16:57						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710052 - EPA 3511										
Blank (K710052-BLK1)				Prepared: 10/30/2017 Analyzed: 10/30/2017 16:57						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*359*		*ug/kg wet*	*400.0*		*89.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*352*		*ug/kg wet*	*400.0*		*88.0*	*60-140*			
LCS (K710052-BS1)				Prepared: 10/30/2017 Analyzed: 10/30/2017 16:35						
Nitrobenzene	378	100	ug/kg wet	400.0		94.6	70-130			
Nitrobenzene [2C]	383	100	ug/kg wet	400.0		95.6	70-130			
2-Nitrotoluene	383	100	ug/kg wet	400.0		95.7	70-130			
2-Nitrotoluene [2C]	394	100	ug/kg wet	400.0		98.4	70-130			
3-Nitrotoluene	356	100	ug/kg wet	400.0		89.1	70-130			
3-Nitrotoluene [2C]	387	100	ug/kg wet	400.0		96.7	70-130			
4-Nitrotoluene	370	100	ug/kg wet	400.0		92.6	70-130			
4-Nitrotoluene [2C]	403	100	ug/kg wet	400.0		101	70-130			
Nitroglycerin	370	100	ug/kg wet	400.0		92.5	70-130			
Nitroglycerin [2C]	346	100	ug/kg wet	400.0		86.4	70-130			
1,3-Dinitrobenzene	344	100	ug/kg wet	400.0		86.1	70-130			
1,3-Dinitrobenzene [2C]	391	100	ug/kg wet	400.0		97.7	70-130			
2,6-Dinitrotoluene	344	100	ug/kg wet	400.0		86.1	70-130			
2,6-Dinitrotoluene [2C]	363	100	ug/kg wet	400.0		90.8	70-130			
2,4-Dinitrotoluene	348	100	ug/kg wet	400.0		87.0	70-130			
2,4-Dinitrotoluene [2C]	358	100	ug/kg wet	400.0		89.6	70-130			
1,3,5-Trinitrobenzene	355	100	ug/kg wet	400.0		88.6	70-130			
1,3,5-Trinitrobenzene [2C]	364	100	ug/kg wet	400.0		91.0	70-130			
2,4,6-Trinitrotoluene	336	100	ug/kg wet	400.0		84.0	70-130			
2,4,6-Trinitrotoluene [2C]	340	100	ug/kg wet	400.0		84.9	70-130			
PETN	365	100	ug/kg wet	400.0		91.2	70-130			
PETN [2C]	338	100	ug/kg wet	400.0		84.6	70-130			
RDX	352	100	ug/kg wet	400.0		88.1	70-130			
RDX [2C]	354	100	ug/kg wet	400.0		88.6	70-130			
4-Amino-2,6-dinitrotoluene	337	100	ug/kg wet	400.0		84.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	355	100	ug/kg wet	400.0		88.8	70-130			
3,5-Dinitroaniline	337	100	ug/kg wet	400.0		84.2	70-130			
3,5-Dinitroaniline [2C]	370	100	ug/kg wet	400.0		92.5	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710052 - EPA 3511										
LCS (K710052-BS1)				Prepared: 10/30/2017 Analyzed: 10/30/2017 16:35						
2-Amino-4,6-dinitrotoluene	341	100	ug/kg wet	400.0		85.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	369	100	ug/kg wet	400.0		92.3	70-130			
Tetryl	337	100	ug/kg wet	400.0		84.2	70-130			
Tetryl [2C]	325	100	ug/kg wet	400.0		81.3	70-130			
HMX	315	100	ug/kg wet	400.0		78.7	70-130			
HMX [2C]	345	100	ug/kg wet	400.0		86.3	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*343*		*ug/kg wet*	*400.0*		*85.9*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*359*		*ug/kg wet*	*400.0*		*89.8*	*60-140*			
Matrix Spike (K710052-MS1)	**Source: K174401-01**			Prepared: 10/30/2017 Analyzed: 10/30/2017 17:41						
Nitrobenzene	464	120	ug/kg dry	474.3	ND	97.9	70-130			
Nitrobenzene [2C]	428	120	ug/kg dry	474.3	ND	90.2	70-130			
2-Nitrotoluene	471	120	ug/kg dry	474.3	ND	99.4	70-130			
2-Nitrotoluene [2C]	431	120	ug/kg dry	474.3	ND	90.9	70-130			
3-Nitrotoluene	460	120	ug/kg dry	474.3	ND	97.1	70-130			
3-Nitrotoluene [2C]	423	120	ug/kg dry	474.3	ND	89.3	70-130			
4-Nitrotoluene	473	120	ug/kg dry	474.3	ND	99.7	70-130			
4-Nitrotoluene [2C]	436	120	ug/kg dry	474.3	ND	91.9	70-130			
Nitroglycerin	450	120	ug/kg dry	474.3	ND	94.9	70-130			
Nitroglycerin [2C]	372	120	ug/kg dry	474.3	ND	78.4	70-130			
1,3-Dinitrobenzene	430	120	ug/kg dry	474.3	ND	90.6	70-130			
1,3-Dinitrobenzene [2C]	410	120	ug/kg dry	474.3	ND	86.5	70-130			
2,6-Dinitrotoluene	427	120	ug/kg dry	474.3	ND	90.0	70-130			
2,6-Dinitrotoluene [2C]	386	120	ug/kg dry	474.3	ND	81.5	70-130			
2,4-Dinitrotoluene	434	120	ug/kg dry	474.3	2.69	90.8	70-130			
2,4-Dinitrotoluene [2C]	379	120	ug/kg dry	474.3	2.85	79.3	70-130			
1,3,5-Trinitrobenzene	424	120	ug/kg dry	474.3	ND	89.3	70-130			
1,3,5-Trinitrobenzene [2C]	348	120	ug/kg dry	474.3	ND	73.4	70-130			
2,4,6-Trinitrotoluene	445	120	ug/kg dry	474.3	46.4	84.1	70-130			
2,4,6-Trinitrotoluene [2C]	379	120	ug/kg dry	474.3	50.0	69.3	70-130			M
PETN	442	120	ug/kg dry	474.3	ND	93.2	70-130			
PETN [2C]	359	120	ug/kg dry	474.3	ND	75.7	70-130			
RDX	389	120	ug/kg dry	474.3	ND	82.0	70-130			
RDX [2C]	290	120	ug/kg dry	474.3	3.16	60.4	70-130			M
4-Amino-2,6-dinitrotoluene	431	120	ug/kg dry	474.3	23.1	86.1	70-130			
4-Amino-2,6-dinitrotoluene [2C]	347	120	ug/kg dry	474.3	26.8	67.5	70-130			M
3,5-Dinitroaniline	395	120	ug/kg dry	474.3	ND	83.2	70-130			
3,5-Dinitroaniline [2C]	309	120	ug/kg dry	474.3	ND	65.2	70-130			M
2-Amino-4,6-dinitrotoluene	413	120	ug/kg dry	474.3	14.2	84.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	329	120	ug/kg dry	474.3	16.2	66.0	70-130			M
Tetryl	413	120	ug/kg dry	474.3	ND	87.0	70-130			
Tetryl [2C]	306	120	ug/kg dry	474.3	ND	64.5	70-130			M
HMX	251	120	ug/kg dry	474.3	ND	52.8	70-130			M
HMX [2C]	117	120	ug/kg dry	474.3	ND	24.7	70-130			M

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710052 - EPA 3511										
Matrix Spike (K710052-MS1)	**Source: K174401-01**			Prepared: 10/30/2017 Analyzed: 10/30/2017 17:41						
Surrogate: 2,2´-Dinitrobiphenyl	*419*		*ug/kg dry*	*474.3*		*88.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*367*		*ug/kg dry*	*474.3*		*77.3*	*60-140*			
Matrix Spike (K710052-MS2)	**Source: K174401-12**			Prepared: 10/30/2017 Analyzed: 10/30/2017 22:46						
Nitrobenzene	433	110	ug/kg dry	427.6	ND	101	70-130			
Nitrobenzene [2C]	411	110	ug/kg dry	427.6	ND	96.0	70-130			
2-Nitrotoluene	437	110	ug/kg dry	427.6	ND	102	70-130			
2-Nitrotoluene [2C]	418	110	ug/kg dry	427.6	ND	97.8	70-130			
3-Nitrotoluene	435	110	ug/kg dry	427.6	ND	102	70-130			
3-Nitrotoluene [2C]	415	110	ug/kg dry	427.6	ND	97.2	70-130			
4-Nitrotoluene	444	110	ug/kg dry	427.6	ND	104	70-130			
4-Nitrotoluene [2C]	427	110	ug/kg dry	427.6	ND	99.9	70-130			
Nitroglycerin	400	110	ug/kg dry	427.6	ND	93.5	70-130			
Nitroglycerin [2C]	361	110	ug/kg dry	427.6	ND	84.4	70-130			
1,3-Dinitrobenzene	410	110	ug/kg dry	427.6	ND	95.8	70-130			
1,3-Dinitrobenzene [2C]	434	110	ug/kg dry	427.6	ND	102	70-130			
2,6-Dinitrotoluene	402	110	ug/kg dry	427.6	ND	94.0	70-130			
2,6-Dinitrotoluene [2C]	394	110	ug/kg dry	427.6	ND	92.2	70-130			
2,4-Dinitrotoluene	402	110	ug/kg dry	427.6	10.9	91.4	70-130			
2,4-Dinitrotoluene [2C]	388	110	ug/kg dry	427.6	10.5	88.2	70-130			
1,3,5-Trinitrobenzene	359	110	ug/kg dry	427.6	1.69	83.5	70-130			
1,3,5-Trinitrobenzene [2C]	333	110	ug/kg dry	427.6	1.25	77.6	70-130			
2,4,6-Trinitrotoluene	383	110	ug/kg dry	427.6	23.5	84.0	70-130			
2,4,6-Trinitrotoluene [2C]	364	110	ug/kg dry	427.6	21.9	79.9	70-130			
PETN	363	110	ug/kg dry	427.6	ND	84.8	70-130			
PETN [2C]	321	110	ug/kg dry	427.6	ND	75.2	70-130			
RDX	295	110	ug/kg dry	427.6	ND	69.0	70-130			M
RDX [2C]	278	110	ug/kg dry	427.6	3.40	64.2	70-130			M
4-Amino-2,6-dinitrotoluene	341	110	ug/kg dry	427.6	ND	79.8	70-130			
4-Amino-2,6-dinitrotoluene [2C]	321	110	ug/kg dry	427.6	1.22	74.8	70-130			
3,5-Dinitroaniline	312	110	ug/kg dry	427.6	ND	72.9	70-130			
3,5-Dinitroaniline [2C]	280	110	ug/kg dry	427.6	ND	65.4	70-130			M
2-Amino-4,6-dinitrotoluene	320	110	ug/kg dry	427.6	ND	74.7	70-130			
2-Amino-4,6-dinitrotoluene [2C]	304	110	ug/kg dry	427.6	ND	71.1	70-130			
Tetryl	291	110	ug/kg dry	427.6	ND	68.1	70-130			M
Tetryl [2C]	280	110	ug/kg dry	427.6	ND	65.6	70-130			M
HMX	8.63	110	ug/kg dry	427.6	ND	2.02	70-130			M
HMX [2C]	7.75	110	ug/kg dry	427.6	ND	1.81	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*381*		*ug/kg dry*	*427.6*		*89.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*376*		*ug/kg dry*	*427.6*		*88.0*	*60-140*			
Matrix Spike Dup (K710052-MSD1)	**Source: K174401-01**			Prepared: 10/30/2017 Analyzed: 10/30/2017 18:03						
Nitrobenzene	471	120	ug/kg dry	474.3	ND	99.3	70-130	1.49	20	
Nitrobenzene [2C]	458	120	ug/kg dry	474.3	ND	96.6	70-130	6.85	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710052 - EPA 3511										
Matrix Spike Dup (K710052-MSD1)	**Source: K174401-01**			Prepared: 10/30/2017 Analyzed: 10/30/2017 18:03						
2-Nitrotoluene	480	120	ug/kg dry	474.3	ND	101	70-130	1.76	20	
2-Nitrotoluene [2C]	464	120	ug/kg dry	474.3	ND	97.9	70-130	7.47	20	
3-Nitrotoluene	467	120	ug/kg dry	474.3	ND	98.4	70-130	1.40	20	
3-Nitrotoluene [2C]	462	120	ug/kg dry	474.3	ND	97.4	70-130	8.68	20	
4-Nitrotoluene	475	120	ug/kg dry	474.3	ND	100	70-130	0.529	20	
4-Nitrotoluene [2C]	476	120	ug/kg dry	474.3	ND	100	70-130	8.74	20	
Nitroglycerin	454	120	ug/kg dry	474.3	ND	95.7	70-130	0.789	20	
Nitroglycerin [2C]	430	120	ug/kg dry	474.3	ND	90.6	70-130	14.5	20	
1,3-Dinitrobenzene	438	120	ug/kg dry	474.3	ND	92.4	70-130	2.03	20	
1,3-Dinitrobenzene [2C]	471	120	ug/kg dry	474.3	ND	99.3	70-130	13.7	20	
2,6-Dinitrotoluene	436	120	ug/kg dry	474.3	ND	91.9	70-130	2.16	20	
2,6-Dinitrotoluene [2C]	435	120	ug/kg dry	474.3	ND	91.7	70-130	11.9	20	
2,4-Dinitrotoluene	439	120	ug/kg dry	474.3	2.69	91.9	70-130	1.17	20	
2,4-Dinitrotoluene [2C]	435	120	ug/kg dry	474.3	2.85	91.2	70-130	14.0	20	
1,3,5-Trinitrobenzene	425	120	ug/kg dry	474.3	ND	89.6	70-130	0.268	20	
1,3,5-Trinitrobenzene [2C]	417	120	ug/kg dry	474.3	ND	88.0	70-130	18.0	20	
2,4,6-Trinitrotoluene	440	120	ug/kg dry	474.3	46.4	83.0	70-130	1.35	20	
2,4,6-Trinitrotoluene [2C]	438	120	ug/kg dry	474.3	50.0	81.8	70-130	16.5	20	
PETN	441	120	ug/kg dry	474.3	ND	93.0	70-130	0.310	20	
PETN [2C]	422	120	ug/kg dry	474.3	ND	89.1	70-130	16.2	20	
RDX	383	120	ug/kg dry	474.3	ND	80.8	70-130	1.49	20	
RDX [2C]	382	120	ug/kg dry	474.3	3.16	79.8	70-130	27.7	20	X
4-Amino-2,6-dinitrotoluene	418	120	ug/kg dry	474.3	23.1	83.2	70-130	3.41	20	
4-Amino-2,6-dinitrotoluene [2C]	437	120	ug/kg dry	474.3	26.8	86.6	70-130	24.8	20	X
3,5-Dinitroaniline	380	120	ug/kg dry	474.3	ND	80.1	70-130	3.84	20	
3,5-Dinitroaniline [2C]	412	120	ug/kg dry	474.3	ND	86.8	70-130	28.4	20	X
2-Amino-4,6-dinitrotoluene	397	120	ug/kg dry	474.3	14.2	80.8	70-130	4.06	20	
2-Amino-4,6-dinitrotoluene [2C]	430	120	ug/kg dry	474.3	16.2	87.2	70-130	27.7	20	X
Tetryl	392	120	ug/kg dry	474.3	ND	82.7	70-130	5.11	20	
Tetryl [2C]	381	120	ug/kg dry	474.3	ND	80.4	70-130	21.9	20	X
HMX	237	120	ug/kg dry	474.3	ND	50.0	70-130	5.45	20	M
HMX [2C]	253	120	ug/kg dry	474.3	ND	53.4	70-130	73.3	20	M, X
Surrogate: 2,2´-Dinitrobiphenyl	*417*		*ug/kg dry*	*474.3*		*87.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*429*		*ug/kg dry*	*474.3*		*90.5*	*60-140*			
Matrix Spike Dup (K710052-MSD2)	**Source: K174401-12**			Prepared: 10/30/2017 Analyzed: 10/30/2017 23:08						
Nitrobenzene	430	110	ug/kg dry	427.6	ND	101	70-130	0.661	20	
Nitrobenzene [2C]	412	110	ug/kg dry	427.6	ND	96.3	70-130	0.223	20	
2-Nitrotoluene	443	110	ug/kg dry	427.6	ND	104	70-130	1.41	20	
2-Nitrotoluene [2C]	416	110	ug/kg dry	427.6	ND	97.3	70-130	0.500	20	
3-Nitrotoluene	431	110	ug/kg dry	427.6	ND	101	70-130	0.856	20	
3-Nitrotoluene [2C]	415	110	ug/kg dry	427.6	ND	97.0	70-130	0.214	20	
4-Nitrotoluene	439	110	ug/kg dry	427.6	ND	103	70-130	1.09	20	
4-Nitrotoluene [2C]	426	110	ug/kg dry	427.6	ND	99.6	70-130	0.276	20	

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Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710052 - EPA 3511										
Matrix Spike Dup (K710052-MSD2)	**Source: K174401-12**			Prepared: 10/30/2017 Analyzed: 10/30/2017 23:08						
Nitroglycerin	390	110	ug/kg dry	427.6	ND	91.3	70-130	2.37	20	
Nitroglycerin [2C]	374	110	ug/kg dry	427.6	ND	87.5	70-130	3.65	20	
1,3-Dinitrobenzene	407	110	ug/kg dry	427.6	ND	95.3	70-130	0.570	20	
1,3-Dinitrobenzene [2C]	446	110	ug/kg dry	427.6	ND	104	70-130	2.67	20	
2,6-Dinitrotoluene	400	110	ug/kg dry	427.6	ND	93.4	70-130	0.567	20	
2,6-Dinitrotoluene [2C]	397	110	ug/kg dry	427.6	ND	92.9	70-130	0.668	20	
2,4-Dinitrotoluene	399	110	ug/kg dry	427.6	10.9	90.8	70-130	0.620	20	
2,4-Dinitrotoluene [2C]	397	110	ug/kg dry	427.6	10.5	90.5	70-130	2.56	20	
1,3,5-Trinitrobenzene	369	110	ug/kg dry	427.6	1.69	85.8	70-130	2.76	20	
1,3,5-Trinitrobenzene [2C]	380	110	ug/kg dry	427.6	1.25	88.6	70-130	13.2	20	
2,4,6-Trinitrotoluene	378	110	ug/kg dry	427.6	23.5	82.9	70-130	1.34	20	
2,4,6-Trinitrotoluene [2C]	382	110	ug/kg dry	427.6	21.9	84.2	70-130	5.14	20	
PETN	368	110	ug/kg dry	427.6	ND	86.1	70-130	1.48	20	
PETN [2C]	371	110	ug/kg dry	427.6	ND	86.9	70-130	14.4	20	
RDX	319	110	ug/kg dry	427.6	ND	74.5	70-130	7.65	20	
RDX [2C]	349	110	ug/kg dry	427.6	3.40	80.8	70-130	22.8	20	X
4-Amino-2,6-dinitrotoluene	353	110	ug/kg dry	427.6	ND	82.5	70-130	3.34	20	
4-Amino-2,6-dinitrotoluene [2C]	374	110	ug/kg dry	427.6	1.22	87.3	70-130	15.3	20	
3,5-Dinitroaniline	323	110	ug/kg dry	427.6	ND	75.6	70-130	3.60	20	
3,5-Dinitroaniline [2C]	357	110	ug/kg dry	427.6	ND	83.4	70-130	24.2	20	X
2-Amino-4,6-dinitrotoluene	336	110	ug/kg dry	427.6	ND	78.7	70-130	5.09	20	
2-Amino-4,6-dinitrotoluene [2C]	372	110	ug/kg dry	427.6	ND	87.0	70-130	20.1	20	X
Tetryl	318	110	ug/kg dry	427.6	ND	74.4	70-130	8.86	20	
Tetryl [2C]	379	110	ug/kg dry	427.6	ND	88.5	70-130	29.8	20	X
HMX	9.50	110	ug/kg dry	427.6	ND	2.22	70-130	9.63	20	M
HMX [2C]	15.4	110	ug/kg dry	427.6	ND	3.59	70-130	65.8	20	X, M
Surrogate: 2,2'-Dinitrobiphenyl	*387*		*ug/kg dry*	*427.6*		*90.6*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*400*		*ug/kg dry*	*427.6*		*93.5*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711001 - EPA 3511										
Blank (K711001-BLK1)				Prepared: 11/01/2017 Analyzed: 11/01/2017 17:09						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*355*		*ug/kg wet*	*400.0*		*88.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*359*		*ug/kg wet*	*400.0*		*89.7*	*60-140*			
Blank (K711001-BLK2)				Prepared: 11/01/2017 Analyzed: 11/02/2017 12:29						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711001 - EPA 3511										
Blank (K711001-BLK2)				Prepared: 11/01/2017 Analyzed: 11/02/2017 12:29						
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*396*		*ug/kg wet*	*400.0*		*99.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*387*		*ug/kg wet*	*400.0*		*96.7*	*60-140*			
LCS (K711001-BS1)				Prepared: 11/01/2017 Analyzed: 11/01/2017 16:47						
Nitrobenzene	406	100	ug/kg wet	400.0		101	70-130			
Nitrobenzene [2C]	401	100	ug/kg wet	400.0		100	70-130			
2-Nitrotoluene	414	100	ug/kg wet	400.0		103	70-130			
2-Nitrotoluene [2C]	401	100	ug/kg wet	400.0		100	70-130			
3-Nitrotoluene	391	100	ug/kg wet	400.0		97.8	70-130			
3-Nitrotoluene [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
4-Nitrotoluene	405	100	ug/kg wet	400.0		101	70-130			
4-Nitrotoluene [2C]	409	100	ug/kg wet	400.0		102	70-130			
Nitroglycerin	395	100	ug/kg wet	400.0		98.8	70-130			
Nitroglycerin [2C]	369	100	ug/kg wet	400.0		92.3	70-130			
1,3-Dinitrobenzene	390	100	ug/kg wet	400.0		97.4	70-130			
1,3-Dinitrobenzene [2C]	414	100	ug/kg wet	400.0		103	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711001 - EPA 3511										
LCS (K711001-BS1)				Prepared: 11/01/2017 Analyzed: 11/01/2017 16:47						
2,6-Dinitrotoluene	376	100	ug/kg wet	400.0		94.0	70-130			
2,6-Dinitrotoluene [2C]	375	100	ug/kg wet	400.0		93.8	70-130			
2,4-Dinitrotoluene	380	100	ug/kg wet	400.0		95.1	70-130			
2,4-Dinitrotoluene [2C]	377	100	ug/kg wet	400.0		94.2	70-130			
1,3,5-Trinitrobenzene	391	100	ug/kg wet	400.0		97.9	70-130			
1,3,5-Trinitrobenzene [2C]	381	100	ug/kg wet	400.0		95.2	70-130			
2,4,6-Trinitrotoluene	369	100	ug/kg wet	400.0		92.4	70-130			
2,4,6-Trinitrotoluene [2C]	362	100	ug/kg wet	400.0		90.5	70-130			
PETN	400	100	ug/kg wet	400.0		100	70-130			
PETN [2C]	369	100	ug/kg wet	400.0		92.3	70-130			
RDX	392	100	ug/kg wet	400.0		98.1	70-130			
RDX [2C]	383	100	ug/kg wet	400.0		95.8	70-130			
4-Amino-2,6-dinitrotoluene	377	100	ug/kg wet	400.0		94.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	376	100	ug/kg wet	400.0		93.9	70-130			
3,5-Dinitroaniline	378	100	ug/kg wet	400.0		94.5	70-130			
3,5-Dinitroaniline [2C]	371	100	ug/kg wet	400.0		92.7	70-130			
2-Amino-4,6-dinitrotoluene	375	100	ug/kg wet	400.0		93.7	70-130			
2-Amino-4,6-dinitrotoluene [2C]	381	100	ug/kg wet	400.0		95.2	70-130			
Tetryl	381	100	ug/kg wet	400.0		95.3	70-130			
Tetryl [2C]	344	100	ug/kg wet	400.0		86.0	70-130			
HMX	361	100	ug/kg wet	400.0		90.2	70-130			
HMX [2C]	393	100	ug/kg wet	400.0		98.3	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*387*		*ug/kg wet*	*400.0*		*96.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*382*		*ug/kg wet*	*400.0*		*95.5*	*60-140*			
LCS (K711001-BS2)				Prepared: 11/01/2017 Analyzed: 11/02/2017 12:01						
Nitrobenzene	428	100	ug/kg wet	400.0		107	70-130			
Nitrobenzene [2C]	392	100	ug/kg wet	400.0		98.0	70-130			
2-Nitrotoluene	441	100	ug/kg wet	400.0		110	70-130			
2-Nitrotoluene [2C]	382	100	ug/kg wet	400.0		95.5	70-130			
3-Nitrotoluene	438	100	ug/kg wet	400.0		110	70-130			
3-Nitrotoluene [2C]	388	100	ug/kg wet	400.0		96.9	70-130			
4-Nitrotoluene	451	100	ug/kg wet	400.0		113	70-130			
4-Nitrotoluene [2C]	402	100	ug/kg wet	400.0		101	70-130			
Nitroglycerin	352	100	ug/kg wet	400.0		88.0	70-130			
Nitroglycerin [2C]	313	100	ug/kg wet	400.0		78.3	70-130			
1,3-Dinitrobenzene	414	100	ug/kg wet	400.0		103	70-130			
1,3-Dinitrobenzene [2C]	427	100	ug/kg wet	400.0		107	70-130			
2,6-Dinitrotoluene	415	100	ug/kg wet	400.0		104	70-130			
2,6-Dinitrotoluene [2C]	388	100	ug/kg wet	400.0		97.0	70-130			
2,4-Dinitrotoluene	421	100	ug/kg wet	400.0		105	70-130			
2,4-Dinitrotoluene [2C]	384	100	ug/kg wet	400.0		96.0	70-130			
1,3,5-Trinitrobenzene	428	100	ug/kg wet	400.0		107	70-130			
1,3,5-Trinitrobenzene [2C]	403	100	ug/kg wet	400.0		101	70-130			

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Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711001 - EPA 3511										
LCS (K711001-BS2)				Prepared: 11/01/2017 Analyzed: 11/02/2017 12:01						
2,4,6-Trinitrotoluene	410	100	ug/kg wet	400.0		102	70-130			
2,4,6-Trinitrotoluene [2C]	383	100	ug/kg wet	400.0		95.7	70-130			
PETN	299	100	ug/kg wet	400.0		74.7	70-130			
PETN [2C]	311	100	ug/kg wet	400.0		77.9	70-130			
RDX	402	100	ug/kg wet	400.0		101	70-130			
RDX [2C]	396	100	ug/kg wet	400.0		98.9	70-130			
4-Amino-2,6-dinitrotoluene	415	100	ug/kg wet	400.0		104	70-130			
4-Amino-2,6-dinitrotoluene [2C]	387	100	ug/kg wet	400.0		96.6	70-130			
3,5-Dinitroaniline	398	100	ug/kg wet	400.0		99.5	70-130			
3,5-Dinitroaniline [2C]	365	100	ug/kg wet	400.0		91.2	70-130			
2-Amino-4,6-dinitrotoluene	406	100	ug/kg wet	400.0		101	70-130			
2-Amino-4,6-dinitrotoluene [2C]	393	100	ug/kg wet	400.0		98.4	70-130			
Tetryl	435	100	ug/kg wet	400.0		109	70-130			
Tetryl [2C]	414	100	ug/kg wet	400.0		103	70-130			
HMX	300	100	ug/kg wet	400.0		75.0	70-130			
HMX [2C]	339	100	ug/kg wet	400.0		84.8	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*427*		*ug/kg wet*	*400.0*		*107*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*411*		*ug/kg wet*	*400.0*		*103*	*60-140*			
Matrix Spike (K711001-MS1)	**Source: K174402-02**			Prepared: 11/01/2017 Analyzed: 11/01/2017 18:16						
Nitrobenzene	514	120	ug/kg dry	488.0	ND	105	70-130			
Nitrobenzene [2C]	486	120	ug/kg dry	488.0	ND	99.7	70-130			
2-Nitrotoluene	527	120	ug/kg dry	488.0	ND	108	70-130			
2-Nitrotoluene [2C]	489	120	ug/kg dry	488.0	ND	100	70-130			
3-Nitrotoluene	506	120	ug/kg dry	488.0	ND	104	70-130			
3-Nitrotoluene [2C]	486	120	ug/kg dry	488.0	ND	99.6	70-130			
4-Nitrotoluene	522	120	ug/kg dry	488.0	ND	107	70-130			
4-Nitrotoluene [2C]	502	120	ug/kg dry	488.0	ND	103	70-130			
Nitroglycerin	525	120	ug/kg dry	488.0	39.5	99.6	70-130			
Nitroglycerin [2C]	479	120	ug/kg dry	488.0	45.9	88.8	70-130			
1,3-Dinitrobenzene	488	120	ug/kg dry	488.0	ND	100	70-130			
1,3-Dinitrobenzene [2C]	489	120	ug/kg dry	488.0	ND	100	70-130			
2,6-Dinitrotoluene	480	120	ug/kg dry	488.0	ND	98.5	70-130			
2,6-Dinitrotoluene [2C]	459	120	ug/kg dry	488.0	ND	94.0	70-130			
2,4-Dinitrotoluene	481	120	ug/kg dry	488.0	ND	98.5	70-130			
2,4-Dinitrotoluene [2C]	466	120	ug/kg dry	488.0	ND	95.4	70-130			
1,3,5-Trinitrobenzene	495	120	ug/kg dry	488.0	ND	101	70-130			
1,3,5-Trinitrobenzene [2C]	472	120	ug/kg dry	488.0	1.24	96.5	70-130			
2,4,6-Trinitrotoluene	492	120	ug/kg dry	488.0	56.6	89.2	70-130			
2,4,6-Trinitrotoluene [2C]	469	120	ug/kg dry	488.0	57.2	84.4	70-130			
PETN	487	120	ug/kg dry	488.0	ND	99.7	70-130			
PETN [2C]	434	120	ug/kg dry	488.0	ND	89.0	70-130			
RDX	450	120	ug/kg dry	488.0	ND	92.2	70-130			
RDX [2C]	430	120	ug/kg dry	488.0	4.85	87.0	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711001 - EPA 3511										
Matrix Spike (K711001-MS1)	**Source: K174402-02**			Prepared: 11/01/2017 Analyzed: 11/01/2017 18:16						
4-Amino-2,6-dinitrotoluene	470	120	ug/kg dry	488.0	16.1	93.0	70-130			
4-Amino-2,6-dinitrotoluene [2C]	444	120	ug/kg dry	488.0	18.3	87.3	70-130			
3,5-Dinitroaniline	463	120	ug/kg dry	488.0	ND	94.9	70-130			
3,5-Dinitroaniline [2C]	457	120	ug/kg dry	488.0	ND	93.6	70-130			
2-Amino-4,6-dinitrotoluene	461	120	ug/kg dry	488.0	9.24	92.6	70-130			
2-Amino-4,6-dinitrotoluene [2C]	463	120	ug/kg dry	488.0	ND	94.8	70-130			
Tetryl	470	120	ug/kg dry	488.0	ND	96.4	70-130			
Tetryl [2C]	392	120	ug/kg dry	488.0	ND	80.4	70-130			
HMX	424	120	ug/kg dry	488.0	ND	86.8	70-130			
HMX [2C]	413	120	ug/kg dry	488.0	ND	84.6	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*471*		*ug/kg dry*	*488.0*		*96.5*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*464*		*ug/kg dry*	*488.0*		*95.0*	*60-140*			
Matrix Spike (K711001-MS2)	**Source: K174402-11**			Prepared: 11/01/2017 Analyzed: 11/02/2017 13:25						
Nitrobenzene	544	130	ug/kg dry	507.7	ND	107	70-130			
Nitrobenzene [2C]	510	130	ug/kg dry	507.7	ND	100	70-130			
2-Nitrotoluene	565	130	ug/kg dry	507.7	ND	111	70-130			
2-Nitrotoluene [2C]	496	130	ug/kg dry	507.7	ND	97.7	70-130			
3-Nitrotoluene	558	130	ug/kg dry	507.7	ND	110	70-130			
3-Nitrotoluene [2C]	510	130	ug/kg dry	507.7	ND	101	70-130			
4-Nitrotoluene	587	130	ug/kg dry	507.7	ND	116	70-130			
4-Nitrotoluene [2C]	527	130	ug/kg dry	507.7	ND	104	70-130			
Nitroglycerin	540	130	ug/kg dry	507.7	81.0	90.5	70-130			
Nitroglycerin [2C]	514	130	ug/kg dry	507.7	77.3	86.1	70-130			
1,3-Dinitrobenzene	528	130	ug/kg dry	507.7	ND	104	70-130			
1,3-Dinitrobenzene [2C]	577	130	ug/kg dry	507.7	ND	114	70-130			
2,6-Dinitrotoluene	523	130	ug/kg dry	507.7	ND	103	70-130			
2,6-Dinitrotoluene [2C]	510	130	ug/kg dry	507.7	ND	100	70-130			
2,4-Dinitrotoluene	534	130	ug/kg dry	507.7	ND	105	70-130			
2,4-Dinitrotoluene [2C]	521	130	ug/kg dry	507.7	ND	103	70-130			
1,3,5-Trinitrobenzene	528	130	ug/kg dry	507.7	ND	104	70-130			
1,3,5-Trinitrobenzene [2C]	507	130	ug/kg dry	507.7	ND	99.8	70-130			
2,4,6-Trinitrotoluene	509	130	ug/kg dry	507.7	4.91	99.2	70-130			
2,4,6-Trinitrotoluene [2C]	494	130	ug/kg dry	507.7	5.32	96.3	70-130			
PETN	380	130	ug/kg dry	507.7	ND	74.8	70-130			
PETN [2C]	398	130	ug/kg dry	507.7	ND	78.4	70-130			
RDX	474	130	ug/kg dry	507.7	ND	93.5	70-130			
RDX [2C]	478	130	ug/kg dry	507.7	4.63	93.3	70-130			
4-Amino-2,6-dinitrotoluene	512	130	ug/kg dry	507.7	10.1	98.8	70-130			
4-Amino-2,6-dinitrotoluene [2C]	497	130	ug/kg dry	507.7	11.1	95.7	70-130			
3,5-Dinitroaniline	508	130	ug/kg dry	507.7	ND	100	70-130			
3,5-Dinitroaniline [2C]	491	130	ug/kg dry	507.7	5.17	95.7	70-130			
2-Amino-4,6-dinitrotoluene	508	130	ug/kg dry	507.7	ND	100	70-130			
2-Amino-4,6-dinitrotoluene [2C]	517	130	ug/kg dry	507.7	ND	102	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711001 - EPA 3511										
Matrix Spike (K711001-MS2)	**Source: K174402-11**			Prepared: 11/01/2017 Analyzed: 11/02/2017 13:25						
Tetryl	553	130	ug/kg dry	507.7	ND	109	70-130			
Tetryl [2C]	544	130	ug/kg dry	507.7	ND	107	70-130			
HMX	822	130	ug/kg dry	507.7	46.1	153	70-130			M
HMX [2C]	513	130	ug/kg dry	507.7	15.7	97.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*510*		*ug/kg dry*	*507.7*		*100*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*525*		*ug/kg dry*	*507.7*		*103*	*60-140*			
Matrix Spike Dup (K711001-MSD1)	**Source: K174402-02**			Prepared: 11/01/2017 Analyzed: 11/01/2017 18:38						
Nitrobenzene	504	120	ug/kg dry	488.0	ND	103	70-130	1.92	20	
Nitrobenzene [2C]	493	120	ug/kg dry	488.0	ND	101	70-130	1.24	20	
2-Nitrotoluene	522	120	ug/kg dry	488.0	ND	107	70-130	1.05	20	
2-Nitrotoluene [2C]	492	120	ug/kg dry	488.0	ND	101	70-130	0.564	20	
3-Nitrotoluene	502	120	ug/kg dry	488.0	ND	103	70-130	0.845	20	
3-Nitrotoluene [2C]	492	120	ug/kg dry	488.0	ND	101	70-130	1.25	20	
4-Nitrotoluene	516	120	ug/kg dry	488.0	ND	106	70-130	1.15	20	
4-Nitrotoluene [2C]	508	120	ug/kg dry	488.0	ND	104	70-130	1.15	20	
Nitroglycerin	507	120	ug/kg dry	488.0	39.5	95.8	70-130	3.84	20	
Nitroglycerin [2C]	473	120	ug/kg dry	488.0	45.9	87.6	70-130	1.31	20	
1,3-Dinitrobenzene	480	120	ug/kg dry	488.0	ND	98.3	70-130	1.74	20	
1,3-Dinitrobenzene [2C]	542	120	ug/kg dry	488.0	ND	111	70-130	10.2	20	
2,6-Dinitrotoluene	472	120	ug/kg dry	488.0	ND	96.6	70-130	1.88	20	
2,6-Dinitrotoluene [2C]	468	120	ug/kg dry	488.0	ND	96.0	70-130	2.12	20	
2,4-Dinitrotoluene	481	120	ug/kg dry	488.0	ND	98.6	70-130	0.128	20	
2,4-Dinitrotoluene [2C]	472	120	ug/kg dry	488.0	ND	96.7	70-130	1.38	20	
1,3,5-Trinitrobenzene	486	120	ug/kg dry	488.0	ND	99.6	70-130	1.82	20	
1,3,5-Trinitrobenzene [2C]	478	120	ug/kg dry	488.0	1.24	97.7	70-130	1.23	20	
2,4,6-Trinitrotoluene	489	120	ug/kg dry	488.0	56.6	88.6	70-130	0.644	20	
2,4,6-Trinitrotoluene [2C]	477	120	ug/kg dry	488.0	57.2	86.1	70-130	2.07	20	
PETN	478	120	ug/kg dry	488.0	ND	97.9	70-130	1.84	20	
PETN [2C]	443	120	ug/kg dry	488.0	ND	90.8	70-130	1.99	20	
RDX	447	120	ug/kg dry	488.0	ND	91.6	70-130	0.597	20	
RDX [2C]	436	120	ug/kg dry	488.0	4.85	88.4	70-130	1.57	20	
4-Amino-2,6-dinitrotoluene	463	120	ug/kg dry	488.0	16.1	91.5	70-130	1.62	20	
4-Amino-2,6-dinitrotoluene [2C]	456	120	ug/kg dry	488.0	18.3	89.6	70-130	2.60	20	
3,5-Dinitroaniline	457	120	ug/kg dry	488.0	ND	93.6	70-130	1.43	20	
3,5-Dinitroaniline [2C]	451	120	ug/kg dry	488.0	ND	92.4	70-130	1.31	20	
2-Amino-4,6-dinitrotoluene	451	120	ug/kg dry	488.0	9.24	90.5	70-130	2.27	20	
2-Amino-4,6-dinitrotoluene [2C]	467	120	ug/kg dry	488.0	ND	95.8	70-130	1.07	20	
Tetryl	456	120	ug/kg dry	488.0	ND	93.5	70-130	3.05	20	
Tetryl [2C]	401	120	ug/kg dry	488.0	ND	82.2	70-130	2.18	20	
HMX	451	120	ug/kg dry	488.0	ND	92.5	70-130	6.35	20	
HMX [2C]	420	120	ug/kg dry	488.0	ND	86.1	70-130	1.71	20	
Surrogate: 2,2´-Dinitrobiphenyl	*469*		*ug/kg dry*	*488.0*		*96.1*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*471*		*ug/kg dry*	*488.0*		*96.4*	*60-140*			

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711001 - EPA 3511										
Matrix Spike Dup (K711001-MSD2)	**Source: K174402-11**			Prepared: 11/01/2017 Analyzed: 11/02/2017 14:13						
Nitrobenzene	557	130	ug/kg dry	507.7	ND	110	70-130	2.39	20	
Nitrobenzene [2C]	509	130	ug/kg dry	507.7	ND	100	70-130	0.106	20	
2-Nitrotoluene	576	130	ug/kg dry	507.7	ND	113	70-130	1.83	20	
2-Nitrotoluene [2C]	496	130	ug/kg dry	507.7	ND	97.8	70-130	0.110	20	
3-Nitrotoluene	578	130	ug/kg dry	507.7	ND	114	70-130	3.48	20	
3-Nitrotoluene [2C]	504	130	ug/kg dry	507.7	ND	99.2	70-130	1.36	20	
4-Nitrotoluene	613	130	ug/kg dry	507.7	ND	121	70-130	4.39	20	
4-Nitrotoluene [2C]	524	130	ug/kg dry	507.7	ND	103	70-130	0.617	20	
Nitroglycerin	554	130	ug/kg dry	507.7	81.0	93.2	70-130	3.01	20	
Nitroglycerin [2C]	509	130	ug/kg dry	507.7	77.3	85.0	70-130	1.29	20	
1,3-Dinitrobenzene	530	130	ug/kg dry	507.7	ND	104	70-130	0.439	20	
1,3-Dinitrobenzene [2C]	571	130	ug/kg dry	507.7	ND	113	70-130	0.979	20	
2,6-Dinitrotoluene	529	130	ug/kg dry	507.7	ND	104	70-130	1.27	20	
2,6-Dinitrotoluene [2C]	506	130	ug/kg dry	507.7	ND	99.6	70-130	0.795	20	
2,4-Dinitrotoluene	547	130	ug/kg dry	507.7	ND	108	70-130	2.42	20	
2,4-Dinitrotoluene [2C]	504	130	ug/kg dry	507.7	ND	99.4	70-130	3.22	20	
1,3,5-Trinitrobenzene	541	130	ug/kg dry	507.7	ND	107	70-130	2.40	20	
1,3,5-Trinitrobenzene [2C]	508	130	ug/kg dry	507.7	ND	100	70-130	0.329	20	
2,4,6-Trinitrotoluene	523	130	ug/kg dry	507.7	4.91	102	70-130	2.73	20	
2,4,6-Trinitrotoluene [2C]	500	130	ug/kg dry	507.7	5.32	97.4	70-130	1.14	20	
PETN	354	130	ug/kg dry	507.7	ND	69.7	70-130	7.00	20	M
PETN [2C]	388	130	ug/kg dry	507.7	ND	76.3	70-130	2.70	20	
RDX	462	130	ug/kg dry	507.7	ND	90.9	70-130	2.71	20	
RDX [2C]	472	130	ug/kg dry	507.7	4.63	92.0	70-130	1.41	20	
4-Amino-2,6-dinitrotoluene	505	130	ug/kg dry	507.7	10.1	97.5	70-130	1.27	20	
4-Amino-2,6-dinitrotoluene [2C]	495	130	ug/kg dry	507.7	11.1	95.3	70-130	0.377	20	
3,5-Dinitroaniline	489	130	ug/kg dry	507.7	ND	96.3	70-130	3.75	20	
3,5-Dinitroaniline [2C]	470	130	ug/kg dry	507.7	5.17	91.6	70-130	4.39	20	
2-Amino-4,6-dinitrotoluene	488	130	ug/kg dry	507.7	ND	96.2	70-130	3.95	20	
2-Amino-4,6-dinitrotoluene [2C]	499	130	ug/kg dry	507.7	ND	98.3	70-130	3.62	20	
Tetryl	535	130	ug/kg dry	507.7	ND	105	70-130	3.32	20	
Tetryl [2C]	544	130	ug/kg dry	507.7	ND	107	70-130	0.0877	20	
HMX	344	130	ug/kg dry	507.7	46.1	58.7	70-130	89.0	20	M, X
HMX [2C]	376	130	ug/kg dry	507.7	15.7	70.9	70-130	31.9	20	X
Surrogate: 2,2´-Dinitrobiphenyl	*532*		*ug/kg dry*	*507.7*		*105*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*532*		*ug/kg dry*	*507.7*		*105*	*60-140*			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711003 - EPA 3511										
Blank (K711003-BLK1)				Prepared: 11/02/2017 Analyzed: 11/03/2017 01:56						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*410*		*ug/kg wet*	*400.0*		*102*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*404*		*ug/kg wet*	*400.0*		*101*	*60-140*			
Blank (K711003-BLK2)				Prepared: 11/02/2017 Analyzed: 11/03/2017 11:24						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711003 - EPA 3511										
Blank (K711003-BLK2)				Prepared: 11/02/2017 Analyzed: 11/03/2017 11:24						
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*401*		*ug/kg wet*	*400.0*		*100*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*401*		*ug/kg wet*	*400.0*		*100*	*60-140*			
LCS (K711003-BS1)				Prepared: 11/02/2017 Analyzed: 11/03/2017 01:29						
Nitrobenzene	435	100	ug/kg wet	400.0		109	70-130			
Nitrobenzene [2C]	425	100	ug/kg wet	400.0		106	70-130			
2-Nitrotoluene	451	100	ug/kg wet	400.0		113	70-130			
2-Nitrotoluene [2C]	420	100	ug/kg wet	400.0		105	70-130			
3-Nitrotoluene	427	100	ug/kg wet	400.0		107	70-130			
3-Nitrotoluene [2C]	427	100	ug/kg wet	400.0		107	70-130			
4-Nitrotoluene	440	100	ug/kg wet	400.0		110	70-130			
4-Nitrotoluene [2C]	442	100	ug/kg wet	400.0		110	70-130			
Nitroglycerin	407	100	ug/kg wet	400.0		102	70-130			
Nitroglycerin [2C]	385	100	ug/kg wet	400.0		96.1	70-130			
1,3-Dinitrobenzene	425	100	ug/kg wet	400.0		106	70-130			
1,3-Dinitrobenzene [2C]	437	100	ug/kg wet	400.0		109	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711003 - EPA 3511										
LCS (K711003-BS1)				Prepared: 11/02/2017 Analyzed: 11/03/2017 01:29						
2,6-Dinitrotoluene	404	100	ug/kg wet	400.0		101	70-130			
2,6-Dinitrotoluene [2C]	399	100	ug/kg wet	400.0		99.8	70-130			
2,4-Dinitrotoluene	411	100	ug/kg wet	400.0		103	70-130			
2,4-Dinitrotoluene [2C]	416	100	ug/kg wet	400.0		104	70-130			
1,3,5-Trinitrobenzene	431	100	ug/kg wet	400.0		108	70-130			
1,3,5-Trinitrobenzene [2C]	414	100	ug/kg wet	400.0		103	70-130			
2,4,6-Trinitrotoluene	386	100	ug/kg wet	400.0		96.5	70-130			
2,4,6-Trinitrotoluene [2C]	373	100	ug/kg wet	400.0		93.3	70-130			
PETN	411	100	ug/kg wet	400.0		103	70-130			
PETN [2C]	371	100	ug/kg wet	400.0		92.7	70-130			
RDX	432	100	ug/kg wet	400.0		108	70-130			
RDX [2C]	414	100	ug/kg wet	400.0		103	70-130			
4-Amino-2,6-dinitrotoluene	415	100	ug/kg wet	400.0		104	70-130			
4-Amino-2,6-dinitrotoluene [2C]	411	100	ug/kg wet	400.0		103	70-130			
3,5-Dinitroaniline	425	100	ug/kg wet	400.0		106	70-130			
3,5-Dinitroaniline [2C]	435	100	ug/kg wet	400.0		109	70-130			
2-Amino-4,6-dinitrotoluene	413	100	ug/kg wet	400.0		103	70-130			
2-Amino-4,6-dinitrotoluene [2C]	417	100	ug/kg wet	400.0		104	70-130			
Tetryl	414	100	ug/kg wet	400.0		103	70-130			
Tetryl [2C]	403	100	ug/kg wet	400.0		101	70-130			
HMX	352	100	ug/kg wet	400.0		87.9	70-130			
HMX [2C]	404	100	ug/kg wet	400.0		101	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*425*		*ug/kg wet*	*400.0*		*106*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*422*		*ug/kg wet*	*400.0*		*105*	*60-140*			
LCS (K711003-BS2)				Prepared: 11/02/2017 Analyzed: 11/03/2017 11:02						
Nitrobenzene	452	100	ug/kg wet	400.0		113	70-130			
Nitrobenzene [2C]	425	100	ug/kg wet	400.0		106	70-130			
2-Nitrotoluene	465	100	ug/kg wet	400.0		116	70-130			
2-Nitrotoluene [2C]	420	100	ug/kg wet	400.0		105	70-130			
3-Nitrotoluene	436	100	ug/kg wet	400.0		109	70-130			
3-Nitrotoluene [2C]	435	100	ug/kg wet	400.0		109	70-130			
4-Nitrotoluene	448	100	ug/kg wet	400.0		112	70-130			
4-Nitrotoluene [2C]	449	100	ug/kg wet	400.0		112	70-130			
Nitroglycerin	451	100	ug/kg wet	400.0		113	70-130			
Nitroglycerin [2C]	405	100	ug/kg wet	400.0		101	70-130			
1,3-Dinitrobenzene	441	100	ug/kg wet	400.0		110	70-130			
1,3-Dinitrobenzene [2C]	443	100	ug/kg wet	400.0		111	70-130			
2,6-Dinitrotoluene	417	100	ug/kg wet	400.0		104	70-130			
2,6-Dinitrotoluene [2C]	407	100	ug/kg wet	400.0		102	70-130			
2,4-Dinitrotoluene	434	100	ug/kg wet	400.0		109	70-130			
2,4-Dinitrotoluene [2C]	432	100	ug/kg wet	400.0		108	70-130			
1,3,5-Trinitrobenzene	461	100	ug/kg wet	400.0		115	70-130			
1,3,5-Trinitrobenzene [2C]	415	100	ug/kg wet	400.0		104	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711003 - EPA 3511										
LCS (K711003-BS2)				Prepared: 11/02/2017 Analyzed: 11/03/2017 11:02						
2,4,6-Trinitrotoluene	407	100	ug/kg wet	400.0		102	70-130			
2,4,6-Trinitrotoluene [2C]	382	100	ug/kg wet	400.0		95.5	70-130			
PETN	493	100	ug/kg wet	400.0		123	70-130			
PETN [2C]	364	100	ug/kg wet	400.0		91.1	70-130			
RDX	463	100	ug/kg wet	400.0		116	70-130			
RDX [2C]	437	100	ug/kg wet	400.0		109	70-130			
4-Amino-2,6-dinitrotoluene	448	100	ug/kg wet	400.0		112	70-130			
4-Amino-2,6-dinitrotoluene [2C]	431	100	ug/kg wet	400.0		108	70-130			
3,5-Dinitroaniline	462	100	ug/kg wet	400.0		115	70-130			
3,5-Dinitroaniline [2C]	481	100	ug/kg wet	400.0		120	70-130			
2-Amino-4,6-dinitrotoluene	452	100	ug/kg wet	400.0		113	70-130			
2-Amino-4,6-dinitrotoluene [2C]	447	100	ug/kg wet	400.0		112	70-130			
Tetryl	459	100	ug/kg wet	400.0		115	70-130			
Tetryl [2C]	410	100	ug/kg wet	400.0		103	70-130			
HMX	412	100	ug/kg wet	400.0		103	70-130			
HMX [2C]	428	100	ug/kg wet	400.0		107	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*444*		*ug/kg wet*	*400.0*		*111*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*421*		*ug/kg wet*	*400.0*		*105*	*60-140*			
Matrix Spike (K711003-MS1)	**Source: K174404-04**			Prepared: 11/02/2017 Analyzed: 11/03/2017 04:12						
Nitrobenzene	469	110	ug/kg dry	441.4	ND	106	70-130			
Nitrobenzene [2C]	468	110	ug/kg dry	441.4	ND	106	70-130			
2-Nitrotoluene	489	110	ug/kg dry	441.4	ND	111	70-130			
2-Nitrotoluene [2C]	462	110	ug/kg dry	441.4	ND	105	70-130			
3-Nitrotoluene	453	110	ug/kg dry	441.4	ND	103	70-130			
3-Nitrotoluene [2C]	473	110	ug/kg dry	441.4	ND	107	70-130			
4-Nitrotoluene	469	110	ug/kg dry	441.4	ND	106	70-130			
4-Nitrotoluene [2C]	484	110	ug/kg dry	441.4	ND	110	70-130			
Nitroglycerin	428	110	ug/kg dry	441.4	ND	97.0	70-130			
Nitroglycerin [2C]	423	110	ug/kg dry	441.4	ND	95.8	70-130			
1,3-Dinitrobenzene	436	110	ug/kg dry	441.4	ND	98.7	70-130			
1,3-Dinitrobenzene [2C]	465	110	ug/kg dry	441.4	ND	105	70-130			
2,6-Dinitrotoluene	429	110	ug/kg dry	441.4	ND	97.2	70-130			
2,6-Dinitrotoluene [2C]	444	110	ug/kg dry	441.4	ND	101	70-130			
2,4-Dinitrotoluene	435	110	ug/kg dry	441.4	ND	98.5	70-130			
2,4-Dinitrotoluene [2C]	459	110	ug/kg dry	441.4	ND	104	70-130			
1,3,5-Trinitrobenzene	392	110	ug/kg dry	441.4	ND	88.9	70-130			
1,3,5-Trinitrobenzene [2C]	426	110	ug/kg dry	441.4	ND	96.6	70-130			
2,4,6-Trinitrotoluene	402	110	ug/kg dry	441.4	ND	91.0	70-130			
2,4,6-Trinitrotoluene [2C]	414	110	ug/kg dry	441.4	ND	93.8	70-130			
PETN	402	110	ug/kg dry	441.4	ND	91.2	70-130			
PETN [2C]	383	110	ug/kg dry	441.4	ND	86.7	70-130			
RDX	369	110	ug/kg dry	441.4	ND	83.7	70-130			
RDX [2C]	424	110	ug/kg dry	441.4	7.35	94.5	70-130			

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Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711003 - EPA 3511										
Matrix Spike (K711003-MS1)	**Source: K174404-04**			Prepared: 11/02/2017 Analyzed: 11/03/2017 04:12						
4-Amino-2,6-dinitrotoluene	387	110	ug/kg dry	441.4	ND	87.7	70-130			
4-Amino-2,6-dinitrotoluene [2C]	430	110	ug/kg dry	441.4	3.74	96.5	70-130			
3,5-Dinitroaniline	372	110	ug/kg dry	441.4	5.76	82.9	70-130			
3,5-Dinitroaniline [2C]	444	110	ug/kg dry	441.4	ND	101	70-130			
2-Amino-4,6-dinitrotoluene	372	110	ug/kg dry	441.4	ND	84.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	426	110	ug/kg dry	441.4	ND	96.5	70-130			
Tetryl	368	110	ug/kg dry	441.4	ND	83.4	70-130			
Tetryl [2C]	422	110	ug/kg dry	441.4	ND	95.6	70-130			
HMX	58.2	110	ug/kg dry	441.4	ND	13.2	70-130			M
HMX [2C]	153	110	ug/kg dry	441.4	ND	34.7	70-130			M
Surrogate: 2,2'-Dinitrobiphenyl	*430*		*ug/kg dry*	*441.4*		*97.4*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*449*		*ug/kg dry*	*441.4*		*102*	*60-140*			
Matrix Spike (K711003-MS2)	**Source: K174404-28**			Prepared: 11/02/2017 Analyzed: 11/03/2017 15:07						
Nitrobenzene	443	110	ug/kg dry	436.8	ND	101	70-130			
Nitrobenzene [2C]	524	110	ug/kg dry	436.8	ND	120	70-130			
2-Nitrotoluene	462	110	ug/kg dry	436.8	ND	106	70-130			
2-Nitrotoluene [2C]	524	110	ug/kg dry	436.8	ND	120	70-130			
3-Nitrotoluene	415	110	ug/kg dry	436.8	ND	95.0	70-130			
3-Nitrotoluene [2C]	542	110	ug/kg dry	436.8	ND	124	70-130			
4-Nitrotoluene	432	110	ug/kg dry	436.8	ND	98.8	70-130			
4-Nitrotoluene [2C]	556	110	ug/kg dry	436.8	ND	127	70-130			
Nitroglycerin	410	110	ug/kg dry	436.8	ND	93.8	70-130			
Nitroglycerin [2C]	462	110	ug/kg dry	436.8	ND	106	70-130			
1,3-Dinitrobenzene	425	110	ug/kg dry	436.8	ND	97.3	70-130			
1,3-Dinitrobenzene [2C]	448	110	ug/kg dry	436.8	ND	103	70-130			
2,6-Dinitrotoluene	407	110	ug/kg dry	436.8	ND	93.2	70-130			
2,6-Dinitrotoluene [2C]	492	110	ug/kg dry	436.8	ND	113	70-130			
2,4-Dinitrotoluene	418	110	ug/kg dry	436.8	ND	95.8	70-130			
2,4-Dinitrotoluene [2C]	520	110	ug/kg dry	436.8	ND	119	70-130			
1,3,5-Trinitrobenzene	415	110	ug/kg dry	436.8	ND	95.1	70-130			
1,3,5-Trinitrobenzene [2C]	492	110	ug/kg dry	436.8	ND	113	70-130			
2,4,6-Trinitrotoluene	387	110	ug/kg dry	436.8	ND	88.6	70-130			
2,4,6-Trinitrotoluene [2C]	456	110	ug/kg dry	436.8	ND	104	70-130			
PETN	418	110	ug/kg dry	436.8	ND	95.7	70-130			
PETN [2C]	419	110	ug/kg dry	436.8	ND	96.0	70-130			
RDX	366	110	ug/kg dry	436.8	ND	83.7	70-130			
RDX [2C]	467	110	ug/kg dry	436.8	7.26	105	70-130			
4-Amino-2,6-dinitrotoluene	397	110	ug/kg dry	436.8	ND	90.8	70-130			
4-Amino-2,6-dinitrotoluene [2C]	492	110	ug/kg dry	436.8	2.65	112	70-130			
3,5-Dinitroaniline	402	110	ug/kg dry	436.8	4.82	90.9	70-130			
3,5-Dinitroaniline [2C]	508	110	ug/kg dry	436.8	ND	116	70-130			
2-Amino-4,6-dinitrotoluene	394	110	ug/kg dry	436.8	ND	90.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	496	110	ug/kg dry	436.8	ND	114	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711003 - EPA 3511										
Matrix Spike (K711003-MS2)	**Source: K174404-28**			Prepared: 11/02/2017 Analyzed: 11/03/2017 15:07						
Tetryl	395	110	ug/kg dry	436.8	ND	90.4	70-130			
Tetryl [2C]	477	110	ug/kg dry	436.8	ND	109	70-130			
HMX	54.8	110	ug/kg dry	436.8	ND	12.5	70-130			M
HMX [2C]	99.4	110	ug/kg dry	436.8	ND	22.7	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*423*		*ug/kg dry*	*436.8*		*96.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*502*		*ug/kg dry*	*436.8*		*115*	*60-140*			
Matrix Spike Dup (K711003-MSD1)	**Source: K174404-04**			Prepared: 11/02/2017 Analyzed: 11/03/2017 04:39						
Nitrobenzene	462	110	ug/kg dry	441.4	ND	105	70-130	1.47	20	
Nitrobenzene [2C]	462	110	ug/kg dry	441.4	ND	105	70-130	1.13	20	
2-Nitrotoluene	484	110	ug/kg dry	441.4	ND	110	70-130	0.919	20	
2-Nitrotoluene [2C]	458	110	ug/kg dry	441.4	ND	104	70-130	0.843	20	
3-Nitrotoluene	447	110	ug/kg dry	441.4	ND	101	70-130	1.44	20	
3-Nitrotoluene [2C]	467	110	ug/kg dry	441.4	ND	106	70-130	1.36	20	
4-Nitrotoluene	463	110	ug/kg dry	441.4	ND	105	70-130	1.21	20	
4-Nitrotoluene [2C]	478	110	ug/kg dry	441.4	ND	108	70-130	1.35	20	
Nitroglycerin	415	110	ug/kg dry	441.4	ND	94.0	70-130	3.15	20	
Nitroglycerin [2C]	403	110	ug/kg dry	441.4	ND	91.3	70-130	4.79	20	
1,3-Dinitrobenzene	433	110	ug/kg dry	441.4	ND	98.0	70-130	0.671	20	
1,3-Dinitrobenzene [2C]	424	110	ug/kg dry	441.4	ND	96.0	70-130	9.33	20	
2,6-Dinitrotoluene	426	110	ug/kg dry	441.4	ND	96.5	70-130	0.686	20	
2,6-Dinitrotoluene [2C]	439	110	ug/kg dry	441.4	ND	99.6	70-130	1.14	20	
2,4-Dinitrotoluene	437	110	ug/kg dry	441.4	ND	99.0	70-130	0.460	20	
2,4-Dinitrotoluene [2C]	452	110	ug/kg dry	441.4	ND	102	70-130	1.46	20	
1,3,5-Trinitrobenzene	404	110	ug/kg dry	441.4	ND	91.6	70-130	3.03	20	
1,3,5-Trinitrobenzene [2C]	431	110	ug/kg dry	441.4	ND	97.7	70-130	1.11	20	
2,4,6-Trinitrotoluene	402	110	ug/kg dry	441.4	ND	91.1	70-130	0.0574	20	
2,4,6-Trinitrotoluene [2C]	413	110	ug/kg dry	441.4	ND	93.6	70-130	0.136	20	
PETN	389	110	ug/kg dry	441.4	ND	88.2	70-130	3.34	20	
PETN [2C]	387	110	ug/kg dry	441.4	ND	87.8	70-130	1.27	20	
RDX	380	110	ug/kg dry	441.4	ND	86.2	70-130	2.95	20	
RDX [2C]	421	110	ug/kg dry	441.4	7.35	93.7	70-130	0.783	20	
4-Amino-2,6-dinitrotoluene	395	110	ug/kg dry	441.4	ND	89.4	70-130	1.90	20	
4-Amino-2,6-dinitrotoluene [2C]	431	110	ug/kg dry	441.4	3.74	96.9	70-130	0.411	20	
3,5-Dinitroaniline	387	110	ug/kg dry	441.4	5.76	86.3	70-130	4.02	20	
3,5-Dinitroaniline [2C]	452	110	ug/kg dry	441.4	ND	102	70-130	1.77	20	
2-Amino-4,6-dinitrotoluene	385	110	ug/kg dry	441.4	ND	87.2	70-130	3.29	20	
2-Amino-4,6-dinitrotoluene [2C]	429	110	ug/kg dry	441.4	ND	97.3	70-130	0.797	20	
Tetryl	377	110	ug/kg dry	441.4	ND	85.5	70-130	2.42	20	
Tetryl [2C]	418	110	ug/kg dry	441.4	ND	94.8	70-130	0.849	20	
HMX	67.8	110	ug/kg dry	441.4	ND	15.4	70-130	15.2	20	M
HMX [2C]	149	110	ug/kg dry	441.4	ND	33.8	70-130	2.86	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*438*		*ug/kg dry*	*441.4*		*99.3*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*460*		*ug/kg dry*	*441.4*		*104*	*60-140*			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711003 - EPA 3511										
Matrix Spike Dup (K711003-MSD2)	**Source: K174404-28**			Prepared: 11/02/2017 Analyzed: 11/03/2017 15:29						
Nitrobenzene	427	110	ug/kg dry	436.8	ND	97.7	70-130	3.73	20	
Nitrobenzene [2C]	452	110	ug/kg dry	436.8	ND	103	70-130	14.7	20	
2-Nitrotoluene	427	110	ug/kg dry	436.8	ND	97.8	70-130	7.89	20	
2-Nitrotoluene [2C]	447	110	ug/kg dry	436.8	ND	102	70-130	15.9	20	
3-Nitrotoluene	394	110	ug/kg dry	436.8	ND	90.1	70-130	5.32	20	
3-Nitrotoluene [2C]	462	110	ug/kg dry	436.8	ND	106	70-130	16.0	20	
4-Nitrotoluene	410	110	ug/kg dry	436.8	ND	93.9	70-130	5.06	20	
4-Nitrotoluene [2C]	473	110	ug/kg dry	436.8	ND	108	70-130	16.1	20	
Nitroglycerin	382	110	ug/kg dry	436.8	ND	87.6	70-130	6.84	20	
Nitroglycerin [2C]	384	110	ug/kg dry	436.8	ND	88.0	70-130	18.4	20	
1,3-Dinitrobenzene	410	110	ug/kg dry	436.8	ND	94.0	70-130	3.49	20	
1,3-Dinitrobenzene [2C]	433	110	ug/kg dry	436.8	ND	99.1	70-130	3.49	20	
2,6-Dinitrotoluene	381	110	ug/kg dry	436.8	ND	87.3	70-130	6.60	20	
2,6-Dinitrotoluene [2C]	424	110	ug/kg dry	436.8	ND	97.2	70-130	14.8	20	
2,4-Dinitrotoluene	391	110	ug/kg dry	436.8	ND	89.6	70-130	6.72	20	
2,4-Dinitrotoluene [2C]	449	110	ug/kg dry	436.8	ND	103	70-130	14.6	20	
1,3,5-Trinitrobenzene	386	110	ug/kg dry	436.8	ND	88.4	70-130	7.20	20	
1,3,5-Trinitrobenzene [2C]	418	110	ug/kg dry	436.8	ND	95.6	70-130	16.3	20	
2,4,6-Trinitrotoluene	361	110	ug/kg dry	436.8	ND	82.8	70-130	6.82	20	
2,4,6-Trinitrotoluene [2C]	397	110	ug/kg dry	436.8	ND	90.8	70-130	13.9	20	
PETN	375	110	ug/kg dry	436.8	ND	85.9	70-130	10.9	20	
PETN [2C]	351	110	ug/kg dry	436.8	ND	80.3	70-130	17.8	20	
RDX	351	110	ug/kg dry	436.8	ND	80.3	70-130	4.14	20	
RDX [2C]	391	110	ug/kg dry	436.8	7.26	87.8	70-130	18.1	20	
4-Amino-2,6-dinitrotoluene	371	110	ug/kg dry	436.8	ND	85.0	70-130	6.67	20	
4-Amino-2,6-dinitrotoluene [2C]	415	110	ug/kg dry	436.8	2.65	94.5	70-130	17.0	20	
3,5-Dinitroaniline	379	110	ug/kg dry	436.8	4.82	85.6	70-130	5.96	20	
3,5-Dinitroaniline [2C]	440	110	ug/kg dry	436.8	ND	101	70-130	14.3	20	
2-Amino-4,6-dinitrotoluene	371	110	ug/kg dry	436.8	ND	84.9	70-130	6.06	20	
2-Amino-4,6-dinitrotoluene [2C]	418	110	ug/kg dry	436.8	ND	95.7	70-130	17.0	20	
Tetryl	373	110	ug/kg dry	436.8	ND	85.3	70-130	5.72	20	
Tetryl [2C]	396	110	ug/kg dry	436.8	ND	90.6	70-130	18.5	20	
HMX	62.0	110	ug/kg dry	436.8	ND	14.2	70-130	12.3	20	M, X
HMX [2C]	58.9	110	ug/kg dry	436.8	ND	13.5	70-130	51.2	20	M, X
Surrogate: 2,2´-Dinitrobiphenyl	*413*		*ug/kg dry*	*436.8*		*94.5*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*437*		*ug/kg dry*	*436.8*		*100*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711004 - EPA 3511										
Blank (K711004-BLK1)				Prepared: 11/03/2017 Analyzed: 11/03/2017 23:35						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*394*		*ug/kg wet*	*400.0*		*98.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*401*		*ug/kg wet*	*400.0*		*100*	*60-140*			
Blank (K711004-BLK2)				Prepared: 11/03/2017 Analyzed: 11/04/2017 07:41						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711004 - EPA 3511										
Blank (K711004-BLK2)				Prepared: 11/03/2017 Analyzed: 11/04/2017 07:41						
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*417*		*ug/kg wet*	*400.0*		*104*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*408*		*ug/kg wet*	*400.0*		*102*	*60-140*			
LCS (K711004-BS1)				Prepared: 11/03/2017 Analyzed: 11/03/2017 23:13						
Nitrobenzene	429	100	ug/kg wet	400.0		107	70-130			
Nitrobenzene [2C]	420	100	ug/kg wet	400.0		105	70-130			
2-Nitrotoluene	425	100	ug/kg wet	400.0		106	70-130			
2-Nitrotoluene [2C]	417	100	ug/kg wet	400.0		104	70-130			
3-Nitrotoluene	416	100	ug/kg wet	400.0		104	70-130			
3-Nitrotoluene [2C]	427	100	ug/kg wet	400.0		107	70-130			
4-Nitrotoluene	430	100	ug/kg wet	400.0		107	70-130			
4-Nitrotoluene [2C]	440	100	ug/kg wet	400.0		110	70-130			
Nitroglycerin	402	100	ug/kg wet	400.0		101	70-130			
Nitroglycerin [2C]	382	100	ug/kg wet	400.0		95.6	70-130			
1,3-Dinitrobenzene	417	100	ug/kg wet	400.0		104	70-130			
1,3-Dinitrobenzene [2C]	422	100	ug/kg wet	400.0		106	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711004 - EPA 3511										
LCS (K711004-BS1)				Prepared: 11/03/2017 Analyzed: 11/03/2017 23:13						
2,6-Dinitrotoluene	392	100	ug/kg wet	400.0		98.0	70-130			
2,6-Dinitrotoluene [2C]	397	100	ug/kg wet	400.0		99.2	70-130			
2,4-Dinitrotoluene	402	100	ug/kg wet	400.0		100	70-130			
2,4-Dinitrotoluene [2C]	412	100	ug/kg wet	400.0		103	70-130			
1,3,5-Trinitrobenzene	413	100	ug/kg wet	400.0		103	70-130			
1,3,5-Trinitrobenzene [2C]	421	100	ug/kg wet	400.0		105	70-130			
2,4,6-Trinitrotoluene	401	100	ug/kg wet	400.0		100	70-130			
2,4,6-Trinitrotoluene [2C]	408	100	ug/kg wet	400.0		102	70-130			
PETN	412	100	ug/kg wet	400.0		103	70-130			
PETN [2C]	345	100	ug/kg wet	400.0		86.3	70-130			
RDX	414	100	ug/kg wet	400.0		103	70-130			
RDX [2C]	414	100	ug/kg wet	400.0		104	70-130			
4-Amino-2,6-dinitrotoluene	394	100	ug/kg wet	400.0		98.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	408	100	ug/kg wet	400.0		102	70-130			
3,5-Dinitroaniline	386	100	ug/kg wet	400.0		96.4	70-130			
3,5-Dinitroaniline [2C]	439	100	ug/kg wet	400.0		110	70-130			
2-Amino-4,6-dinitrotoluene	385	100	ug/kg wet	400.0		96.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	417	100	ug/kg wet	400.0		104	70-130			
Tetryl	389	100	ug/kg wet	400.0		97.2	70-130			
Tetryl [2C]	402	100	ug/kg wet	400.0		100	70-130			
HMX	237	100	ug/kg wet	400.0		59.2	70-130			
HMX [2C]	455	100	ug/kg wet	400.0		114	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*413*		*ug/kg wet*	*400.0*		*103*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*423*		*ug/kg wet*	*400.0*		*106*	*60-140*			
LCS (K711004-BS2)				Prepared: 11/03/2017 Analyzed: 11/04/2017 07:19						
Nitrobenzene	466	100	ug/kg wet	400.0		117	70-130			
Nitrobenzene [2C]	413	100	ug/kg wet	400.0		103	70-130			
2-Nitrotoluene	468	100	ug/kg wet	400.0		117	70-130			
2-Nitrotoluene [2C]	409	100	ug/kg wet	400.0		102	70-130			
3-Nitrotoluene	462	100	ug/kg wet	400.0		115	70-130			
3-Nitrotoluene [2C]	425	100	ug/kg wet	400.0		106	70-130			
4-Nitrotoluene	472	100	ug/kg wet	400.0		118	70-130			
4-Nitrotoluene [2C]	438	100	ug/kg wet	400.0		109	70-130			
Nitroglycerin	444	100	ug/kg wet	400.0		111	70-130			
Nitroglycerin [2C]	403	100	ug/kg wet	400.0		101	70-130			
1,3-Dinitrobenzene	460	100	ug/kg wet	400.0		115	70-130			
1,3-Dinitrobenzene [2C]	430	100	ug/kg wet	400.0		107	70-130			
2,6-Dinitrotoluene	435	100	ug/kg wet	400.0		109	70-130			
2,6-Dinitrotoluene [2C]	404	100	ug/kg wet	400.0		101	70-130			
2,4-Dinitrotoluene	452	100	ug/kg wet	400.0		113	70-130			
2,4-Dinitrotoluene [2C]	427	100	ug/kg wet	400.0		107	70-130			
1,3,5-Trinitrobenzene	480	100	ug/kg wet	400.0		120	70-130			
1,3,5-Trinitrobenzene [2C]	435	100	ug/kg wet	400.0		109	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711004 - EPA 3511										
LCS (K711004-BS2)				Prepared: 11/03/2017 Analyzed: 11/04/2017 07:19						
2,4,6-Trinitrotoluene	450	100	ug/kg wet	400.0		112	70-130			
2,4,6-Trinitrotoluene [2C]	421	100	ug/kg wet	400.0		105	70-130			
PETN	451	100	ug/kg wet	400.0		113	70-130			
PETN [2C]	378	100	ug/kg wet	400.0		94.5	70-130			
RDX	475	100	ug/kg wet	400.0		119	70-130			
RDX [2C]	440	100	ug/kg wet	400.0		110	70-130			
4-Amino-2,6-dinitrotoluene	452	100	ug/kg wet	400.0		113	70-130			
4-Amino-2,6-dinitrotoluene [2C]	432	100	ug/kg wet	400.0		108	70-130			
3,5-Dinitroaniline	474	100	ug/kg wet	400.0		118	70-130			
3,5-Dinitroaniline [2C]	473	100	ug/kg wet	400.0		118	70-130			
2-Amino-4,6-dinitrotoluene	459	100	ug/kg wet	400.0		115	70-130			
2-Amino-4,6-dinitrotoluene [2C]	452	100	ug/kg wet	400.0		113	70-130			
Tetryl	479	100	ug/kg wet	400.0		120	70-130			
Tetryl [2C]	427	100	ug/kg wet	400.0		107	70-130			
HMX	724	100	ug/kg wet	400.0		181	70-130			
HMX [2C]	646	100	ug/kg wet	400.0		161	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*448*		*ug/kg wet*	*400.0*		*112*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*432*		*ug/kg wet*	*400.0*		*108*	*60-140*			
Matrix Spike (K711004-MS1)	**Source: K174405-01**			Prepared: 11/03/2017 Analyzed: 11/04/2017 00:19						
Nitrobenzene	486	110	ug/kg dry	457.1	ND	106	70-130			
Nitrobenzene [2C]	484	110	ug/kg dry	457.1	ND	106	70-130			
2-Nitrotoluene	483	110	ug/kg dry	457.1	ND	106	70-130			
2-Nitrotoluene [2C]	484	110	ug/kg dry	457.1	ND	106	70-130			
3-Nitrotoluene	475	110	ug/kg dry	457.1	ND	104	70-130			
3-Nitrotoluene [2C]	493	110	ug/kg dry	457.1	ND	108	70-130			
4-Nitrotoluene	494	110	ug/kg dry	457.1	ND	108	70-130			
4-Nitrotoluene [2C]	509	110	ug/kg dry	457.1	ND	111	70-130			
Nitroglycerin	454	110	ug/kg dry	457.1	ND	99.3	70-130			
Nitroglycerin [2C]	459	110	ug/kg dry	457.1	ND	100	70-130			
1,3-Dinitrobenzene	484	110	ug/kg dry	457.1	ND	106	70-130			
1,3-Dinitrobenzene [2C]	473	110	ug/kg dry	457.1	ND	104	70-130			
2,6-Dinitrotoluene	453	110	ug/kg dry	457.1	2.53	98.5	70-130			
2,6-Dinitrotoluene [2C]	467	110	ug/kg dry	457.1	3.51	101	70-130			
2,4-Dinitrotoluene	478	110	ug/kg dry	457.1	29.6	98.2	70-130			
2,4-Dinitrotoluene [2C]	504	110	ug/kg dry	457.1	21.4	106	70-130			
1,3,5-Trinitrobenzene	473	110	ug/kg dry	457.1	2.78	103	70-130			
1,3,5-Trinitrobenzene [2C]	479	110	ug/kg dry	457.1	ND	105	70-130			
2,4,6-Trinitrotoluene	914	110	ug/kg dry	457.1	1610	NR	70-130			M
2,4,6-Trinitrotoluene [2C]	938	110	ug/kg dry	457.1	1600	NR	70-130			M
PETN	433	110	ug/kg dry	457.1	10.6	92.3	70-130			
PETN [2C]	415	110	ug/kg dry	457.1	ND	90.8	70-130			
RDX	459	110	ug/kg dry	457.1	ND	100	70-130			
RDX [2C]	480	110	ug/kg dry	457.1	8.67	103	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711004 - EPA 3511										
Matrix Spike (K711004-MS1)	**Source: K174405-01**			Prepared: 11/03/2017 Analyzed: 11/04/2017 00:19						
4-Amino-2,6-dinitrotoluene	716	110	ug/kg dry	457.1	299	91.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	760	110	ug/kg dry	457.1	321	96.0	70-130			
3,5-Dinitroaniline	492	110	ug/kg dry	457.1	ND	108	70-130			
3,5-Dinitroaniline [2C]	527	110	ug/kg dry	457.1	ND	115	70-130			
2-Amino-4,6-dinitrotoluene	555	110	ug/kg dry	457.1	125	94.1	70-130			
2-Amino-4,6-dinitrotoluene [2C]	600	110	ug/kg dry	457.1	129	103	70-130			
Tetryl	482	110	ug/kg dry	457.1	ND	105	70-130			
Tetryl [2C]	465	110	ug/kg dry	457.1	2.82	101	70-130			
HMX	544	110	ug/kg dry	457.1	ND	119	70-130			
HMX [2C]	674	110	ug/kg dry	457.1	ND	147	70-130			M
Surrogate: 2,2'-Dinitrobiphenyl	*473*		*ug/kg dry*	*457.1*		*104*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*490*		*ug/kg dry*	*457.1*		*107*	*60-140*			
Matrix Spike (K711004-MS2)	**Source: K174405-21**			Prepared: 11/03/2017 Analyzed: 11/04/2017 09:52						
Nitrobenzene	532	110	ug/kg dry	452.5	ND	118	70-130			
Nitrobenzene [2C]	465	110	ug/kg dry	452.5	ND	103	70-130			
2-Nitrotoluene	547	110	ug/kg dry	452.5	ND	121	70-130			
2-Nitrotoluene [2C]	464	110	ug/kg dry	452.5	ND	102	70-130			
3-Nitrotoluene	531	110	ug/kg dry	452.5	ND	117	70-130			
3-Nitrotoluene [2C]	479	110	ug/kg dry	452.5	ND	106	70-130			
4-Nitrotoluene	544	110	ug/kg dry	452.5	ND	120	70-130			
4-Nitrotoluene [2C]	496	110	ug/kg dry	452.5	ND	110	70-130			
Nitroglycerin	508	110	ug/kg dry	452.5	ND	112	70-130			
Nitroglycerin [2C]	461	110	ug/kg dry	452.5	ND	102	70-130			
1,3-Dinitrobenzene	538	110	ug/kg dry	452.5	ND	119	70-130			
1,3-Dinitrobenzene [2C]	508	110	ug/kg dry	452.5	ND	112	70-130			
2,6-Dinitrotoluene	504	110	ug/kg dry	452.5	ND	111	70-130			
2,6-Dinitrotoluene [2C]	456	110	ug/kg dry	452.5	ND	101	70-130			
2,4-Dinitrotoluene	533	110	ug/kg dry	452.5	5.48	116	70-130			
2,4-Dinitrotoluene [2C]	484	110	ug/kg dry	452.5	ND	107	70-130			
1,3,5-Trinitrobenzene	545	110	ug/kg dry	452.5	ND	121	70-130			
1,3,5-Trinitrobenzene [2C]	472	110	ug/kg dry	452.5	ND	104	70-130			
2,4,6-Trinitrotoluene	724	110	ug/kg dry	452.5	96.4	139	70-130			M
2,4,6-Trinitrotoluene [2C]	653	110	ug/kg dry	452.5	98.4	122	70-130			
PETN	503	110	ug/kg dry	452.5	ND	111	70-130			
PETN [2C]	430	110	ug/kg dry	452.5	ND	95.1	70-130			
RDX	519	110	ug/kg dry	452.5	ND	115	70-130			
RDX [2C]	466	110	ug/kg dry	452.5	7.12	101	70-130			
4-Amino-2,6-dinitrotoluene	543	110	ug/kg dry	452.5	33.3	113	70-130			
4-Amino-2,6-dinitrotoluene [2C]	514	110	ug/kg dry	452.5	33.2	106	70-130			
3,5-Dinitroaniline	529	110	ug/kg dry	452.5	ND	117	70-130			
3,5-Dinitroaniline [2C]	524	110	ug/kg dry	452.5	ND	116	70-130			
2-Amino-4,6-dinitrotoluene	544	110	ug/kg dry	452.5	27.2	114	70-130			
2-Amino-4,6-dinitrotoluene [2C]	517	110	ug/kg dry	452.5	ND	114	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711004 - EPA 3511										
Matrix Spike (K711004-MS2)	**Source: K174405-21**			Prepared: 11/03/2017 Analyzed: 11/04/2017 09:52						
Tetryl	547	110	ug/kg dry	452.5	ND	121	70-130			
Tetryl [2C]	465	110	ug/kg dry	452.5	ND	103	70-130			
HMX	679	110	ug/kg dry	452.5	ND	150	70-130			M
HMX [2C]	562	110	ug/kg dry	452.5	ND	124	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*521*		*ug/kg dry*	*452.5*		*115*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*476*		*ug/kg dry*	*452.5*		*105*	*60-140*			
Matrix Spike Dup (K711004-MSD1)	**Source: K174405-01**			Prepared: 11/03/2017 Analyzed: 11/04/2017 00:42						
Nitrobenzene	489	110	ug/kg dry	457.1	ND	107	70-130	0.504	20	
Nitrobenzene [2C]	487	110	ug/kg dry	457.1	ND	107	70-130	0.627	20	
2-Nitrotoluene	506	110	ug/kg dry	457.1	ND	111	70-130	4.72	20	
2-Nitrotoluene [2C]	481	110	ug/kg dry	457.1	ND	105	70-130	0.765	20	
3-Nitrotoluene	481	110	ug/kg dry	457.1	ND	105	70-130	1.31	20	
3-Nitrotoluene [2C]	494	110	ug/kg dry	457.1	ND	108	70-130	0.156	20	
4-Nitrotoluene	497	110	ug/kg dry	457.1	ND	109	70-130	0.590	20	
4-Nitrotoluene [2C]	509	110	ug/kg dry	457.1	ND	111	70-130	0.0386	20	
Nitroglycerin	452	110	ug/kg dry	457.1	ND	98.8	70-130	0.465	20	
Nitroglycerin [2C]	460	110	ug/kg dry	457.1	ND	101	70-130	0.241	20	
1,3-Dinitrobenzene	480	110	ug/kg dry	457.1	ND	105	70-130	0.847	20	
1,3-Dinitrobenzene [2C]	476	110	ug/kg dry	457.1	ND	104	70-130	0.515	20	
2,6-Dinitrotoluene	453	110	ug/kg dry	457.1	2.53	98.5	70-130	0.0180	20	
2,6-Dinitrotoluene [2C]	467	110	ug/kg dry	457.1	3.51	102	70-130	0.168	20	
2,4-Dinitrotoluene	480	110	ug/kg dry	457.1	29.6	98.6	70-130	0.446	20	
2,4-Dinitrotoluene [2C]	500	110	ug/kg dry	457.1	21.4	105	70-130	0.769	20	
1,3,5-Trinitrobenzene	469	110	ug/kg dry	457.1	2.78	102	70-130	0.799	20	
1,3,5-Trinitrobenzene [2C]	465	110	ug/kg dry	457.1	ND	102	70-130	3.01	20	
2,4,6-Trinitrotoluene	518	110	ug/kg dry	457.1	1610	NR	70-130	NR	20	M
2,4,6-Trinitrotoluene [2C]	525	110	ug/kg dry	457.1	1600	NR	70-130	NR	20	M
PETN	423	110	ug/kg dry	457.1	10.6	90.3	70-130	2.25	20	
PETN [2C]	396	110	ug/kg dry	457.1	ND	86.7	70-130	4.60	20	
RDX	470	110	ug/kg dry	457.1	ND	103	70-130	2.34	20	
RDX [2C]	449	110	ug/kg dry	457.1	8.67	96.4	70-130	6.80	20	
4-Amino-2,6-dinitrotoluene	730	110	ug/kg dry	457.1	299	94.4	70-130	3.24	20	
4-Amino-2,6-dinitrotoluene [2C]	748	110	ug/kg dry	457.1	321	93.3	70-130	2.85	20	
3,5-Dinitroaniline	494	110	ug/kg dry	457.1	ND	108	70-130	0.537	20	
3,5-Dinitroaniline [2C]	502	110	ug/kg dry	457.1	ND	110	70-130	4.80	20	
2-Amino-4,6-dinitrotoluene	569	110	ug/kg dry	457.1	125	97.1	70-130	3.16	20	
2-Amino-4,6-dinitrotoluene [2C]	582	110	ug/kg dry	457.1	129	99.2	70-130	3.87	20	
Tetryl	487	110	ug/kg dry	457.1	ND	107	70-130	1.12	20	
Tetryl [2C]	456	110	ug/kg dry	457.1	2.82	99.2	70-130	1.98	20	
HMX	576	110	ug/kg dry	457.1	ND	126	70-130	5.60	20	
HMX [2C]	610	110	ug/kg dry	457.1	ND	134	70-130	9.92	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*469*		*ug/kg dry*	*457.1*		*103*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*485*		*ug/kg dry*	*457.1*		*106*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711004 - EPA 3511										
Matrix Spike Dup (K711004-MSD2)	**Source: K174405-21**			Prepared: 11/03/2017 Analyzed: 11/04/2017 10:14						
Nitrobenzene	492	110	ug/kg dry	452.5	ND	109	70-130	7.98	20	
Nitrobenzene [2C]	465	110	ug/kg dry	452.5	ND	103	70-130	0.0564	20	
2-Nitrotoluene	494	110	ug/kg dry	452.5	ND	109	70-130	10.2	20	
2-Nitrotoluene [2C]	461	110	ug/kg dry	452.5	ND	102	70-130	0.457	20	
3-Nitrotoluene	488	110	ug/kg dry	452.5	ND	108	70-130	8.44	20	
3-Nitrotoluene [2C]	478	110	ug/kg dry	452.5	ND	106	70-130	0.166	20	
4-Nitrotoluene	500	110	ug/kg dry	452.5	ND	110	70-130	8.37	20	
4-Nitrotoluene [2C]	491	110	ug/kg dry	452.5	ND	109	70-130	0.956	20	
Nitroglycerin	483	110	ug/kg dry	452.5	ND	107	70-130	4.99	20	
Nitroglycerin [2C]	450	110	ug/kg dry	452.5	ND	99.4	70-130	2.41	20	
1,3-Dinitrobenzene	490	110	ug/kg dry	452.5	ND	108	70-130	9.35	20	
1,3-Dinitrobenzene [2C]	475	110	ug/kg dry	452.5	ND	105	70-130	6.85	20	
2,6-Dinitrotoluene	465	110	ug/kg dry	452.5	ND	103	70-130	7.87	20	
2,6-Dinitrotoluene [2C]	454	110	ug/kg dry	452.5	ND	100	70-130	0.375	20	
2,4-Dinitrotoluene	491	110	ug/kg dry	452.5	5.48	107	70-130	8.26	20	
2,4-Dinitrotoluene [2C]	484	110	ug/kg dry	452.5	ND	107	70-130	0.0384	20	
1,3,5-Trinitrobenzene	521	110	ug/kg dry	452.5	ND	115	70-130	4.49	20	
1,3,5-Trinitrobenzene [2C]	463	110	ug/kg dry	452.5	ND	102	70-130	1.73	20	
2,4,6-Trinitrotoluene	576	110	ug/kg dry	452.5	96.4	106	70-130	26.7	20	X
2,4,6-Trinitrotoluene [2C]	539	110	ug/kg dry	452.5	98.4	97.4	70-130	22.8	20	X
PETN	503	110	ug/kg dry	452.5	ND	111	70-130	0.0144	20	
PETN [2C]	418	110	ug/kg dry	452.5	ND	92.5	70-130	2.84	20	
RDX	514	110	ug/kg dry	452.5	ND	114	70-130	1.05	20	
RDX [2C]	464	110	ug/kg dry	452.5	7.12	101	70-130	0.577	20	
4-Amino-2,6-dinitrotoluene	520	110	ug/kg dry	452.5	33.3	107	70-130	4.67	20	
4-Amino-2,6-dinitrotoluene [2C]	485	110	ug/kg dry	452.5	33.2	99.8	70-130	6.36	20	
3,5-Dinitroaniline	528	110	ug/kg dry	452.5	ND	117	70-130	0.0959	20	
3,5-Dinitroaniline [2C]	510	110	ug/kg dry	452.5	ND	113	70-130	2.78	20	
2-Amino-4,6-dinitrotoluene	526	110	ug/kg dry	452.5	27.2	110	70-130	3.53	20	
2-Amino-4,6-dinitrotoluene [2C]	493	110	ug/kg dry	452.5	ND	109	70-130	4.72	20	
Tetryl	537	110	ug/kg dry	452.5	ND	119	70-130	1.75	20	
Tetryl [2C]	463	110	ug/kg dry	452.5	ND	102	70-130	0.444	20	
HMX	722	110	ug/kg dry	452.5	ND	160	70-130	6.17	20	M
HMX [2C]	604	110	ug/kg dry	452.5	ND	133	70-130	7.10	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*499*		*ug/kg dry*	*452.5*		*110*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*473*		*ug/kg dry*	*452.5*		*105*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711006 - EPA 3511										
Blank (K711006-BLK1)				Prepared: 11/04/2017 Analyzed: 11/04/2017 19:53						
Nitrobenzene	ND	0.10	ug/L							
Nitrobenzene [2C]	ND	0.10	ug/L							
2-Nitrotoluene	ND	0.10	ug/L							
2-Nitrotoluene [2C]	ND	0.10	ug/L							
3-Nitrotoluene	ND	0.10	ug/L							
3-Nitrotoluene [2C]	ND	0.10	ug/L							
4-Nitrotoluene	ND	0.10	ug/L							
4-Nitrotoluene [2C]	ND	0.10	ug/L							
Nitroglycerin	ND	0.10	ug/L							
Nitroglycerin [2C]	ND	0.10	ug/L							
1,3-Dinitrobenzene	0.22	0.10	ug/L							
1,3-Dinitrobenzene [2C]	ND	0.10	ug/L							
2,6-Dinitrotoluene	ND	0.10	ug/L							
2,6-Dinitrotoluene [2C]	ND	0.10	ug/L							
2,4-Dinitrotoluene	ND	0.10	ug/L							
2,4-Dinitrotoluene [2C]	ND	0.10	ug/L							
1,3,5-Trinitrobenzene	ND	0.10	ug/L							
1,3,5-Trinitrobenzene [2C]	ND	0.10	ug/L							
2,4,6-Trinitrotoluene	ND	0.10	ug/L							
2,4,6-Trinitrotoluene [2C]	ND	0.10	ug/L							
PETN	ND	0.10	ug/L							
PETN [2C]	ND	0.10	ug/L							
RDX	ND	0.10	ug/L							
RDX [2C]	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene [2C]	ND	0.10	ug/L							
3,5-Dinitroaniline	1.9	0.10	ug/L							
3,5-Dinitroaniline [2C]	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene	0.13	0.10	ug/L							
2-Amino-4,6-dinitrotoluene [2C]	ND	0.10	ug/L							
Tetryl	ND	0.10	ug/L							
Tetryl [2C]	ND	0.10	ug/L							
HMX	0.85	0.10	ug/L							
HMX [2C]	ND	0.10	ug/L							
Surrogate: 2,2´-Dinitrobiphenyl	*2.79*		*ug/L*	*2.500*		*111*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.73*		*ug/L*	*2.500*		*109*	*60-140*			
LCS (K711006-BS1)				Prepared: 11/04/2017 Analyzed: 11/04/2017 19:31						
Nitrobenzene	2.57	0.10	ug/L	2.500		103	70-130			
Nitrobenzene [2C]	2.49	0.10	ug/L	2.500		99.6	70-130			
2-Nitrotoluene	2.63	0.10	ug/L	2.500		105	70-130			
2-Nitrotoluene [2C]	2.49	0.10	ug/L	2.500		99.6	70-130			
3-Nitrotoluene	2.61	0.10	ug/L	2.500		104	70-130			
3-Nitrotoluene [2C]	2.47	0.10	ug/L	2.500		98.8	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711006 - EPA 3511										
LCS (K711006-BS1)				Prepared: 11/04/2017 Analyzed: 11/04/2017 19:31						
4-Nitrotoluene	2.68	0.10	ug/L	2.500		107	70-130			
4-Nitrotoluene [2C]	2.46	0.10	ug/L	2.500		98.6	70-130			
Nitroglycerin	2.21	0.10	ug/L	2.500		88.2	70-130			
Nitroglycerin [2C]	2.32	0.10	ug/L	2.500		92.8	70-130			
1,3-Dinitrobenzene	2.47	0.10	ug/L	2.500		98.7	70-130			B
1,3-Dinitrobenzene [2C]	2.23	0.10	ug/L	2.500		89.2	70-130			
2,6-Dinitrotoluene	2.55	0.10	ug/L	2.500		102	70-130			
2,6-Dinitrotoluene [2C]	2.49	0.10	ug/L	2.500		99.8	70-130			
2,4-Dinitrotoluene	2.56	0.10	ug/L	2.500		103	70-130			
2,4-Dinitrotoluene [2C]	2.46	0.10	ug/L	2.500		98.3	70-130			
1,3,5-Trinitrobenzene	2.35	0.10	ug/L	2.500		94.1	70-130			
1,3,5-Trinitrobenzene [2C]	2.33	0.10	ug/L	2.500		93.1	70-130			
2,4,6-Trinitrotoluene	2.21	0.10	ug/L	2.500		88.3	70-130			
2,4,6-Trinitrotoluene [2C]	2.23	0.10	ug/L	2.500		89.1	70-130			
PETN	2.03	0.10	ug/L	2.500		81.3	70-130			
PETN [2C]	2.20	0.10	ug/L	2.500		88.1	70-130			
RDX	2.13	0.10	ug/L	2.500		85.2	70-130			
RDX [2C]	2.86	0.10	ug/L	2.500		115	70-130			
4-Amino-2,6-dinitrotoluene	2.32	0.10	ug/L	2.500		93.0	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.54	0.10	ug/L	2.500		102	70-130			
3,5-Dinitroaniline	3.25	0.10	ug/L	2.500		130	70-130			B
3,5-Dinitroaniline [2C]	2.44	0.10	ug/L	2.500		97.6	70-130			
2-Amino-4,6-dinitrotoluene	2.26	0.10	ug/L	2.500		90.5	70-130			B
2-Amino-4,6-dinitrotoluene [2C]	2.44	0.10	ug/L	2.500		97.8	70-130			
Tetryl	2.65	0.10	ug/L	2.500		106	70-130			
Tetryl [2C]	2.77	0.10	ug/L	2.500		111	70-130			
HMX	1.64	0.10	ug/L	2.500		65.6	70-130			B
HMX [2C]	1.81	0.10	ug/L	2.500		72.3	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*2.63*		*ug/L*	*2.500*		*105*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.72*		*ug/L*	*2.500*		*109*	*60-140*			
Matrix Spike (K711006-MS1)		**Source: K174403-02**		Prepared: 11/04/2017 Analyzed: 11/04/2017 20:59						
Nitrobenzene	2.47	0.10	ug/L	2.500	0.0106	98.4	70-130			
Nitrobenzene [2C]	2.46	0.10	ug/L	2.500	ND	98.3	70-130			
2-Nitrotoluene	2.56	0.10	ug/L	2.500	0.0620	100	70-130			
2-Nitrotoluene [2C]	2.47	0.10	ug/L	2.500	ND	98.8	70-130			
3-Nitrotoluene	2.54	0.10	ug/L	2.500	0.0155	101	70-130			
3-Nitrotoluene [2C]	2.43	0.10	ug/L	2.500	0.0268	96.3	70-130			
4-Nitrotoluene	2.65	0.10	ug/L	2.500	ND	106	70-130			
4-Nitrotoluene [2C]	2.44	0.10	ug/L	2.500	ND	97.6	70-130			
Nitroglycerin	2.64	0.10	ug/L	2.500	ND	106	70-130			
Nitroglycerin [2C]	2.25	0.10	ug/L	2.500	ND	89.8	70-130			
1,3-Dinitrobenzene	2.61	0.10	ug/L	2.500	0.233	95.1	70-130			B
1,3-Dinitrobenzene [2C]	2.42	0.10	ug/L	2.500	ND	96.9	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711006 - EPA 3511										
Matrix Spike (K711006-MS1)	**Source: K174403-02**			Prepared: 11/04/2017 Analyzed: 11/04/2017 20:59						
2,6-Dinitrotoluene	2.53	0.10	ug/L	2.500	0.00354	101	70-130			
2,6-Dinitrotoluene [2C]	2.49	0.10	ug/L	2.500	ND	99.4	70-130			
2,4-Dinitrotoluene	2.76	0.10	ug/L	2.500	ND	110	70-130			
2,4-Dinitrotoluene [2C]	2.54	0.10	ug/L	2.500	ND	102	70-130			
1,3,5-Trinitrobenzene	2.72	0.10	ug/L	2.500	ND	109	70-130			
1,3,5-Trinitrobenzene [2C]	2.48	0.10	ug/L	2.500	ND	99.1	70-130			
2,4,6-Trinitrotoluene	2.48	0.10	ug/L	2.500	0.0140	98.5	70-130			
2,4,6-Trinitrotoluene [2C]	2.38	0.10	ug/L	2.500	0.0159	94.6	70-130			
PETN	2.56	0.10	ug/L	2.500	0.0441	101	70-130			
PETN [2C]	2.24	0.10	ug/L	2.500	ND	89.5	70-130			
RDX	2.64	0.10	ug/L	2.500	0.00489	105	70-130			
RDX [2C]	2.81	0.10	ug/L	2.500	ND	113	70-130			
4-Amino-2,6-dinitrotoluene	2.91	0.10	ug/L	2.500	0.0419	115	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.64	0.10	ug/L	2.500	ND	106	70-130			
3,5-Dinitroaniline	3.64	0.10	ug/L	2.500	2.09	61.9	70-130			B, M
3,5-Dinitroaniline [2C]	2.72	0.10	ug/L	2.500	ND	109	70-130			
2-Amino-4,6-dinitrotoluene	2.81	0.10	ug/L	2.500	0.195	105	70-130			B
2-Amino-4,6-dinitrotoluene [2C]	2.71	0.10	ug/L	2.500	ND	109	70-130			
Tetryl	3.21	0.10	ug/L	2.500	ND	128	70-130			
Tetryl [2C]	2.83	0.10	ug/L	2.500	ND	113	70-130			
HMX	2.15	0.10	ug/L	2.500	0.997	46.2	70-130			B, M
HMX [2C]	1.95	0.10	ug/L	2.500	0.0743	75.1	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*2.94*		*ug/L*	*2.500*		*118*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.84*		*ug/L*	*2.500*		*114*	*60-140*			
Matrix Spike Dup (K711006-MSD1)	**Source: K174403-02**			Prepared: 11/04/2017 Analyzed: 11/04/2017 21:20						
Nitrobenzene	2.40	0.10	ug/L	2.500	0.0106	95.5	70-130	3.03	20	
2-Nitrotoluene	2.48	0.10	ug/L	2.500	0.0620	96.5	70-130	3.49	20	
3-Nitrotoluene	2.44	0.10	ug/L	2.500	0.0155	97.1	70-130	3.68	20	
4-Nitrotoluene	2.55	0.10	ug/L	2.500	ND	102	70-130	3.92	20	
Nitroglycerin	2.61	0.10	ug/L	2.500	ND	104	70-130	1.23	20	
1,3-Dinitrobenzene	2.54	0.10	ug/L	2.500	0.233	92.1	70-130	2.90	20	B
2,6-Dinitrotoluene	2.48	0.10	ug/L	2.500	0.00354	99.0	70-130	2.00	20	
2,4-Dinitrotoluene	2.68	0.10	ug/L	2.500	ND	107	70-130	2.85	20	
1,3,5-Trinitrobenzene	2.66	0.10	ug/L	2.500	ND	107	70-130	2.23	20	
2,4,6-Trinitrotoluene	2.38	0.10	ug/L	2.500	0.0140	94.8	70-130	3.79	20	
PETN	2.59	0.10	ug/L	2.500	0.0441	102	70-130	1.02	20	
RDX	2.60	0.10	ug/L	2.500	0.00489	104	70-130	1.52	20	
4-Amino-2,6-dinitrotoluene	2.87	0.10	ug/L	2.500	0.0419	113	70-130	1.12	20	
3,5-Dinitroaniline	3.53	0.10	ug/L	2.500	2.09	57.6	70-130	3.01	20	B, M
2-Amino-4,6-dinitrotoluene	2.74	0.10	ug/L	2.500	0.195	102	70-130	2.43	20	B
Tetryl	3.16	0.10	ug/L	2.500	ND	126	70-130	1.60	20	
HMX	2.24	0.10	ug/L	2.500	0.997	49.7	70-130	3.94	20	B, M
Surrogate: 2,2´-Dinitrobiphenyl	*2.83*		*ug/L*	*2.500*		*113*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711006 - EPA 3511										
Batch K711008 - EPA 3511										
Blank (K711008-BLK1)				Prepared: 11/06/2017 Analyzed: 11/06/2017 17:02						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*365*		*ug/kg wet*	*400.0*		*91.2*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*348*		*ug/kg wet*	*400.0*		*87.1*	*60-140*			
Blank (K711008-BLK2)				Prepared: 11/06/2017 Analyzed: 11/07/2017 01:08						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711008 - EPA 3511										
Blank (K711008-BLK2)				Prepared: 11/06/2017 Analyzed: 11/07/2017 01:08						
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*357*		*ug/kg wet*	*400.0*		*89.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*367*		*ug/kg wet*	*400.0*		*91.9*	*60-140*			
LCS (K711008-BS1)				Prepared: 11/06/2017 Analyzed: 11/06/2017 16:40						
Nitrobenzene	393	100	ug/kg wet	400.0		98.4	70-130			
Nitrobenzene [2C]	376	100	ug/kg wet	400.0		94.0	70-130			
2-Nitrotoluene	398	100	ug/kg wet	400.0		99.5	70-130			
2-Nitrotoluene [2C]	384	100	ug/kg wet	400.0		96.0	70-130			
3-Nitrotoluene	388	100	ug/kg wet	400.0		97.0	70-130			
3-Nitrotoluene [2C]	384	100	ug/kg wet	400.0		96.1	70-130			
4-Nitrotoluene	409	100	ug/kg wet	400.0		102	70-130			
4-Nitrotoluene [2C]	397	100	ug/kg wet	400.0		99.3	70-130			
Nitroglycerin	391	100	ug/kg wet	400.0		97.8	70-130			
Nitroglycerin [2C]	355	100	ug/kg wet	400.0		88.8	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711008 - EPA 3511										
LCS (K711008-BS1)				Prepared: 11/06/2017 Analyzed: 11/06/2017 16:40						
1,3-Dinitrobenzene	386	100	ug/kg wet	400.0		96.5	70-130			
1,3-Dinitrobenzene [2C]	377	100	ug/kg wet	400.0		94.3	70-130			
2,6-Dinitrotoluene	364	100	ug/kg wet	400.0		91.0	70-130			
2,6-Dinitrotoluene [2C]	359	100	ug/kg wet	400.0		89.8	70-130			
2,4-Dinitrotoluene	377	100	ug/kg wet	400.0		94.2	70-130			
2,4-Dinitrotoluene [2C]	365	100	ug/kg wet	400.0		91.2	70-130			
1,3,5-Trinitrobenzene	393	100	ug/kg wet	400.0		98.3	70-130			
1,3,5-Trinitrobenzene [2C]	374	100	ug/kg wet	400.0		93.5	70-130			
2,4,6-Trinitrotoluene	362	100	ug/kg wet	400.0		90.4	70-130			
2,4,6-Trinitrotoluene [2C]	340	100	ug/kg wet	400.0		84.9	70-130			
PETN	403	100	ug/kg wet	400.0		101	70-130			
PETN [2C]	358	100	ug/kg wet	400.0		89.5	70-130			
RDX	391	100	ug/kg wet	400.0		97.6	70-130			
RDX [2C]	367	100	ug/kg wet	400.0		91.6	70-130			
4-Amino-2,6-dinitrotoluene	378	100	ug/kg wet	400.0		94.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	359	100	ug/kg wet	400.0		89.6	70-130			
3,5-Dinitroaniline	387	100	ug/kg wet	400.0		96.7	70-130			
3,5-Dinitroaniline [2C]	379	100	ug/kg wet	400.0		94.7	70-130			
2-Amino-4,6-dinitrotoluene	377	100	ug/kg wet	400.0		94.1	70-130			
2-Amino-4,6-dinitrotoluene [2C]	364	100	ug/kg wet	400.0		91.0	70-130			
Tetryl	405	100	ug/kg wet	400.0		101	70-130			
Tetryl [2C]	357	100	ug/kg wet	400.0		89.2	70-130			
HMX	322	100	ug/kg wet	400.0		80.4	70-130			
HMX [2C]	320	100	ug/kg wet	400.0		80.1	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*381*		*ug/kg wet*	*400.0*		*95.3*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*358*		*ug/kg wet*	*400.0*		*89.5*	*60-140*			
LCS (K711008-BS2)				Prepared: 11/06/2017 Analyzed: 11/07/2017 00:46						
Nitrobenzene	395	100	ug/kg wet	400.0		98.7	70-130			
Nitrobenzene [2C]	398	100	ug/kg wet	400.0		99.5	70-130			
2-Nitrotoluene	400	100	ug/kg wet	400.0		100	70-130			
2-Nitrotoluene [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
3-Nitrotoluene	391	100	ug/kg wet	400.0		97.8	70-130			
3-Nitrotoluene [2C]	411	100	ug/kg wet	400.0		103	70-130			
4-Nitrotoluene	408	100	ug/kg wet	400.0		102	70-130			
4-Nitrotoluene [2C]	424	100	ug/kg wet	400.0		106	70-130			
Nitroglycerin	385	100	ug/kg wet	400.0		96.3	70-130			
Nitroglycerin [2C]	371	100	ug/kg wet	400.0		92.7	70-130			
1,3-Dinitrobenzene	384	100	ug/kg wet	400.0		96.1	70-130			
1,3-Dinitrobenzene [2C]	440	100	ug/kg wet	400.0		110	70-130			
2,6-Dinitrotoluene	369	100	ug/kg wet	400.0		92.3	70-130			
2,6-Dinitrotoluene [2C]	393	100	ug/kg wet	400.0		98.2	70-130			
2,4-Dinitrotoluene	375	100	ug/kg wet	400.0		93.8	70-130			
2,4-Dinitrotoluene [2C]	403	100	ug/kg wet	400.0		101	70-130			

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Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711008 - EPA 3511										
LCS (K711008-BS2)				Prepared: 11/06/2017 Analyzed: 11/07/2017 00:46						
1,3,5-Trinitrobenzene	392	100	ug/kg wet	400.0		98.1	70-130			
1,3,5-Trinitrobenzene [2C]	405	100	ug/kg wet	400.0		101	70-130			
2,4,6-Trinitrotoluene	354	100	ug/kg wet	400.0		88.5	70-130			
2,4,6-Trinitrotoluene [2C]	365	100	ug/kg wet	400.0		91.2	70-130			
PETN	385	100	ug/kg wet	400.0		96.2	70-130			
PETN [2C]	359	100	ug/kg wet	400.0		89.8	70-130			
RDX	387	100	ug/kg wet	400.0		96.8	70-130			
RDX [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
4-Amino-2,6-dinitrotoluene	371	100	ug/kg wet	400.0		92.7	70-130			
4-Amino-2,6-dinitrotoluene [2C]	387	100	ug/kg wet	400.0		96.6	70-130			
3,5-Dinitroaniline	380	100	ug/kg wet	400.0		95.0	70-130			
3,5-Dinitroaniline [2C]	419	100	ug/kg wet	400.0		105	70-130			
2-Amino-4,6-dinitrotoluene	374	100	ug/kg wet	400.0		93.6	70-130			
2-Amino-4,6-dinitrotoluene [2C]	397	100	ug/kg wet	400.0		99.1	70-130			
Tetryl	398	100	ug/kg wet	400.0		99.6	70-130			
Tetryl [2C]	379	100	ug/kg wet	400.0		94.9	70-130			
HMX	336	100	ug/kg wet	400.0		84.0	70-130			
HMX [2C]	361	100	ug/kg wet	400.0		90.3	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*364*		*ug/kg wet*	*400.0*		*91.0*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*379*		*ug/kg wet*	*400.0*		*94.6*	*60-140*			
Matrix Spike (K711008-MS1)	**Source: K174501-02**			Prepared: 11/06/2017 Analyzed: 11/06/2017 18:09						
Nitrobenzene	457	120	ug/kg dry	470.1	ND	97.3	70-130			
Nitrobenzene [2C]	460	120	ug/kg dry	470.1	ND	97.8	70-130			
2-Nitrotoluene	459	120	ug/kg dry	470.1	ND	97.6	70-130			
2-Nitrotoluene [2C]	467	120	ug/kg dry	470.1	ND	99.3	70-130			
3-Nitrotoluene	448	120	ug/kg dry	470.1	ND	95.4	70-130			
3-Nitrotoluene [2C]	474	120	ug/kg dry	470.1	ND	101	70-130			
4-Nitrotoluene	472	120	ug/kg dry	470.1	ND	100	70-130			
4-Nitrotoluene [2C]	491	120	ug/kg dry	470.1	ND	104	70-130			
Nitroglycerin	445	120	ug/kg dry	470.1	ND	94.7	70-130			
Nitroglycerin [2C]	436	120	ug/kg dry	470.1	ND	92.8	70-130			
1,3-Dinitrobenzene	429	120	ug/kg dry	470.1	ND	91.2	70-130			
1,3-Dinitrobenzene [2C]	475	120	ug/kg dry	470.1	ND	101	70-130			
2,6-Dinitrotoluene	416	120	ug/kg dry	470.1	2.75	88.0	70-130			
2,6-Dinitrotoluene [2C]	448	120	ug/kg dry	470.1	2.61	94.8	70-130			
2,4-Dinitrotoluene	435	120	ug/kg dry	470.1	ND	92.5	70-130			
2,4-Dinitrotoluene [2C]	468	120	ug/kg dry	470.1	ND	99.5	70-130			
1,3,5-Trinitrobenzene	434	120	ug/kg dry	470.1	ND	92.2	70-130			
1,3,5-Trinitrobenzene [2C]	442	120	ug/kg dry	470.1	ND	94.1	70-130			
2,4,6-Trinitrotoluene	412	120	ug/kg dry	470.1	16.5	84.2	70-130			
2,4,6-Trinitrotoluene [2C]	421	120	ug/kg dry	470.1	15.5	86.2	70-130			
PETN	439	120	ug/kg dry	470.1	ND	93.3	70-130			
PETN [2C]	416	120	ug/kg dry	470.1	ND	88.5	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711008 - EPA 3511										
Matrix Spike (K711008-MS1)	**Source: K174501-02**			Prepared: 11/06/2017 Analyzed: 11/06/2017 18:09						
RDX	411	120	ug/kg dry	470.1	ND	87.4	70-130			
RDX [2C]	410	120	ug/kg dry	470.1	4.62	86.2	70-130			
4-Amino-2,6-dinitrotoluene	416	120	ug/kg dry	470.1	ND	88.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	427	120	ug/kg dry	470.1	ND	90.9	70-130			
3,5-Dinitroaniline	423	120	ug/kg dry	470.1	ND	89.9	70-130			
3,5-Dinitroaniline [2C]	448	120	ug/kg dry	470.1	ND	95.4	70-130			
2-Amino-4,6-dinitrotoluene	412	120	ug/kg dry	470.1	ND	87.7	70-130			
2-Amino-4,6-dinitrotoluene [2C]	430	120	ug/kg dry	470.1	ND	91.5	70-130			
Tetryl	430	120	ug/kg dry	470.1	ND	91.4	70-130			
Tetryl [2C]	403	120	ug/kg dry	470.1	1.69	85.5	70-130			
HMX	327	120	ug/kg dry	470.1	ND	69.5	70-130			M
HMX [2C]	280	120	ug/kg dry	470.1	ND	59.5	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*416*		*ug/kg dry*	*470.1*		*88.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*428*		*ug/kg dry*	*470.1*		*90.9*	*60-140*			
Matrix Spike (K711008-MS2)	**Source: K174501-08**			Prepared: 11/06/2017 Analyzed: 11/06/2017 21:50						
Nitrobenzene	474	120	ug/kg dry	473.9	ND	100	70-130			
Nitrobenzene [2C]	485	120	ug/kg dry	473.9	ND	102	70-130			
2-Nitrotoluene	481	120	ug/kg dry	473.9	ND	102	70-130			
2-Nitrotoluene [2C]	483	120	ug/kg dry	473.9	ND	102	70-130			
3-Nitrotoluene	469	120	ug/kg dry	473.9	ND	99.0	70-130			
3-Nitrotoluene [2C]	501	120	ug/kg dry	473.9	ND	106	70-130			
4-Nitrotoluene	493	120	ug/kg dry	473.9	ND	104	70-130			
4-Nitrotoluene [2C]	518	120	ug/kg dry	473.9	ND	109	70-130			
Nitroglycerin	460	120	ug/kg dry	473.9	ND	97.1	70-130			
Nitroglycerin [2C]	458	120	ug/kg dry	473.9	ND	96.6	70-130			
1,3-Dinitrobenzene	450	120	ug/kg dry	473.9	ND	95.0	70-130			
1,3-Dinitrobenzene [2C]	484	120	ug/kg dry	473.9	ND	102	70-130			
2,6-Dinitrotoluene	440	120	ug/kg dry	473.9	ND	92.9	70-130			
2,6-Dinitrotoluene [2C]	472	120	ug/kg dry	473.9	ND	99.7	70-130			
2,4-Dinitrotoluene	449	120	ug/kg dry	473.9	1.11	94.6	70-130			
2,4-Dinitrotoluene [2C]	487	120	ug/kg dry	473.9	ND	103	70-130			
1,3,5-Trinitrobenzene	451	120	ug/kg dry	473.9	ND	95.1	70-130			
1,3,5-Trinitrobenzene [2C]	473	120	ug/kg dry	473.9	ND	99.8	70-130			
2,4,6-Trinitrotoluene	428	120	ug/kg dry	473.9	7.90	88.6	70-130			
2,4,6-Trinitrotoluene [2C]	442	120	ug/kg dry	473.9	5.48	92.1	70-130			
PETN	441	120	ug/kg dry	473.9	ND	93.0	70-130			
PETN [2C]	446	120	ug/kg dry	473.9	ND	94.0	70-130			
RDX	402	120	ug/kg dry	473.9	ND	84.9	70-130			
RDX [2C]	426	120	ug/kg dry	473.9	3.61	89.2	70-130			
4-Amino-2,6-dinitrotoluene	420	120	ug/kg dry	473.9	ND	88.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	455	120	ug/kg dry	473.9	ND	96.0	70-130			
3,5-Dinitroaniline	433	120	ug/kg dry	473.9	ND	91.3	70-130			
3,5-Dinitroaniline [2C]	473	120	ug/kg dry	473.9	ND	99.8	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711008 - EPA 3511										
Matrix Spike (K711008-MS2)	**Source: K174501-08**			Prepared: 11/06/2017 Analyzed: 11/06/2017 21:50						
2-Amino-4,6-dinitrotoluene	421	120	ug/kg dry	473.9	ND	88.9	70-130			
2-Amino-4,6-dinitrotoluene [2C]	460	120	ug/kg dry	473.9	0.940	96.8	70-130			
Tetryl	439	120	ug/kg dry	473.9	ND	92.6	70-130			
Tetryl [2C]	449	120	ug/kg dry	473.9	ND	94.8	70-130			
HMX	236	120	ug/kg dry	473.9	ND	49.8	70-130			M
HMX [2C]	210	120	ug/kg dry	473.9	ND	44.4	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*422*		*ug/kg dry*	*473.9*		*89.2*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*446*		*ug/kg dry*	*473.9*		*94.0*	*60-140*			
Matrix Spike Dup (K711008-MSD1)	**Source: K174501-02**			Prepared: 11/06/2017 Analyzed: 11/06/2017 18:31						
Nitrobenzene	465	120	ug/kg dry	470.1	ND	98.9	70-130	1.63	20	
Nitrobenzene [2C]	456	120	ug/kg dry	470.1	ND	97.0	70-130	0.738	20	
2-Nitrotoluene	470	120	ug/kg dry	470.1	ND	99.9	70-130	2.36	20	
2-Nitrotoluene [2C]	461	120	ug/kg dry	470.1	ND	98.1	70-130	1.24	20	
3-Nitrotoluene	458	120	ug/kg dry	470.1	ND	97.5	70-130	2.14	20	
3-Nitrotoluene [2C]	470	120	ug/kg dry	470.1	ND	100	70-130	0.640	20	
4-Nitrotoluene	481	120	ug/kg dry	470.1	ND	102	70-130	1.86	20	
4-Nitrotoluene [2C]	491	120	ug/kg dry	470.1	ND	105	70-130	0.174	20	
Nitroglycerin	454	120	ug/kg dry	470.1	ND	96.6	70-130	1.98	20	
Nitroglycerin [2C]	429	120	ug/kg dry	470.1	ND	91.3	70-130	1.57	20	
1,3-Dinitrobenzene	446	120	ug/kg dry	470.1	ND	94.9	70-130	4.03	20	
1,3-Dinitrobenzene [2C]	483	120	ug/kg dry	470.1	ND	103	70-130	1.76	20	
2,6-Dinitrotoluene	426	120	ug/kg dry	470.1	2.75	90.0	70-130	2.27	20	
2,6-Dinitrotoluene [2C]	447	120	ug/kg dry	470.1	2.61	94.5	70-130	0.307	20	
2,4-Dinitrotoluene	454	120	ug/kg dry	470.1	ND	96.5	70-130	4.19	20	
2,4-Dinitrotoluene [2C]	472	120	ug/kg dry	470.1	ND	100	70-130	0.869	20	
1,3,5-Trinitrobenzene	443	120	ug/kg dry	470.1	ND	94.3	70-130	2.22	20	
1,3,5-Trinitrobenzene [2C]	432	120	ug/kg dry	470.1	ND	91.8	70-130	2.45	20	
2,4,6-Trinitrotoluene	420	120	ug/kg dry	470.1	16.5	85.9	70-130	1.97	20	
2,4,6-Trinitrotoluene [2C]	418	120	ug/kg dry	470.1	15.5	85.7	70-130	0.571	20	
PETN	443	120	ug/kg dry	470.1	ND	94.2	70-130	0.972	20	
PETN [2C]	401	120	ug/kg dry	470.1	ND	85.2	70-130	3.80	20	
RDX	408	120	ug/kg dry	470.1	ND	86.7	70-130	0.700	20	
RDX [2C]	409	120	ug/kg dry	470.1	4.62	86.0	70-130	0.227	20	
4-Amino-2,6-dinitrotoluene	418	120	ug/kg dry	470.1	ND	89.0	70-130	0.421	20	
4-Amino-2,6-dinitrotoluene [2C]	431	120	ug/kg dry	470.1	ND	91.6	70-130	0.749	20	
3,5-Dinitroaniline	429	120	ug/kg dry	470.1	ND	91.2	70-130	1.42	20	
3,5-Dinitroaniline [2C]	446	120	ug/kg dry	470.1	ND	94.8	70-130	0.548	20	
2-Amino-4,6-dinitrotoluene	420	120	ug/kg dry	470.1	ND	89.3	70-130	1.88	20	
2-Amino-4,6-dinitrotoluene [2C]	433	120	ug/kg dry	470.1	ND	92.0	70-130	0.628	20	
Tetryl	447	120	ug/kg dry	470.1	ND	95.1	70-130	3.99	20	
Tetryl [2C]	406	120	ug/kg dry	470.1	1.69	86.0	70-130	0.607	20	
HMX	326	120	ug/kg dry	470.1	ND	69.3	70-130	0.326	20	M
HMX [2C]	289	120	ug/kg dry	470.1	ND	61.5	70-130	3.38	20	M

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Project: Hercules Inc. - Kenvil Works Facility
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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711008 - EPA 3511										
Matrix Spike Dup (K711008-MSD1)	**Source: K174501-02**			Prepared: 11/06/2017 Analyzed: 11/06/2017 18:31						
Surrogate: 2,2´-Dinitrobiphenyl	*418*		*ug/kg dry*	*470.1*		*88.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*430*		*ug/kg dry*	*470.1*		*91.5*	*60-140*			
Matrix Spike Dup (K711008-MSD2)	**Source: K174501-08**			Prepared: 11/06/2017 Analyzed: 11/06/2017 22:12						
Nitrobenzene	475	120	ug/kg dry	473.9	ND	100	70-130	0.194	20	
Nitrobenzene [2C]	473	120	ug/kg dry	473.9	ND	99.8	70-130	2.44	20	
2-Nitrotoluene	482	120	ug/kg dry	473.9	ND	102	70-130	0.271	20	
2-Nitrotoluene [2C]	470	120	ug/kg dry	473.9	ND	99.3	70-130	2.72	20	
3-Nitrotoluene	471	120	ug/kg dry	473.9	ND	99.3	70-130	0.282	20	
3-Nitrotoluene [2C]	489	120	ug/kg dry	473.9	ND	103	70-130	2.54	20	
4-Nitrotoluene	492	120	ug/kg dry	473.9	ND	104	70-130	0.136	20	
4-Nitrotoluene [2C]	505	120	ug/kg dry	473.9	ND	107	70-130	2.49	20	
Nitroglycerin	459	120	ug/kg dry	473.9	ND	96.9	70-130	0.217	20	
Nitroglycerin [2C]	445	120	ug/kg dry	473.9	ND	93.9	70-130	2.91	20	
1,3-Dinitrobenzene	458	120	ug/kg dry	473.9	ND	96.6	70-130	1.63	20	
1,3-Dinitrobenzene [2C]	467	120	ug/kg dry	473.9	ND	98.5	70-130	3.60	20	
2,6-Dinitrotoluene	434	120	ug/kg dry	473.9	ND	91.7	70-130	1.35	20	
2,6-Dinitrotoluene [2C]	460	120	ug/kg dry	473.9	ND	97.1	70-130	2.64	20	
2,4-Dinitrotoluene	447	120	ug/kg dry	473.9	1.11	94.0	70-130	0.602	20	
2,4-Dinitrotoluene [2C]	472	120	ug/kg dry	473.9	ND	99.7	70-130	3.01	20	
1,3,5-Trinitrobenzene	450	120	ug/kg dry	473.9	ND	94.9	70-130	0.174	20	
1,3,5-Trinitrobenzene [2C]	465	120	ug/kg dry	473.9	ND	98.1	70-130	1.77	20	
2,4,6-Trinitrotoluene	419	120	ug/kg dry	473.9	7.90	86.8	70-130	2.11	20	
2,4,6-Trinitrotoluene [2C]	432	120	ug/kg dry	473.9	5.48	89.9	70-130	2.35	20	
PETN	452	120	ug/kg dry	473.9	ND	95.5	70-130	2.59	20	
PETN [2C]	425	120	ug/kg dry	473.9	ND	89.8	70-130	4.65	20	
RDX	407	120	ug/kg dry	473.9	ND	85.9	70-130	1.20	20	
RDX [2C]	419	120	ug/kg dry	473.9	3.61	87.7	70-130	1.74	20	
4-Amino-2,6-dinitrotoluene	419	120	ug/kg dry	473.9	ND	88.5	70-130	0.135	20	
4-Amino-2,6-dinitrotoluene [2C]	449	120	ug/kg dry	473.9	ND	94.8	70-130	1.25	20	
3,5-Dinitroaniline	426	120	ug/kg dry	473.9	ND	89.9	70-130	1.51	20	
3,5-Dinitroaniline [2C]	462	120	ug/kg dry	473.9	ND	97.5	70-130	2.29	20	
2-Amino-4,6-dinitrotoluene	416	120	ug/kg dry	473.9	ND	87.8	70-130	1.21	20	
2-Amino-4,6-dinitrotoluene [2C]	458	120	ug/kg dry	473.9	0.940	96.4	70-130	0.411	20	
Tetryl	439	120	ug/kg dry	473.9	ND	92.7	70-130	0.153	20	
Tetryl [2C]	441	120	ug/kg dry	473.9	ND	93.1	70-130	1.84	20	
HMX	247	120	ug/kg dry	473.9	ND	52.2	70-130	4.68	20	M
HMX [2C]	235	120	ug/kg dry	473.9	ND	49.6	70-130	11.1	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*429*		*ug/kg dry*	*473.9*		*90.5*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*452*		*ug/kg dry*	*473.9*		*95.3*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711010 - EPA 3511										
Blank (K711010-BLK1)				Prepared: 11/07/2017 Analyzed: 11/07/2017 17:28						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*392*		*ug/kg wet*	*400.0*		*97.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*370*		*ug/kg wet*	*400.0*		*92.5*	*60-140*			
LCS (K711010-BS1)				Prepared: 11/07/2017 Analyzed: 11/07/2017 17:06						
Nitrobenzene	423	100	ug/kg wet	400.0		106	70-130			
Nitrobenzene [2C]	409	100	ug/kg wet	400.0		102	70-130			
2-Nitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
2-Nitrotoluene [2C]	412	100	ug/kg wet	400.0		103	70-130			
3-Nitrotoluene	423	100	ug/kg wet	400.0		106	70-130			
3-Nitrotoluene [2C]	423	100	ug/kg wet	400.0		106	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711010 - EPA 3511										
LCS (K711010-BS1)				Prepared: 11/07/2017 Analyzed: 11/07/2017 17:06						
4-Nitrotoluene	434	100	ug/kg wet	400.0		109	70-130			
4-Nitrotoluene [2C]	443	100	ug/kg wet	400.0		111	70-130			
Nitroglycerin	411	100	ug/kg wet	400.0		103	70-130			
Nitroglycerin [2C]	391	100	ug/kg wet	400.0		97.7	70-130			
1,3-Dinitrobenzene	425	100	ug/kg wet	400.0		106	70-130			
1,3-Dinitrobenzene [2C]	412	100	ug/kg wet	400.0		103	70-130			
2,6-Dinitrotoluene	391	100	ug/kg wet	400.0		97.9	70-130			
2,6-Dinitrotoluene [2C]	391	100	ug/kg wet	400.0		97.7	70-130			
2,4-Dinitrotoluene	399	100	ug/kg wet	400.0		99.7	70-130			
2,4-Dinitrotoluene [2C]	406	100	ug/kg wet	400.0		101	70-130			
1,3,5-Trinitrobenzene	410	100	ug/kg wet	400.0		103	70-130			
1,3,5-Trinitrobenzene [2C]	411	100	ug/kg wet	400.0		103	70-130			
2,4,6-Trinitrotoluene	398	100	ug/kg wet	400.0		99.5	70-130			
2,4,6-Trinitrotoluene [2C]	392	100	ug/kg wet	400.0		98.0	70-130			
PETN	412	100	ug/kg wet	400.0		103	70-130			
PETN [2C]	364	100	ug/kg wet	400.0		90.9	70-130			
RDX	408	100	ug/kg wet	400.0		102	70-130			
RDX [2C]	395	100	ug/kg wet	400.0		98.7	70-130			
4-Amino-2,6-dinitrotoluene	403	100	ug/kg wet	400.0		101	70-130			
4-Amino-2,6-dinitrotoluene [2C]	397	100	ug/kg wet	400.0		99.3	70-130			
3,5-Dinitroaniline	408	100	ug/kg wet	400.0		102	70-130			
3,5-Dinitroaniline [2C]	426	100	ug/kg wet	400.0		107	70-130			
2-Amino-4,6-dinitrotoluene	403	100	ug/kg wet	400.0		101	70-130			
2-Amino-4,6-dinitrotoluene [2C]	401	100	ug/kg wet	400.0		100	70-130			
Tetryl	425	100	ug/kg wet	400.0		106	70-130			
Tetryl [2C]	383	100	ug/kg wet	400.0		95.7	70-130			
HMX	361	100	ug/kg wet	400.0		90.3	70-130			
HMX [2C]	382	100	ug/kg wet	400.0		95.6	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*401*		*ug/kg wet*	*400.0*		*100*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*391*		*ug/kg wet*	*400.0*		*97.7*	*60-140*			
Matrix Spike (K711010-MS1)	**Source: K174502-05**			Prepared: 11/07/2017 Analyzed: 11/07/2017 19:40						
Nitrobenzene	470	110	ug/kg dry	443.6	ND	106	70-130			
Nitrobenzene [2C]	444	110	ug/kg dry	443.6	ND	100	70-130			
2-Nitrotoluene	480	110	ug/kg dry	443.6	ND	108	70-130			
2-Nitrotoluene [2C]	453	110	ug/kg dry	443.6	ND	102	70-130			
3-Nitrotoluene	471	110	ug/kg dry	443.6	ND	106	70-130			
3-Nitrotoluene [2C]	468	110	ug/kg dry	443.6	ND	105	70-130			
4-Nitrotoluene	480	110	ug/kg dry	443.6	ND	108	70-130			
4-Nitrotoluene [2C]	487	110	ug/kg dry	443.6	ND	110	70-130			
Nitroglycerin	461	110	ug/kg dry	443.6	ND	104	70-130			
Nitroglycerin [2C]	432	110	ug/kg dry	443.6	ND	97.4	70-130			
1,3-Dinitrobenzene	469	110	ug/kg dry	443.6	ND	106	70-130			
1,3-Dinitrobenzene [2C]	473	110	ug/kg dry	443.6	ND	107	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711010 - EPA 3511										
Matrix Spike (K711010-MS1)	**Source: K174502-05**			Prepared: 11/07/2017 Analyzed: 11/07/2017 19:40						
2,6-Dinitrotoluene	435	110	ug/kg dry	443.6	ND	98.0	70-130			
2,6-Dinitrotoluene [2C]	435	110	ug/kg dry	443.6	ND	98.1	70-130			
2,4-Dinitrotoluene	452	110	ug/kg dry	443.6	ND	102	70-130			
2,4-Dinitrotoluene [2C]	448	110	ug/kg dry	443.6	ND	101	70-130			
1,3,5-Trinitrobenzene	466	110	ug/kg dry	443.6	ND	105	70-130			
1,3,5-Trinitrobenzene [2C]	449	110	ug/kg dry	443.6	ND	101	70-130			
2,4,6-Trinitrotoluene	459	110	ug/kg dry	443.6	10.0	101	70-130			
2,4,6-Trinitrotoluene [2C]	443	110	ug/kg dry	443.6	10.6	97.4	70-130			
PETN	450	110	ug/kg dry	443.6	ND	102	70-130			
PETN [2C]	408	110	ug/kg dry	443.6	ND	92.0	70-130			
RDX	451	110	ug/kg dry	443.6	ND	102	70-130			
RDX [2C]	433	110	ug/kg dry	443.6	5.98	96.2	70-130			
4-Amino-2,6-dinitrotoluene	445	110	ug/kg dry	443.6	ND	100	70-130			
4-Amino-2,6-dinitrotoluene [2C]	444	110	ug/kg dry	443.6	ND	100	70-130			
3,5-Dinitroaniline	456	110	ug/kg dry	443.6	3.46	102	70-130			
3,5-Dinitroaniline [2C]	482	110	ug/kg dry	443.6	ND	109	70-130			
2-Amino-4,6-dinitrotoluene	439	110	ug/kg dry	443.6	ND	98.9	70-130			
2-Amino-4,6-dinitrotoluene [2C]	445	110	ug/kg dry	443.6	ND	100	70-130			
Tetryl	482	110	ug/kg dry	443.6	ND	109	70-130			
Tetryl [2C]	431	110	ug/kg dry	443.6	ND	97.1	70-130			
HMX	295	110	ug/kg dry	443.6	ND	66.4	70-130			M
HMX [2C]	272	110	ug/kg dry	443.6	ND	61.4	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*443*		*ug/kg dry*	*443.6*		*99.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*431*		*ug/kg dry*	*443.6*		*97.3*	*60-140*			
Matrix Spike (K711010-MS2)	**Source: K174502-09**			Prepared: 11/07/2017 Analyzed: 11/07/2017 22:12						
Nitrobenzene	493	110	ug/kg dry	446.4	ND	110	70-130			
Nitrobenzene [2C]	437	110	ug/kg dry	446.4	ND	98.0	70-130			
2-Nitrotoluene	500	110	ug/kg dry	446.4	ND	112	70-130			
2-Nitrotoluene [2C]	445	110	ug/kg dry	446.4	ND	99.7	70-130			
3-Nitrotoluene	494	110	ug/kg dry	446.4	ND	111	70-130			
3-Nitrotoluene [2C]	460	110	ug/kg dry	446.4	ND	103	70-130			
4-Nitrotoluene	507	110	ug/kg dry	446.4	ND	113	70-130			
4-Nitrotoluene [2C]	482	110	ug/kg dry	446.4	ND	108	70-130			
Nitroglycerin	483	110	ug/kg dry	446.4	ND	108	70-130			
Nitroglycerin [2C]	417	110	ug/kg dry	446.4	ND	93.3	70-130			
1,3-Dinitrobenzene	491	110	ug/kg dry	446.4	ND	110	70-130			
1,3-Dinitrobenzene [2C]	456	110	ug/kg dry	446.4	2.55	102	70-130			
2,6-Dinitrotoluene	458	110	ug/kg dry	446.4	ND	103	70-130			
2,6-Dinitrotoluene [2C]	434	110	ug/kg dry	446.4	ND	97.2	70-130			
2,4-Dinitrotoluene	467	110	ug/kg dry	446.4	2.66	104	70-130			
2,4-Dinitrotoluene [2C]	446	110	ug/kg dry	446.4	2.24	99.4	70-130			
1,3,5-Trinitrobenzene	478	110	ug/kg dry	446.4	ND	107	70-130			
1,3,5-Trinitrobenzene [2C]	452	110	ug/kg dry	446.4	ND	101	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711010 - EPA 3511										
Matrix Spike (K711010-MS2)	**Source: K174502-09**			Prepared: 11/07/2017 Analyzed: 11/07/2017 22:12						
2,4,6-Trinitrotoluene	469	110	ug/kg dry	446.4	11.4	103	70-130			
2,4,6-Trinitrotoluene [2C]	447	110	ug/kg dry	446.4	12.4	97.4	70-130			
PETN	473	110	ug/kg dry	446.4	ND	106	70-130			
PETN [2C]	407	110	ug/kg dry	446.4	ND	91.1	70-130			
RDX	475	110	ug/kg dry	446.4	ND	106	70-130			
RDX [2C]	440	110	ug/kg dry	446.4	6.13	97.2	70-130			
4-Amino-2,6-dinitrotoluene	464	110	ug/kg dry	446.4	3.61	103	70-130			
4-Amino-2,6-dinitrotoluene [2C]	448	110	ug/kg dry	446.4	2.16	99.8	70-130			
3,5-Dinitroaniline	464	110	ug/kg dry	446.4	ND	104	70-130			
3,5-Dinitroaniline [2C]	475	110	ug/kg dry	446.4	ND	106	70-130			
2-Amino-4,6-dinitrotoluene	464	110	ug/kg dry	446.4	3.87	103	70-130			
2-Amino-4,6-dinitrotoluene [2C]	454	110	ug/kg dry	446.4	ND	102	70-130			
Tetryl	488	110	ug/kg dry	446.4	ND	109	70-130			
Tetryl [2C]	443	110	ug/kg dry	446.4	ND	99.2	70-130			
HMX	187	110	ug/kg dry	446.4	ND	41.9	70-130			M
HMX [2C]	223	110	ug/kg dry	446.4	ND	49.8	70-130			M
Surrogate: 2,2'-Dinitrobiphenyl	*472*		*ug/kg dry*	*446.4*		*106*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*441*		*ug/kg dry*	*446.4*		*98.8*	*60-140*			
Matrix Spike Dup (K711010-MSD1)	**Source: K174502-05**			Prepared: 11/07/2017 Analyzed: 11/07/2017 20:02						
Nitrobenzene	480	110	ug/kg dry	443.6	ND	108	70-130	2.19	20	
Nitrobenzene [2C]	444	110	ug/kg dry	443.6	ND	100	70-130	0.0480	20	
2-Nitrotoluene	493	110	ug/kg dry	443.6	ND	111	70-130	2.50	20	
2-Nitrotoluene [2C]	451	110	ug/kg dry	443.6	ND	102	70-130	0.477	20	
3-Nitrotoluene	481	110	ug/kg dry	443.6	ND	108	70-130	2.01	20	
3-Nitrotoluene [2C]	466	110	ug/kg dry	443.6	ND	105	70-130	0.390	20	
4-Nitrotoluene	494	110	ug/kg dry	443.6	ND	111	70-130	2.81	20	
4-Nitrotoluene [2C]	490	110	ug/kg dry	443.6	ND	111	70-130	0.744	20	
Nitroglycerin	474	110	ug/kg dry	443.6	ND	107	70-130	2.61	20	
Nitroglycerin [2C]	431	110	ug/kg dry	443.6	ND	97.1	70-130	0.236	20	
1,3-Dinitrobenzene	471	110	ug/kg dry	443.6	ND	106	70-130	0.472	20	
1,3-Dinitrobenzene [2C]	462	110	ug/kg dry	443.6	ND	104	70-130	2.34	20	
2,6-Dinitrotoluene	440	110	ug/kg dry	443.6	ND	99.1	70-130	1.08	20	
2,6-Dinitrotoluene [2C]	433	110	ug/kg dry	443.6	ND	97.5	70-130	0.542	20	
2,4-Dinitrotoluene	453	110	ug/kg dry	443.6	ND	102	70-130	0.176	20	
2,4-Dinitrotoluene [2C]	447	110	ug/kg dry	443.6	ND	101	70-130	0.325	20	
1,3,5-Trinitrobenzene	458	110	ug/kg dry	443.6	ND	103	70-130	1.79	20	
1,3,5-Trinitrobenzene [2C]	450	110	ug/kg dry	443.6	ND	101	70-130	0.329	20	
2,4,6-Trinitrotoluene	448	110	ug/kg dry	443.6	10.0	98.8	70-130	2.45	20	
2,4,6-Trinitrotoluene [2C]	443	110	ug/kg dry	443.6	10.6	97.5	70-130	0.0467	20	
PETN	462	110	ug/kg dry	443.6	ND	104	70-130	2.57	20	
PETN [2C]	397	110	ug/kg dry	443.6	ND	89.5	70-130	2.85	20	
RDX	447	110	ug/kg dry	443.6	ND	101	70-130	0.844	20	
RDX [2C]	422	110	ug/kg dry	443.6	5.98	93.9	70-130	2.46	20	

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Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711010 - EPA 3511										
Matrix Spike Dup (K711010-MSD1)	**Source: K174502-05**			Prepared: 11/07/2017 Analyzed: 11/07/2017 20:02						
4-Amino-2,6-dinitrotoluene	448	110	ug/kg dry	443.6	ND	101	70-130	0.638	20	
4-Amino-2,6-dinitrotoluene [2C]	428	110	ug/kg dry	443.6	ND	96.4	70-130	3.81	20	
3,5-Dinitroaniline	450	110	ug/kg dry	443.6	3.46	101	70-130	1.48	20	
3,5-Dinitroaniline [2C]	451	110	ug/kg dry	443.6	ND	102	70-130	6.60	20	
2-Amino-4,6-dinitrotoluene	445	110	ug/kg dry	443.6	ND	100	70-130	1.44	20	
2-Amino-4,6-dinitrotoluene [2C]	442	110	ug/kg dry	443.6	ND	99.5	70-130	0.739	20	
Tetryl	470	110	ug/kg dry	443.6	ND	106	70-130	2.37	20	
Tetryl [2C]	422	110	ug/kg dry	443.6	ND	95.1	70-130	2.06	20	
HMX	266	110	ug/kg dry	443.6	ND	59.9	70-130	10.2	20	M
HMX [2C]	177	110	ug/kg dry	443.6	ND	40.0	70-130	42.3	20	M, X
Surrogate: 2,2'-Dinitrobiphenyl	*450*		*ug/kg dry*	*443.6*		*101*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*429*		*ug/kg dry*	*443.6*		*96.8*	*60-140*			
Matrix Spike Dup (K711010-MSD2)	**Source: K174502-09**			Prepared: 11/07/2017 Analyzed: 11/07/2017 22:34						
Nitrobenzene	471	110	ug/kg dry	446.4	ND	105	70-130	4.71	20	
Nitrobenzene [2C]	435	110	ug/kg dry	446.4	ND	97.3	70-130	0.628	20	
2-Nitrotoluene	481	110	ug/kg dry	446.4	ND	108	70-130	3.88	20	
2-Nitrotoluene [2C]	442	110	ug/kg dry	446.4	ND	99.1	70-130	0.581	20	
3-Nitrotoluene	472	110	ug/kg dry	446.4	ND	106	70-130	4.55	20	
3-Nitrotoluene [2C]	461	110	ug/kg dry	446.4	ND	103	70-130	0.0921	20	
4-Nitrotoluene	489	110	ug/kg dry	446.4	ND	110	70-130	3.52	20	
4-Nitrotoluene [2C]	480	110	ug/kg dry	446.4	ND	108	70-130	0.374	20	
Nitroglycerin	475	110	ug/kg dry	446.4	ND	106	70-130	1.58	20	
Nitroglycerin [2C]	412	110	ug/kg dry	446.4	ND	92.2	70-130	1.24	20	
1,3-Dinitrobenzene	475	110	ug/kg dry	446.4	ND	106	70-130	3.22	20	
1,3-Dinitrobenzene [2C]	472	110	ug/kg dry	446.4	2.55	105	70-130	3.63	20	
2,6-Dinitrotoluene	440	110	ug/kg dry	446.4	ND	98.6	70-130	4.10	20	
2,6-Dinitrotoluene [2C]	432	110	ug/kg dry	446.4	ND	96.8	70-130	0.417	20	
2,4-Dinitrotoluene	451	110	ug/kg dry	446.4	2.66	100	70-130	3.40	20	
2,4-Dinitrotoluene [2C]	450	110	ug/kg dry	446.4	2.24	100	70-130	0.804	20	
1,3,5-Trinitrobenzene	460	110	ug/kg dry	446.4	ND	103	70-130	3.71	20	
1,3,5-Trinitrobenzene [2C]	452	110	ug/kg dry	446.4	ND	101	70-130	0.0623	20	
2,4,6-Trinitrotoluene	455	110	ug/kg dry	446.4	11.4	99.3	70-130	3.14	20	
2,4,6-Trinitrotoluene [2C]	445	110	ug/kg dry	446.4	12.4	97.0	70-130	0.363	20	
PETN	461	110	ug/kg dry	446.4	ND	103	70-130	2.62	20	
PETN [2C]	400	110	ug/kg dry	446.4	ND	89.6	70-130	1.60	20	
RDX	462	110	ug/kg dry	446.4	ND	103	70-130	2.79	20	
RDX [2C]	438	110	ug/kg dry	446.4	6.13	96.8	70-130	0.439	20	
4-Amino-2,6-dinitrotoluene	457	110	ug/kg dry	446.4	3.61	101	70-130	1.65	20	
4-Amino-2,6-dinitrotoluene [2C]	440	110	ug/kg dry	446.4	2.16	98.0	70-130	1.79	20	
3,5-Dinitroaniline	457	110	ug/kg dry	446.4	ND	102	70-130	1.60	20	
3,5-Dinitroaniline [2C]	473	110	ug/kg dry	446.4	ND	106	70-130	0.555	20	
2-Amino-4,6-dinitrotoluene	455	110	ug/kg dry	446.4	3.87	101	70-130	1.96	20	
2-Amino-4,6-dinitrotoluene [2C]	445	110	ug/kg dry	446.4	ND	99.6	70-130	1.99	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711010 - EPA 3511										
Matrix Spike Dup (K711010-MSD2)	**Source: K174502-09**			Prepared: 11/07/2017 Analyzed: 11/07/2017 22:34						
Tetryl	474	110	ug/kg dry	446.4	ND	106	70-130	3.07	20	
Tetryl [2C]	430	110	ug/kg dry	446.4	ND	96.3	70-130	2.94	20	
HMX	181	110	ug/kg dry	446.4	ND	40.6	70-130	3.13	20	M
HMX [2C]	217	110	ug/kg dry	446.4	ND	48.6	70-130	2.54	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*458*		*ug/kg dry*	*446.4*		*103*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*441*		*ug/kg dry*	*446.4*		*98.8*	*60-140*			
Batch K711012 - EPA 3511										
Blank (K711012-BLK1)				Prepared: 11/08/2017 Analyzed: 11/08/2017 16:30						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711012 - EPA 3511										
Blank (K711012-BLK1)				Prepared: 11/08/2017 Analyzed: 11/08/2017 16:30						
Surrogate: 2,2´-Dinitrobiphenyl	*386*		*ug/kg wet*	*400.0*		*96.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*373*		*ug/kg wet*	*400.0*		*93.3*	*60-140*			
LCS (K711012-BS1)				Prepared: 11/08/2017 Analyzed: 11/08/2017 16:07						
Nitrobenzene	418	100	ug/kg wet	400.0		104	70-130			
Nitrobenzene [2C]	413	100	ug/kg wet	400.0		103	70-130			
2-Nitrotoluene	422	100	ug/kg wet	400.0		105	70-130			
2-Nitrotoluene [2C]	411	100	ug/kg wet	400.0		103	70-130			
3-Nitrotoluene	404	100	ug/kg wet	400.0		101	70-130			
3-Nitrotoluene [2C]	422	100	ug/kg wet	400.0		106	70-130			
4-Nitrotoluene	425	100	ug/kg wet	400.0		106	70-130			
4-Nitrotoluene [2C]	443	100	ug/kg wet	400.0		111	70-130			
Nitroglycerin	393	100	ug/kg wet	400.0		98.2	70-130			
Nitroglycerin [2C]	386	100	ug/kg wet	400.0		96.5	70-130			
1,3-Dinitrobenzene	417	100	ug/kg wet	400.0		104	70-130			
1,3-Dinitrobenzene [2C]	502	100	ug/kg wet	400.0		126	70-130			
2,6-Dinitrotoluene	389	100	ug/kg wet	400.0		97.3	70-130			
2,6-Dinitrotoluene [2C]	398	100	ug/kg wet	400.0		99.5	70-130			
2,4-Dinitrotoluene	400	100	ug/kg wet	400.0		100	70-130			
2,4-Dinitrotoluene [2C]	414	100	ug/kg wet	400.0		103	70-130			
1,3,5-Trinitrobenzene	409	100	ug/kg wet	400.0		102	70-130			
1,3,5-Trinitrobenzene [2C]	412	100	ug/kg wet	400.0		103	70-130			
2,4,6-Trinitrotoluene	395	100	ug/kg wet	400.0		98.9	70-130			
2,4,6-Trinitrotoluene [2C]	396	100	ug/kg wet	400.0		99.1	70-130			
PETN	403	100	ug/kg wet	400.0		101	70-130			
PETN [2C]	356	100	ug/kg wet	400.0		89.1	70-130			
RDX	413	100	ug/kg wet	400.0		103	70-130			
RDX [2C]	399	100	ug/kg wet	400.0		99.6	70-130			
4-Amino-2,6-dinitrotoluene	394	100	ug/kg wet	400.0		98.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	413	100	ug/kg wet	400.0		103	70-130			
3,5-Dinitroaniline	418	100	ug/kg wet	400.0		105	70-130			
3,5-Dinitroaniline [2C]	452	100	ug/kg wet	400.0		113	70-130			
2-Amino-4,6-dinitrotoluene	397	100	ug/kg wet	400.0		99.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	414	100	ug/kg wet	400.0		103	70-130			
Tetryl	426	100	ug/kg wet	400.0		106	70-130			
Tetryl [2C]	391	100	ug/kg wet	400.0		97.7	70-130			
HMX	438	100	ug/kg wet	400.0		110	70-130			
HMX [2C]	373	100	ug/kg wet	400.0		93.1	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*396*		*ug/kg wet*	*400.0*		*98.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*398*		*ug/kg wet*	*400.0*		*99.5*	*60-140*			
Matrix Spike (K711012-MS1)	**Source: K174504-21**			Prepared: 11/08/2017 Analyzed: 11/09/2017 00:51						
Nitrobenzene	466	110	ug/kg dry	421.3	ND	111	70-130			
Nitrobenzene [2C]	486	110	ug/kg dry	421.3	ND	115	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711012 - EPA 3511										
Matrix Spike (K711012-MS1)	**Source: K174504-21**			Prepared: 11/08/2017 Analyzed: 11/09/2017 00:51						
2-Nitrotoluene	473	110	ug/kg dry	421.3	ND	112	70-130			
2-Nitrotoluene [2C]	487	110	ug/kg dry	421.3	ND	116	70-130			
3-Nitrotoluene	463	110	ug/kg dry	421.3	ND	110	70-130			
3-Nitrotoluene [2C]	507	110	ug/kg dry	421.3	ND	120	70-130			
4-Nitrotoluene	479	110	ug/kg dry	421.3	ND	114	70-130			
4-Nitrotoluene [2C]	533	110	ug/kg dry	421.3	ND	126	70-130			
Nitroglycerin	439	110	ug/kg dry	421.3	ND	104	70-130			
Nitroglycerin [2C]	457	110	ug/kg dry	421.3	ND	109	70-130			
1,3-Dinitrobenzene	459	110	ug/kg dry	421.3	ND	109	70-130			
1,3-Dinitrobenzene [2C]	557	110	ug/kg dry	421.3	ND	132	70-130			M
2,6-Dinitrotoluene	430	110	ug/kg dry	421.3	ND	102	70-130			
2,6-Dinitrotoluene [2C]	466	110	ug/kg dry	421.3	0.650	110	70-130			
2,4-Dinitrotoluene	442	110	ug/kg dry	421.3	ND	105	70-130			
2,4-Dinitrotoluene [2C]	498	110	ug/kg dry	421.3	ND	118	70-130			
1,3,5-Trinitrobenzene	446	110	ug/kg dry	421.3	ND	106	70-130			
1,3,5-Trinitrobenzene [2C]	474	110	ug/kg dry	421.3	ND	113	70-130			
2,4,6-Trinitrotoluene	434	110	ug/kg dry	421.3	ND	103	70-130			
2,4,6-Trinitrotoluene [2C]	463	110	ug/kg dry	421.3	ND	110	70-130			
PETN	427	110	ug/kg dry	421.3	ND	101	70-130			
PETN [2C]	411	110	ug/kg dry	421.3	ND	97.6	70-130			
RDX	453	110	ug/kg dry	421.3	ND	108	70-130			
RDX [2C]	482	110	ug/kg dry	421.3	6.03	113	70-130			
4-Amino-2,6-dinitrotoluene	436	110	ug/kg dry	421.3	ND	103	70-130			
4-Amino-2,6-dinitrotoluene [2C]	487	110	ug/kg dry	421.3	ND	116	70-130			
3,5-Dinitroaniline	444	110	ug/kg dry	421.3	7.21	104	70-130			
3,5-Dinitroaniline [2C]	534	110	ug/kg dry	421.3	ND	127	70-130			
2-Amino-4,6-dinitrotoluene	433	110	ug/kg dry	421.3	ND	103	70-130			
2-Amino-4,6-dinitrotoluene [2C]	496	110	ug/kg dry	421.3	ND	118	70-130			
Tetryl	463	110	ug/kg dry	421.3	ND	110	70-130			
Tetryl [2C]	481	110	ug/kg dry	421.3	ND	114	70-130			
HMX	175	110	ug/kg dry	421.3	ND	41.6	70-130			M
HMX [2C]	176	110	ug/kg dry	421.3	ND	41.8	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*439*		*ug/kg dry*	*421.3*		*104*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*476*		*ug/kg dry*	*421.3*		*113*	*60-140*			
Matrix Spike Dup (K711012-MSD1)	**Source: K174504-21**			Prepared: 11/08/2017 Analyzed: 11/09/2017 01:13						
Nitrobenzene	502	110	ug/kg dry	421.3	ND	119	70-130	7.46	20	
Nitrobenzene [2C]	424	110	ug/kg dry	421.3	ND	101	70-130	13.6	20	
2-Nitrotoluene	514	110	ug/kg dry	421.3	ND	122	70-130	8.41	20	
2-Nitrotoluene [2C]	425	110	ug/kg dry	421.3	ND	101	70-130	13.6	20	
3-Nitrotoluene	500	110	ug/kg dry	421.3	ND	119	70-130	7.72	20	
3-Nitrotoluene [2C]	445	110	ug/kg dry	421.3	ND	106	70-130	13.1	20	
4-Nitrotoluene	518	110	ug/kg dry	421.3	ND	123	70-130	7.80	20	
4-Nitrotoluene [2C]	468	110	ug/kg dry	421.3	ND	111	70-130	12.9	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711012 - EPA 3511										
Matrix Spike Dup (K711012-MSD1)	**Source: K174504-21**			Prepared: 11/08/2017 Analyzed: 11/09/2017 01:13						
Nitroglycerin	470	110	ug/kg dry	421.3	ND	112	70-130	6.79	20	
Nitroglycerin [2C]	383	110	ug/kg dry	421.3	ND	90.9	70-130	17.7	20	
1,3-Dinitrobenzene	490	110	ug/kg dry	421.3	ND	116	70-130	6.50	20	
1,3-Dinitrobenzene [2C]	469	110	ug/kg dry	421.3	ND	111	70-130	17.2	20	
2,6-Dinitrotoluene	463	110	ug/kg dry	421.3	ND	110	70-130	7.43	20	
2,6-Dinitrotoluene [2C]	413	110	ug/kg dry	421.3	0.650	97.9	70-130	12.1	20	
2,4-Dinitrotoluene	474	110	ug/kg dry	421.3	ND	112	70-130	6.86	20	
2,4-Dinitrotoluene [2C]	431	110	ug/kg dry	421.3	ND	102	70-130	14.4	20	
1,3,5-Trinitrobenzene	469	110	ug/kg dry	421.3	ND	111	70-130	4.90	20	
1,3,5-Trinitrobenzene [2C]	407	110	ug/kg dry	421.3	ND	96.6	70-130	15.3	20	
2,4,6-Trinitrotoluene	459	110	ug/kg dry	421.3	ND	109	70-130	5.58	20	
2,4,6-Trinitrotoluene [2C]	406	110	ug/kg dry	421.3	ND	96.4	70-130	13.1	20	
PETN	439	110	ug/kg dry	421.3	ND	104	70-130	2.78	20	
PETN [2C]	351	110	ug/kg dry	421.3	ND	83.4	70-130	15.7	20	
RDX	435	110	ug/kg dry	421.3	ND	103	70-130	3.95	20	
RDX [2C]	389	110	ug/kg dry	421.3	6.03	90.8	70-130	21.7	20	X
4-Amino-2,6-dinitrotoluene	441	110	ug/kg dry	421.3	ND	105	70-130	1.27	20	
4-Amino-2,6-dinitrotoluene [2C]	404	110	ug/kg dry	421.3	ND	95.9	70-130	18.6	20	
3,5-Dinitroaniline	438	110	ug/kg dry	421.3	7.21	102	70-130	1.31	20	
3,5-Dinitroaniline [2C]	441	110	ug/kg dry	421.3	ND	105	70-130	19.2	20	
2-Amino-4,6-dinitrotoluene	433	110	ug/kg dry	421.3	ND	103	70-130	0.203	20	
2-Amino-4,6-dinitrotoluene [2C]	404	110	ug/kg dry	421.3	ND	96.0	70-130	20.3	20	X
Tetryl	453	110	ug/kg dry	421.3	ND	108	70-130	2.26	20	
Tetryl [2C]	383	110	ug/kg dry	421.3	ND	90.9	70-130	22.6	20	X
HMX	126	110	ug/kg dry	421.3	ND	29.9	70-130	32.7	20	M, X
HMX [2C]	91.8	110	ug/kg dry	421.3	ND	21.8	70-130	62.8	20	M, X
Surrogate: 2,2'-Dinitrobiphenyl	*447*		*ug/kg dry*	*421.3*		*106*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*409*		*ug/kg dry*	*421.3*		*97.0*	*60-140*			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711014 - EPA 3511										
Blank (K711014-BLK1)				Prepared: 11/08/2017 Analyzed: 11/09/2017 02:17						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*426*		*ug/kg wet*	*400.0*		*106*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*389*		*ug/kg wet*	*400.0*		*97.2*	*60-140*			
LCS (K711014-BS1)				Prepared: 11/08/2017 Analyzed: 11/09/2017 01:56						
Nitrobenzene	422	100	ug/kg wet	400.0		106	70-130			
Nitrobenzene [2C]	399	100	ug/kg wet	400.0		99.8	70-130			
2-Nitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
2-Nitrotoluene [2C]	402	100	ug/kg wet	400.0		100	70-130			
3-Nitrotoluene	420	100	ug/kg wet	400.0		105	70-130			
3-Nitrotoluene [2C]	421	100	ug/kg wet	400.0		105	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711014 - EPA 3511										
LCS (K711014-BS1)				Prepared: 11/08/2017 Analyzed: 11/09/2017 01:56						
4-Nitrotoluene	438	100	ug/kg wet	400.0		109	70-130			
4-Nitrotoluene [2C]	443	100	ug/kg wet	400.0		111	70-130			
Nitroglycerin	408	100	ug/kg wet	400.0		102	70-130			
Nitroglycerin [2C]	375	100	ug/kg wet	400.0		93.6	70-130			
1,3-Dinitrobenzene	427	100	ug/kg wet	400.0		107	70-130			
1,3-Dinitrobenzene [2C]	465	100	ug/kg wet	400.0		116	70-130			
2,6-Dinitrotoluene	397	100	ug/kg wet	400.0		99.2	70-130			
2,6-Dinitrotoluene [2C]	391	100	ug/kg wet	400.0		97.8	70-130			
2,4-Dinitrotoluene	412	100	ug/kg wet	400.0		103	70-130			
2,4-Dinitrotoluene [2C]	412	100	ug/kg wet	400.0		103	70-130			
1,3,5-Trinitrobenzene	426	100	ug/kg wet	400.0		107	70-130			
1,3,5-Trinitrobenzene [2C]	408	100	ug/kg wet	400.0		102	70-130			
2,4,6-Trinitrotoluene	404	100	ug/kg wet	400.0		101	70-130			
2,4,6-Trinitrotoluene [2C]	391	100	ug/kg wet	400.0		97.8	70-130			
PETN	404	100	ug/kg wet	400.0		101	70-130			
PETN [2C]	362	100	ug/kg wet	400.0		90.6	70-130			
RDX	416	100	ug/kg wet	400.0		104	70-130			
RDX [2C]	399	100	ug/kg wet	400.0		99.7	70-130			
4-Amino-2,6-dinitrotoluene	402	100	ug/kg wet	400.0		101	70-130			
4-Amino-2,6-dinitrotoluene [2C]	397	100	ug/kg wet	400.0		99.2	70-130			
3,5-Dinitroaniline	408	100	ug/kg wet	400.0		102	70-130			
3,5-Dinitroaniline [2C]	428	100	ug/kg wet	400.0		107	70-130			
2-Amino-4,6-dinitrotoluene	402	100	ug/kg wet	400.0		100	70-130			
2-Amino-4,6-dinitrotoluene [2C]	408	100	ug/kg wet	400.0		102	70-130			
Tetryl	422	100	ug/kg wet	400.0		106	70-130			
Tetryl [2C]	383	100	ug/kg wet	400.0		95.6	70-130			
HMX	197	100	ug/kg wet	400.0		49.2	70-130			
HMX [2C]	207	100	ug/kg wet	400.0		51.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*417*		*ug/kg wet*	*400.0*		*104*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*413*		*ug/kg wet*	*400.0*		*103*	*60-140*			
Matrix Spike (K711014-MS1)	**Source: K174504-25**			Prepared: 11/08/2017 Analyzed: 11/09/2017 03:43						
Nitrobenzene	543	120	ug/kg dry	490.7	ND	111	70-130			
Nitrobenzene [2C]	486	120	ug/kg dry	490.7	4.95	98.0	70-130			
2-Nitrotoluene	547	120	ug/kg dry	490.7	ND	112	70-130			
2-Nitrotoluene [2C]	493	120	ug/kg dry	490.7	ND	100	70-130			
3-Nitrotoluene	540	120	ug/kg dry	490.7	ND	110	70-130			
3-Nitrotoluene [2C]	514	120	ug/kg dry	490.7	ND	105	70-130			
4-Nitrotoluene	558	120	ug/kg dry	490.7	ND	114	70-130			
4-Nitrotoluene [2C]	543	120	ug/kg dry	490.7	ND	111	70-130			
Nitroglycerin	528	120	ug/kg dry	490.7	ND	108	70-130			
Nitroglycerin [2C]	456	120	ug/kg dry	490.7	ND	92.9	70-130			
1,3-Dinitrobenzene	541	120	ug/kg dry	490.7	ND	110	70-130			
1,3-Dinitrobenzene [2C]	527	120	ug/kg dry	490.7	ND	107	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711014 - EPA 3511										
Matrix Spike (K711014-MS1)	**Source: K174504-25**			Prepared: 11/08/2017 Analyzed: 11/09/2017 03:43						
2,6-Dinitrotoluene	503	120	ug/kg dry	490.7	ND	102	70-130			
2,6-Dinitrotoluene [2C]	476	120	ug/kg dry	490.7	ND	97.0	70-130			
2,4-Dinitrotoluene	519	120	ug/kg dry	490.7	ND	106	70-130			
2,4-Dinitrotoluene [2C]	506	120	ug/kg dry	490.7	ND	103	70-130			
1,3,5-Trinitrobenzene	537	120	ug/kg dry	490.7	ND	109	70-130			
1,3,5-Trinitrobenzene [2C]	486	120	ug/kg dry	490.7	ND	99.1	70-130			
2,4,6-Trinitrotoluene	535	120	ug/kg dry	490.7	34.4	102	70-130			
2,4,6-Trinitrotoluene [2C]	501	120	ug/kg dry	490.7	33.8	95.2	70-130			
PETN	502	120	ug/kg dry	490.7	ND	102	70-130			
PETN [2C]	415	120	ug/kg dry	490.7	ND	84.6	70-130			
RDX	516	120	ug/kg dry	490.7	ND	105	70-130			
RDX [2C]	476	120	ug/kg dry	490.7	8.70	95.2	70-130			
4-Amino-2,6-dinitrotoluene	531	120	ug/kg dry	490.7	19.4	104	70-130			
4-Amino-2,6-dinitrotoluene [2C]	494	120	ug/kg dry	490.7	17.3	97.2	70-130			
3,5-Dinitroaniline	521	120	ug/kg dry	490.7	ND	106	70-130			
3,5-Dinitroaniline [2C]	522	120	ug/kg dry	490.7	ND	106	70-130			
2-Amino-4,6-dinitrotoluene	525	120	ug/kg dry	490.7	12.3	104	70-130			
2-Amino-4,6-dinitrotoluene [2C]	505	120	ug/kg dry	490.7	ND	103	70-130			
Tetryl	537	120	ug/kg dry	490.7	ND	109	70-130			
Tetryl [2C]	475	120	ug/kg dry	490.7	ND	96.8	70-130			
HMX	200	120	ug/kg dry	490.7	ND	40.8	70-130			M
HMX [2C]	123	120	ug/kg dry	490.7	ND	25.1	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*529*		*ug/kg dry*	*490.7*		*108*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*506*		*ug/kg dry*	*490.7*		*103*	*60-140*			
Matrix Spike Dup (K711014-MSD1)	**Source: K174504-25**			Prepared: 11/08/2017 Analyzed: 11/09/2017 04:04						
Nitrobenzene	522	120	ug/kg dry	490.7	ND	106	70-130	3.93	20	
Nitrobenzene [2C]	480	120	ug/kg dry	490.7	4.95	96.9	70-130	1.13	20	
2-Nitrotoluene	529	120	ug/kg dry	490.7	ND	108	70-130	3.45	20	
2-Nitrotoluene [2C]	483	120	ug/kg dry	490.7	ND	98.5	70-130	2.02	20	
3-Nitrotoluene	519	120	ug/kg dry	490.7	ND	106	70-130	3.91	20	
3-Nitrotoluene [2C]	502	120	ug/kg dry	490.7	ND	102	70-130	2.43	20	
4-Nitrotoluene	538	120	ug/kg dry	490.7	ND	110	70-130	3.65	20	
4-Nitrotoluene [2C]	530	120	ug/kg dry	490.7	ND	108	70-130	2.27	20	
Nitroglycerin	499	120	ug/kg dry	490.7	ND	102	70-130	5.64	20	
Nitroglycerin [2C]	450	120	ug/kg dry	490.7	ND	91.6	70-130	1.35	20	
1,3-Dinitrobenzene	508	120	ug/kg dry	490.7	ND	104	70-130	6.29	20	
1,3-Dinitrobenzene [2C]	499	120	ug/kg dry	490.7	ND	102	70-130	5.52	20	
2,6-Dinitrotoluene	490	120	ug/kg dry	490.7	ND	99.8	70-130	2.57	20	
2,6-Dinitrotoluene [2C]	468	120	ug/kg dry	490.7	ND	95.5	70-130	1.58	20	
2,4-Dinitrotoluene	494	120	ug/kg dry	490.7	ND	101	70-130	4.91	20	
2,4-Dinitrotoluene [2C]	493	120	ug/kg dry	490.7	ND	100	70-130	2.74	20	
1,3,5-Trinitrobenzene	514	120	ug/kg dry	490.7	ND	105	70-130	4.46	20	
1,3,5-Trinitrobenzene [2C]	483	120	ug/kg dry	490.7	ND	98.5	70-130	0.640	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711014 - EPA 3511										
Matrix Spike Dup (K711014-MSD1)	**Source: K174504-25**			Prepared: 11/08/2017 Analyzed: 11/09/2017 04:04						
2,4,6-Trinitrotoluene	521	120	ug/kg dry	490.7	34.4	99.1	70-130	2.90	20	
2,4,6-Trinitrotoluene [2C]	500	120	ug/kg dry	490.7	33.8	94.9	70-130	0.344	20	
PETN	461	120	ug/kg dry	490.7	ND	93.8	70-130	8.66	20	
PETN [2C]	416	120	ug/kg dry	490.7	ND	84.8	70-130	0.178	20	
RDX	487	120	ug/kg dry	490.7	ND	99.2	70-130	5.89	20	
RDX [2C]	472	120	ug/kg dry	490.7	8.70	94.3	70-130	0.879	20	
4-Amino-2,6-dinitrotoluene	504	120	ug/kg dry	490.7	19.4	98.7	70-130	5.43	20	
4-Amino-2,6-dinitrotoluene [2C]	496	120	ug/kg dry	490.7	17.3	97.6	70-130	0.346	20	
3,5-Dinitroaniline	487	120	ug/kg dry	490.7	ND	99.3	70-130	6.71	20	
3,5-Dinitroaniline [2C]	525	120	ug/kg dry	490.7	ND	107	70-130	0.608	20	
2-Amino-4,6-dinitrotoluene	496	120	ug/kg dry	490.7	12.3	98.6	70-130	5.78	20	
2-Amino-4,6-dinitrotoluene [2C]	496	120	ug/kg dry	490.7	ND	101	70-130	1.76	20	
Tetryl	504	120	ug/kg dry	490.7	ND	103	70-130	6.36	20	
Tetryl [2C]	462	120	ug/kg dry	490.7	ND	94.1	70-130	2.84	20	
HMX	167	120	ug/kg dry	490.7	ND	33.9	70-130	18.3	20	M
HMX [2C]	177	120	ug/kg dry	490.7	ND	36.1	70-130	36.0	20	X, M
Surrogate: 2,2'-Dinitrobiphenyl	*510*		*ug/kg dry*	*490.7*		*104*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*492*		*ug/kg dry*	*490.7*		*100*	*60-140*			
Batch K711016 - EPA 3511										
Blank (K711016-BLK1)				Prepared: 11/09/2017 Analyzed: 11/09/2017 15:39						
Nitrobenzene	ND	0.10	ug/L							
Nitrobenzene [2C]	ND	0.10	ug/L							
2-Nitrotoluene	ND	0.10	ug/L							
2-Nitrotoluene [2C]	ND	0.10	ug/L							
3-Nitrotoluene	ND	0.10	ug/L							
3-Nitrotoluene [2C]	ND	0.10	ug/L							
4-Nitrotoluene	ND	0.10	ug/L							
4-Nitrotoluene [2C]	ND	0.10	ug/L							
Nitroglycerin	ND	0.10	ug/L							
Nitroglycerin [2C]	ND	0.10	ug/L							
1,3-Dinitrobenzene	ND	0.10	ug/L							
1,3-Dinitrobenzene [2C]	ND	0.10	ug/L							
2,6-Dinitrotoluene	ND	0.10	ug/L							
2,6-Dinitrotoluene [2C]	ND	0.10	ug/L							
2,4-Dinitrotoluene	ND	0.10	ug/L							
2,4-Dinitrotoluene [2C]	ND	0.10	ug/L							
1,3,5-Trinitrobenzene	ND	0.10	ug/L							
1,3,5-Trinitrobenzene [2C]	ND	0.10	ug/L							
2,4,6-Trinitrotoluene	ND	0.10	ug/L							
2,4,6-Trinitrotoluene [2C]	ND	0.10	ug/L							
PETN	ND	0.10	ug/L							
PETN [2C]	ND	0.10	ug/L							

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Project: Hercules Inc. - Kenvil Works Facility
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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711016 - EPA 3511										
Blank (K711016-BLK1)				Prepared: 11/09/2017 Analyzed: 11/09/2017 15:39						
RDX	ND	0.10	ug/L							
RDX [2C]	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L							
4-Amino-2,6-dinitrotoluene [2C]	ND	0.10	ug/L							
3,5-Dinitroaniline	ND	0.10	ug/L							
3,5-Dinitroaniline [2C]	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L							
2-Amino-4,6-dinitrotoluene [2C]	ND	0.10	ug/L							
Tetryl	ND	0.10	ug/L							
Tetryl [2C]	ND	0.10	ug/L							
HMX	ND	0.10	ug/L							
HMX [2C]	ND	0.10	ug/L							
Surrogate: 2,2´-Dinitrobiphenyl	*2.61*		*ug/L*	*2.500*		*104*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.68*		*ug/L*	*2.500*		*107*	*60-140*			
LCS (K711016-BS1)				Prepared: 11/09/2017 Analyzed: 11/09/2017 15:17						
Nitrobenzene	2.35	0.10	ug/L	2.500		94.1	70-130			
Nitrobenzene [2C]	2.38	0.10	ug/L	2.500		95.2	70-130			
2-Nitrotoluene	2.54	0.10	ug/L	2.500		102	70-130			
2-Nitrotoluene [2C]	2.44	0.10	ug/L	2.500		97.5	70-130			
3-Nitrotoluene	2.45	0.10	ug/L	2.500		97.9	70-130			
3-Nitrotoluene [2C]	2.40	0.10	ug/L	2.500		96.2	70-130			
4-Nitrotoluene	2.52	0.10	ug/L	2.500		101	70-130			
4-Nitrotoluene [2C]	2.38	0.10	ug/L	2.500		95.1	70-130			
Nitroglycerin	2.65	0.10	ug/L	2.500		106	70-130			
Nitroglycerin [2C]	2.05	0.10	ug/L	2.500		81.8	70-130			
1,3-Dinitrobenzene	2.09	0.10	ug/L	2.500		83.7	70-130			
1,3-Dinitrobenzene [2C]	2.04	0.10	ug/L	2.500		81.5	70-130			
2,6-Dinitrotoluene	2.36	0.10	ug/L	2.500		94.5	70-130			
2,6-Dinitrotoluene [2C]	2.32	0.10	ug/L	2.500		92.8	70-130			
2,4-Dinitrotoluene	2.32	0.10	ug/L	2.500		92.7	70-130			
2,4-Dinitrotoluene [2C]	2.24	0.10	ug/L	2.500		89.6	70-130			
1,3,5-Trinitrobenzene	2.13	0.10	ug/L	2.500		85.3	70-130			
1,3,5-Trinitrobenzene [2C]	2.02	0.10	ug/L	2.500		80.6	70-130			
2,4,6-Trinitrotoluene	2.22	0.10	ug/L	2.500		88.9	70-130			
2,4,6-Trinitrotoluene [2C]	2.22	0.10	ug/L	2.500		89.0	70-130			
PETN	2.37	0.10	ug/L	2.500		94.8	70-130			
PETN [2C]	1.86	0.10	ug/L	2.500		74.5	70-130			
RDX	2.18	0.10	ug/L	2.500		87.1	70-130			
RDX [2C]	2.59	0.10	ug/L	2.500		104	70-130			
4-Amino-2,6-dinitrotoluene	2.32	0.10	ug/L	2.500		92.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.29	0.10	ug/L	2.500		91.7	70-130			
3,5-Dinitroaniline	2.75	0.10	ug/L	2.500		110	70-130			
3,5-Dinitroaniline [2C]	2.18	0.10	ug/L	2.500		87.0	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711016 - EPA 3511										
LCS (K711016-BS1)				Prepared: 11/09/2017 Analyzed: 11/09/2017 15:17						
2-Amino-4,6-dinitrotoluene	2.25	0.10	ug/L	2.500		90.0	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.24	0.10	ug/L	2.500		89.6	70-130			
Tetryl	2.55	0.10	ug/L	2.500		102	70-130			
Tetryl [2C]	2.27	0.10	ug/L	2.500		90.9	70-130			
HMX	2.18	0.10	ug/L	2.500		87.4	70-130			
HMX [2C]	1.85	0.10	ug/L	2.500		74.1	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*2.44*		*ug/L*	*2.500*		*97.7*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.56*		*ug/L*	*2.500*		*103*	*60-140*			
Matrix Spike (K711016-MS1)	**Source: K174503-02**			Prepared: 11/09/2017 Analyzed: 11/09/2017 16:49						
Nitrobenzene	2.41	0.10	ug/L	2.500	ND	96.5	70-130			
Nitrobenzene [2C]	2.39	0.10	ug/L	2.500	ND	95.5	70-130			
2-Nitrotoluene	2.62	0.10	ug/L	2.500	ND	105	70-130			
2-Nitrotoluene [2C]	2.46	0.10	ug/L	2.500	ND	98.4	70-130			
3-Nitrotoluene	2.53	0.10	ug/L	2.500	ND	101	70-130			
3-Nitrotoluene [2C]	2.45	0.10	ug/L	2.500	0.0555	95.8	70-130			
4-Nitrotoluene	2.57	0.10	ug/L	2.500	ND	103	70-130			
4-Nitrotoluene [2C]	2.43	0.10	ug/L	2.500	ND	97.0	70-130			
Nitroglycerin	2.74	0.10	ug/L	2.500	0.00481	109	70-130			
Nitroglycerin [2C]	2.22	0.10	ug/L	2.500	ND	88.9	70-130			
1,3-Dinitrobenzene	2.19	0.10	ug/L	2.500	0.108	83.4	70-130			
1,3-Dinitrobenzene [2C]	2.21	0.10	ug/L	2.500	ND	88.3	70-130			
2,6-Dinitrotoluene	2.45	0.10	ug/L	2.500	0.00267	97.8	70-130			
2,6-Dinitrotoluene [2C]	2.46	0.10	ug/L	2.500	ND	98.4	70-130			
2,4-Dinitrotoluene	2.43	0.10	ug/L	2.500	ND	97.1	70-130			
2,4-Dinitrotoluene [2C]	2.44	0.10	ug/L	2.500	ND	97.8	70-130			
1,3,5-Trinitrobenzene	2.24	0.10	ug/L	2.500	ND	89.4	70-130			
1,3,5-Trinitrobenzene [2C]	2.29	0.10	ug/L	2.500	ND	91.5	70-130			
2,4,6-Trinitrotoluene	2.41	0.10	ug/L	2.500	0.0413	94.9	70-130			
2,4,6-Trinitrotoluene [2C]	2.55	0.10	ug/L	2.500	0.0503	99.9	70-130			
PETN	2.43	0.10	ug/L	2.500	ND	97.3	70-130			
PETN [2C]	2.07	0.10	ug/L	2.500	0.0316	81.7	70-130			
RDX	2.41	0.10	ug/L	2.500	ND	96.2	70-130			
RDX [2C]	2.86	0.10	ug/L	2.500	ND	114	70-130			
4-Amino-2,6-dinitrotoluene	2.51	0.10	ug/L	2.500	ND	101	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.56	0.10	ug/L	2.500	0.0545	100	70-130			
3,5-Dinitroaniline	2.99	0.10	ug/L	2.500	0.815	86.8	70-130			
3,5-Dinitroaniline [2C]	2.47	0.10	ug/L	2.500	ND	98.8	70-130			
2-Amino-4,6-dinitrotoluene	2.43	0.10	ug/L	2.500	ND	97.2	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.52	0.10	ug/L	2.500	ND	101	70-130			
Tetryl	2.71	0.10	ug/L	2.500	ND	108	70-130			
Tetryl [2C]	2.54	0.10	ug/L	2.500	ND	101	70-130			
HMX	2.41	0.10	ug/L	2.500	ND	96.3	70-130			
HMX [2C]	2.15	0.10	ug/L	2.500	0.0340	84.7	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711016 - EPA 3511										
Matrix Spike (K711016-MS1)		**Source: K174503-02**		Prepared: 11/09/2017 Analyzed: 11/09/2017 16:49						
Surrogate: 2,2´-Dinitrobiphenyl	*2.55*		*ug/L*	*2.500*		*102*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.71*		*ug/L*	*2.500*		*109*	*60-140*			
Matrix Spike Dup (K711016-MSD1)		**Source: K174503-02**		Prepared: 11/09/2017 Analyzed: 11/09/2017 17:11						
Nitrobenzene	2.34	0.10	ug/L	2.500	ND	93.4	70-130	3.27	20	
Nitrobenzene [2C]	2.33	0.10	ug/L	2.500	ND	93.2	70-130	2.44	20	
2-Nitrotoluene	2.54	0.10	ug/L	2.500	ND	102	70-130	2.91	20	
2-Nitrotoluene [2C]	2.41	0.10	ug/L	2.500	ND	96.3	70-130	2.17	20	
3-Nitrotoluene	2.45	0.10	ug/L	2.500	ND	98.2	70-130	2.91	20	
3-Nitrotoluene [2C]	2.38	0.10	ug/L	2.500	0.0555	93.1	70-130	2.78	20	
4-Nitrotoluene	2.51	0.10	ug/L	2.500	ND	100	70-130	2.43	20	
4-Nitrotoluene [2C]	2.35	0.10	ug/L	2.500	ND	94.1	70-130	3.08	20	
Nitroglycerin	2.74	0.10	ug/L	2.500	0.00481	109	70-130	0.0283	20	
Nitroglycerin [2C]	2.14	0.10	ug/L	2.500	ND	85.7	70-130	3.70	20	
1,3-Dinitrobenzene	2.13	0.10	ug/L	2.500	0.108	81.1	70-130	2.74	20	
1,3-Dinitrobenzene [2C]	2.08	0.10	ug/L	2.500	ND	83.3	70-130	5.83	20	
2,6-Dinitrotoluene	2.40	0.10	ug/L	2.500	0.00267	95.7	70-130	2.16	20	
2,6-Dinitrotoluene [2C]	2.42	0.10	ug/L	2.500	ND	96.8	70-130	1.61	20	
2,4-Dinitrotoluene	2.36	0.10	ug/L	2.500	ND	94.6	70-130	2.67	20	
2,4-Dinitrotoluene [2C]	2.36	0.10	ug/L	2.500	ND	94.4	70-130	3.49	20	
1,3,5-Trinitrobenzene	2.17	0.10	ug/L	2.500	ND	86.9	70-130	2.85	20	
1,3,5-Trinitrobenzene [2C]	2.16	0.10	ug/L	2.500	ND	86.5	70-130	5.53	20	
2,4,6-Trinitrotoluene	2.32	0.10	ug/L	2.500	0.0413	91.1	70-130	4.04	20	
2,4,6-Trinitrotoluene [2C]	2.40	0.10	ug/L	2.500	0.0503	94.2	70-130	5.84	20	
PETN	2.48	0.10	ug/L	2.500	ND	99.2	70-130	1.90	20	
PETN [2C]	2.01	0.10	ug/L	2.500	0.0316	79.0	70-130	3.25	20	
RDX	2.32	0.10	ug/L	2.500	ND	93.0	70-130	3.43	20	
RDX [2C]	2.72	0.10	ug/L	2.500	ND	109	70-130	4.83	20	
4-Amino-2,6-dinitrotoluene	2.49	0.10	ug/L	2.500	ND	99.7	70-130	0.853	20	
4-Amino-2,6-dinitrotoluene [2C]	2.45	0.10	ug/L	2.500	0.0545	95.8	70-130	4.23	20	
3,5-Dinitroaniline	2.98	0.10	ug/L	2.500	0.815	86.7	70-130	0.0762	20	
3,5-Dinitroaniline [2C]	2.35	0.10	ug/L	2.500	ND	93.8	70-130	5.17	20	
2-Amino-4,6-dinitrotoluene	2.44	0.10	ug/L	2.500	ND	97.7	70-130	0.518	20	
2-Amino-4,6-dinitrotoluene [2C]	2.43	0.10	ug/L	2.500	ND	97.0	70-130	3.67	20	
Tetryl	2.66	0.10	ug/L	2.500	ND	106	70-130	1.68	20	
Tetryl [2C]	2.44	0.10	ug/L	2.500	ND	97.7	70-130	3.71	20	
HMX	2.37	0.10	ug/L	2.500	ND	94.7	70-130	1.70	20	
HMX [2C]	1.96	0.10	ug/L	2.500	0.0340	77.0	70-130	9.29	20	
Surrogate: 2,2´-Dinitrobiphenyl	*2.61*		*ug/L*	*2.500*		*105*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*2.74*		*ug/L*	*2.500*		*110*	*60-140*			

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608.221.4889 Fax

Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Classical Chemistry Parameters - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710002 - % Solids										
Duplicate (K710002-DUP1)		**Source: K174002-05**		Prepared: 10/03/2017 Analyzed: 10/04/2017 10:42						
% Solids	87.6	0.00	% by Weight		88.0			0.387	20	
Batch K710004 - % Solids										
Duplicate (K710004-DUP1)		**Source: K174003-09**		Prepared: 10/04/2017 Analyzed: 10/05/2017 12:34						
% Solids	85.6	0.00	% by Weight		84.9			0.833	20	
Batch K710007 - % Solids										
Duplicate (K710007-DUP1)		**Source: K174007-05**		Prepared: 10/05/2017 Analyzed: 10/06/2017 12:59						
% Solids	90.2	0.00	% by Weight		90.7			0.594	20	
Batch K710010 - % Solids										
Duplicate (K710010-DUP1)		**Source: K174101-03**		Prepared: 10/09/2017 Analyzed: 10/10/2017 10:50						
% Solids	89.6	0.00	% by Weight		87.9			1.88	20	
Batch K710012 - % Solids										
Duplicate (K710012-DUP1)		**Source: K174103-09**		Prepared: 10/10/2017 Analyzed: 10/11/2017 09:55						
% Solids	95.8	0.00	% by Weight		95.5			0.348	20	
Batch K710014 - % Solids										
Duplicate (K710014-DUP1)		**Source: K174104-10**		Prepared: 10/11/2017 Analyzed: 10/12/2017 09:20						
% Solids	92.1	0.00	% by Weight		91.2			0.929	20	

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Project Number: 2769

Classical Chemistry Parameters - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710016 - % Solids										
Duplicate (K710016-DUP1)		**Source: K174105-01**		Prepared: 10/12/2017 Analyzed: 10/13/2017 10:51						
% Solids	86.1	0.00	% by Weight		85.8			0.325	20	
Batch K710018 - % Solids										
Duplicate (K710018-DUP1)		**Source: K174105-22**		Prepared: 10/12/2017 Analyzed: 10/13/2017 10:45						
% Solids	84.8	0.00	% by Weight		85.5			0.835	20	
Batch K710021 - % Solids										
Duplicate (K710021-DUP1)		**Source: K174106-08**		Prepared: 10/13/2017 Analyzed: 10/14/2017 14:29						
% Solids	89.5	0.00	% by Weight		89.2			0.350	20	
Batch K710023 - % Solids										
Duplicate (K710023-DUP1)		**Source: K174201-01**		Prepared: 10/16/2017 Analyzed: 10/17/2017 11:51						
% Solids	90.5	0.00	% by Weight		90.5			0.0114	20	
Batch K710026 - % Solids										
Duplicate (K710026-DUP1)		**Source: K174201-17**		Prepared: 10/17/2017 Analyzed: 10/20/2017 10:16						
% Solids	88.3	0.00	% by Weight		89.5			1.35	20	
Batch K710028 - % Solids										
Duplicate (K710028-DUP1)		**Source: K174207-01**		Prepared: 10/18/2017 Analyzed: 10/20/2017 10:22						
% Solids	88.2	0.00	% by Weight		87.8			0.467	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Classical Chemistry Parameters - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710029 - % Solids										
Duplicate (K710029-DUP1)		**Source: K174207-11**		Prepared: 10/18/2017 Analyzed: 10/20/2017 10:36						
% Solids	87.4	0.00	% by Weight		87.5			0.0674	20	
Batch K710032 - % Solids										
Duplicate (K710032-DUP1)		**Source: K174210-01**		Prepared: 10/19/2017 Analyzed: 10/21/2017 15:22						
% Solids	88.0	0.00	% by Weight		88.8			0.893	20	
Duplicate (K710032-DUP2)		**Source: K174201-15**		Prepared: 10/19/2017 Analyzed: 10/21/2017 15:22						
% Solids	87.6	0.00	% by Weight		87.9			0.362	20	
Batch K710035 - % Solids										
Duplicate (K710035-DUP1)		**Source: K174213-01**		Prepared: 10/21/2017 Analyzed: 10/22/2017 15:50						
% Solids	93.0	0.00	% by Weight		89.2			4.17	20	
Batch K710038 - % Solids										
Duplicate (K710038-DUP1)		**Source: K174301-16**		Prepared: 10/23/2017 Analyzed: 10/24/2017 09:14						
% Solids	89.1	0.00	% by Weight		89.7			0.739	20	
Batch K710041 - % Solids										
Duplicate (K710041-DUP1)		**Source: K174301-24**		Prepared: 10/24/2017 Analyzed: 10/24/2017 22:00						
% Solids	88.9	0.00	% by Weight		89.2			0.361	20	

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Project Number: 2769

Classical Chemistry Parameters - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K710043 - % Solids										
Duplicate (K710043-DUP1)		**Source: K174305-01**		Prepared: 10/25/2017 Analyzed: 10/26/2017 13:49						
% Solids	89.3	0.00	% by Weight		89.0			0.429	20	
Batch K710046 - % Solids										
Duplicate (K710046-DUP1)		**Source: K174309-01**		Prepared: 10/26/2017 Analyzed: 10/27/2017 15:12						
% Solids	86.6	0.00	% by Weight		86.4			0.208	20	
Batch K710048 - % Solids										
Duplicate (K710048-DUP1)		**Source: K174310-04**		Prepared: 10/27/2017 Analyzed: 10/29/2017 18:56						
% Solids	86.3	0.00	% by Weight		85.5			0.937	20	
Batch K710051 - % Solids										
Duplicate (K710051-DUP1)		**Source: K174309-07**		Prepared: 10/29/2017 Analyzed: 10/30/2017 09:59						
% Solids	90.6	0.00	% by Weight		90.4			0.235	20	
Batch K710053 - % Solids										
Duplicate (K710053-DUP1)		**Source: K174401-01**		Prepared: 10/30/2017 Analyzed: 10/31/2017 11:13						
% Solids	83.4	0.00	% by Weight		84.3			1.14	20	
Duplicate (K710053-DUP2)		**Source: K174401-12**		Prepared: 10/30/2017 Analyzed: 10/31/2017 11:13						
% Solids	93.8	0.00	% by Weight		93.6			0.315	20	

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711002 - % Solids										
Duplicate (K711002-DUP1)		**Source: K174402-02**		Prepared: 11/01/2017 Analyzed: 11/03/2017 11:15						
% Solids	82.0	0.00	% by Weight		82.0			0.0338	20	
Duplicate (K711002-DUP2)		**Source: K174402-11**		Prepared: 11/01/2017 Analyzed: 11/03/2017 11:12						
% Solids	79.1	0.00	% by Weight		78.8			0.388	20	
Batch K711005 - % Solids										
Duplicate (K711005-DUP1)		**Source: K174404-04**		Prepared: 11/03/2017 Analyzed: 11/05/2017 13:19						
% Solids	91.0	0.00	% by Weight		90.6			0.423	20	
Duplicate (K711005-DUP2)		**Source: K174404-28**		Prepared: 11/03/2017 Analyzed: 11/05/2017 13:19						
% Solids	91.6	0.00	% by Weight		91.6			0.0280	20	
Batch K711007 - % Solids										
Duplicate (K711007-DUP1)		**Source: K174405-01**		Prepared: 11/04/2017 Analyzed: 11/05/2017 14:32						
% Solids	87.3	0.00	% by Weight		87.5			0.291	20	
Duplicate (K711007-DUP2)		**Source: K174405-21**		Prepared: 11/04/2017 Analyzed: 11/05/2017 14:32						
% Solids	87.9	0.00	% by Weight		88.4			0.539	20	
Batch K711009 - % Solids										
Duplicate (K711009-DUP1)		**Source: K174501-02**		Prepared: 11/06/2017 Analyzed: 11/07/2017 10:49						
% Solids	86.3	0.00	% by Weight		85.1			1.43	20	
Duplicate (K711009-DUP2)		**Source: K174501-08**		Prepared: 11/06/2017 Analyzed: 11/07/2017 10:49						
% Solids	84.4	0.00	% by Weight		84.4			0.0690	20	

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Project Number: 2769

Classical Chemistry Parameters - Quality Control

Pace Analytical - Lab #11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch K711011 - % Solids										
Duplicate (K711011-DUP1)		**Source: K174502-05**		Prepared: 11/07/2017 Analyzed: 11/08/2017 10:45						
% Solids	90.3	0.00	% by Weight		90.2			0.106	20	
Batch K711013 - % Solids										
Duplicate (K711013-DUP1)		**Source: K174504-21**		Prepared: 11/08/2017 Analyzed: 11/09/2017 12:11						
% Solids	95.5	0.00	% by Weight		94.9			0.596	20	
Batch K711015 - % Solids										
Duplicate (K711015-DUP1)		**Source: K174504-25**		Prepared: 11/08/2017 Analyzed: 11/09/2017 12:05						
% Solids	80.1	0.00	% by Weight		81.5			1.71	20	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 2769

Notes and Definitions

X	Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.
S	Surrogate recovery was outside of laboratory control limits due to an apparent matrix effect.
P	The difference in the concentrations between the primary and confirmation column was > 40%.
M1	Spike recoveries were not evaluated because of elevated levels of the spiked analyte in the parent sample.
M	The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.
LC	Resuts may be biased low because of low continuing calibration verification (CCV).
HC	Results may be biased high because of high continuing calibration verification (CCV).
DO	Diluted out.
D	Data reported from a dilution
B	Analyte is also detected in the associated method blank.
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
RPD	Relative Percent Difference

Appendix B

Chain of Custody Documentation

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CHAIN OF CUSTODY

No. 6303

Page: 1 of: 2

Lab Work Order #: K174001

Report To: Lora Stemer
Company: Kennedy / Jenks
Address 1: 214 Carnegie Center Suite 10
Address 2: Princeton, NJ 08540
E-mail Address: lora.sterner@kennedyjenks.com
Invoice To: Lora Stemer
Company: Kennedy / Jenks
Address 1: SAA
Address 2: SAA

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Stemer

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPE 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B10-01(01.0-01.5)	10/2	11:30	S	1	X							01	
TP-RD-B10-01(03.0-03.5)	10/2	11:30	S	1	X							02	
TP-RD-B10-01(04.5-05.0)	10/2	11:30	S	1	X							03	
TP-RD-B10-02(01.0-01.5)	10/2	2:30	S	1	X							04	
TP-RD-B10-02(03.0-03.5)	10/2	2:30	S	1	X							05	
TP-RD-B10-02(04.5-05.0)	10/2	2:30	S	1	X							06	
TP-RD-B10-03(01.0-01.5)	10/2	1:50	S	1	X							07	
TP-RD-B10-03(03.0-03.5)	10/2	1:50	S	1	X							08	
TP-RD-B10-03(04.5-05.0)	10/2	1:50	S	1	X							09	
TP-R-B10-2/B10-509-7(04.5-05.0)	10/2	2:50	S	1	X							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/2/17	1630	[signature]	10/2/17	1630
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6304

Lab Work Order #: K174001

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lora.sterner@kennedyjenks.com

Project Number: 1540001#36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B10-04 (01.0-01.5)	10/2	3:10	S	1	X							11	
TP-RD-B10-04 (03.0-03.5)	10/2	3:10	S	1	X							12	
TP-RD-B10-04 (04.5-05.0)	10/2	3:10	S	1	X							13	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/2/17	1630	[signature]	10/2/17	1630
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6305 Page: 1 of:

Lab Work Order #: K174002

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Report To: Lora Sterner
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A (Soil Gas 5 mL)	Comments	Lab ID	Lab Receipt Time
TP-RD-B10-05 (01.0-01.5)	10/3/17	8:20	S	1	X		01	
TP-RD-B10-05 (02.0-02.5)		8:20	S	1	X		02	
TP-RD-B10-09 (01.0-01.5)		9:15	S	1	X		03	
TP-RD-B10-12 (01.0-01.5)		9:20	S	1	X		04	
TP-RD-B10-10 (01.0-01.5)		10:00	S	3	X	MS/MSD	05	
BD100317		—	S	1	X		06	
TP-R-B10-2/B10-509-3 (01.5-02.0)	10/3/17	8:40	S	1	X		07	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Lora Sterner	10/3/17	1220		10/3/17	1220
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6306

Page: 1 of: 2

Lab Work Order #: 174003 174004

Report To: Lora Sterner
Company: Kennedy / Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lora sterner@kennedyjenks.com

Project Number: 1540001 # 36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EE VOA 8095						Comments	Lab ID	Lab Receipt Time
FB100317	10/3/17	1500	W	1	X							174004 -02	
FB100217	10/2/17	1600	W	1	X							174004 -01	
BD100317A	10/3/17	—	S	1	X							174003 -01	
TP-RD-B10-08(01.0-01.5)	10/3/17	11:06	S	1	X							-02	
TP-RD-B10-08(03.0-03.5)	↓	11:20	S	1	X							-03	
TP-RD-B10-08(05.0-05.5)	↓	11:25	S	1	X							-04	
TP-RD-B10-08(07.0-07.5)	↓	11:30	S	1	X							-05	
TP-RD-B10-08(09.0-09.5)	↓	11:35	S	1	X							-06	
TP-RD-B10-08(10.5-10.8)	↓	11:40	S	1	X							-07	
TP-RD-B10-07(01.0-01.5)	↓	14:10	S	1	X							-08	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/3/17	1508	[signature]	10/3/17	1508
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6314

Page: 2 of: 2

Lab Work Order #: 174003

Report To: Lora Sterner
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Preservation Codes
Analyses Requested

Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EE via 8015						Comments	Lab ID	Lab Receipt Time
					A								
TP-RD-B10-07(025-03.0)	10/3	14:10	S	1	X						MS/MSD	69	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/3/17	~~10~~ 1508		10/3/17	1508
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6315 Page: 1 of: 1

Lab Work Order #: KI74004 KI74005

Project Number: 54000*36 PO Number:
Project Name: Ashland Kennil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr., Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EBE via 8095	Comments	Lab ID	Lab Receipt Time
TP-RD-B10-06(01.0-01.5)	10/4/17	8:45	S	1	X		KI74005 01	
TP-RD-B10-06(03.0-03.5)		8:45	S	1	X		02	
TP-RD-B10-06(05.0-05.5)		8:45	S	1	X		03	
TP-RD-B10-06(06.0-06.5)		8:45	S	1	X		04	
TP-RD-B10-11(01.0-01.5)		9:50	S	1	X		05	
TP-RD-B10-11(03.0-03.5)		9:50	S	1	X		06	
TP-RD-B10-11(05.0-05.5)		9:50	S	1	X		07	
TP-RD-B10-11(06.0-06.5)		9:50	S	1	X		08	
FB100417	10/4/17	11:00	W	1	X		KI74004 -03	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: Date: 10/4/17 Time: 11:00 Received By: Date: 10/4/17 Time: 1100
Relinquished By: Date: Time: Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6316 Page: 1 of: 1

Lab Work Order #: K174006

Report To: Lora Stemer
Company: Kennedy Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasternerp@kennedyjenks.com

Project Number: 154000736 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Preservation Codes
Analyses Requested

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EB Encore 8095	Comments	Lab ID	Lab Receipt Time
TP-R-All-S04-1 (08.5-09.0)	10/4/17	14:05	S	1	X		01	
TP-RD-All-01 (01.0-01.5)		12:45	S	1	X		02	
TP-RD-All-01 (03.0-03.5)			S	1	X		03	
TP-RD-All-01 (05.0-05.5)			S	1	X		04	
TP-RD-All-01 (07.0-07.5)			S	1	X		05	
TP-RD-All-01 (09.0-09.5)			S	1	X		06	
TP-RD-All-01 (10.5-11.0)			S	1	X		07	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/4/17	15:15		10/4/17	1515
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6318 Page: 1 of: 1

Lab Work Order #: K174004 / K174007

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lora.sterner@kennedyjenks.com

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Eyzbury

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A	EDB via 8011						Comments	Lab ID	Lab Receipt Time
TP-R-B10-508-1(14.0-14.5)	10/5/17	9:00	S	1	X								K174007-01	
TP-R-B10-505-5(11.0-11.5)		8:15	S	1	X								-02	
TP-RD-A11-02(06.0-06.5)		10:40	S	1	X								-03	
TP-R-A11-4-2(08.5-09.0)		11:16	S	1	X								-04	
FB100517		13:00	W	3	X								K174004-04	
BD100517		-	S	1	X								K174007-05	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/5/17	14:00		10/5/17	1400
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6319 Page: 1 of: 2

Lab Work Order #: K174101

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): [X] Normal [ ] Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Kryberg

Preservation Codes
Analyses Requested

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	8260 VOC	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-01(01.0-01.5)	10/6/17	12:44	S	1	X		01	
TP-RD-B11-01(03.0-03.5)	10/6/17	12:44	S	1	X		02	
TP-RD-B11-01(04.0-04.5)	10/6/17	12:44	S	1	X	MS/MSD	03	
B11-663-06(08.5-09.0)	10/6/17	12:00	S	1	X		04	
TP-RD-A12-02(01.0-01.5)	10/6/17	10:30	S	1	X		05	
TP-RD-A12-02(02.0-02.5)	10/6/17	10:30	S	1	X		06	
TP-RD-A11-04(01.0-01.5)	10/6/17	9:15	S	1	X		07	
TP-RD-A11-04(03.0-03.5)	10/6/17	9:15	S	1	X		08	
TP-RD-A11-04(05.0-05.5)	10/6/17	9:15	S	1	X		09	
TP-RD-A11-04(07.0-07.5)	10/6/17	9:15	S	1	X		10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/6/17	14:00		10/6/17	1400
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: [ ] NA [ ] Intact [ ] Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: [ ] Y [ ] N

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CHAIN OF CUSTODY

No. 6320 Page: 2 of: 2

Lab Work Order #: KI74004 / KI74101

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A; 8260 MW 8095	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-03(01.0-01.5)	10/6/17	8:15	S	1	X		KI74101-11	
TP-RD-A11-03(03.0-03.5)		8:15	S	1	X		-12	
TP-RD-A11-03(05.0-05.5)		8:15	S	1	X		-13	
TP-RD-A11-03(07.0-07.5)		8:15	S	1	X		-14	
TP-RD-A11-03(08.5-09.0)		8:15	S	1	X		-15	
BD100617		=	S	1	X		-16	
FB100617	↓	14:00	W	1	X		KI74004-05	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/6/17	14:00		10/6/17	1400
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6325 Page: 1 of: 1

Lab Work Order #: K174102 / K174103

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Report To: Lora Stemer
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EDDs via Excel	Comments	Lab ID	Lab Receipt Time
TP-R-B10-2/B10-509-3(02.0-02.5)	10/10/17	8:30	S	1	X		01	
TP-R-B10-2/B10-509-3(03.0-03.5)		8:30	S	1	X	HOLD CFF hold 10/12/17	02	
TR-RD-B10-10(01.5-02.0)		9:15	S	1	X		03	
TP-RD-B10-10(02.5-03.0)		9:15	S	1	X	HOLD	04	
TP-RD-B10-12(01.5-02.0)		9:30	S	1	X		05	
TP-RD-B10-12(02.5-03.0)		9:30	S	1	X	HOLD OFF hold 10/12/17	06	
TP-R-A11-504-1(10.5-11.0)		11:00	S	1	X		07	
TR-R-A11-504-1(11.5-12.0)		11:00	S	1	X	HOLD OFF hold 10/12/17	08	
FB 10/10/17	10/10/17	13:20	W	1	X		K174102-01	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/10/17	13:30		10/11/17	1330
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact | Shipped Via: | Receipt Temp: | Thermometer #/ Exp. Date: | Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6327

Page: 1 of: 1

Lab Work Order #: K174102

Report To: Lora Sterner
Company: Kennedy / Jenks Consultants
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*35 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A EPE via 8095						Comments	Lab ID	Lab Receipt Time
TNT-PS-PW-1	10/11/17	1145	W	1	X							02	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/11/17	1200	[signature]	10/11/17	1200
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6326 Page: 1 of: 1

Lab Work Order #: K174103

Report To: Lora Sterner
Company: Kennedy/Jenks
Address 1: 2319 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A = EDB via 8011						Comments	Lab ID	Lab Receipt Time
TP-RD-A11-02(07.0-07.5)	10/10/17	14:00	S	1	X							09	
TP-RD-A11-02(08.0-08.5)	10/10/17	14:00	S	1	X						HOLD	10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/10/17	15:20		10/10/17	1520
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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No. 6328

Page: 1 of: 1

Lab Work Order #: K174104

Report To: Lora Sterner
Company: Kennedy Jenks
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPEng 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-C11-01 (00.5-01.0)	10/11/17	8:25	S	1	X							01	
TP-RD-C11-01 (01.0-01.5)		8:25	S	1	X							02	
TP-RD-C11-02 (00.5-01.0)		8:17	S	1	X							03	
TP-RD-C11-02 (01.0-01.5)		8:17	S	1	X							04	
TP-RD-C11-03 (00.5-01.0)		8:37	S	1	X							05	
TP-RD-C11-03 (01.0-01.5)		8:37	S	1	X							06	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/11/17	12:00	[signature]	10/11/17	1200
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6329

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Lab Work Order #: K174102 / K174104

Report To: Lora Sterner
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-A12-02A(00.5-01.0)	10/11/17	9:18	S	1	X							07	
TP-RD-A12-02A(01.0-01.5)		9:18	S	1	X							08	
TP-RD-A12-01(01.0-01.5)		9:35	S	1	X							09	
TP-RD-A12-01(03.0-03.5)		9:35	S	1	X						MS/MSD	10	
TP-RD-A12-01(05.0-05.5)		9:35	S	1	X							11	
TP-RD-A12-01(07.0-07.5)		9:35	S	1	X							12	
TP-RD-A12-01(09.0-09.5)		9:35	S	1	X							13	
TP-R-A12-1-1(09.0-09.5)		10:34	S	1	X							14	
FB101117		13:30	W	1	X							K174102 -03	
BD101117		—	S	1	X							K174104 15	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/11/17	13:45	[signature]	10/11/17	13:45
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6330 Page: 1 of: 2

Lab Work Order #: K174105

Report To: LOLA STERNER
Company: KENNEDY/JENKS
Address 1:
Address 2:
E-mail Address: LSTERNER@KENNEDYJENKS.COM

Project Number: 154001.36 PO Number:
Project Name: ASHRAM - KENVIL
Project Location (City, State): KENVIL NJ

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): SCOTT M LARSEN

Invoice To: SAA
Company:
Address 1:
Address 2:

Preservation Codes
Analyses Requested: A (8095)

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A						Comments	Lab ID	Lab Receipt Time
TP-RD-B11-02 (01.0-01.5)	10/12	11:30	SO	3	X						MS/MSD	01	
TP-RD-B11-02 (02.0-02.5)	10/12	11:35	SO	1	X						HOLD	02	
TP-RD-B11-02 (03.0-03.5)	10/12	11:40	SO	1	X						HOLD	03	
TP-RD-A11-06 (01.0-01.5)	10/12	11:45	SO	1	X							04	
TP-RD-A11-06 (03.0-03.5)	10/12	11:50	SO	1	X							05	
TP-RD-A11-06 (05.0-05.5)	10/12	11:55	SO	1	X							06	
TP-RD-A11-06 (07.0-07.5)	10/12	12:00	SO	1	X							07	
TP-RD-A11-06 (08.5-09.0)	10/12	12:05	SO	1	X							08	
TP-RD-B11-03 (01.0-01.5)	10/12	12:10	SO	1	X							09	
TP-RD-B11-03 (03.0-03.5)	10/12	12:15	SO	1	X							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/12/17 Time: 1206
Relinquished By: Date: Time:
Received By: [signature] Date: 10/12/17 Time: 1206
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6331 Page: 2 of: 2

Lab Work Order #: K174105

Report To: LORA STEINER
Company: KENNEDY/JENKS
Address 1: 214 CARNEGIE CENTER SUITE 103
Address 2: PRINCETON NJ 08540
E-mail Address: LORASTEINER@KENNEDYJENKS.COM

Project Number: 154000 1*36 PO Number:
Project Name: ASTRAM - KENVIL
Project Location (City, State): KENVIL, NJ

Preservation Codes
Analyses Requested

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): SCOTT M. LARSEN

Invoice To: SAA
Company:
Address 1:
Address 2:

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	8025						Comments	Lab ID	Lab Receipt Time
TP-RD-BH-03 (05.0-05.5)	10/12	12:20	So	1	X							11	
TP-RD-BH-03 (07.0-07.5)	10/12	12:25	So	1	X							12	
TP-RD-BH-03 (08.5-09.0)	10/12	12:30	So	1	X							13	
BD10122017	10/12	—	So	1	X							14	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/12/17	1200		10/12/17	1206
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6332 Page: 1 of: 1

Lab Work Order #: K174105 / K174102

Project Number: 154001 #36 PO Number:
Project Name: ASHLAND KENNEL
Project Location (City, State): KENNEL MT
Turn Around (check one): [X] Normal [ ] Rush
If Rush, Report Due Date:
Sampled By (Print): Scott M. Lanew

Report To: LORA STEVENS
Company: KENNEDY JENKS
Address 1:
Address 2:
E-mail Address: LORA.STEVENS@KENNEDYJENKS.com

Invoice To: SAME
Company:
Address 1:
Address 2:

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested	Comments	Lab ID	Lab Receipt Time
FB10122017	10/12/17	1500	Aq	1	X			K174102-04	
TP-RD-B11-01A (01.0-01.5)	10/12/17	1505	So	1	X			K174105-15	
TP-RD-B10-14 (01.0-01.5)	10/12/17	1506	So	1	X			-16	
TP-RD-B10-14 (02.0-02.5)	10/12/17	1507	So	1	X			-17	
TP-RD-B11-04 (01.0-01.5)	10/12/17	1508	So	1	X			-18	
TP-RD-B11-04 (03.0-03.5)	10/12/17	1509	So	1	X			-19	
TP-RD-B11-04 (05.0-05.5)	10/12/17	1510	So	1	X			-20	
TP-RD-B11-04 (07.0-07.5)	10/12/17	1511	So	1	X			-21	
TP-RD-B11-04 (08.5-09.0)	10/12/17	1512	So	1	X			-22	
DI BLANK	10/12/17	-	Aq	2	X		—	[illegible]	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/12/17 Time: 1525
Received By: [signature] Date: 10/12/17 Time: 1525
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: [ ] NA [ ] Intact [ ] Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: [ ] Y [ ] N

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CHAIN OF CUSTODY

No. 6333

Page: 1 of: 2

Lab Work Order #: K174106

Report To: Lora Sterner
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: Ashland-1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B10-13(01.0-01.5)	10/13/17	8:15	S	1	X							01	
TP-RD-B10-13(03.0-03.5)			S	1	X							02	
TP-RD-B10-13(05.0-05.5)			S	1	X							03	
TP-RD-B10-13(07.0-07.5)			S	1	X							04	
TP-RD-B10-13(09.0-09.5)			S	1	X							05	
TP-RD-B10-13(10.0-10.5)			S	1	X							06	
TP-RD-A11-07A(01.0-01.5)		9:30	S	1	X							07	
TP-RD-A11-07A(03.0-03.5)			S	1	X						MS/MSD	08	
TP-RD-A11-07A(05.0-05.5)			S	1	X							09	
TP-RD-A11-07A(07.0-07.5)			S	1	X							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/13/17	11:45	[signature]	10/13/17	11:45
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6334 Page: 2 of: 2

Lab Work Order #: K174102 / K174106

Project Number: 154001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Fogarty

Report To: Lora Stemer
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center Dr., Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-07A(08.5-09.0)	10/13/17	9:30	S	1	X		-11	
TP-RD-A11-03A(01.0-01.5)		10:30	S	1	X		-12	
TP-RD-A11-03A(03.0-03.5)			S	1	X		-13	
TP-RD-A11-03A(05.0-05.5)			S	1	X		-14	
TP-RD-A11-03A(07.0-07.5)			S	1	X		-15	
TP-RD-A11-03A(08.5-09.0)			S	1	X		-16	
FB101317		11:30	W	3	X		K174102 -05	
BD101317		—	S	1	X		K174106 -17	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: Date: 10/13/17 Time: 11:45 Received By: Date: 10/13/17 Time: 11:45
Relinquished By: Date: Time: Received By: Date: Time:
Custody Seal: ☐ NA ☐ Intact ☐ Not Intact Shipped Via: Receipt Temp: Thermometer #/ Exp. Date: Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6335

Page: 1 of: 2

Lab Work Order #: K174201

Report To: Lora Sterner
Company: Kennedy / Jenks
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174201

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A EDE via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B10-05 (03.0-03.5)	10/16/17	8:20	S	1	X							01	
TP-RD-C10-01 (01.0-01.5)		8:50	S	1	X							02	
TP-RD-C10-01 (02.5-03.0)		8:50	S	1	X							03	
TP-RD-C10-01 (03.0-03.5)		8:50	S	1	X							04	
TP-RD-B10-12 (03.5-04.0)		9:15	S	1	X							05	
TP-RD-B10-12 (04.5-05.0)		9:15	S	1	X						HOLD	06	
TP-RD-B10-12 (05.5-06.0)		9:15	S	1	X						HOLD	07	
TP-RD-B11-05A (01.0-01.5)		9:50	S	1	X							08	
TP-RD-B11-05A (03.0-03.5)		9:50	S	1	X							09	
TP-RD-B11-05A (05.0-05.5)		9:50	S	1	X							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Lora Sterner	10/16/17	1130	R Jackson	16 Oct 17	1131
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6336

Page: 2 of: 2

Lab Work Order #: K174201

Report To: Lora Sterner
Company: Kennedy / Jenks
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ
E-mail Address: lora sterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Preservation Codes
Analyses Requested

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174201

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A EDE Vitamins						Comments	Lab ID	Lab Receipt Time
TP-RD-B11-05A (06.0-06.5)	10/16/17	950	S	1	X						Hold	11	
TP-RD-B10-14A (01.0-01.5)	↓	1040	S	1	X							12	
TP-RD-B10-14A (02.0-02.5)	↓	1040	S	1	X						Hold	13	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/16/17	1130	[signature]	16097	1131
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6338 Page: 1 of: 1

Lab Work Order #: K174201

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174201

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A (Table 1613 8260 VOCs)	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-01B(01.0-01.5)	10/16/17	14:10	S	1	X		14	
TP-RD-B11-01B(02.0-02.5)		14:10	S	1	X	HOLD Removed from HOLD per KF 10/20/17	15	
TP-RD-B11-04A(01.0-01.5)		13:54	S	1	X		16	
TP-RD-B11-04A(02.0-02.5)		13:54	S	1	X	HOLD	17	
TP-RD-A11-03(09.5-10.0)		13:00	S	1	X		18	
TP-RD-A11-03(10.5-11.0)		13:00	S	1	X	HOLD	19	
TP-RD-A11-03(11.5-12.0)	↓	13:00	S	1	X	HOLD	20	
FB101617	10/16/17	15:00	W	1	X		01	
DIFFERENT W.O, K174203								

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

	Date:	Time:		Date:	Time:
Relinquished By:	10/16/17	15:15	Received By:	10/16/17	15:16
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact | Shipped Via: | Receipt Temp: | Thermometer #/ Exp. Date: | Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6285 Page: 1 of: 1

Lab Work Order #: K174203

Project Number: 154000[A]36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Stemer

Report To: Lora Stemer
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lora.stemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
FB101717	10/17/17	1500	W	3	X			02	
FB101817	10/18/17	1500	W	1	X			03	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/18/17 Time: 1515
Received By: [signature] Date: 10/18/17 Time: 1576
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6294 Page: 1 of: 1

Lab Work Order #: K174203

Project Number: 15410001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A					
FB101917	10/19/17	14:00	S	1	X					
FB102017	10/20/17	14:00	S	1	X					

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton NJ, 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Comments	Lab ID	Lab Receipt Time
	04	
	05	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/20/17 Time: 14:20
Received By: [signature] Date: 10/20/17 Time: 1424
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6280

Page: 1 of: 1

Lab Work Order #: K174206

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174206

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPE via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-C11-01A(01.0-01.5)	10/17/17	10:17	S	1	X							01	
TP-RD-C11-01A(02.0-02.5)		10:17	S	1	X							02	
TP-RD-C11-01A(03.0-03.5)		10:17	S	1	X						Hold	03	
TP-RD-C11-01(02.0-02.5)		10:00	S	1	X							04	
TP-RD-C11-01(03.0-03.5)		10:00	S	1	X						Hold	05	
TP-R-A12-1-1(10.5-11.0)		9:17	S	1	X							06	
TP-R-A12-1-1(12.0-12.5)		9:17	S	1	X						Hold	07	
TP-R-A11-504-1(12.0-12.5)		8:35	S	1	X							08	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/17/17	11:30	R Jackson	17 Oct 17	11:31
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6282

Page: 1 of: 1

Lab Work Order #: K174206

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174206

Or 19oct17 changed per client

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EC Evia 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-~~B~~C10-~~15~~02(01.0-01.5)	10/17/17	1:20	S	1	X							09	
TP-RD-~~B~~C10-~~15~~02(03.0-03.5)		1:20	S	1	X							10	
TP-RD-~~B~~C10-~~15~~02(03.5-04.0)		1:20	S	1	X							11	
TP-RD-B10-09(03.0-03.5)		1:45	S	1	X							12	
TP-RD-B10-09(02.0-02.5)		1:45	S	1	X							13	
TP-RD-B10-09(03.5-04.0)		1:45	S	1	X							14	
TP-RD-B10-10(03.5-04.0)		2:00	S	1	X							15	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/17/17	300	[signature]	12oct17	1501
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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2525 Advance Road
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608-221-4889 (fax)

CHAIN OF CUSTODY

No. 6283

Page: 1 of: 1

Lab Work Order #: K174207

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174207

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A EPE 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B11-05B(01.0-01.5)	10/18	8:00	S	1	+							01	
TP-RD-B11-05B(03.0-03.5)		8:00	S	1	+							02	
TP-RD-B11-05B(05.0-05.5)		8:00	S	1	+							03	
TP-RD-B12-02(09.0-09.5)		9:30	S	1	+							04	
TP-RD-B12-02A(01.0-01.5)		10:30	S	1	+							05	
TP-RD-B12-02A(03.0-03.5)			S	1	+						MS/MSD	06	
TP-RD-B12-02A(05.0-05.5)			S	1	+							07	
TP-RD-B12-02A(07.0-07.5)			S	1	+							08	
TP-RD-B12-02A(09.0-09.5)			S	1	+							09	
BD101817		—	S	1	+							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/18/17	12:00	[signature]	18oct17	1201
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6284 Page: 1 of: 1

Lab Work Order #: K174207

Project Number: 54000*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engbery

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174207

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
					EB EM 6095				
TP-RD-B12-01(01.0-01.5)	10/18/17	13:30	S	1	X			11	
TP-RD-B12-01(03.0-03.5)		13:30	S	1	X			12	
TP-RD-B12-01(05.0-05.5)		13:30	S	1	X			13	
TP-RD-A12-03(01.0-01.5)		14:00	S	1	X			14	
TP-RD-A12-03(03.0-03.5)		14:00	S	1	X			15	
TP-RD-A12-03(05.0-05.5)		14:00	S	1	X			16	
TP-RD-A12-03(07.0-07.5)		14:00	S	1	X			17	
TP-RD-A12-03(09.0-09.5)		14:00	S	1	X			18	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/18/17 Time: 15:15
Received By: [signature] Date: 10/20/17 Time: 1915
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6286

Page: 1 of: 2

Lab Work Order #: K174210

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174210

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPE Vol 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B11-04A(03.0-03.5)	10/19/17	8:20	S	1	X							01	
TP-RD-B11-04A(04.0-04.5)		8:20	S	1	X						HOLD	02	
TP-RD-B11-04A(05.0-05.5)		8:20	S	1	X						HOLD	03	
TP-RD-A11-14(01.0-01.5)		9:00	S	1	X							04	
TP-RD-A11-14(03.0-03.5)		9:00	S	1	X							05	
TP-RD-A11-14(05.0-05.5)		9:00	S	1	X						HOLD	06	
TP-RD-A11-13(01.0-01.5)		10:00	S	1	X							07	
TP-RD-A11-13(03.0-03.5)		10:00	S	1	X							08	
TP-RD-A11-13(05.0-05.5)		10:00	S	1	X						HOLD	09	
TP-RD-A11-12(01.0-01.5)		10:30	S	1	X							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/19/17	11:30	[signature] 19 Oct 17		11:31
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6287 Page: 2 of: 2

Lab Work Order #: KL74210

Project Number: 154000[illegible]36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA KL74210

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-12(03.0-03.5)	10/19/17	10:30	S	1	X			11	
TP-RD-A11-12(05.0-05.5)	10/19/17	10:30	S	1	X		HOLD	12	

EDE via EDDS

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/19/17 Time: 11:30
Received By: [signature] Date: 10/20/17 Time: 11:31
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6289 Page: 1 of: 1

Lab Work Order #: K174210

Project Number: 154001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA K174210

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-08(01.0-01.5)	10/19/17	13:00	S	1	E	X		13	
TP-RD-A11-08(03.0-03.5)			S	1	E	X		14	
TP-RD-A11-08(05.0-05.5)			S	1	E	X		15	
TP-RD-A11-08(07.0-07.5)			S	1	E	X		16	
TP-RD-A11-08(09.0-09.5)			S	1	E	X		17	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/19/17 Time: 14:45
Received By: [signature] Date: 10/20/17 Time: 1446
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6292 Page: 1 of: 2

Lab Work Order #: K179213

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Fenyberg

Preservation Codes
Analyses Requested

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Bottles via Eurofins	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-09(01.0-01.5)	10/29/17	8:20	S	1	X	MS/MSD	01	
TP-RD-A11-09(03.0-03.5)		8:20	S	1	X		02	
TP-RD-A11-09(05.0-05.5)		8:20	S	1	X		03	
TP-RD-A11-09(07.0-07.5)		8:20	S	1	X		04	
TP-RD-A11-10(01.0-01.5)		9:15	S	1	X		05	
TP-RD-A11-10(03.0-03.5)		9:15	S	1	X		06	
TP-RD-A11-10(05.0-05.5)		9:15	S	1	X		07	
TP-RD-A11-10(07.0-07.5)		9:15	S	1	X		08	
TP-RD-A11-10(08.0-08.5)		9:15	S	1	X		09	
TP-RD-A11-11(01.0-01.5)		10:15	S	1	X	MS/MSD	10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/29/17 Time: 12:00 Received By: [signature] Date: 20917 Time: 1201
Relinquished By: Date: Time: Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6293 Page: 2 of: 2

Lab Work Order #: K174213

Project Number: 540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Preservation Codes
Analyses Requested
A

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-11(03.0-03.5)	10/20/17	10:15	S	1		11	
TP-RD-A11-11(05.0-05.5)		10:15	S	1		12	
TP-RD-A11-11(07.0-07.5)		10:15	S	1		13	
TP-RD-A11-11(08.0-08.5)		10:15	S	1		14	
BD102017A		-	S	1		15	
BD102017B		-	S	1		16	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/20/17 Time: 12:00 Received By: [signature] Date: 20017 Time: 1201
Relinquished By: Date: Time: Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6291

Page: 1 of: 1

Lab Work Order #: K174213

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-A11-02A(01.0-01.5)	10/20/17	1:10	S	1	X							17	
TP-RD-A11-02A(03.0-03.5)	↓	↓	S	1	X							18	
TP-RD-A11-02A(05.0-05.5)	↓	↓	S	1	X							19	
TP-RD-A11-02A(07.0-07.5)	↓	↓	S	1	X							20	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/20/17	2:30	[signature]	10/20/17	1431
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6296 Page: 1 of: 2

Lab Work Order #: K174301

Project Number: 154020001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☐ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes: EnCore vials	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-05C(01.0-01.5)	10/23/17	8:20	S	1	X			01	
TP-RD-B11-05C(03.0-03.5)		8:20	S	1	X		HOLD	02	
TP-RD-B11-05C(05.0-05.5)		8:20	S	1	X		HOLD	03	
TP-RD-C11-01(04.0-04.5)		9:05	S	1	X			04	
TP-RD-C11-01(05.0-05.5)		9:05	S	1	X		HOLD	05	
TP-RD-C11-01(06.0-06.5)		9:05	S	1	X		HOLD	06	
TP-RD-C11-01B(01.0-01.5)		9:20	S	1	X			07	
TP-RD-C11-01B(03.0-03.5)		9:20	S	1	X			08	
TP-RD-C11-01B(05.0-05.5)		9:20	S	1	X		~~HOLD~~	09	
TP-RD-C11-01B(06.0-06.5)	↓	9:30	S	1	X		HOLD	10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/23/17	11:45		10/23/17	11:45
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6297 Page: 2 of: 2

Lab Work Order #: K174301

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☐ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kahe Engberg

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A (EPE NA 8015)	Comments	Lab ID	Lab Receipt Time
C11-7-02 (01.0-01.5)	10/23/17	10:00	S	1	X		11	
C11-7-02 (03.0-03.5)		10:00	S	1	X		12	
C11-7-02 (05.0-05.5)		10:00	S	1	X		13	
C11-7-02 (06.0-06.5)		10:00	S	1	X	HOLD	14	
TP-RD-C11-02 (03.0-03.5)		10:30	S	1	X		15	
TP-RD-C11-02 (05.0-05.5)		10:30	S	1	X	MS/MSD	16	
TP-RD-C11-02 (06.0-06.5)		10:30	S	1	X	HOLD	17	
BD102317	↓	—	S	1	X		18	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/23/17	11:45		10/23/17	1145
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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608-221-4889 (fax)

CHAIN OF CUSTODY

No. 6298

Page: 1 of: 1

Lab Work Order #: K174301

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-C11-03 (03.0-03.5)	10/23/17	13:20	S	1	X							19	
TP-RD-C11-03 (05.0-05.5)	↓	13:20	S	1	X							20	
TP-RD-C11-03 (06.0-06.5)	↓	13:20	S	1	X						HOLD	21	
TP-RD-B12-03 (09.0-09.5)	↓	13:50	S	1	X							22	
TP-RD-B12-03 (10.0-10.5)	↓	13:50	S	1	X						HOLD	23	
TP-RD-B12-03 (12.0-12.5)	↓	13:50	S	1	X						HOLD	24	
			S	1	X								
			S	1	X								
			S	1	X								
			S	1	X								

15 6/23/17

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/23/17	15:30	[signature]	10/23/17	1530
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6341 Page: 1 of: 2

Lab Work Order #: K174305

Project Number: 154000I*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Stemer

Preservation Codes
Analyses Requested

Report To: Lora Stemer
Company: Kennedy Jenks
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPH via 8015						Comments	Lab ID	Lab Receipt Time
TP-RD-A11-14(06.0-06.5)	10/25/17	9:00	S		X						MS/MSD	01	
TP-RD-A11-14(07.0-07.5)		9:00			X						HOLD	02	
TP-RD-A11-14(08.5-09.0)		9:00			X						HOLD	03	
TP-RD-B11-01C(01.0-01.5)		9:45			X							04	
TP-RD-B11-01C(03.0-03.5)		9:45			X							05	
TP-RD-B11-01C(05.0-05.5)		9:45			X						HOLD	06	
TP-RD-B11-01B(03.0-03.5)		10:15			X							07	
TP-RD-B11-01B(05.0-05.5)		10:15			X						HOLD	08	
TP-RD-B11-04A(07.0-07.5)		10:45			X							09	
TP-RD-B11-04A(08.5-09.0)		10:45			X						HOLD	10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/25/17	1200		10/25/17	1200
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6342 Page: 2 of: 2

Lab Work Order #: K174305

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Steiner

Report To: Lora Steiner
Company: 214 Carnegie Center, Suite 103
Address 1: Princeton, NJ 08540
Address 2: Kennedy / Jenks
E-mail Address: lora steiner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
BD102517	10/25/17	—	S	1	X			11	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/25/17	1200	[signature]	10/25/17	1200
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6308

Page: 1 of: 1

Lab Work Order #: K174305

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Fengberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPE via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-A11-15(01.0-01.5)	10/25/17	13:30	S	1	X							12	
TP-RD-A11-15(03.0-03.5)	10/25/17	13:30	S	1	X							13	
TP-RD-A11-15(05.0-05.5)	10/25/17	13:30	S	1	X							14	
TP-RD-A11-15(08.0-08.5)	10/25/17	13:30	S	1	X							15	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/25/17	15:15	[signature]	10/25/17	1515
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6307 Page: 1 of: 1

Lab Work Order #: K174306

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Stemer

Preservation Codes
Analyses Requested

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A						Comments	Lab ID	Lab Receipt Time
FB102317	10/23/17	1430	W	1	X							01	
FB102517	10/25/17	1445	W	3	X						MS/MSD	02	

AW 10/27/17

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/25/17	1500		10/25/17	1522
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 4693 Page: 1 of: 1

Lab Work Order #: K174306

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Stemmer

Preservation Codes
Analyses Requested
A

Report To: Lora Stemmer
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemmer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A						Comments	Lab ID	Lab Receipt Time
FB102617	10/26/17	1415	W	1	X							03	
FB102717	10/27/17	1100	W	1	X							04	

AW 10/27/17

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 10/27/17 Time: 1105
Received By: [signature] Date: 10/27/17 Time: 1105
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6310

Page: 1 of: 2

Lab Work Order #: K174309

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-A11-16 (01.0-01.5)	10/26/17	8:25	S	1	X							01	
TP-RD-A11-16 (03.0-03.5)		8:25	S	1	X							02	
TP-RD-A11-16 (05.0-05.5)		8:25	S	1	X							03	
TP-RD-A11-16 (07.0-07.5)		8:25	S	1	X							04	
TP-RD-A11-16 (08.0-08.5)		8:25	S	1	X							05	
TP-RD-B12-03 (13.0-13.5)		9:45	S	1	X							06	
TP-RD-B12-03 (14.0-14.5)		9:45	S	1	X						HOLD	07	
TP-RD-B12-03 (15.0-15.5)		9:45	S	1	X						HOLD	08	
TP-RD-A12-04 (01.0-01.5)		10:45	S	1	X							09	
TP-RD-A12-04 (03.0-03.5)		10:45	S	1	X							10	

AW 10/26/17

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/26/17	11:45	[signature]	10/26/17	11:55
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6311 Page: 2 of: 2

Lab Work Order #: K174309

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Fryberg

Preservation Codes
Analyses Requested

Report To: Lora Siemer
Company: Kennedy/Jenks Consultants
Address 1: 24 Cameron Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasiemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPA 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-A12-04 (05.0-05.5)	10/26/17	10:45	S	1	A							11	

HW 10/26/17

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/26/17	11:45		10/26/17	11:55
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6312

Page: 1 of: 1

Lab Work Order #: K174309

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Ed Fe via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-A12-03A(01.0-01.5)	10/26/17	13:20	S	1	X							12	
TP-RD-A12-03A(03.0-03.5)	↓	13:20	S	1	X							13	
TP-RD-A12-03A(05.0-05.5)	↓	13:20	S	1	X							14	
TP-RD-A11-17(01.0-01.5)	↓	13:45	S	1	X							15	
TP-RD-A11-17(03.0-03.5)	↓	13:45	S	1	X							16	
TP-RD-A11-17(05.0-05.5)	↓	13:45	S	1	X							17	
TP-RD-A11-17(07.0-07.5)	↓	13:45	S	1	X							18	

AW 10/27/17

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/26/17	14:45	[signature]	10/26/17	1445
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6313 Page: 1 of: 2

Lab Work Order #: K174310

Project Number: 154001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Stermer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastermer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A	EDB via 8011	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-15A(01.0-01.5)	10/27/17	8:10	S	1	✓	✓		01	
TP-RD-A11-15A(03.0-03.5)		8:10	S	1	X	X		02	
TP-RD-A11-15A(05.0-05.5)		8:10	S	1	X	X		03	
TP-RD-C11-01C(01.0-01.5)		9:00	S	1	X	X	MS/MSD	04	
TP-RD-C11-01C(03.0-03.5)		9:00	S	1	X	X		05	
TP-RD-C11-01C(05.0-05.5)		9:00	S	1	X	X		06	
TP-RD-C11-01C(06.0-06.5)		9:00	S	1	X	X		07	
TP-RD-C11-02A(01.0-01.5)		9:30	S	1	X	X		08	
TP-RD-C11-02A(03.0-03.5)		9:30	S	1	X	X		09	
TP-RD-C11-02A(05.0-05.5)		9:30	S	1	X	X		10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/27/17	11:15		10/27/17	1115
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6343 Page: 2 of: 2

Lab Work Order #: K174310

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☐ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
Analyses Requested: A

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EDD via EQUIS	Comments	Lab ID	Lab Receipt Time
TP-RD-C11-02A(06.0-06.5)	10/27/17	9:30	S	1	X		11	
TP-RD-C11-04(01.0-01.5)		10:00	S	1	X		12	
TP-RD-C11-04(03.0-03.5)		10:00	S	1	X		13	
TP-RD-C11-04(05.0-05.5)		10:00	S	1	X		14	
TP-RD-C11-04(06.0-06.5)		10:00	S	1	X		15	

AMJ 10/27/17

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/27/17	11:15		10/27/17	1115
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 4692 Page: 1 of: 1

Lab Work Order #: K174310

Project Number: 154000|436 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print):

Preservation Codes
Analyses Requested

Report To: Lora Stetner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastetner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested	Comments	Lab ID	Lab Receipt Time
					A	E.Coli 8095			
BD102717	10/27/17	—	S	1	X	X		16	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:
① Sample not included on CoC submitted 10/27/17 LW

Relinquished By: ① Date: 10/27/17 Time: 1115
Received By: Date: 10/27/17 Time: 1115
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6259 Page: 1 of: 1

Lab Work Order #: K174401

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-B13-03(01.0-01.5)	10/30/17	10:45	S	1	X	X		01	
TP-RD-B13-03(03.0-03.5)		10:45	S	1	X	X		02	
TP-RD-B13-03(05.0-05.5)		10:45	S	1	X	X		03	
TP-RD-B13-03(07.0-07.5)		10:45	S	1	X	X		04	
TP-RD-B13-04(01.0-01.5)		11:40	S	1	X	X		05	
TP-RD-B13-04(03.0-03.5)		11:40	S	1	X	X		06	
TP-RD-B13-04(05.0-05.5)		11:40	S	1	X	X		07	
TP-RD-B13-04(07.0-07.5)	↓	11:40	S	1	X	X		08	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	10/30/17	12:45		10/30/17	1245
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6260 Page: 1 of: 1

Lab Work Order #: K174401

Project Number: 154000I*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested

Report To: Lora Siemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasiemer@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A: EDB 8011						Comments	Lab ID	Lab Receipt Time
TP-RD-B13-02(01.0-01.5)	10/30/17	14:00	S	1	X							09	
TP-RD-B13-02(03.0-03.5)		14:00	S	1	X							10	
TP-RD-B13-02(05.0-05.5)		14:00	S	1	X							11	
TP-RD-B13-02(07.0-07.5)		14:00	S	1	X						MS/MSD	12	
TP-RD-B13-01(01.0-01.5)		14:45	S	1	X							13	
TP-RD-B13-01(03.0-03.5)		14:45	S	1	X							14	
TP-RD-B13-01(05.0-05.5)		14:45	S	1	X							15	
TP-RD-B13-01(07.0-07.5)		14:45	S	1	X							16	
BD103017	↓	—	S	1	X							17	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: Date: 10/30/17 Time: 16:00 Received By: Date: 10/30/17 Time: 1600
Relinquished By: Date: Time: Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact | Shipped Via: | Receipt Temp: | Thermometer #/ Exp. Date: | Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6261 Page: 1 of: 1

Lab Work Order #: K174402

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Stemer

Report To: Lora Stemer
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested	Comments	Lab ID	Lab Receipt Time
TP-R-B13-1-1(12.0-12.5)	11/1/17	945	S	1	X		01	
TP-RD-B13-08(01.0-01.5)		1030	S	1	X		02	
TP-RD-B13-08(03.0-03.5)		1030	S	1	X		03	
TP-RD-B13-08(05.0-05.5)		1030	S	1	X		04	
TP-RD-B13-08(07.0-07.5)		1030	S	1	X		05	
TP-RD-B13-09(01.0-01.5)		1050	S	1	X		06	
TP-RD-B13-09(03.0-03.5)		1050	S	1	X		07	
TP-RD-B13-09(05.0-05.5)		1050	S	1	X		08	
TP-RD-B13-09(07.0-07.5)		1050	S	1	X		09	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: Lora S Date: 11/1/17 Time: 1130 Received By: [signature] Date: 11/01/17 Time: 1130
Relinquished By: Date: Time: Received By: Date: Time:
Custody Seal: ☐ NA ☐ Intact ☐ Not Intact Shipped Via: Receipt Temp: Thermometer #/ Exp. Date: Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6262 Page: 1 of: 2

Lab Work Order #: K174402

Project Number: 154000[illegible]*36 PO Number:
Project Name: Ashland Kenova
Project Location (City, State): Kenova, WV
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engbery

Report To: Lora Siemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasiemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-A13-01A(01.0-01.5)	11/1/17	13:15	S	1	X		10	
TP-RD-A13-01A(03.0-03.5)	11/1/17	13:15	S	1	X	MS/MSD	11	
TP-RD-A13-01A(05.0-05.5)		13:15	S	1	X		12	
TP-RD-A13-01A(07.0-07.5		13:15	S	1	X		13	
TP-RD-A13-01A(08.0-08.5)		13:15	S	1	X		14	
TP-RD-A12-05(01.0-01.5)		14:10	S	1	X		15	
TP-RD-A12-05(03.0-03.5)		14:10	S	1	X		16	
TP-RD-A12-05(05.0-05.5)		14:10	S	1	X		17	
TP-RD-A12-05(07.0-07.5)		14:10	S	1	X		18	
TP-RD-A12-05(08.0-08.5)		14:10	S	1	X		19	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/1/17	15:45	[signature]	11/01/17	1545
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6264

Lab Work Order #: K174402

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Fingberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B13-10 (01.0-01.5)	11/1/17	14:35	S	1	X							20	
TP-RD-B13-10 (03.0-03.5)	↓	14:35	S	1	X							21	
TP-RD-B13-10 (05.0-05.5)	↓	14:35	S	1	X							22	
TP-RD-B13-10 (07.0-07.5)	↓	14:35	S	1	X							23	
TP-RD-B13-10 (08.0-08.5)	↓	14:35	S	1	X							24	
BD110117	↓	—	S	1	X							25	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/1/17	15:45	[signature]	11/01/17	1545
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6263

Page: 1 of: 1

Lab Work Order #: K174403

Report To: Lora Sterner
Company: Kennedy Jenks
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Invoice To: SAA
Company: JAA
Address 1: JAA
Address 2: SAA

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A E?Eva 8095						Comments	Lab ID	Lab Receipt Time
FB103017	10/30/17	1530	W	1	X							01	
FB110117	11/1/17	1130	W	3	X							02	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/1/17	1145	[signature]	11/01/17	1145
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6268 Page: 1 of: 1

Lab Work Order #: K174403

Project Number: 154000/*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Preservation Codes
Analyses Requested
A

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Dissolved Iron						Comments	Lab ID	Lab Receipt Time
FB110217	11/2/17	1530	W	1	X							03	
FB110317	11/3/17	800	W	1	X							04	

Report To: Lora Sterner
Company: Kennedy/Jenks
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lora.sterner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
A=None B=HCL C=H_2SO_4 D=HNO_3 E=EnCore F=Methanol G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/3/17	1020		11/03/17	1020
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact | Shipped Via: | Receipt Temp: | Thermometer #/ Exp. Date: | Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6265 Page: 1 of: 2

Lab Work Order #: K174404

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engbery

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A						Comments	Lab ID	Lab Receipt Time
TP-RD-A13-02(01.0-01.5)	11/2/17	7:45	S	1	X							01	
TP-RD-A13-02(03.0-03.5)		7:45	S	1	X							02	
TP-RD-A13-02(05.0-05.5)		7:45	S	1	X							03	
TP-RD-A13-02(07.0-07.5)		7:45	S	1	X						MS/MSD	04	
TP-RD-A13-02(08.0-08.5)		7:45	S	1	X							05	
TP-R-A13-625-4(08.5-09.0)		8:25	S	1	X							06	
TP-R-A13-625-4(09.5-10.0)		8:25	S	1	X						HOLD	07	
TP-R-A13-625-4(10.5-11.0)		8:25	S	1	X						HOLD	08	
TP-RD-B12-04(01.0-01.5)		9:25	S	1	X							09	
TP-RD-B12-04(03.0-03.5)		9:25	S	1	X							10	

Report To: Lora Stelmer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastelmer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/2/17	11:45		11/2/17	1145
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6266

Lab Work Order #: K174404

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Fengberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E Fe Mn 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B12-04(05.0-05.5)	11/2/17	9:25	S	1	X							11	
TP-RD-B12-04(07.0-07.5)		9:25	S	1	X							12	
TP-RD-B12-04(09.0-09.5)		9:25	S	1	X							13	
TP-RD-B12-05(01.0-01.5)		9:45	S	1	X							14	
TP-RD-B12-05(03.0-03.5)		9:45	S	1	X							15	
TP-RD-B12-05(05.0-05.5)		9:45	S	1	X							16	
TP-RD-B12-05(07.0-07.5)		9:45	S	1	X							17	
TP-RD-B12-05(09.0-09.5)		9:45	S	1	X							18	
BD110217		—	S	1	X							19	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/2/17	11:45	[signature]	11/02/17	1145
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6267 Page: 1 of: 2

Lab Work Order #: K1744O4

Report To: Lora Stemer
Company: Kennedy / Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ

Preservation Codes
Analyses Requested

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kahe Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A	E&E via BOAS	Comments	Lab ID	Lab Receipt Time
TP-RD-B12-03(16.5-17.0)	11/2/17	13:15	S	1	X			20	
TP-RD-B12-03(17.5-18.0)		13:15	S	1	X		HOLD	21	
TP-RD-B12-03(18.5-19.0)		13:15	S	1	X		HOLD	22	
TP-RD-A12-06(03.0-03.5)		14:00	S	1	X			23	
TP-RD-A12-06(05.0-05.5)		14:00	S	1	X			24	
TP-RD-B12-07(01.0-01.5)		14:40	S	1	X			25	
TP-RD-B12-07(03.0-03.5)		14:40	S	1	X			26	
TP-RD-B12-07(05.0-05.5)		14:40	S	1	X			27	
TP-RD-B12-07(07.0-07.5)		14:40	S	1	X		MS/MSD	28	
TP-RD-B12-07(09.0-09.5)		14:40	S	1	X			29	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/2/17	15:45		11/02/17	1545
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6269

Lab Work Order #: K174404

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: loraStemer@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EC E via 8095						Comments	Lab ID	Lab Receipt Time
TD-RD-B12-07(10.0-10.5)	11/2/17	1440	S	1	X							30	
BD110217A	↓		S	1	X							31	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/2/17	1545	[signature]	11/02/17	1545
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6271 Page: 1 of: 3

Lab Work Order #: K174405

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A						Comments	Lab ID	Lab Receipt Time
TP-RD-A11-18(01.0-01.5)	11/3/17	8:20	S	1	X						MS/MSD	01	
TP-RD-A11-18(03.0-03.0)		8:20	S	1	X							02	
TP-RD-A11-18(05.0-05.5)		8:20	S	1	X							03	
TP-RD-A11-18(07.0-07.5)		8:20	S	1	X							04	
TP-RD-A11-18(08.0-08.5)		8:20	S	1	X							05	
TP-RD-A11-20A(01.0-01.5)		9:05	S	1	X							06	
TP-RD-A11-20A(03.0-03.5)		9:05	S	1	X							07	
TP-RD-A11-20A(05.0-05.5)		9:05	S	1	X							08	
TP-RD-A11-20A(07.0-07.5)		9:05	S	1	X							09	
TP-RD-A11-20A(08.0-08.5)	↓	9:05	S	1	X							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date: 11/3/17	Time: 12:00	Received By:	Date: 11/3/17	Time: 1200
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6272 Page: 2 of: 3

Lab Work Order #: K174405

Project Number: 154000I*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 24 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemere@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-19(01.0-01.5)	11/3/17	9:30	S	1	X		11	
TP-RD-A11-19(03.0-03.5)		9:30	S	1	X		12	
TP-RD-A11-19(05.0-05.5)		9:30	S	1	X		13	
TP-RD-A11-19(07.0-07.5)		9:30	S	1	X		14	
TP-RD-A11-21(01.0-01.5)		10:17	S	1	X		15	
TP-RD-A11-21(03.0-03.5)		10:17	S	1	X		16	
TP-RD-A11-21(05.0-05.5)		10:17	S	1	X		17	
TP-RD-A11-21(07.0-07.5)		10:17	S	1	X		18	
TP-RD-A11-21(09.0-09.5)		10:17	S	1	X		19	
BD110317	↓	—	S	1	X		20	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/3/17	12:00		11/03/17	1200
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6270 Page: 3 of: 3

Lab Work Order #: K174405

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-06(01.0-01.5)	11/3/17	10:40	S	1	X	X		21	
TP-RD-B11-06(03.0-03.5)		10:40	S	1	X	X		22	
TP-RD-B11-06(05.0-05.5)		10:40	S	1	X	X		23	
TP-RD-B11-06(07.0-07.5)		10:40	S	1	X	X		24	
TP-RD-B11-06(09.0-09.5)		10:40	S	1	X	X		25	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 11/3/17 Time: 12:00 Received By: [signature] Date: 11/03/17 Time: 1200
Relinquished By: Date: Time: Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6273 Page: 1 of: 1

Lab Work Order #: K174501

Report To: Lora Stevens
Company: KLJ
Address 1:
Address 2:
E-mail Address: lorastevens@kennedyjenks.com

Project Number: 154000136 PO Number:
Project Name: KENAI INT RD
Project Location (City, State): KENAI NT

Preservation Codes
Analyses Requested

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Scott Lamen

Invoice To:
Company:
Address 1:
Address 2:

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	8025	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-07 (03.0-03.5)	11/6/17	11:20	S	1	X		01	
TP-RA-B10-16 (01.0-01.5)		11:25	S	1			02	
TP-RD-A11-19A (07.0-07.5)		11:40	S	1			03	
TP-RA-B10-16 (02.0-02.5)		11:25	S	1			04	
TP-RD-A11-19A (08.0-08.5)		11:35	S	1			05	
TP-RD-B11-07 (01.0-01.5)		11:30	S	1			06	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/6/17	11:35		11/6/17	1135
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 6274 Page: 1 of: 2

Lab Work Order #: K174501

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: K140001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Preservation Codes
Analyses Requested

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kahe Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A						Comments	Lab ID	Lab Receipt Time
TP-RD-B10-15(01.0-01.5)	11/6/17	8:17	S	1	X							07	
TP-RD-B10-15(02.0-02.5)		8:17	S	1	X						MS/MSD	08	
TP-RD-B10-15(03.0-03.5)		8:17	S	1	X						HOLD	09	
TP-RD-B10-16(03.0-03.5)		8:45	S	1	X						HOLD	10	
TP-RD-B11-07(05.0-05.5)		9:00	S	1	X						HOLD	11	
TP-RD-A11-20C(01.0-01.5)		9:41	S	1	X							12	
TP-RD-A11-20C(03.0-03.5)		9:41	S	1	X							13	
TP-RD-A11-20C(05.0-05.5)		9:41	S	1	X						HOLD	14	
TP-RD-A11-19(08.0-08.5)		10:15	S	1	X							15	
BD110617		—	S	1	X							16	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 11/6/17 Time: 13:00
Received By: [signature] Date: 11/06/17 Time: 1300
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 4689 Page: 2 of: 2

Lab Work Order #: K174501

Project Number: 154000[illegible]36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☐ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A (Ext 8015)	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-18A(01.0-01.5)	11/6/17	11:00	S	1	X		17	
TP-RD-A11-18A(03.0-03.5)		11:00	S	1	X		18	
TP-RD-A11-18A(05.0-05.5)		11:00	S	1	X	HOLD	19	
TP-RD-A11-19A(01.0-01.5)		10:20	S	1	X		20	
TP-RD-A11-19A(03.0-03.5)		10:20	S	1	X		21	
TP-RD-A11-19A(05.0-05.5)		10:20	S	1	X		22	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

	Date	Time	Received By	Date	Time
Relinquished By:	11/6/17	13:00			
Relinquished By:			Received By:		

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 4690 Page: 1 of: 1

Lab Work Order #: K174501

Project Number: 1540001*36 PO Number:
Project Name: Ashland - Kearny
Project Location (City, State): NJ
Turn Around (check one): [X] Normal [ ] Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engbring

Report To: Lora Stenner
Company: KJ
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastenner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A	8260	Comments	Lab ID	Lab Receipt Time
TP-RD-C11-02B (01.0-01.5)	11/6/17	1345	S	1	X	X		23	
TP-RD-C11-02B (03.0-03.5)		1345						24	
TP-RD-C11-02B (05.0-05.5)		1345						25	
TP-RD-C11-02B (07.0-07.5)		1345						26	
TP-RD-C11-04A (01.0-01.5)		1420						27	
TP-RD-C11-04A (03.0-03.5)		1420					HOLD	28	
TP-RD-C11-04A (05.0-05.5)		1420					HOLD	29	
TP-RD-C11-01D (01.0-01.5)		1445						30	
TP-RD-C11-01D (03.0-03.5)		1445					HOLD	31	
TP-RD-C11-01D (05.0-05.5)		1445					HOLD	32	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 11/6/17 Time: 15:70
Relinquished By: Date: Time:
Received By: [signature] Date: 11/06/17 Time: 1530
Received By: Date: Time:

Custody Seal: [ ] NA [ ] Intact [ ] Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: [ ] Y [ ] N

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CHAIN OF CUSTODY

No. 4691 Page: 1 of: 2

Lab Work Order #: K174502

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engbery

Preservation Codes
Analyses Requested

Report To: Lora Siemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasiemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-08 (01.0-01.5)	11/7/17	9:15	S	1	X			01	
TP-RD-B11-08 (03.0-03.5)		9:15	S	1	X			02	
TP-RD-B11-08 (05.0-05.5)		9:15	S	1	X			03	
TP-RD-B11-08 (07.0-07.5)		9:15	S	1	X			04	
TP-RD-B11-08 (09.0-09.5)		9:15	S	1	X		MS/MSD	05	
TP-RD-B12-08 (01.0-01.5) LES 11/8		10:00	S	1	X			06	
TP-RD-B12-08 (03.0-03.5) LES 11/8		10:00	S	1	X			07	
TP-RD-B12-08 (05.0-05.5) LES 11/8		10:00	S	1	X			08	
TP-RD-B12-08 (07.0-07.5) LES 11/8		10:00	S	1	X		MS/MSD	09	
TP-RD-B12-08 (09.0-09.5) LES 11/8		10:00	S	1	X			10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/7/17	11:45		11/07/17	1145
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8196

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Lab Work Order #: K174502

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B12-08(11.0-11.5) LEJ 11/8	11/7/17	10:00	S	1	X						HOLD	11	
TP-RD-B12-08(13.0-13.5) LEJ 11/8	↓	10:00	S	1	X						HOLD	12	
TP-RD-B12-08(15.0-15.5) LEJ 11/8	↓	10:00	S	1	X						HOLD	13	
BD110717A	↓	—	S	1	X							14	
BD110717B	↓	—	S	1	X							15	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/7/17	11:45	[signature]	11/07/17	1145
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8197 Page: 1 of: 1

Lab Work Order #: K174502

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: K40001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ

Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A						Comments	Lab ID	Lab Receipt Time
TP-RD-B13-10(09.0-09.5)	11/7/17	13:20	S	1	X							16	
TP-R-C13-666-1(06.5-07.0)		14:10	S	1	X							17	
TP-RD-C13-02(01.0-01.5)		14:30	S	1	X							18	
TP-RD-C13-02(03.0-03.5)		14:30	S	1	X							19	
TP-RD-C13-02(05.0-05.5)		14:30	S	1	X							20	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/7/17	15:30	[signature]	11/07/17	1550
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8198

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Lab Work Order #: K174503

Report To: Lora Sterner
Company: Kennedy / Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154 0001 #36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Sterner

Preservation Codes
Analyses Requested: A; E+E via 8095

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E+E via 8095						Comments	Lab ID	Lab Receipt Time
FB110617	11/6/17	1530	W	1								01	
FB110717	11/7/17	1515	W	3							MS/MSD	02	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/7/17	1530	[signature]	11/07/17	1530
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8385 Page: 1 of: 1

Lab Work Order #: K174583

Project Number: 154009.36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Lora Stemera

Preservation Codes
Analyses Requested

Report To: Lora Stemera
Company: Kennedy | Jenks Consultants
Address 1: 214 Carnegie Center Suite 103
Address 2: Princeton, NJ
E-mail Address: lorastemera@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	A						Comments	Lab ID	Lab Receipt Time
					Analyses Requested	EE various								
FB110817	11/8/17	1515	W	1		X							03	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 11/9 Time: 1220 Received By: [signature] Date: 11/9 Time: 1220
Relinquished By: Date: Time: Received By: Date: Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8381

Page: 1 of: 2

Lab Work Order #: K174504

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr Suite 103
Address 2: Princeton NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: ASHland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8009S						Comments	Lab ID	Lab Receipt Time
TP-RD-C13-04(01.0-01.5)	11/8/17	8:30	S	1	X							01	
TP-RD-C13-04(03.0-03.5)		8:30	S	1	X							02	
TP-RD-C13-04(05.0-05.5)		8:30	S	1	X							03	
TP-RD-C13-01A(01.0-01.5)		9:40	S	1	X							04	
TP-RD-C13-01A(03.0-03.5)		9:40	S	1	X							05	
B13-682-03(05.0-05.5)		10:15	S	1	X							06	
TP-RD-B13-06(01.0-01.5)		11:00	S	1	X							07	
TP-RD-B13-06(03.0-03.5)		11:00	S	1	X							08	
TP-RD-B13-06(05.0-05.5)		11:00	S	1	X							09	
TP-RD-B13-06(07.0-07.5)		11:00	S	1	X							10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/8/17	12:00	[signature]	11/8/17	12:00
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8382 Page: 2 of: 2

Lab Work Order #: K174504

Project Number: 154600136 PO Number:
Project Name: Ashland, Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☐ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Preservation Codes
Analyses Requested

Report To: Lora Siemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasiemer@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EDB Via 8011						Comments	Lab ID	Lab Receipt Time
TP-RD-C13-04(06.5-07.0)	11/8/17	8:30	S	1	X							11	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/8/17	12:00		11/8/17	120
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8383

Page: 1 of: 2

Lab Work Order #: K174504

Report To: Lora Slemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 105
Address 2: Princeton, NJ 08540
E-mail Address: lorasiemer@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Tengberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EPE via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B14-02(01.0-01.5)	11/8/17	13:15	S	1	X							12	
TP-RD-B14-02(03.0-03.5)		13:15	S	1	X							13	
TP-RD-B14-02(05.0-05.5)		13:15	S	1	X							14	
TP-RD-B14-01(01.0-01.5)		13:45	S	1	X							15	
TP-RD-B14-01(03.0-03.5)		13:45	S	1	X							16	
TP-RD-B14-01(05.0-05.5)		13:45	S	1	X							17	
TP-RD-B14-01(07.0-07.5)		13:45	S	1	X						HOLD	18	
TP-RD-B13-07(01.0-01.5)		14:12	S	1	X							19	
TP-RD-B13-07(03.0-03.5)		14:12	S	1	X							20	
TP-RD-B13-07(05.0-05.5)		14:12	S	1	X							21	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	11/8/17	15:30	[signature]	11/8/17	1530
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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CHAIN OF CUSTODY

No. 8384 Page: 2 of: 2

Lab Work Order #: K174504

Project Number: 154001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engbary

Preservation Codes
Analyses Requested

Report To: Lora Stenner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastenner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A						Comments	Lab ID	Lab Receipt Time
TP-RD-B13-07(07.0-07.5)	11/8/17	13:12	S	1	X						HOLD	22	
TP-RD-C13-02A(01.0-01.5)	↓	14:30	S	1	X							23	
TP-RD-C13-02A(03.0-03.5)		14:30	S	1	X							24	
TP-RD-C13-02A(05.0-05.5)		14:30	S	1	X							25	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	11/8/17	15:30		11/8/17	15:30
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via:
Receipt Temp:
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

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June 18, 2019

Lora Sterner
Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton, NJ 08540

RE: Ashland Kenvil - Kenvil, NJ

Enclosed are the revised analytical results for the samples received by the laboratory on 04/19/2019.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser
Project Manager

Certification List			Expires
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2020
ILEPA	Illinois Secondary NELAP Accreditation	004366	04/30/2020
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2020
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2019
NCDEQ	North Carolina Dept. of Environmental Quality Accr	688	12/31/2019
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2019
ODEQ	Oklahoma Department of Environmental Quality Ac	2018-087	08/31/2019
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2019
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2019

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D14-667-03(00.0-00.5)	A191619-01	Soil	04/16/2019	04/19/2019
D14-667-03(01.0-01.5)	A191619-02	Soil	04/16/2019	04/19/2019
D14-667-03(03.0-03.5)	A191619-03	Soil	04/16/2019	04/19/2019
TP-RD-D14-04(01.0-01.5)	A191619-04	Soil	04/16/2019	04/19/2019
TP-RD-D14-05(01.0-01.5)	A191619-05	Soil	04/16/2019	04/19/2019
TP-RD-D14-02(01.0-01.5)	A191619-06	Soil	04/16/2019	04/19/2019
TP-RD-D14-03(01.0-01.5)	A191619-07	Soil	04/16/2019	04/19/2019
TP-RD-B13-16(03.0-03.5)	A191619-08	Soil	04/16/2019	04/19/2019
TP-RD-B13-17(03.0-03.5)	A191619-09	Soil	04/16/2019	04/19/2019
BD041619B	A191619-10	Soil	04/16/2019	04/19/2019
TP-RD-B13-18(01.0-01.5)	A191619-11	Soil	04/16/2019	04/19/2019
TP-RD-B13-19(01.0-01.5)	A191619-12	Soil	04/16/2019	04/19/2019
TP-RD-B13-20(00.0-00.5)	A191619-13	Soil	04/18/2019	04/19/2019
TP-RD-B11-28(01.0-01.5)	A191619-14	Soil	04/16/2019	04/19/2019
TP-RD-B11-28(03.0-03.5)	A191619-15	Soil	04/16/2019	04/19/2019
TP-RD-B11-28(05.0-05.5)	A191619-16	Soil	04/16/2019	04/19/2019
TP-RD-B11-28(07.0-07.5)	A191619-17	Soil	04/16/2019	04/19/2019
TP-RD-B11-27(07.0-07.5)	A191619-18	Soil	04/16/2019	04/19/2019
SD-R-C11-04(04.5-05.0)	A191619-19	Soil	04/17/2019	04/19/2019
SD-R-C11-04(06.5-07.0)	A191619-20	Soil	04/17/2019	04/19/2019
TP-RD-C11-15(00.5-01.0)	A191619-21	Soil	04/17/2019	04/19/2019
TP-RD-C11-15(02.5-03.0)	A191619-22	Soil	04/17/2019	04/19/2019
TP-RD-C11-15(04.5-05.0)	A191619-23	Soil	04/17/2019	04/19/2019
TP-RD-C11-16(00.5-01.0)	A191619-24	Soil	04/17/2019	04/19/2019
TP-RD-C11-16(02.5-03.0)	A191619-25	Soil	04/17/2019	04/19/2019
TP-RD-C11-16(04.5-05.0)	A191619-26	Soil	04/17/2019	04/19/2019
TP-RD-C11-17(00.5-01.0)	A191619-27	Soil	04/17/2019	04/19/2019
TP-RD-C11-17(02.5-03.0)	A191619-28	Soil	04/17/2019	04/19/2019
TP-RD-C11-17(04.5-05.0)	A191619-29	Soil	04/17/2019	04/19/2019
TP-RD-C11-18(04.5-05.0)	A191619-30	Soil	04/17/2019	04/19/2019

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-RD-C11-19(00.5-01.0)	A191619-31	Soil	04/17/2019	04/19/2019
TP-RD-C11-19(02.5-03.0)	A191619-32	Soil	04/17/2019	04/19/2019
TP-RD-C11-19(04.5-05.0)	A191619-33	Soil	04/17/2019	04/19/2019
B11-602C-08(00.0-01.0)	A191619-34	Soil	04/17/2019	04/19/2019
B11-513-05(00.0-01.0)	A191619-35	Soil	04/17/2019	04/19/2019
TP-RD-C13-05(01.0-01.5)	A191619-36	Soil	04/17/2019	04/19/2019
TP-RD-C13-06(01.0-01.5)	A191619-37	Soil	04/17/2019	04/19/2019
FB041619	A191619-38	Water	04/16/2019	04/19/2019
FB041719	A191619-39	Water	04/17/2019	04/19/2019
TP-RD-D14-04(03.0-03.5)	A191619-41	Soil	04/16/2019	04/19/2019
TP-RD-D14-05(03.0-03.5)	A191619-42	Soil	04/16/2019	04/19/2019
TP-RD-D14-02(03.0-03.5)	A191619-43	Soil	04/16/2019	04/19/2019
TP-RD-D14-03(03.0-03.5)	A191619-44	Soil	04/16/2019	04/19/2019

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

CASE NARRATIVE

Sample Receipt Information:
56 samples were received on 04/19/2019. Samples were received at 3.1 degrees Celsius. Samples were received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.

8095 analysis for samples A191619-41 through A191619-44 was added on 04/29/2019, per the client.

Laboratory Control Samples (LCS):
The E1 footnote on samples A191619-38 and A191619-39 indicates that there were quality control sample exceedances for HMX. The LCS recovery was below acceptable limits. Please see the quality control section of the report for more information.

Continuing Calibration Verification (CCV):
The LC footnote on samples A191619-08 through A191619-11, A191619-20 and A191619-35 through A191619-37 states that there was a low CCV recovery for nitroglycerin. The lower control limit is 80% and the lowest recovery was 65.0%.

The LC footnote on samples A191619-01 through A191619-37 and A191619-41 through A191619-44 states that there was a low CCV recovery for PETN. The lower control limit is 80% and the lowest recovery was 61.8%.

The LC footnote on samples A191619-21 and A191619-37 states that there was a low CCV recovery for HMX. The lower control limit is 80% and the lowest recovery was 72.7%.

The HC footnote on sample A191619-29 states that there was a high CCV recovery for nitrobenzene. The upper control limit is 120% and the highest recovery was 136%.

The HC footnote on sample A191619-06 states that there was a high CCV recovery for 1,3,5-trinitrobenzene. The upper control limit is 120% and the highest recovery was 124%.

The HC footnote on samples A191619-01 through A191619-06, A191619-08 through A191619-13 and A191619-19 states that there was a high CCV recovery for 4-amino-2,6-dinitrotoluene. The upper control limit is 120% and the highest recovery was 296%.

The HC footnote on samples A191619-04 through A191619-06 states that there was a high CCV recovery for 3,5-dinitroaniline. The upper control limit is 120% and the highest recovery was 122%.

The HC footnote on samples A191619-01, A191619-02, A191619-04 through A191619-06 and A191619-08 through A191619-13 states that there was a high CCV recovery for 2-amino-4,6-dinitrotoluene. The upper control limit is 120% and the highest recovery was 138%.

The HC footnote on sample A191619-03 states that there was a high CCV recovery for HMX. The upper control limit is 120% and the highest recovery was 128%.

REASON FOR REVISED REPORT

On 05/04/2019, this report was revised to add additional compounds to the water samples - A191619-38 and A191619-39.

On 06/18/2019, this report was revised to change the sample descriptions for A191619-14 through A191619-18 per client request.

This report should replace "A191619 FINAL 05 03 2019 1622" and "A191619 FINAL 05 04 2019 1043".

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

D14-667-03(00.0-00.5)

A191619-01 (Soil)

Date Sampled
04/16/2019 08:40

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:33	EPA 8095	U
2-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
3-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
4-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:33	EPA 8095	U
Nitroglycerin	**0.57**	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	
1,3-Dinitrobenzene	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
2,6-Dinitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
2,4-Dinitrotoluene	**0.11**	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:33	EPA 8095	U
2,4,6-Trinitrotoluene	**0.68**	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	
PETN	**0.046**	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	LC, P
RDX	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.40**	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	HC
3,5-Dinitroaniline	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.26**	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	HC
Tetryl	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
HMX	ND	0.022	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*	*55.6-133*		*04/23/2019*	*04/25/2019 21:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**72.5**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

D14-667-03(01.0-01.5)

A191619-02 (Soil)

Date Sampled
04/16/2019 08:43

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
2-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
3-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
4-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
Nitroglycerin	**1.5**	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	
1,3-Dinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
2,6-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
2,4-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
2,4,6-Trinitrotoluene	**0.050**	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	
PETN	**0.019**	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	LC
RDX	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.043**	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 21:55	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.032**	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	HC
Tetryl	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
HMX	ND	0.018	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*	*55.6-133*		*04/23/2019*	*04/25/2019 22:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**87.5**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

D14-667-03(03.0-03.5)

A191619-03 (Soil)

Date Sampled
04/16/2019 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	U
2-Nitrotoluene	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
3-Nitrotoluene	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	U
4-Nitrotoluene	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
Nitroglycerin	**0.068**	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	
1,3-Dinitrobenzene	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	U
2,6-Dinitrotoluene	**4.4**	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	P
2,4-Dinitrotoluene	**2.2**	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	P
1,3,5-Trinitrobenzene	**1.4**	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	P
2,4,6-Trinitrotoluene	**3500**	22	mg/kg dry	400	04/23/2019	05/01/2019 01:48	EPA 8095	D
PETN	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	LC, U
RDX	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**9.7**	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**18**	1.4	mg/kg dry	25	04/23/2019	04/27/2019 05:48	EPA 8095	P, D
Tetryl	ND	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:39	EPA 8095	U
HMX	**0.15**	0.055	mg/kg dry	1	04/23/2019	04/25/2019 22:17	EPA 8095	HC, P
Surrogate: 2,2'-Dinitrobiphenyl		*117 %*	*55.6-133*		*04/23/2019*	*04/25/2019 22:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**29.1**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-04(01.0-01.5)

A191619-04 (Soil)

Date Sampled
04/16/2019 09:12

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Explosive Compounds by EPA Method 8095 — **Preparation Batch: A904193**

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Nitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
2-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
3-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
4-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
Nitroglycerin	**1.6**	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	
1,3-Dinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 22:38	EPA 8095	U
2,6-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
2,4-Dinitrotoluene	**0.021**	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	P
1,3,5-Trinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
2,4,6-Trinitrotoluene	**0.44**	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	P
PETN	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U, LC
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.14**	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	HC, P
3,5-Dinitroaniline	**0.025**	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	HC
2-Amino-4,6-dinitrotoluene	**0.14**	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	HC, P
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/25/2019 23:01	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*108 %*	*55.6-133*		*04/23/2019*	*04/25/2019 23:01*	*EPA 8095*	

Classical Chemistry Parameters — **Preparation Batch: A904202**

% Solids	**80.6**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-05(01.0-01.5)

A191619-05 (Soil)

Date Sampled
04/16/2019 09:30

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Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: A904193**		
Nitrobenzene	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	U
2-Nitrotoluene	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:00	EPA 8095	U
3-Nitrotoluene	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	U
4-Nitrotoluene	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	U
Nitroglycerin	**2.0**	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	
1,3-Dinitrobenzene	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:00	EPA 8095	U
2,6-Dinitrotoluene	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	U
2,4-Dinitrotoluene	**0.22**	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	P
1,3,5-Trinitrobenzene	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	U
2,4,6-Trinitrotoluene	**0.85**	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	P
PETN	**0.064**	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	LC
RDX	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.49**	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	HC, P
3,5-Dinitroaniline	**0.044**	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	HC, P
2-Amino-4,6-dinitrotoluene	**0.45**	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	HC, P
Tetryl	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:00	EPA 8095	U
HMX	ND	0.033	mg/kg dry	1	04/23/2019	04/25/2019 23:31	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*109 %*	*55.6-133*		*04/23/2019*	*04/25/2019 23:31*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: A904202**		
% Solids	**48.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-02(01.0-01.5)

A191619-06 (Soil)

Date Sampled
04/16/2019 09:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: A904193**		
Nitrobenzene	ND	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	U
2-Nitrotoluene	ND	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:21	EPA 8095	U
3-Nitrotoluene	ND	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	U
4-Nitrotoluene	ND	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	U
Nitroglycerin	**0.20**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	
1,3-Dinitrobenzene	**0.11**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	P
2,6-Dinitrotoluene	**0.081**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	P
2,4-Dinitrotoluene	**1.2**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	
1,3,5-Trinitrobenzene	**0.25**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	HC, P
2,4,6-Trinitrotoluene	**4.1**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	
PETN	**0.034**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	LC, P
RDX	ND	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.65**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	HC, P
3,5-Dinitroaniline	**0.14**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	HC, P
2-Amino-4,6-dinitrotoluene	**0.41**	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	HC, P
Tetryl	ND	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	U
HMX	ND	0.023	mg/kg dry	1	04/23/2019	04/25/2019 23:53	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*113 %*	*55.6-133*		*04/23/2019*	*04/25/2019 23:53*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: A904202**		
% Solids	**69.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-03(01.0-01.5)

A191619-07 (Soil)

Date Sampled
04/16/2019 10:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/25/2019 23:43	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/25/2019 23:43	EPA 8095	U
Nitroglycerin	**0.048**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/25/2019 23:43	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
2,4,6-Trinitrotoluene	**0.041**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/25/2019 23:43	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:17	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/25/2019 23:43	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*	*55.6-133*		*04/23/2019*	*04/26/2019 00:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**84.5**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-16(03.0-03.5)

A191619-08 (Soil)

Date Sampled
04/16/2019 10:57

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:05	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:05	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:05	EPA 8095	U
2,6-Dinitrotoluene	**0.031**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	P
2,4-Dinitrotoluene	**0.036**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	P
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U
2,4,6-Trinitrotoluene	**4.3**	0.47	mg/kg dry	25	04/23/2019	04/27/2019 09:17	EPA 8095	P, D
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:05	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.15**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.12**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	HC, P
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 00:39	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*	*55.6-133*		*04/23/2019*	*04/26/2019 00:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**85.0**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-17(03.0-03.5)

A191619-09 (Soil)

Date Sampled
04/16/2019 11:23

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: A904193**		
Nitrobenzene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U
2-Nitrotoluene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 00:48	EPA 8095	U, M
3-Nitrotoluene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U
4-Nitrotoluene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U
Nitroglycerin	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 00:48	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 00:48	EPA 8095	U, M
2,6-Dinitrotoluene	**0.54**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	P
2,4-Dinitrotoluene	**0.49**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U
2,4,6-Trinitrotoluene	**5.1**	0.42	mg/kg dry	25	04/23/2019	04/27/2019 09:38	EPA 8095	M, P, D
PETN	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U, LC, M, X
RDX	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.67**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.52**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	HC, P
Tetryl	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U
HMX	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:22	EPA 8095	U, M
Surrogate: 2,2'-Dinitrobiphenyl		*111 %*	*55.6-133*		*04/23/2019*	*04/26/2019 01:22*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: A904202**		
% Solids	**94.5**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

BD041619B

A191619-10 (Soil)

Date Sampled
04/16/2019 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	U
2-Nitrotoluene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:52	EPA 8095	U
3-Nitrotoluene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	U
4-Nitrotoluene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:52	EPA 8095	U
Nitroglycerin	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:52	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 01:52	EPA 8095	U
2,6-Dinitrotoluene	**0.56**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	P
2,4-Dinitrotoluene	**0.50**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	U
2,4,6-Trinitrotoluene	**5.1**	0.42	mg/kg dry	25	04/23/2019	04/27/2019 11:04	EPA 8095	P, D
PETN	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	U, LC
RDX	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.73**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.56**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	HC, P
Tetryl	ND	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	U
HMX	**0.61**	0.017	mg/kg dry	1	04/23/2019	04/26/2019 02:27	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*113 %*	*55.6-133*		*04/23/2019*	*04/26/2019 02:27*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**94.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-18(01.0-01.5)

A191619-11 (Soil)

Date Sampled
04/16/2019 11:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:14	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:14	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:14	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:14	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:14	EPA 8095	U
2,4,6-Trinitrotoluene	**0.33**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	P
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:14	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.11**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.071**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	HC, P
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 02:49	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*106 %*	*55.6-133*		*04/23/2019*	*04/26/2019 02:49*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**85.1**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-19(01.0-01.5)

A191619-12 (Soil)

Date Sampled
04/16/2019 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 02:35	EPA 8095	U
2-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
3-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
4-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
Nitroglycerin	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
1,3-Dinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 02:35	EPA 8095	U
2,6-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
2,4-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
2,4,6-Trinitrotoluene	**0.033**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	P
PETN	**0.025**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	LC
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.021**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.021**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	HC
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:10	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*	*55.6-133*		*04/23/2019*	*04/26/2019 03:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**81.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-20(00.0-00.5)

A191619-13 (Soil)

Date Sampled
04/18/2019 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
2-Nitrotoluene	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
3-Nitrotoluene	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
4-Nitrotoluene	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
Nitroglycerin	**0.55**	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	
1,3-Dinitrobenzene	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 02:57	EPA 8095	U
2,6-Dinitrotoluene	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
2,4-Dinitrotoluene	**0.091**	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	P
1,3,5-Trinitrobenzene	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
2,4,6-Trinitrotoluene	**0.37**	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	
PETN	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U, LC
RDX	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.51**	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	HC, P
3,5-Dinitroaniline	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.32**	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	HC, P
Tetryl	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
HMX	ND	0.024	mg/kg dry	1	04/23/2019	04/26/2019 03:32	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*	*55.6-133*		*04/23/2019*	*04/26/2019 03:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**67.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-28(01.0-01.5)

A191619-14 (Soil)

Date Sampled
04/16/2019 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:18	EPA 8095	U
2-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
3-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
4-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
Nitroglycerin	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
1,3-Dinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:18	EPA 8095	U
2,6-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
2,4-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
PETN	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:18	EPA 8095	U, LC
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
3,5-Dinitroaniline	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 03:54	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*	*55.6-133*		*04/23/2019*	*04/26/2019 03:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**80.6**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-28(03.0-03.5)

A191619-15 (Soil)

Date Sampled
04/16/2019 14:53

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 03:40	EPA 8095	U
2-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
3-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
4-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 03:40	EPA 8095	U
Nitroglycerin	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
1,3-Dinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 03:40	EPA 8095	U
2,6-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
2,4-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
PETN	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 03:40	EPA 8095	U, LC
RDX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
3,5-Dinitroaniline	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 03:40	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
Tetryl	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
HMX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:16	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*109 %*	*55.6-133*		*04/23/2019*	*04/26/2019 04:16*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**89.3**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-28(05.0-05.5)

A191619-16 (Soil)

Date Sampled
04/16/2019 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:02	EPA 8095	U
2-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
3-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
4-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:02	EPA 8095	U
Nitroglycerin	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
1,3-Dinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
2,6-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
2,4-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
PETN	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:02	EPA 8095	U, LC
RDX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
3,5-Dinitroaniline	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:02	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
Tetryl	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
HMX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 04:37	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*	*55.6-133*		*04/23/2019*	*04/26/2019 04:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**89.5**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-28(07.0-07.5)

A191619-17 (Soil)

Date Sampled
04/16/2019 14:57

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 04:45	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 04:45	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 04:45	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 04:45	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 04:45	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:21	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*	*55.6-133*		*04/23/2019*	*04/26/2019 05:21*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**82.6**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-27(07.0-07.5)

A191619-18 (Soil)

Date Sampled
04/16/2019 15:23

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:06	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:06	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:06	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:06	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:06	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:42	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*98.4 %*	*55.6-133*		*04/23/2019*	*04/26/2019 05:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**84.5**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

SD-R-C11-04(04.5-05.0)

A191619-19 (Soil)

Date Sampled
04/17/2019 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904193**			
Nitrobenzene	**0.032**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	P
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:28	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:28	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
2,4-Dinitrotoluene	**0.027**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	P
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
2,4,6-Trinitrotoluene	**0.034**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:28	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.023**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	HC
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 05:28	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 06:04	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*107 %*	*55.6-133*		*04/23/2019*	*04/26/2019 06:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904202**			
% Solids	**85.7**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

SD-R-C11-04(06.5-07.0)

A191619-20 (Soil)

Date Sampled
04/17/2019 08:33

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: A904193**		
Nitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
2-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 05:50	EPA 8095	U
3-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
4-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 05:50	EPA 8095	U
Nitroglycerin	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 05:50	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 05:50	EPA 8095	U
2,6-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
2,4-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
PETN	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 05:50	EPA 8095	U, LC
RDX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
3,5-Dinitroaniline	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
Tetryl	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
HMX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 06:26	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*	*55.6-133*		*04/23/2019*	*04/26/2019 06:26*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: A904202**		
% Solids	**86.6**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:00	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-15(00.5-01.0)

A191619-21 (Soil)

Date Sampled
04/17/2019 08:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095						**Preparation Batch: A904204**		
Nitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:05	EPA 8095	U
2-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
3-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
4-Nitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
Nitroglycerin	**0.083**	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	
1,3-Dinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
2,6-Dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
2,4-Dinitrotoluene	**0.024**	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:05	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
PETN	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	LC, U
RDX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
3,5-Dinitroaniline	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
Tetryl	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:23	EPA 8095	U
HMX	ND	0.018	mg/kg dry	1	04/23/2019	04/26/2019 21:05	EPA 8095	LC, U
Surrogate: 2,2'-Dinitrobiphenyl		*99.9 %*	*55.6-133*		*04/23/2019*	*04/26/2019 21:23*	*EPA 8095*	
Classical Chemistry Parameters						**Preparation Batch: A904203**		
% Solids	**89.6**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-15(02.5-03.0)

A191619-22 (Soil)

Date Sampled
04/17/2019 08:47

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**0.12**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
2-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	U
3-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	U
4-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	U
Nitroglycerin	**0.14**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
1,3-Dinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:10	EPA 8095	U
2,6-Dinitrotoluene	**0.071**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
2,4-Dinitrotoluene	**0.15**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
1,3,5-Trinitrobenzene	**0.020**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
2,4,6-Trinitrotoluene	**0.45**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
PETN	**0.34**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	LC
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.045**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
3,5-Dinitroaniline	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.032**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:28	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*98.3 %*	*55.6-133*		*04/23/2019*	*04/26/2019 22:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**81.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-15(04.5-05.0)

A191619-23 (Soil)

Date Sampled
04/17/2019 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**1.3**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
2-Nitrotoluene	**0.17**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
3-Nitrotoluene	**0.029**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	P
4-Nitrotoluene	**0.19**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
Nitroglycerin	**0.84**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
1,3-Dinitrobenzene	**0.23**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
2,6-Dinitrotoluene	**0.12**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
2,4-Dinitrotoluene	**0.66**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	P
1,3,5-Trinitrobenzene	**0.058**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	P
2,4,6-Trinitrotoluene	**0.14**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	P
PETN	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	U, LC
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.085**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
3,5-Dinitroaniline	**0.039**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
2-Amino-4,6-dinitrotoluene	**0.075**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 22:49	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*150 %*	*55.6-133*		*04/23/2019*	*04/26/2019 22:49*	*EPA 8095*	*S*
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**78.6**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-16(00.5-01.0)

A191619-24 (Soil)

Date Sampled
04/17/2019 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**0.19**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
2-Nitrotoluene	**0.036**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	U
4-Nitrotoluene	**0.035**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
Nitroglycerin	**0.064**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 22:53	EPA 8095	U
2,6-Dinitrotoluene	**0.11**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
2,4-Dinitrotoluene	**0.31**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	P
1,3,5-Trinitrobenzene	**0.021**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
2,4,6-Trinitrotoluene	**0.26**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
PETN	**0.023**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	LC, P
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.069**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
3,5-Dinitroaniline	**0.026**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
2-Amino-4,6-dinitrotoluene	**0.045**	0.019	mg/kg dry	1	04/23/2019	04/26/2019 23:11	EPA 8095	
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 22:11	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/26/2019 22:11	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*101 %*	*55.6-133*		*04/23/2019*	*04/26/2019 23:11*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**84.8**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-16(02.5-03.0)

A191619-25 (Soil)

Date Sampled
04/17/2019 09:07

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**1.1**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
2-Nitrotoluene	**0.16**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
3-Nitrotoluene	**0.022**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
4-Nitrotoluene	**0.20**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
Nitroglycerin	**0.039**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
1,3-Dinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:15	EPA 8095	U
2,6-Dinitrotoluene	**0.53**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	P
2,4-Dinitrotoluene	**2.9**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
1,3,5-Trinitrobenzene	**0.18**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
2,4,6-Trinitrotoluene	**3.9**	0.20	mg/kg dry	10	04/23/2019	05/01/2019 02:53	EPA 8095	D
PETN	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	U, LC
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**1.1**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
3,5-Dinitroaniline	**0.14**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	**0.77**	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	P
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/26/2019 23:32	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*102 %*	*55.6-133*		*04/23/2019*	*04/26/2019 23:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**78.8**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-16(04.5-05.0)

A191619-26 (Soil)

Date Sampled
04/17/2019 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**0.086**	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	
2-Nitrotoluene	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:36	EPA 8095	U
3-Nitrotoluene	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
4-Nitrotoluene	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
Nitroglycerin	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
1,3-Dinitrobenzene	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:36	EPA 8095	U
2,6-Dinitrotoluene	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
2,4-Dinitrotoluene	**0.14**	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
2,4,6-Trinitrotoluene	**0.85**	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	P
PETN	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U, LC
RDX	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.48**	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	P
3,5-Dinitroaniline	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.36**	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	P
Tetryl	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
HMX	ND	0.035	mg/kg dry	1	04/23/2019	04/26/2019 23:54	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*96.1 %*	*55.6-133*		*04/23/2019*	*04/26/2019 23:54*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**45.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-17(00.5-01.0)

A191619-27 (Soil)

Date Sampled
04/17/2019 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
2-Nitrotoluene	**0.030**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:19	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:19	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:19	EPA 8095	U
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 00:37	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*	*55.6-133*		*04/23/2019*	*04/27/2019 00:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**84.8**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-17(02.5-03.0)

A191619-28 (Soil)

Date Sampled
04/17/2019 09:33

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**0.054**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
2-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U
3-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U
4-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U
Nitroglycerin	**0.039**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
1,3-Dinitrobenzene	**0.079**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
2,6-Dinitrotoluene	**0.046**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
2,4-Dinitrotoluene	**0.37**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	P
1,3,5-Trinitrobenzene	**0.045**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
2,4,6-Trinitrotoluene	**1.8**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
PETN	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U, LC
RDX	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.39**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
3,5-Dinitroaniline	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.32**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	
Tetryl	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U
HMX	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 00:59	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*112 %*	*55.6-133*		*04/23/2019*	*04/27/2019 00:59*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**73.7**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-17(04.5-05.0)

A191619-29 (Soil)

Date Sampled
04/17/2019 09:35

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**0.071**	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:02	EPA 8095	HC, P
2-Nitrotoluene	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:02	EPA 8095	U
3-Nitrotoluene	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U
4-Nitrotoluene	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:02	EPA 8095	U
Nitroglycerin	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U
1,3-Dinitrobenzene	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:02	EPA 8095	U
2,6-Dinitrotoluene	**0.036**	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	
2,4-Dinitrotoluene	**0.097**	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	P
1,3,5-Trinitrobenzene	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U
2,4,6-Trinitrotoluene	**0.74**	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	P
PETN	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U, LC
RDX	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.31**	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	P
3,5-Dinitroaniline	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.34**	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	P
Tetryl	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U
HMX	ND	0.025	mg/kg dry	1	04/23/2019	04/27/2019 01:27	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*86.5 %*	*55.6-133*		*04/23/2019*	*04/27/2019 01:27*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**64.8**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-18(04.5-05.0)

A191619-30 (Soil)

Date Sampled
04/17/2019 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**0.021**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:24	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:24	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:24	EPA 8095	U
2,6-Dinitrotoluene	**0.042**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	
2,4-Dinitrotoluene	**0.15**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U
2,4,6-Trinitrotoluene	**6.4**	0.19	mg/kg dry	10	04/23/2019	05/01/2019 03:35	EPA 8095	D
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**2.8**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**3.7**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 01:49	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*100 %*	*55.6-133*		*04/23/2019*	*04/27/2019 01:49*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**85.3**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-19(00.5-01.0)

A191619-31 (Soil)

Date Sampled
04/17/2019 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	**0.12**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	
2-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
3-Nitrotoluene	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
4-Nitrotoluene	**0.034**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	
Nitroglycerin	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
1,3-Dinitrobenzene	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 01:45	EPA 8095	U
2,6-Dinitrotoluene	**0.22**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	P
2,4-Dinitrotoluene	**0.95**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	P
1,3,5-Trinitrobenzene	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
2,4,6-Trinitrotoluene	**3.4**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	
PETN	**7.7**	0.22	mg/kg dry	10	04/23/2019	05/01/2019 03:57	EPA 8095	LC, D
RDX	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.67**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	P
3,5-Dinitroaniline	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.67**	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	P
Tetryl	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
HMX	ND	0.022	mg/kg dry	1	04/23/2019	04/27/2019 02:10	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*100 %*	*55.6-133*		*04/23/2019*	*04/27/2019 02:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**72.7**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-19(02.5-03.0)

A191619-32 (Soil)

Date Sampled
04/17/2019 09:57

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:06	EPA 8095	U
2-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
3-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
4-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
Nitroglycerin	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
1,3-Dinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
2,6-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:06	EPA 8095	U
2,4-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:06	EPA 8095	U
PETN	**4.8**	0.40	mg/kg dry	20	04/23/2019	05/01/2019 04:18	EPA 8095	LC, D
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
3,5-Dinitroaniline	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 02:32	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*99.5 %*	*55.6-133*		*04/23/2019*	*04/27/2019 02:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**80.0**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-19(04.5-05.0)

A191619-33 (Soil)

Date Sampled
04/17/2019 10:00

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Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:28	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
2,4,6-Trinitrotoluene	**0.032**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	
PETN	**11**	0.19	mg/kg dry	10	04/23/2019	05/01/2019 04:40	EPA 8095	LC, D
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:28	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:53	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*101 %*	*55.6-133*		*04/23/2019*	*04/27/2019 02:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**84.9**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

B11-602C-08(00.0-01.0)

A191619-34 (Soil)

Date Sampled
04/17/2019 11:15

Pace Analytical - Madison

Explosive Compounds by EPA Method 8095 — **Preparation Batch: A904204**

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:49	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:49	EPA 8095	U
2,6-Dinitrotoluene	**0.11**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	P
2,4-Dinitrotoluene	**2.5**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:49	EPA 8095	U
2,4,6-Trinitrotoluene	**0.047**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 02:49	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:15	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*100 %*	*55.6-133*		*04/23/2019*	*04/27/2019 03:15*	*EPA 8095*	

Classical Chemistry Parameters — **Preparation Batch: A904203**

% Solids	**85.9**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

B11-513-05(00.0-01.0)

A191619-35 (Soil)

Date Sampled
04/17/2019 11:30

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:11	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:11	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:11	EPA 8095	U
2,4,6-Trinitrotoluene	**0.031**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	
PETN	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.029**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:11	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.021**	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	
Tetryl	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/23/2019	04/27/2019 03:43	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*97.2 %*	*55.6-133*		*04/23/2019*	*04/27/2019 03:43*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**86.3**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C13-05(01.0-01.5)

A191619-36 (Soil)

Date Sampled
04/17/2019 14:30

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
2-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
3-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
4-Nitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
Nitroglycerin	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 03:33	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
2,6-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 03:33	EPA 8095	U
2,4-Dinitrotoluene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 03:33	EPA 8095	U
2,4,6-Trinitrotoluene	**0.020**	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	
PETN	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U, LC
RDX	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.042**	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	
3,5-Dinitroaniline	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 03:33	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.027**	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	
Tetryl	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
HMX	ND	0.020	mg/kg dry	1	04/23/2019	04/27/2019 04:07	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*94.7 %*	*55.6-133*		*04/23/2019*	*04/27/2019 04:07*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**81.2**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C13-06(01.0-01.5)

A191619-37 (Soil)

Date Sampled
04/17/2019 14:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904204**			
Nitrobenzene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:16	EPA 8095	U
2-Nitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
3-Nitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
4-Nitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
Nitroglycerin	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:16	EPA 8095	U, LC
1,3-Dinitrobenzene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
2,6-Dinitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:16	EPA 8095	U
2,4-Dinitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:16	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:16	EPA 8095	U
PETN	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U, LC
RDX	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
3,5-Dinitroaniline	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:16	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
Tetryl	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U
HMX	ND	0.021	mg/kg dry	1	04/23/2019	04/27/2019 04:57	EPA 8095	U, LC
Surrogate: 2,2'-Dinitrobiphenyl		*102 %*	*55.6-133*		*04/23/2019*	*04/27/2019 04:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904203**			
% Solids	**75.4**	0.00	% by Weight	1	04/23/2019	04/24/2019 10:30	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

FB041619

A191619-38 (Water)

Date Sampled
04/16/2019 15:45

Pace Analytical - Madison

Explosive Compounds by EPA Method 8095 — **Preparation Batch: A904200**

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Nitrobenzene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
2-Nitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
3-Nitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
4-Nitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
Nitroglycerin	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
1,3-Dinitrobenzene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
2,6-Dinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
2,4-Dinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
PETN	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
RDX	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.050	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
3,5-Dinitroaniline	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
Tetryl	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:24	EPA 8095	U
HMX	ND	0.025	ug/L	1	04/23/2019	05/02/2019 18:15	EPA 8095	U, E1
Surrogate: 2,2'-Dinitrobiphenyl		*103 %*	*85.3-122*		*04/23/2019*	*05/02/2019 22:24*	*EPA 8095*	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

FB041719

A191619-39 (Water)

Date Sampled
04/17/2019 10:25

Pace Analytical - Madison

Explosive Compounds by EPA Method 8095 — **Preparation Batch: A904200**

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Nitrobenzene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
2-Nitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
3-Nitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
4-Nitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
Nitroglycerin	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
1,3-Dinitrobenzene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
2,6-Dinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
2,4-Dinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
PETN	ND	0.025	ug/L	1	04/23/2019	05/02/2019 18:37	EPA 8095	U
RDX	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.050	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
3,5-Dinitroaniline	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
Tetryl	ND	0.025	ug/L	1	04/23/2019	05/02/2019 22:46	EPA 8095	U
HMX	ND	0.025	ug/L	1	04/23/2019	05/02/2019 18:37	EPA 8095	U, E1
Surrogate: 2,2'-Dinitrobiphenyl		*108 %*	*85.3-122*		*04/23/2019*	*05/02/2019 22:46*	*EPA 8095*	

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-04(03.0-03.5)

A191619-41 (Soil)

Date Sampled
04/16/2019 09:15

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904224**			
Nitrobenzene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 17:51	EPA 8095	U
2-Nitrotoluene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 17:51	EPA 8095	U
3-Nitrotoluene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	U
4-Nitrotoluene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 17:51	EPA 8095	U
Nitroglycerin	**0.31**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
1,3-Dinitrobenzene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 17:51	EPA 8095	U
2,6-Dinitrotoluene	**0.022**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
2,4-Dinitrotoluene	**0.083**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
1,3,5-Trinitrobenzene	**0.042**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
2,4,6-Trinitrotoluene	**1.7**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
PETN	**0.057**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	LC
RDX	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**1.4**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
3,5-Dinitroaniline	**0.27**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1.2**	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	
Tetryl	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	U
HMX	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 23:17	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*93.9 %*	*55.6-133*		*04/30/2019*	*04/30/2019 23:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904226**			
% Solids	**74.5**	0.00	% by Weight	1	04/30/2019	05/01/2019 10:33	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-05(03.0-03.5)

A191619-42 (Soil)

Date Sampled
04/16/2019 09:33

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904224**			
Nitrobenzene	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 18:13	EPA 8095	U
2-Nitrotoluene	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 18:13	EPA 8095	U
3-Nitrotoluene	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U
4-Nitrotoluene	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 18:13	EPA 8095	U
Nitroglycerin	**0.21**	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	
1,3-Dinitrobenzene	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 18:13	EPA 8095	U
2,6-Dinitrotoluene	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U
2,4-Dinitrotoluene	**0.42**	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U
2,4,6-Trinitrotoluene	**1.2**	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	
PETN	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U, LC
RDX	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.12**	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	
3,5-Dinitroaniline	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.10**	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	
Tetryl	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U
HMX	ND	0.039	mg/kg dry	1	04/30/2019	04/30/2019 23:39	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*93.4 %*	*55.6-133*		*04/30/2019*	*04/30/2019 23:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904226**			
% Solids	**40.6**	0.00	% by Weight	1	04/30/2019	05/01/2019 10:33	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-02(03.0-03.5)

A191619-43 (Soil)

Date Sampled
04/16/2019 09:47

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904224**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/30/2019	04/30/2019 18:34	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	04/30/2019 18:34	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	U
4-Nitrotoluene	**0.021**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
Nitroglycerin	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/30/2019	04/30/2019 18:34	EPA 8095	U, M
2,6-Dinitrotoluene	**0.068**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
2,4-Dinitrotoluene	**0.55**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
1,3,5-Trinitrobenzene	**0.24**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
2,4,6-Trinitrotoluene	**1.7**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
PETN	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	U, LC
RDX	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.47**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
3,5-Dinitroaniline	**0.14**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
2-Amino-4,6-dinitrotoluene	**0.47**	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	
Tetryl	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 00:00	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*96.7 %*	*55.6-133*		*04/30/2019*	*05/01/2019 00:00*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904226**			
% Solids	**85.2**	0.00	% by Weight	1	04/30/2019	05/01/2019 10:33	SM 2540B	

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TP-RD-D14-03(03.0-03.5)

A191619-44 (Soil)

Date Sampled
04/16/2019 10:07

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904224**			
Nitrobenzene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 19:39	EPA 8095	U
2-Nitrotoluene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 19:39	EPA 8095	U
3-Nitrotoluene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 19:39	EPA 8095	U
4-Nitrotoluene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 19:39	EPA 8095	U
Nitroglycerin	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U
1,3-Dinitrobenzene	ND	0.021	mg/kg dry	1	04/30/2019	04/30/2019 19:39	EPA 8095	U
2,6-Dinitrotoluene	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U
2,4-Dinitrotoluene	**0.096**	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U
2,4,6-Trinitrotoluene	**0.48**	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	
PETN	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U, LC
RDX	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.11**	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	
3,5-Dinitroaniline	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.087**	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	
Tetryl	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U
HMX	ND	0.021	mg/kg dry	1	04/30/2019	05/01/2019 01:05	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*96.0 %*	*55.6-133*		*04/30/2019*	*05/01/2019 01:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904226**			
% Solids	**77.2**	0.00	% by Weight	1	04/30/2019	05/01/2019 10:33	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904193 - EPA 3570										
Blank (A904193-BLK1)			Prepared: 04/23/2019 Analyzed: 04/25/2019 21:34							
Nitrobenzene	ND	0.016	mg/kg wet							U
Nitrobenzene [2C]	ND	0.016	mg/kg wet							U
2-Nitrotoluene	ND	0.016	mg/kg wet							U
2-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
3-Nitrotoluene	ND	0.016	mg/kg wet							U
3-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
4-Nitrotoluene	ND	0.016	mg/kg wet							U
4-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
Nitroglycerin	ND	0.016	mg/kg wet							U
Nitroglycerin [2C]	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene [2C]	ND	0.016	mg/kg wet							U
PETN	ND	0.016	mg/kg wet							U
PETN [2C]	ND	0.016	mg/kg wet							U
RDX	ND	0.016	mg/kg wet							U
RDX [2C]	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline [2C]	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
Tetryl	ND	0.016	mg/kg wet							U
Tetryl [2C]	ND	0.016	mg/kg wet							U
HMX	ND	0.016	mg/kg wet							U
HMX [2C]	ND	0.016	mg/kg wet							U
Surrogate: 2,2´-Dinitrobiphenyl	*0.352*		*mg/kg wet*	*0.4000*		*88.1*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.332*		*mg/kg wet*	*0.4000*		*83.1*	*39.9-153*			
LCS (A904193-BS1)			Prepared: 04/23/2019 Analyzed: 04/25/2019 21:12							
Nitrobenzene	0.394	0.016	mg/kg wet	0.4000		98.4	74-135			
Nitrobenzene [2C]	0.387	0.016	mg/kg wet	0.4000		96.7	80.5-128			
2-Nitrotoluene	0.406	0.016	mg/kg wet	0.4000		101	69.9-140			
2-Nitrotoluene [2C]	0.380	0.016	mg/kg wet	0.4000		95.0	77-132			
3-Nitrotoluene	0.408	0.016	mg/kg wet	0.4000		102	69.5-137			
3-Nitrotoluene [2C]	0.365	0.016	mg/kg wet	0.4000		91.2	77.1-132			

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904193 - EPA 3570										
LCS (A904193-BS1)				Prepared: 04/23/2019 Analyzed: 04/25/2019 21:12						
4-Nitrotoluene	0.413	0.016	mg/kg wet	0.4000		103	66.3-143			
4-Nitrotoluene [2C]	0.399	0.016	mg/kg wet	0.4000		99.8	80.5-135			
Nitroglycerin	0.388	0.016	mg/kg wet	0.4000		97.0	71.5-125			
Nitroglycerin [2C]	0.368	0.016	mg/kg wet	0.4000		92.1	69.2-119			
1,3-Dinitrobenzene	0.392	0.016	mg/kg wet	0.4000		98.0	60.8-134			
1,3-Dinitrobenzene [2C]	0.365	0.016	mg/kg wet	0.4000		91.4	65.6-134			
2,6-Dinitrotoluene	0.372	0.016	mg/kg wet	0.4000		93.1	67.4-126			
2,6-Dinitrotoluene [2C]	0.358	0.016	mg/kg wet	0.4000		89.5	70.6-122			
2,4-Dinitrotoluene	0.386	0.016	mg/kg wet	0.4000		96.4	61.5-130			
2,4-Dinitrotoluene [2C]	0.380	0.016	mg/kg wet	0.4000		95.1	69.8-124			
1,3,5-Trinitrobenzene	0.379	0.016	mg/kg wet	0.4000		94.7	65.1-130			
1,3,5-Trinitrobenzene [2C]	0.365	0.016	mg/kg wet	0.4000		91.4	71.3-122			
2,4,6-Trinitrotoluene	0.391	0.016	mg/kg wet	0.4000		97.7	65.6-131			
2,4,6-Trinitrotoluene [2C]	0.382	0.016	mg/kg wet	0.4000		95.4	66.8-126			
PETN	0.392	0.016	mg/kg wet	0.4000		98.1	67-128			
PETN [2C]	0.360	0.016	mg/kg wet	0.4000		90.1	64.4-123			
RDX	0.403	0.016	mg/kg wet	0.4000		101	66.1-133			
RDX [2C]	0.357	0.016	mg/kg wet	0.4000		89.2	73.7-121			
4-Amino-2,6-dinitrotoluene	0.375	0.016	mg/kg wet	0.4000		93.7	61.6-129			
4-Amino-2,6-dinitrotoluene [2C]	0.347	0.016	mg/kg wet	0.4000		86.8	66.8-122			
3,5-Dinitroaniline	0.364	0.016	mg/kg wet	0.4000		91.0	53.2-133			
3,5-Dinitroaniline [2C]	0.348	0.016	mg/kg wet	0.4000		87.1	66.5-126			
2-Amino-4,6-dinitrotoluene	0.375	0.016	mg/kg wet	0.4000		93.8	57.7-131			
2-Amino-4,6-dinitrotoluene [2C]	0.350	0.016	mg/kg wet	0.4000		87.5	67.3-124			
Tetryl	0.385	0.016	mg/kg wet	0.4000		96.2	57.9-134			
Tetryl [2C]	0.367	0.016	mg/kg wet	0.4000		91.8	65.1-119			
HMX	0.391	0.016	mg/kg wet	0.4000		97.6	42.7-139			
HMX [2C]	0.373	0.016	mg/kg wet	0.4000		93.3	56.1-134			
Surrogate: 2,2´-Dinitrobiphenyl	*0.396*		*mg/kg wet*	*0.4000*		*99.0*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.356*		*mg/kg wet*	*0.4000*		*88.9*	*39.9-153*			
Matrix Spike (A904193-MS1)	**Source: A191619-09**			Prepared: 04/23/2019 Analyzed: 04/26/2019 01:44						
Nitrobenzene	0.425	0.017	mg/kg dry	0.4234	0.00904	98.3	65.2-141			
Nitrobenzene [2C]	1.44	0.017	mg/kg dry	0.4234	0.0253	333	69.8-131			M
2-Nitrotoluene	0.431	0.017	mg/kg dry	0.4234	0.00460	101	72.4-138			
2-Nitrotoluene [2C]	1.37	0.017	mg/kg dry	0.4234	ND	324	71.1-132			M
3-Nitrotoluene	0.434	0.017	mg/kg dry	0.4234	ND	103	67.7-138			
3-Nitrotoluene [2C]	0.546	0.42	mg/kg dry	0.4234	ND	129	72.8-135			D
4-Nitrotoluene	0.455	0.017	mg/kg dry	0.4234	ND	107	72.5-139			
4-Nitrotoluene [2C]	0.537	0.42	mg/kg dry	0.4234	ND	127	74.9-136			D
Nitroglycerin	0.398	0.017	mg/kg dry	0.4234	0.0108	91.4	18.7-155			
Nitroglycerin [2C]	0.451	0.017	mg/kg dry	0.4234	ND	106	20.4-150			
1,3-Dinitrobenzene	0.493	0.017	mg/kg dry	0.4234	0.0451	106	37-149			
1,3-Dinitrobenzene [2C]	1.01	0.42	mg/kg dry	0.4234	ND	238	38.1-157			M, D

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904193 - EPA 3570										
Matrix Spike (A904193-MS1)	**Source: A191619-09**		Prepared: 04/23/2019	Analyzed: 04/26/2019 01:44						
2,6-Dinitrotoluene	0.912	0.017	mg/kg dry	0.4234	0.543	87.2	46-142			
2,6-Dinitrotoluene [2C]	0.753	0.42	mg/kg dry	0.4234	1.08	NR	51.5-137			M, D
2,4-Dinitrotoluene	0.892	0.017	mg/kg dry	0.4234	0.487	95.6	31.3-165			
2,4-Dinitrotoluene [2C]	0.827	0.42	mg/kg dry	0.4234	0.961	NR	28.3-169			M, D
1,3,5-Trinitrobenzene	0.520	0.017	mg/kg dry	0.4234	ND	123	20.6-157			
1,3,5-Trinitrobenzene [2C]	0.657	0.42	mg/kg dry	0.4234	0.124	126	14.4-162			D
2,4,6-Trinitrotoluene	0.478	0.42	mg/kg dry	0.4234	5.12	NR	13.8-165			M, D
2,4,6-Trinitrotoluene [2C]	0.745	0.42	mg/kg dry	0.4234	11.0	NR	13.6-169			M, D
PETN	2.70	0.017	mg/kg dry	0.4234	ND	638	11.5-150			M
PETN [2C]	0.466	0.017	mg/kg dry	0.4234	ND	110	11.5-146			
RDX	0.503	0.017	mg/kg dry	0.4234	ND	119	10.3-153			
RDX [2C]	1.11	0.017	mg/kg dry	0.4234	0.228	209	10.5-154			M
4-Amino-2,6-dinitrotoluene	1.15	0.017	mg/kg dry	0.4234	0.675	113	12.2-168			
4-Amino-2,6-dinitrotoluene [2C]	0.772	0.42	mg/kg dry	0.4234	1.42	NR	13.6-175			M, D
3,5-Dinitroaniline	0.554	0.017	mg/kg dry	0.4234	ND	131	12.2-162			
3,5-Dinitroaniline [2C]	1.54	0.017	mg/kg dry	0.4234	0.0314	355	10.3-165			M
2-Amino-4,6-dinitrotoluene	1.02	0.017	mg/kg dry	0.4234	0.524	117	11.9-165			
2-Amino-4,6-dinitrotoluene [2C]	0.709	0.42	mg/kg dry	0.4234	1.61	NR	11.3-172			M, D
Tetryl	0.552	0.017	mg/kg dry	0.4234	ND	130	11.4-160			
Tetryl [2C]	1.10	0.017	mg/kg dry	0.4234	ND	259	12.2-157			M
HMX	1.01	0.017	mg/kg dry	0.4234	ND	240	10.3-143			M
HMX [2C]	1.16	0.017	mg/kg dry	0.4234	0.539	147	11.3-160			
Surrogate: 2,2'-Dinitrobiphenyl	*0.524*		*mg/kg dry*	*0.4234*		*124*	*55.6-133*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*1.60*		*mg/kg dry*	*0.4234*		*377*	*39.9-153*			*S*
Matrix Spike Dup (A904193-MSD1)	**Source: A191619-09**		Prepared: 04/23/2019	Analyzed: 04/26/2019 02:06						
Nitrobenzene	0.420	0.017	mg/kg dry	0.4234	0.00904	97.0	65.2-141	1.33	20	
Nitrobenzene [2C]	1.40	0.017	mg/kg dry	0.4234	0.0253	324	69.8-131	2.73	20	M
2-Nitrotoluene	0.427	0.017	mg/kg dry	0.4234	0.00460	99.7	72.4-138	0.979	20	
2-Nitrotoluene [2C]	1.33	0.017	mg/kg dry	0.4234	ND	314	71.1-132	3.02	20	M
3-Nitrotoluene	0.432	0.017	mg/kg dry	0.4234	ND	102	67.7-138	0.504	20	
3-Nitrotoluene [2C]	0.965	0.42	mg/kg dry	0.4234	ND	228	72.8-135	55.5	20	M, X, D
4-Nitrotoluene	0.452	0.017	mg/kg dry	0.4234	ND	107	72.5-139	0.727	20	
4-Nitrotoluene [2C]	1.67	0.017	mg/kg dry	0.4234	0.0155	391	74.9-136	103	20	X, M
Nitroglycerin	0.393	0.017	mg/kg dry	0.4234	0.0108	90.3	18.7-155	1.12	20	
Nitroglycerin [2C]	0.429	0.017	mg/kg dry	0.4234	ND	101	20.4-150	5.02	20	
1,3-Dinitrobenzene	0.492	0.017	mg/kg dry	0.4234	0.0451	105	37-149	0.179	20	
1,3-Dinitrobenzene [2C]	1.08	0.42	mg/kg dry	0.4234	ND	256	38.1-157	7.18	20	M, D
2,6-Dinitrotoluene	0.932	0.017	mg/kg dry	0.4234	0.543	91.7	46-142	2.09	20	
2,6-Dinitrotoluene [2C]	0.856	0.42	mg/kg dry	0.4234	1.08	NR	51.5-137	12.8	20	M, D
2,4-Dinitrotoluene	0.914	0.017	mg/kg dry	0.4234	0.487	101	31.3-165	2.46	20	
2,4-Dinitrotoluene [2C]	0.957	0.42	mg/kg dry	0.4234	0.961	NR	28.3-169	14.6	20	M, D
1,3,5-Trinitrobenzene	0.520	0.017	mg/kg dry	0.4234	ND	123	20.6-157	0.0773	20	
1,3,5-Trinitrobenzene [2C]	1.65	0.017	mg/kg dry	0.4234	0.124	361	14.4-162	86.2	20	M, X

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904193 - EPA 3570										
Matrix Spike Dup (A904193-MSD1)	**Source: A191619-09**		Prepared: 04/23/2019 Analyzed: 04/27/2019 10:42							
2,4,6-Trinitrotoluene	0.461	0.42	mg/kg dry	0.4234	5.12	NR	13.8-165	3.81	20	M, D
2,4,6-Trinitrotoluene [2C]	0.809	0.42	mg/kg dry	0.4234	11.0	NR	13.6-169	8.21	20	M, D
PETN	1.74	0.017	mg/kg dry	0.4234	ND	410	11.5-150	43.6	20	M, X
PETN [2C]	0.464	0.017	mg/kg dry	0.4234	ND	110	11.5-146	0.293	20	
RDX	0.484	0.017	mg/kg dry	0.4234	ND	114	10.3-153	3.87	20	
RDX [2C]	1.07	0.017	mg/kg dry	0.4234	0.228	200	10.5-154	3.77	20	M
4-Amino-2,6-dinitrotoluene	1.15	0.017	mg/kg dry	0.4234	0.675	111	12.2-168	0.548	20	
4-Amino-2,6-dinitrotoluene [2C]	0.829	0.42	mg/kg dry	0.4234	1.42	NR	13.6-175	7.18	20	M, D
3,5-Dinitroaniline	0.547	0.017	mg/kg dry	0.4234	ND	129	12.2-162	1.16	20	
3,5-Dinitroaniline [2C]	1.52	0.017	mg/kg dry	0.4234	0.0314	351	10.3-165	1.27	20	M
2-Amino-4,6-dinitrotoluene	0.979	0.017	mg/kg dry	0.4234	0.524	107	11.9-165	4.10	20	
2-Amino-4,6-dinitrotoluene [2C]	0.779	0.42	mg/kg dry	0.4234	1.61	NR	11.3-172	9.39	20	M, D
Tetryl	0.535	0.017	mg/kg dry	0.4234	ND	126	11.4-160	3.14	20	
Tetryl [2C]	1.08	0.017	mg/kg dry	0.4234	ND	254	12.2-157	1.72	20	M
HMX	1.00	0.017	mg/kg dry	0.4234	ND	237	10.3-143	1.05	20	M
HMX [2C]	1.19	0.017	mg/kg dry	0.4234	0.539	154	11.3-160	2.42	20	
Surrogate: 2,2'-Dinitrobiphenyl	*0.469*		*mg/kg dry*	*0.4234*		*111*	*55.6-133*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*1.57*		*mg/kg dry*	*0.4234*		*371*	*39.9-153*			*S*
Batch A904200 - EPA 3511										
Blank (A904200-BLK1)			Prepared: 04/23/2019 Analyzed: 05/02/2019 22:03							
Nitrobenzene	ND	0.025	ug/L							U
Nitrobenzene [2C]	ND	0.025	ug/L							U
2-Nitrotoluene	ND	0.025	ug/L							U
2-Nitrotoluene [2C]	ND	0.025	ug/L							U
3-Nitrotoluene	ND	0.025	ug/L							U
3-Nitrotoluene [2C]	ND	0.025	ug/L							U
4-Nitrotoluene	ND	0.025	ug/L							U
4-Nitrotoluene [2C]	ND	0.025	ug/L							U
Nitroglycerin	ND	0.025	ug/L							U
Nitroglycerin [2C]	ND	0.025	ug/L							U
1,3-Dinitrobenzene	ND	0.025	ug/L							U
1,3-Dinitrobenzene [2C]	ND	0.025	ug/L							U
2,6-Dinitrotoluene	ND	0.025	ug/L							U
2,6-Dinitrotoluene [2C]	ND	0.025	ug/L							U
2,4-Dinitrotoluene	ND	0.025	ug/L							U
2,4-Dinitrotoluene [2C]	ND	0.025	ug/L							U
1,3,5-Trinitrobenzene	ND	0.025	ug/L							U
1,3,5-Trinitrobenzene [2C]	ND	0.025	ug/L							U
2,4,6-Trinitrotoluene	ND	0.025	ug/L							U
2,4,6-Trinitrotoluene [2C]	ND	0.025	ug/L							U
PETN	ND	0.025	ug/L							U
PETN [2C]	ND	0.025	ug/L							U

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904200 - EPA 3511										
Blank (A904200-BLK1)				Prepared: 04/23/2019 Analyzed: 05/02/2019 22:03						
RDX	ND	0.025	ug/L							U
RDX [2C]	ND	0.025	ug/L							U
4-Amino-2,6-dinitrotoluene	ND	0.050	ug/L							U
4-Amino-2,6-dinitrotoluene [2C]	ND	0.050	ug/L							U
3,5-Dinitroaniline	ND	0.025	ug/L							U
3,5-Dinitroaniline [2C]	ND	0.025	ug/L							U
2-Amino-4,6-dinitrotoluene	ND	0.025	ug/L							U
2-Amino-4,6-dinitrotoluene [2C]	ND	0.025	ug/L							U
Tetryl	ND	0.025	ug/L							U
Tetryl [2C]	ND	0.025	ug/L							U
HMX	ND	0.025	ug/L							U
HMX [2C]	ND	0.025	ug/L							U
Surrogate: 2,2´-Dinitrobiphenyl	*1.32*		*ug/L*	*1.250*		*106*	*85.3-122*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.21*		*ug/L*	*1.250*		*96.7*	*86.3-125*			
LCS (A904200-BS1)				Prepared: 04/23/2019 Analyzed: 05/02/2019 20:36						
Nitrobenzene	1.14	0.025	ug/L	1.250		91.3	85.4-110			
Nitrobenzene [2C]	1.23	0.025	ug/L	1.250		98.3	87.2-108			
2-Nitrotoluene	1.25	0.025	ug/L	1.250		100	81.6-121			
2-Nitrotoluene [2C]	1.26	0.025	ug/L	1.250		101	83.2-118			
3-Nitrotoluene	1.16	0.025	ug/L	1.250		92.9	82.9-118			
3-Nitrotoluene [2C]	1.28	0.025	ug/L	1.250		103	87.2-109			
4-Nitrotoluene	1.26	0.025	ug/L	1.250		101	90.5-120			
4-Nitrotoluene [2C]	1.35	0.025	ug/L	1.250		108	87.2-117			
Nitroglycerin	1.26	0.025	ug/L	1.250		101	70-130			
Nitroglycerin [2C]	1.26	0.025	ug/L	1.250		100	70-130			
1,3-Dinitrobenzene	1.14	0.025	ug/L	1.250		91.2	82.2-106			
1,3-Dinitrobenzene [2C]	1.18	0.025	ug/L	1.250		94.4	71.7-118			
2,6-Dinitrotoluene	1.21	0.025	ug/L	1.250		96.5	87.2-107			
2,6-Dinitrotoluene [2C]	1.22	0.025	ug/L	1.250		97.2	86.9-109			
2,4-Dinitrotoluene	1.24	0.025	ug/L	1.250		99.0	84.7-106			
2,4-Dinitrotoluene [2C]	1.21	0.025	ug/L	1.250		97.0	86.1-108			
1,3,5-Trinitrobenzene	1.14	0.025	ug/L	1.250		91.6	79.8-106			
1,3,5-Trinitrobenzene [2C]	1.13	0.025	ug/L	1.250		90.2	79-110			
2,4,6-Trinitrotoluene	1.31	0.025	ug/L	1.250		105	72.9-134			
2,4,6-Trinitrotoluene [2C]	1.25	0.025	ug/L	1.250		99.7	70.4-138			
PETN	1.23	0.025	ug/L	1.250		98.1	70-130			
PETN [2C]	1.19	0.025	ug/L	1.250		95.0	70-130			
RDX	1.16	0.025	ug/L	1.250		93.0	75.6-113			
RDX [2C]	1.02	0.025	ug/L	1.250		81.6	78.6-113			
4-Amino-2,6-dinitrotoluene	1.18	0.050	ug/L	1.250		94.4	80.6-116			
4-Amino-2,6-dinitrotoluene [2C]	0.984	0.050	ug/L	1.250		78.7	86.6-111			
3,5-Dinitroaniline	1.21	0.025	ug/L	1.250		96.7	70-130			
3,5-Dinitroaniline [2C]	0.958	0.025	ug/L	1.250		76.6	70-130			

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904200 - EPA 3511										
LCS (A904200-BS1)				Prepared: 04/23/2019 Analyzed: 05/02/2019 20:36						
2-Amino-4,6-dinitrotoluene	1.22	0.025	ug/L	1.250		97.9	77.4-118			
2-Amino-4,6-dinitrotoluene [2C]	1.02	0.025	ug/L	1.250		82.0	85.8-111			
Tetryl	1.20	0.025	ug/L	1.250		96.0	70-130			
Tetryl [2C]	1.12	0.025	ug/L	1.250		89.6	70-130			
HMX	1.14	0.025	ug/L	1.250		90.9	70-130			
HMX [2C]	0.741	0.025	ug/L	1.250		59.2	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*1.32*		*ug/L*	*1.250*		*106*	*85.3-122*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.21*		*ug/L*	*1.250*		*96.8*	*86.3-125*			
LCS Dup (A904200-BSD1)				Prepared: 04/23/2019 Analyzed: 05/02/2019 20:58						
Nitrobenzene	1.15	0.025	ug/L	1.250		91.7	85.4-110	0.458	20	
Nitrobenzene [2C]	1.24	0.025	ug/L	1.250		99.6	87.2-108	1.26	20	
2-Nitrotoluene	1.24	0.025	ug/L	1.250		99.0	81.6-121	0.956	20	
2-Nitrotoluene [2C]	1.27	0.025	ug/L	1.250		102	83.2-118	0.914	20	
3-Nitrotoluene	1.16	0.025	ug/L	1.250		92.6	82.9-118	0.280	20	
3-Nitrotoluene [2C]	1.31	0.025	ug/L	1.250		105	87.2-109	1.80	20	
4-Nitrotoluene	1.27	0.025	ug/L	1.250		102	90.5-120	0.527	20	
4-Nitrotoluene [2C]	1.35	0.025	ug/L	1.250		108	87.2-117	0.445	20	
Nitroglycerin	1.24	0.025	ug/L	1.250		99.4	70-130	1.56	20	
Nitroglycerin [2C]	1.23	0.025	ug/L	1.250		98.1	70-130	2.42	20	
1,3-Dinitrobenzene	1.14	0.025	ug/L	1.250		91.4	82.2-106	0.185	20	
1,3-Dinitrobenzene [2C]	1.13	0.025	ug/L	1.250		90.5	71.7-118	4.15	20	
2,6-Dinitrotoluene	1.21	0.025	ug/L	1.250		96.7	87.2-107	0.171	20	
2,6-Dinitrotoluene [2C]	1.25	0.025	ug/L	1.250		99.6	86.9-109	2.43	20	
2,4-Dinitrotoluene	1.24	0.025	ug/L	1.250		99.1	84.7-106	0.0330	20	
2,4-Dinitrotoluene [2C]	1.23	0.025	ug/L	1.250		98.2	86.1-108	1.15	20	
1,3,5-Trinitrobenzene	1.17	0.025	ug/L	1.250		93.6	79.8-106	2.15	20	
1,3,5-Trinitrobenzene [2C]	1.13	0.025	ug/L	1.250		90.4	79-110	0.274	20	
2,4,6-Trinitrotoluene	1.33	0.025	ug/L	1.250		106	72.9-134	0.976	20	
2,4,6-Trinitrotoluene [2C]	1.23	0.025	ug/L	1.250		98.7	70.4-138	1.00	20	
PETN	1.19	0.025	ug/L	1.250		95.1	70-130	3.10	20	
PETN [2C]	1.10	0.025	ug/L	1.250		88.0	70-130	7.61	20	
RDX	1.16	0.025	ug/L	1.250		93.2	75.6-113	0.236	20	
RDX [2C]	1.01	0.025	ug/L	1.250		80.9	78.6-113	0.808	20	
4-Amino-2,6-dinitrotoluene	1.21	0.050	ug/L	1.250		96.9	80.6-116	2.61	20	
4-Amino-2,6-dinitrotoluene [2C]	1.04	0.050	ug/L	1.250		83.1	86.6-111	5.33	20	
3,5-Dinitroaniline	1.24	0.025	ug/L	1.250		99.5	70-130	2.87	20	
3,5-Dinitroaniline [2C]	1.01	0.025	ug/L	1.250		80.8	70-130	5.38	20	
2-Amino-4,6-dinitrotoluene	1.22	0.025	ug/L	1.250		97.4	77.4-118	0.493	20	
2-Amino-4,6-dinitrotoluene [2C]	1.08	0.025	ug/L	1.250		86.2	85.8-111	5.02	20	
Tetryl	1.26	0.025	ug/L	1.250		101	70-130	4.82	20	
Tetryl [2C]	1.23	0.025	ug/L	1.250		98.2	70-130	9.21	20	
HMX	1.12	0.025	ug/L	1.250		89.2	70-130	1.86	20	
HMX [2C]	0.899	0.025	ug/L	1.250		71.9	70-130	19.3	20	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904200 - EPA 3511										
LCS Dup (A904200-BSD1)				Prepared: 04/23/2019 Analyzed: 05/02/2019 20:58						
Surrogate: 2,2´-Dinitrobiphenyl	*1.29*		*ug/L*	*1.250*		*104*	*85.3-122*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.12*		*ug/L*	*1.250*		*89.6*	*86.3-125*			
Batch A904204 - EPA 3570										
Blank (A904204-BLK1)				Prepared: 04/23/2019 Analyzed: 04/26/2019 21:01						
Nitrobenzene	ND	0.016	mg/kg wet							U
Nitrobenzene [2C]	ND	0.016	mg/kg wet							U
2-Nitrotoluene	ND	0.016	mg/kg wet							U
2-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
3-Nitrotoluene	ND	0.016	mg/kg wet							U
3-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
4-Nitrotoluene	ND	0.016	mg/kg wet							U
4-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
Nitroglycerin	ND	0.016	mg/kg wet							U
Nitroglycerin [2C]	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene [2C]	ND	0.016	mg/kg wet							U
PETN	ND	0.016	mg/kg wet							U
PETN [2C]	ND	0.016	mg/kg wet							U
RDX	ND	0.016	mg/kg wet							U
RDX [2C]	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline [2C]	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
Tetryl	ND	0.016	mg/kg wet							U
Tetryl [2C]	ND	0.016	mg/kg wet							U
HMX	ND	0.016	mg/kg wet							U
HMX [2C]	ND	0.016	mg/kg wet							U
Surrogate: 2,2´-Dinitrobiphenyl	*0.370*		*mg/kg wet*	*0.4000*		*92.6*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.331*		*mg/kg wet*	*0.4000*		*82.7*	*39.9-153*			

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904204 - EPA 3570										
LCS (A904204-BS1)				Prepared: 04/23/2019 Analyzed: 04/26/2019 20:40						
Nitrobenzene	0.379	0.016	mg/kg wet	0.4000		94.7	74-135			
Nitrobenzene [2C]	0.373	0.016	mg/kg wet	0.4000		93.2	80.5-128			
2-Nitrotoluene	0.383	0.016	mg/kg wet	0.4000		95.7	69.9-140			
2-Nitrotoluene [2C]	0.396	0.016	mg/kg wet	0.4000		98.9	77-132			
3-Nitrotoluene	0.391	0.016	mg/kg wet	0.4000		97.6	69.5-137			
3-Nitrotoluene [2C]	0.386	0.016	mg/kg wet	0.4000		96.4	77.1-132			
4-Nitrotoluene	0.394	0.016	mg/kg wet	0.4000		98.6	66.3-143			
4-Nitrotoluene [2C]	0.392	0.016	mg/kg wet	0.4000		98.1	80.5-135			
Nitroglycerin	0.370	0.016	mg/kg wet	0.4000		92.6	71.5-125			
Nitroglycerin [2C]	0.381	0.016	mg/kg wet	0.4000		95.1	69.2-119			
1,3-Dinitrobenzene	0.389	0.016	mg/kg wet	0.4000		97.2	60.8-134			
1,3-Dinitrobenzene [2C]	0.306	0.016	mg/kg wet	0.4000		76.4	65.6-134			
2,6-Dinitrotoluene	0.366	0.016	mg/kg wet	0.4000		91.5	67.4-126			
2,6-Dinitrotoluene [2C]	0.352	0.016	mg/kg wet	0.4000		88.1	70.6-122			
2,4-Dinitrotoluene	0.378	0.016	mg/kg wet	0.4000		94.5	61.5-130			
2,4-Dinitrotoluene [2C]	0.354	0.016	mg/kg wet	0.4000		88.5	69.8-124			
1,3,5-Trinitrobenzene	0.385	0.016	mg/kg wet	0.4000		96.3	65.1-130			
1,3,5-Trinitrobenzene [2C]	0.355	0.016	mg/kg wet	0.4000		88.7	71.3-122			
2,4,6-Trinitrotoluene	0.381	0.016	mg/kg wet	0.4000		95.3	65.6-131			
2,4,6-Trinitrotoluene [2C]	0.361	0.016	mg/kg wet	0.4000		90.3	66.8-126			
PETN	0.384	0.016	mg/kg wet	0.4000		95.9	67-128			
PETN [2C]	0.371	0.016	mg/kg wet	0.4000		92.7	64.4-123			
RDX	0.400	0.016	mg/kg wet	0.4000		100	66.1-133			
RDX [2C]	0.368	0.016	mg/kg wet	0.4000		92.1	73.7-121			
4-Amino-2,6-dinitrotoluene	0.367	0.016	mg/kg wet	0.4000		91.7	61.6-129			
4-Amino-2,6-dinitrotoluene [2C]	0.342	0.016	mg/kg wet	0.4000		85.5	66.8-122			
3,5-Dinitroaniline	0.367	0.016	mg/kg wet	0.4000		91.7	53.2-133			
3,5-Dinitroaniline [2C]	0.350	0.016	mg/kg wet	0.4000		87.6	66.5-126			
2-Amino-4,6-dinitrotoluene	0.376	0.016	mg/kg wet	0.4000		94.1	57.7-131			
2-Amino-4,6-dinitrotoluene [2C]	0.342	0.016	mg/kg wet	0.4000		85.5	67.3-124			
Tetryl	0.388	0.016	mg/kg wet	0.4000		97.0	57.9-134			
Tetryl [2C]	0.355	0.016	mg/kg wet	0.4000		88.8	65.1-119			
HMX	0.373	0.016	mg/kg wet	0.4000		93.3	42.7-139			
HMX [2C]	0.374	0.016	mg/kg wet	0.4000		93.5	56.1-134			
Surrogate: 2,2´-Dinitrobiphenyl	*0.383*		*mg/kg wet*	*0.4000*		*95.8*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.351*		*mg/kg wet*	*0.4000*		*87.8*	*39.9-153*			
Matrix Spike (A904204-MS1)	**Source: A191619-21**			Prepared: 04/23/2019 Analyzed: 04/26/2019 21:44						
Nitrobenzene	0.440	0.018	mg/kg dry	0.4463	ND	98.6	65.2-141			
Nitrobenzene [2C]	0.388	0.018	mg/kg dry	0.4463	ND	86.9	69.8-131			
2-Nitrotoluene	0.448	0.018	mg/kg dry	0.4463	ND	100	72.4-138			
2-Nitrotoluene [2C]	0.409	0.018	mg/kg dry	0.4463	ND	91.6	71.1-132			
3-Nitrotoluene	0.449	0.018	mg/kg dry	0.4463	ND	101	67.7-138			
3-Nitrotoluene [2C]	0.411	0.018	mg/kg dry	0.4463	0.0104	89.7	72.8-135			

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Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904204 - EPA 3570										
Matrix Spike (A904204-MS1)	**Source: A191619-21**		Prepared: 04/23/2019 Analyzed: 04/26/2019 21:44							
4-Nitrotoluene	0.460	0.018	mg/kg dry	0.4463	ND	103	72.5-139			
4-Nitrotoluene [2C]	0.421	0.018	mg/kg dry	0.4463	ND	94.3	74.9-136			
Nitroglycerin	0.503	0.018	mg/kg dry	0.4463	0.0828	94.1	18.7-155			
Nitroglycerin [2C]	0.481	0.018	mg/kg dry	0.4463	0.0850	88.6	20.4-150			
1,3-Dinitrobenzene	0.440	0.018	mg/kg dry	0.4463	ND	98.6	37-149			
1,3-Dinitrobenzene [2C]	0.354	0.018	mg/kg dry	0.4463	ND	79.3	38.1-157			
2,6-Dinitrotoluene	0.435	0.018	mg/kg dry	0.4463	0.0139	94.4	46-142			
2,6-Dinitrotoluene [2C]	0.395	0.018	mg/kg dry	0.4463	0.0116	85.9	51.5-137			
2,4-Dinitrotoluene	0.451	0.018	mg/kg dry	0.4463	0.0243	95.6	31.3-165			
2,4-Dinitrotoluene [2C]	0.407	0.018	mg/kg dry	0.4463	0.0190	86.9	28.3-169			
1,3,5-Trinitrobenzene	0.423	0.018	mg/kg dry	0.4463	ND	94.8	20.6-157			
1,3,5-Trinitrobenzene [2C]	0.388	0.018	mg/kg dry	0.4463	ND	86.8	14.4-162			
2,4,6-Trinitrotoluene	0.438	0.018	mg/kg dry	0.4463	0.0136	95.1	13.8-165			
2,4,6-Trinitrotoluene [2C]	0.397	0.018	mg/kg dry	0.4463	0.0134	85.9	13.6-169			
PETN	0.439	0.018	mg/kg dry	0.4463	ND	98.3	11.5-150			
PETN [2C]	0.418	0.018	mg/kg dry	0.4463	0.0188	89.5	11.5-146			
RDX	0.473	0.018	mg/kg dry	0.4463	ND	106	10.3-153			
RDX [2C]	0.402	0.018	mg/kg dry	0.4463	ND	90.0	10.5-154			
4-Amino-2,6-dinitrotoluene	0.431	0.018	mg/kg dry	0.4463	0.00528	95.4	12.2-168			
4-Amino-2,6-dinitrotoluene [2C]	0.373	0.018	mg/kg dry	0.4463	0.00673	82.0	13.6-175			
3,5-Dinitroaniline	0.434	0.018	mg/kg dry	0.4463	0.00820	95.5	12.2-162			
3,5-Dinitroaniline [2C]	0.394	0.018	mg/kg dry	0.4463	0.00570	87.0	10.3-165			
2-Amino-4,6-dinitrotoluene	0.433	0.018	mg/kg dry	0.4463	ND	97.1	11.9-165			
2-Amino-4,6-dinitrotoluene [2C]	0.384	0.018	mg/kg dry	0.4463	ND	86.0	11.3-172			
Tetryl	0.462	0.018	mg/kg dry	0.4463	ND	104	11.4-160			
Tetryl [2C]	0.421	0.018	mg/kg dry	0.4463	ND	94.4	12.2-157			
HMX	0.528	0.018	mg/kg dry	0.4463	0.0796	101	10.3-143			
HMX [2C]	0.517	0.018	mg/kg dry	0.4463	0.0160	112	11.3-160			
Surrogate: 2,2´-Dinitrobiphenyl	*0.454*		*mg/kg dry*	*0.4463*		*102*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.415*		*mg/kg dry*	*0.4463*		*93.0*	*39.9-153*			
Matrix Spike Dup (A904204-MSD1)	**Source: A191619-21**		Prepared: 04/23/2019 Analyzed: 04/26/2019 22:06							
Nitrobenzene	0.431	0.018	mg/kg dry	0.4463	ND	96.5	65.2-141	2.20	20	
Nitrobenzene [2C]	0.460	0.018	mg/kg dry	0.4463	ND	103	69.8-131	17.1	20	
2-Nitrotoluene	0.436	0.018	mg/kg dry	0.4463	ND	97.6	72.4-138	2.73	20	
2-Nitrotoluene [2C]	0.482	0.018	mg/kg dry	0.4463	ND	108	71.1-132	16.5	20	
3-Nitrotoluene	0.440	0.018	mg/kg dry	0.4463	ND	98.6	67.7-138	1.93	20	
3-Nitrotoluene [2C]	0.505	0.018	mg/kg dry	0.4463	0.0104	111	72.8-135	20.6	20	X
4-Nitrotoluene	0.441	0.018	mg/kg dry	0.4463	ND	98.9	72.5-139	4.05	20	
4-Nitrotoluene [2C]	0.508	0.018	mg/kg dry	0.4463	ND	114	74.9-136	18.8	20	
Nitroglycerin	0.478	0.018	mg/kg dry	0.4463	0.0828	88.5	18.7-155	5.07	20	
Nitroglycerin [2C]	0.535	0.018	mg/kg dry	0.4463	0.0850	101	20.4-150	10.7	20	
1,3-Dinitrobenzene	0.439	0.018	mg/kg dry	0.4463	ND	98.3	37-149	0.250	20	
1,3-Dinitrobenzene [2C]	0.490	0.018	mg/kg dry	0.4463	ND	110	38.1-157	32.4	20	X

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904204 - EPA 3570										
Matrix Spike Dup (A904204-MSD1)	**Source: A191619-21**		Prepared: 04/23/2019 Analyzed: 04/26/2019 22:06							
2,6-Dinitrotoluene	0.427	0.018	mg/kg dry	0.4463	0.0139	92.5	46-142	2.01	20	
2,6-Dinitrotoluene [2C]	0.477	0.018	mg/kg dry	0.4463	0.0116	104	51.5-137	18.7	20	
2,4-Dinitrotoluene	0.446	0.018	mg/kg dry	0.4463	0.0243	94.5	31.3-165	1.07	20	
2,4-Dinitrotoluene [2C]	0.493	0.018	mg/kg dry	0.4463	0.0190	106	28.3-169	19.1	20	
1,3,5-Trinitrobenzene	0.426	0.018	mg/kg dry	0.4463	ND	95.5	20.6-157	0.780	20	
1,3,5-Trinitrobenzene [2C]	0.446	0.018	mg/kg dry	0.4463	ND	99.8	14.4-162	13.9	20	
2,4,6-Trinitrotoluene	0.434	0.018	mg/kg dry	0.4463	0.0136	94.1	13.8-165	0.981	20	
2,4,6-Trinitrotoluene [2C]	0.463	0.018	mg/kg dry	0.4463	0.0134	101	13.6-169	15.5	20	
PETN	0.415	0.018	mg/kg dry	0.4463	ND	93.0	11.5-150	5.57	20	
PETN [2C]	0.472	0.018	mg/kg dry	0.4463	0.0188	101	11.5-146	12.1	20	
RDX	0.452	0.018	mg/kg dry	0.4463	ND	101	10.3-153	4.42	20	
RDX [2C]	0.477	0.018	mg/kg dry	0.4463	ND	107	10.5-154	17.3	20	
4-Amino-2,6-dinitrotoluene	0.425	0.018	mg/kg dry	0.4463	0.00528	94.1	12.2-168	1.28	20	
4-Amino-2,6-dinitrotoluene [2C]	0.458	0.018	mg/kg dry	0.4463	0.00673	101	13.6-175	20.5	20	X
3,5-Dinitroaniline	0.421	0.018	mg/kg dry	0.4463	0.00820	92.5	12.2-162	3.14	20	
3,5-Dinitroaniline [2C]	0.472	0.018	mg/kg dry	0.4463	0.00570	104	10.3-165	18.0	20	
2-Amino-4,6-dinitrotoluene	0.426	0.018	mg/kg dry	0.4463	ND	95.5	11.9-165	1.66	20	
2-Amino-4,6-dinitrotoluene [2C]	0.452	0.018	mg/kg dry	0.4463	ND	101	11.3-172	16.4	20	
Tetryl	0.452	0.018	mg/kg dry	0.4463	ND	101	11.4-160	2.13	20	
Tetryl [2C]	0.529	0.018	mg/kg dry	0.4463	ND	119	12.2-157	22.7	20	X
HMX	0.505	0.018	mg/kg dry	0.4463	0.0796	95.4	10.3-143	4.47	20	
HMX [2C]	0.627	0.018	mg/kg dry	0.4463	0.0160	137	11.3-160	19.1	20	
Surrogate: 2,2'-Dinitrobiphenyl	*0.436*		*mg/kg dry*	*0.4463*		*97.7*	*55.6-133*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*0.495*		*mg/kg dry*	*0.4463*		*111*	*39.9-153*			
Batch A904224 - EPA 3570										
Blank (A904224-BLK1)			Prepared: 04/30/2019 Analyzed: 04/30/2019 22:56							
Nitrobenzene	ND	0.016	mg/kg wet							U
Nitrobenzene [2C]	ND	0.016	mg/kg wet							U
2-Nitrotoluene	ND	0.016	mg/kg wet							U
2-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
3-Nitrotoluene	ND	0.016	mg/kg wet							U
3-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
4-Nitrotoluene	ND	0.016	mg/kg wet							U
4-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
Nitroglycerin	ND	0.016	mg/kg wet							U
Nitroglycerin [2C]	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
Blank (A904224-BLK1)			Prepared: 04/30/2019 Analyzed: 04/30/2019 22:56							
1,3,5-Trinitrobenzene	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene [2C]	ND	0.016	mg/kg wet							U
PETN	ND	0.016	mg/kg wet							U
PETN [2C]	ND	0.016	mg/kg wet							U
RDX	ND	0.016	mg/kg wet							U
RDX [2C]	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline [2C]	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
Tetryl	ND	0.016	mg/kg wet							U
Tetryl [2C]	ND	0.016	mg/kg wet							U
HMX	ND	0.016	mg/kg wet							U
HMX [2C]	ND	0.016	mg/kg wet							U
Surrogate: 2,2'-Dinitrobiphenyl	*0.346*		*mg/kg wet*	*0.4000*		*86.5*	*55.6-133*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*0.299*		*mg/kg wet*	*0.4000*		*74.8*	*39.9-153*			
LCS (A904224-BS1)			Prepared: 04/30/2019 Analyzed: 04/30/2019 22:34							
Nitrobenzene	0.374	0.016	mg/kg wet	0.4000		93.4	74-135			
Nitrobenzene [2C]	0.388	0.016	mg/kg wet	0.4000		97.0	80.5-128			
2-Nitrotoluene	0.388	0.016	mg/kg wet	0.4000		97.1	69.9-140			
2-Nitrotoluene [2C]	0.398	0.016	mg/kg wet	0.4000		99.5	77-132			
3-Nitrotoluene	0.386	0.016	mg/kg wet	0.4000		96.5	69.5-137			
3-Nitrotoluene [2C]	0.392	0.016	mg/kg wet	0.4000		97.9	77.1-132			
4-Nitrotoluene	0.393	0.016	mg/kg wet	0.4000		98.2	66.3-143			
4-Nitrotoluene [2C]	0.395	0.016	mg/kg wet	0.4000		98.8	80.5-135			
Nitroglycerin	0.372	0.016	mg/kg wet	0.4000		93.0	71.5-125			
Nitroglycerin [2C]	0.375	0.016	mg/kg wet	0.4000		93.8	69.2-119			
1,3-Dinitrobenzene	0.374	0.016	mg/kg wet	0.4000		93.6	60.8-134			
1,3-Dinitrobenzene [2C]	0.333	0.016	mg/kg wet	0.4000		83.3	65.6-134			
2,6-Dinitrotoluene	0.356	0.016	mg/kg wet	0.4000		89.0	67.4-126			
2,6-Dinitrotoluene [2C]	0.353	0.016	mg/kg wet	0.4000		88.3	70.6-122			
2,4-Dinitrotoluene	0.365	0.016	mg/kg wet	0.4000		91.2	61.5-130			
2,4-Dinitrotoluene [2C]	0.350	0.016	mg/kg wet	0.4000		87.5	69.8-124			
1,3,5-Trinitrobenzene	0.357	0.016	mg/kg wet	0.4000		89.3	65.1-130			
1,3,5-Trinitrobenzene [2C]	0.333	0.016	mg/kg wet	0.4000		83.3	71.3-122			
2,4,6-Trinitrotoluene	0.365	0.016	mg/kg wet	0.4000		91.3	65.6-131			
2,4,6-Trinitrotoluene [2C]	0.354	0.016	mg/kg wet	0.4000		88.6	66.8-126			
PETN	0.375	0.016	mg/kg wet	0.4000		93.6	67-128			
PETN [2C]	0.378	0.016	mg/kg wet	0.4000		94.4	64.4-123			

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Revised Report

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214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
LCS (A904224-BS1)				Prepared: 04/30/2019 Analyzed: 04/30/2019 22:34						
RDX	0.379	0.016	mg/kg wet	0.4000		94.8	66.1-133			
RDX [2C]	0.381	0.016	mg/kg wet	0.4000		95.3	73.7-121			
4-Amino-2,6-dinitrotoluene	0.350	0.016	mg/kg wet	0.4000		87.5	61.6-129			
4-Amino-2,6-dinitrotoluene [2C]	0.340	0.016	mg/kg wet	0.4000		85.1	66.8-122			
3,5-Dinitroaniline	0.363	0.016	mg/kg wet	0.4000		90.6	53.2-133			
3,5-Dinitroaniline [2C]	0.332	0.016	mg/kg wet	0.4000		83.0	66.5-126			
2-Amino-4,6-dinitrotoluene	0.354	0.016	mg/kg wet	0.4000		88.5	57.7-131			
2-Amino-4,6-dinitrotoluene [2C]	0.340	0.016	mg/kg wet	0.4000		85.1	67.3-124			
Tetryl	0.355	0.016	mg/kg wet	0.4000		88.7	57.9-134			
Tetryl [2C]	0.343	0.016	mg/kg wet	0.4000		85.8	65.1-119			
HMX	0.382	0.016	mg/kg wet	0.4000		95.6	42.7-139			
HMX [2C]	0.362	0.016	mg/kg wet	0.4000		90.5	56.1-134			
Surrogate: 2,2´-Dinitrobiphenyl	*0.368*		*mg/kg wet*	*0.4000*		*92.0*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.358*		*mg/kg wet*	*0.4000*		*89.4*	*39.9-153*			
Matrix Spike (A904224-MS1)	**Source: A191619-43**			Prepared: 04/30/2019 Analyzed: 05/01/2019 00:22						
Nitrobenzene	0.456	0.019	mg/kg dry	0.4695	ND	97.0	65.2-141			
Nitrobenzene [2C]	0.512	0.019	mg/kg dry	0.4695	ND	109	69.8-131			
2-Nitrotoluene	0.485	0.019	mg/kg dry	0.4695	0.0142	100	72.4-138			
2-Nitrotoluene [2C]	0.525	0.019	mg/kg dry	0.4695	ND	112	71.1-132			
3-Nitrotoluene	0.473	0.019	mg/kg dry	0.4695	0.00666	99.4	67.7-138			
3-Nitrotoluene [2C]	0.558	0.019	mg/kg dry	0.4695	0.0148	116	72.8-135			
4-Nitrotoluene	0.496	0.019	mg/kg dry	0.4695	0.0207	101	72.5-139			
4-Nitrotoluene [2C]	0.582	0.019	mg/kg dry	0.4695	0.0229	119	74.9-136			
Nitroglycerin	0.425	0.019	mg/kg dry	0.4695	0.00374	89.7	18.7-155			
Nitroglycerin [2C]	0.415	0.019	mg/kg dry	0.4695	0.00264	87.8	20.4-150			
1,3-Dinitrobenzene	0.501	0.019	mg/kg dry	0.4695	0.0539	95.2	37-149			
1,3-Dinitrobenzene [2C]	0.782	0.019	mg/kg dry	0.4695	ND	166	38.1-157			M
2,6-Dinitrotoluene	0.495	0.019	mg/kg dry	0.4695	0.0681	90.8	46-142			
2,6-Dinitrotoluene [2C]	0.685	0.019	mg/kg dry	0.4695	0.0788	129	51.5-137			
2,4-Dinitrotoluene	0.964	0.019	mg/kg dry	0.4695	0.546	89.2	31.3-165			
2,4-Dinitrotoluene [2C]	1.49	0.019	mg/kg dry	0.4695	0.716	164	28.3-169			
1,3,5-Trinitrobenzene	0.660	0.019	mg/kg dry	0.4695	0.244	88.5	20.6-157			
1,3,5-Trinitrobenzene [2C]	1.12	0.019	mg/kg dry	0.4695	0.318	171	14.4-162			M
2,4,6-Trinitrotoluene	2.11	0.019	mg/kg dry	0.4695	1.70	88.8	13.8-165			
2,4,6-Trinitrotoluene [2C]	2.17	0.19	mg/kg dry	0.4695	1.49	145	13.6-169			D
PETN	0.323	0.019	mg/kg dry	0.4695	ND	68.8	11.5-150			
PETN [2C]	0.354	0.019	mg/kg dry	0.4695	0.0140	72.4	11.5-146			
RDX	0.451	0.019	mg/kg dry	0.4695	ND	96.0	10.3-153			
RDX [2C]	0.505	0.019	mg/kg dry	0.4695	0.00605	106	10.5-154			
4-Amino-2,6-dinitrotoluene	0.849	0.019	mg/kg dry	0.4695	0.466	81.6	12.2-168			
4-Amino-2,6-dinitrotoluene [2C]	1.43	0.019	mg/kg dry	0.4695	0.637	170	13.6-175			
3,5-Dinitroaniline	0.568	0.019	mg/kg dry	0.4695	0.136	92.0	12.2-162			
3,5-Dinitroaniline [2C]	0.907	0.019	mg/kg dry	0.4695	0.164	158	10.3-165			

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
Matrix Spike (A904224-MS1)	**Source: A191619-43**		Prepared: 04/30/2019	Analyzed: 05/01/2019 00:22						
2-Amino-4,6-dinitrotoluene	0.876	0.019	mg/kg dry	0.4695	0.474	85.7	11.9-165			
2-Amino-4,6-dinitrotoluene [2C]	1.56	0.019	mg/kg dry	0.4695	0.706	181	11.3-172			M
Tetryl	0.473	0.019	mg/kg dry	0.4695	ND	101	11.4-160			
Tetryl [2C]	0.717	0.019	mg/kg dry	0.4695	ND	153	12.2-157			
HMX	0.372	0.019	mg/kg dry	0.4695	ND	79.2	10.3-143			
HMX [2C]	0.408	0.019	mg/kg dry	0.4695	ND	87.0	11.3-160			
Surrogate: 2,2´-Dinitrobiphenyl	*0.450*		*mg/kg dry*	*0.4695*		*95.8*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.753*		*mg/kg dry*	*0.4695*		*160*	*39.9-153*			*S*
Matrix Spike Dup (A904224-MSD1)	**Source: A191619-43**		Prepared: 04/30/2019	Analyzed: 05/01/2019 00:43						
Nitrobenzene	0.467	0.019	mg/kg dry	0.4695	ND	99.5	65.2-141	2.49	20	
Nitrobenzene [2C]	0.589	0.019	mg/kg dry	0.4695	ND	125	69.8-131	14.0	20	
2-Nitrotoluene	0.502	0.019	mg/kg dry	0.4695	0.0142	104	72.4-138	3.33	20	
2-Nitrotoluene [2C]	0.612	0.019	mg/kg dry	0.4695	ND	130	71.1-132	15.4	20	
3-Nitrotoluene	0.485	0.019	mg/kg dry	0.4695	0.00666	102	67.7-138	2.40	20	
3-Nitrotoluene [2C]	0.653	0.019	mg/kg dry	0.4695	0.0148	136	72.8-135	15.7	20	M
4-Nitrotoluene	0.517	0.019	mg/kg dry	0.4695	0.0207	106	72.5-139	4.10	20	
4-Nitrotoluene [2C]	0.685	0.019	mg/kg dry	0.4695	0.0229	141	74.9-136	16.2	20	M
Nitroglycerin	0.436	0.019	mg/kg dry	0.4695	0.00374	92.0	18.7-155	2.50	20	
Nitroglycerin [2C]	0.494	0.019	mg/kg dry	0.4695	0.00264	105	20.4-150	17.5	20	
1,3-Dinitrobenzene	0.526	0.019	mg/kg dry	0.4695	0.0539	101	37-149	4.95	20	
1,3-Dinitrobenzene [2C]	0.886	0.019	mg/kg dry	0.4695	ND	189	38.1-157	12.5	20	M
2,6-Dinitrotoluene	0.519	0.019	mg/kg dry	0.4695	0.0681	96.0	46-142	4.79	20	
2,6-Dinitrotoluene [2C]	0.799	0.019	mg/kg dry	0.4695	0.0788	153	51.5-137	15.4	20	M
2,4-Dinitrotoluene	1.08	0.019	mg/kg dry	0.4695	0.546	114	31.3-165	11.5	20	
2,4-Dinitrotoluene [2C]	1.11	0.19	mg/kg dry	0.4695	0.716	83.9	28.3-169	29.1	20	X, D
1,3,5-Trinitrobenzene	0.704	0.019	mg/kg dry	0.4695	0.244	97.8	20.6-157	6.38	20	
1,3,5-Trinitrobenzene [2C]	1.38	0.019	mg/kg dry	0.4695	0.318	226	14.4-162	20.8	20	X, M
2,4,6-Trinitrotoluene	2.20	0.019	mg/kg dry	0.4695	1.70	108	13.8-165	4.21	20	
2,4,6-Trinitrotoluene [2C]	2.10	0.19	mg/kg dry	0.4695	1.49	129	13.6-169	3.45	20	D
PETN	0.326	0.019	mg/kg dry	0.4695	ND	69.5	11.5-150	1.03	20	
PETN [2C]	0.410	0.019	mg/kg dry	0.4695	0.0140	84.3	11.5-146	14.6	20	
RDX	0.463	0.019	mg/kg dry	0.4695	ND	98.7	10.3-153	2.79	20	
RDX [2C]	0.579	0.019	mg/kg dry	0.4695	0.00605	122	10.5-154	13.7	20	
4-Amino-2,6-dinitrotoluene	0.894	0.019	mg/kg dry	0.4695	0.466	91.1	12.2-168	5.14	20	
4-Amino-2,6-dinitrotoluene [2C]	1.74	0.019	mg/kg dry	0.4695	0.637	235	13.6-175	19.5	20	M
3,5-Dinitroaniline	0.591	0.019	mg/kg dry	0.4695	0.136	96.9	12.2-162	3.97	20	
3,5-Dinitroaniline [2C]	1.11	0.019	mg/kg dry	0.4695	0.164	202	10.3-165	20.2	20	M, X
2-Amino-4,6-dinitrotoluene	0.934	0.019	mg/kg dry	0.4695	0.474	98.1	11.9-165	6.41	20	
2-Amino-4,6-dinitrotoluene [2C]	0.857	0.19	mg/kg dry	0.4695	0.706	32.2	11.3-172	57.9	20	X, D
Tetryl	0.482	0.019	mg/kg dry	0.4695	ND	103	11.4-160	1.72	20	
Tetryl [2C]	0.869	0.019	mg/kg dry	0.4695	ND	185	12.2-157	19.2	20	M
HMX	0.385	0.019	mg/kg dry	0.4695	ND	82.0	10.3-143	3.56	20	
HMX [2C]	0.467	0.019	mg/kg dry	0.4695	ND	99.4	11.3-160	13.4	20	

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
Matrix Spike Dup (A904224-MSD1)	**Source: A191619-43**		Prepared: 04/30/2019 Analyzed: 05/01/2019 00:43							
Surrogate: 2,2´-Dinitrobiphenyl	*0.458*		*mg/kg dry*	*0.4695*		*97.6*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.866*		*mg/kg dry*	*0.4695*		*185*	*39.9-153*			*S*

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904202 - % Solids										
Duplicate (A904202-DUP1)	**Source: A191619-10**		Prepared: 04/23/2019	Analyzed: 04/24/2019 10:00						
% Solids	94.1	0.00	% by Weight		94.4			0.342	20	
Batch A904203 - % Solids										
Duplicate (A904203-DUP1)	**Source: A191619-32**		Prepared: 04/23/2019	Analyzed: 04/24/2019 10:30						
% Solids	78.9	0.00	% by Weight		80.0			1.40	20	
Batch A904226 - % Solids										
Duplicate (A904226-DUP1)	**Source: A191723-14**		Prepared: 04/30/2019	Analyzed: 05/01/2019 10:33						
% Solids	83.4	0.00	% by Weight		84.6			1.40	20	

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214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Notes and Definitions

X	Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.
U	Analyte included in the analysis, but not detected
S	Surrogate recovery was outside of laboratory control limits due to an apparent matrix effect.
P	The difference in the concentrations between the primary and confirmation column was > 40%.
M	The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.
LC	Results may be biased low because of low continuing calibration verification (CCV).
HC	Results may be biased high because of high continuing calibration verification (CCV).
E1	Estimated value because of quality control sample exceedances.
D	Data reported from a dilution
ND	Analyte NOT DETECTED at or above the reporting limit or limit of detection (if listed).
NR	Not Reported
dry	Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
RPD	Relative Percent Difference

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CHAIN OF CUSTODY

No. 10866

Page: 1 of: 6

Lab Work Order #: A191619

Report To: Lora Sterner
Company: Kennedy Jenks
Address 1: 214 Carnegie Center, Suite 10
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.c

Project Number: 1540001*61 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day Hold time
Sampled By (Print): Lora Sterner

Invoice To: Lora Sterner
Company: Kennedy Jenks
Address 1: SAA
Address 2: SAA

Preservation Codes / Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E2E na 8095 (A)	HOLD (E2E) (A)					Comments	Lab ID	Lab Receipt Time
D14-667-03(00.0-00.5)	4/16/19	0840	S	1	X							01	
D14-667-03(01.0-01.5)		0843		1	X							02	
D14-667-03(03.0-03.5)		0845		1	X							03	
D14-667-03(05.0-05.5)		0848		1		X						40	
TP-RD-D14-04(01.0-01.5)		0912		1	X							04	
TP-RD-D14-04(03.0-03.5)		0915		1		X						41	
TP-RD-D14-05(01.0-01.5)		0930		1	X							05	
TP-RD-D14-05(03.0-03.5)		0933		1		X						42	
TP-RD-D14-02(01.0-01.5)		0945		1	X							06	
TP-RD-D14-02(03.0-03.5)		0947		1		X						43	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	4/18/19	1300	Kari-Ann Killin	4/19/19	1045
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1°C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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CHAIN OF CUSTODY

No. 10867

Page: 2 of: 6

Lab Work Order #: A191619

Report To: Lora Stemek
Company: Kennedy / Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemek@kennedyjenks.com

Project Number: 1540001*61 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day HOLD
Sampled By (Print): Lora Stemek

Invoice To: Lora Stemek
Company: Kennedy Jenks
Address 1: SAA
Address 2: SAA

Preservation Codes / Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A: E.Eria 8095	A: HOLD (E?E)					Comments	Lab ID	Lab Receipt Time
TP-RD-D14-03(01.0-01.5)	4/16/19	1005	S	1	X							07	
TP-RD-D14-03(03.0-03.5)	↓	1007	↓	1		X						44	
TP-RD-B13-16(03.0-03.5)	↓	1057	↓	1	X							08	
TP-RD-B13-16(05.0-05.5)	↓	1100	↓	1		X						45	
TP-RD-B13-17(03.0-03.5)	↓	1123	↓	1	X							09	
TP-RD-B13-17(05.0-05.5)	↓	1125	↓	3		X		Rec'd 2 jars			MS/MSD HOLD	46	
BD041619B	↓	—	↓	1	X							10	
TP-RD-B13-18(01.0-01.5)	↓	1145	↓	1	X							11	
TP-RD-B13-18(03.0-03.5)	↓	1147	↓	1		X						47	
TP-RD-B13-19(01.0-01.5	↓	1300	↓	1	X							12	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	4/18/19	1300	Kari A. Billi	4/19/19	1045

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1°C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 10868 Page: 3 of: 6

Lab Work Order #: A191619

Project Number: 154000161 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day Hold time
Sampled By (Print): Lora Sterner

Report To: Lora Sterner
Company: Kennedy Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes: EnCore	Preservation Codes: HOLD (LBE)	Analyses Requested: A	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-B13-19(03.0-03.5)	4/16/19	1303	S	1		X				48	
TP-RD-B13-20(00.0-00.5)	4/18/19	1045		1	X					13	
TP-RD-B13-20(01.0-01.5)	4/16/19	1330		1		X				49	
TP-RD-B11-21(01.0-01.5)		1450		1	X				"21" in description	14	
TP-RD-B11-21(03.0-03.5)		1453		1	X				changed to "28" per Lora ✓ 06-18-19	15	
TP-RD-B11-21(05.0-05.5)		1455		1	X					16	
TP-RD-B11-21(07.0-07.5)		1457		1	X					17	
TP-RD-B11-21(09.0-09.5)		1500		1		X				50	
TP-RD-B11-20(07.0-07.5)		1523		1	X				"20" in description changed to "27" per Lora ✓ 06-18-19	18	
TP-RD-B11-20(09.0-09.5)		1525		1		X				51	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: Lora Sterner Date: 4/18/19 Time: 1300
Relinquished By: Date: Time:

Received By: Kari-Ann Killeen Date: 4/19/19 Time: 1045
Received By: Date: Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1°C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 10869

Lab Work Order #: A191619

Report To: Lora Sterner
Company: Kennedy/Tenks
Address 1: 214 Carnegie Center Suite 10
Address 2: Princeton, NJ 08540
E-mail Address: lora.sterner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Project Number: 154000 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day hold time
Sampled By (Print): Lora Sterner

Preservation Codes / Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E3E via 8025 (A)	HOLD (E3E) (A)					Comments	Lab ID	Lab Receipt Time
SD-R-C11-04(04.5-05.0)	4/17/19	0830	S	1	X							19	
SD-R-C11-04(06.5-07.0)	↓	0833	↓	1	X							20	
SD-R-C11-04(08.5-09.0)	↓	0835	↓	1		X						52	
TP-RD-C11-15(00.5-01.0)	↓	0845	↓	1	X							21	
TP-RD-C11-15(02.5-03.0)	↓	0847	↓	1	X							22	
TP-RD-C11-15(04.5-05.0)	↓	0850	↓	1	X							23	
TP-RD-C11-15(06.5-07.0)	↓	0853	↓	3		X					MS/MSD HOLD	53	
TP-RD-C11-16(00.5-01.0)	↓	0905	↓	1	X							24	
TP-RD-C11-16(02.5-03.0)	↓	0907	↓	1	X							25	
TP-RD-C11-16(04.5-05.0)	↓	0910	↓	1	X							26	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	4/18/19	1300	Kari-Ann Killian	4/19/19	1045

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1°C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 10870

Lab Work Order #: A191619

Report To: Lora Sterner
Company: Kennedy Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lora.sterner@kennedyjenks.c

Project Number: 1540001*61 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day Hold time
Sampled By (Print): Lora Sterner

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes / Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A: EnCore 8095	A: Hold (E&E)					Comments	Lab ID	Lab Receipt Time
TP-RD-C11-16 (06.5-07.0)	4/17/19	0913	S	1		X						54	
TP-RD-C11-17 (00.5-01.0)	↓	0930	↓	1	X							27	
TP-RD-C11-17 (02.5-03.0)		0933		1	X							28	
TP-RD-C11-17 (04.5-05.0)		0935		1	X							29	
TP-RD-C11-17 (06.5-07.0)		0937		1		X						55	
TP-RD-C11-18 (04.5-05.0)		0950		1	X							30	
TP-RD-C11-19 (00.5-01.0)		0955		1	X							31	
TP-RD-C11-19 (02.5-03.0)		0957		1	X							32	
TP-RD-C11-19 (04.5-05.0)		1000		1	X							33	
B11-602C-08 (00.0-01.0)	↓	1115	↓	1	X							34	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	4/18/19	1300	Kari-Ann Killin	4/19/19	1045

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1°C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 10871

Page: 6 of: 6

Lab Work Order #: A191619

Report To: Lora Sterner
Company: Kennedy Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lora sterner@kennedyjenks.com

Project Number: 1540001*261 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day hold time
Sampled By (Print): Lora Sterner

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes / Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E+E via 8095 (A)	HAD (E+E) (A)					Comments	Lab ID	Lab Receipt Time
B11-513-05 (00.0-01.0)	4/17/19	1130	S	1	X							35	
TP-RD-C13-05 (01.0-01.5)	4/17/19	1430	S	1	X							36	
TP-RD-C13-05 (03.0-03.5)	4/17/19	1435	S	1		X						56	
TP-RD-C13-06 (01.0-01.5)	4/17/19	1440	S	1	X							37	
FB041619	4/16/19	1545	W	2	X							38	
FB041719	4/17/19	1025	W	2	X							39	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	4/18/19	1300	Kari-Ann Killian	4/19/19	1045

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1°C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

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June 18, 2019

Lora Sterner
Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton, NJ 08540

RE: Ashland Kenvil - Kenvil, NJ

Enclosed are the revised analytical results for the samples received by the laboratory on the dates listed on the following page(s).

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser
Project Manager

Certification List			Expires
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2020
ILEPA	Illinois Secondary NELAP Accreditation	004366	04/30/2020
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2020
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2019
NCDEQ	North Carolina Dept. of Environmental Quality Accr	688	12/31/2019
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2019
ODEQ	Oklahoma Department of Environmental Quality Ac	2018-087	08/31/2019
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2019
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2019

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-RD-B11-28(09.0-09.5)	A191619-50	Soil	04/16/2019	04/19/2019
D14-667-03(05.0-05.5)	A191901-01	Soil	04/16/2019	04/19/2019

CASE NARRATIVE

Sample Receipt Information:
Samples released from hold by client via email.

Sample A191901-01 was held frozen by Pace-Madison.

Please see the chain of custody (COC) documents at the end of this report for additional information.

Laboratory Control Samples (LCS):
The E1 footnote on sample A191901-01 indicates that there were quality control sample exceedances for 1,3-dinitrobenzene. The LCS recovery was below acceptable limits. Please see the quality control section of the report for more information.

Continuing Calibration Verification (CCV):
The LC footnote on sample A191901-01 states that there was a low CCV recovery for PETN. The lower control limit is 80% and the lowest recovery was 71.7%.

CCV indicates a potential high bias for nitrobenzene, 2-nitrotoluene, 3-nitrotoluene and tetryl for sample A191901-01. Sample was less than the reporting limit for these analytes so no further action is required.

REASON FOR REVISED REPORT

This report was revised to change the sample description for A191619-50 per client request. This report should replace "A191619,A191901 FINAL 05 14 2019 0817".

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-28(09.0-09.5)

A191619-50 (Soil)

Date Sampled
04/16/2019 15:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A904224**			
Nitrobenzene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
2-Nitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
3-Nitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
4-Nitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
Nitroglycerin	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 16:23	EPA 8095	U
1,3-Dinitrobenzene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
2,6-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 16:23	EPA 8095	U
2,4-Dinitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 16:23	EPA 8095	U
1,3,5-Trinitrobenzene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 16:23	EPA 8095	U
2,4,6-Trinitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
PETN	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
RDX	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 16:23	EPA 8095	U
4-Amino-2,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 16:23	EPA 8095	U
3,5-Dinitroaniline	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
2-Amino-4,6-dinitrotoluene	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
Tetryl	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 16:23	EPA 8095	U
HMX	ND	0.019	mg/kg dry	1	04/30/2019	05/01/2019 17:20	EPA 8095	U
Surrogate: 2,2'-Dinitrobiphenyl		*88.3 %*	*55.6-133*		*04/30/2019*	*05/01/2019 16:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A904226**			
% Solids	**85.0**	0.00	% by Weight	1	04/30/2019	05/01/2019 10:33	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

D14-667-03(05.0-05.5)

A191901-01 (Soil)

Date Sampled
04/16/2019 08:48

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A905176**			**H**
Nitrobenzene	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:05	EPA 8095	U
2-Nitrotoluene	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:05	EPA 8095	U
3-Nitrotoluene	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:05	EPA 8095	U, M
4-Nitrotoluene	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	U
Nitroglycerin	**0.19**	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	X
1,3-Dinitrobenzene	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:05	EPA 8095	U, E1
2,6-Dinitrotoluene	**0.024**	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	U
2,4-Dinitrotoluene	**0.15**	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	U
2,4,6-Trinitrotoluene	**3.0**	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	M, X
PETN	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	U, LC
RDX	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	U
4-Amino-2,6-dinitrotoluene	**0.35**	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	
3,5-Dinitroaniline	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	U
2-Amino-4,6-dinitrotoluene	**0.49**	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	
Tetryl	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:05	EPA 8095	U, X
HMX	ND	0.024	mg/kg dry	1	05/06/2019	05/08/2019 17:04	EPA 8095	U
Surrogate: 2,2´-Dinitrobiphenyl		*104 %*	*55.6-133*		*05/06/2019*	*05/08/2019 17:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A905181**			
% Solids	**65.6**	0.00	% by Weight	1	05/07/2019	05/08/2019 09:01	SM 2540B	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
Blank (A904224-BLK1)			Prepared: 04/30/2019 Analyzed: 04/30/2019 22:56							
Nitrobenzene	ND	0.016	mg/kg wet							U
Nitrobenzene [2C]	ND	0.016	mg/kg wet							U
2-Nitrotoluene	ND	0.016	mg/kg wet							U
2-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
3-Nitrotoluene	ND	0.016	mg/kg wet							U
3-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
4-Nitrotoluene	ND	0.016	mg/kg wet							U
4-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
Nitroglycerin	ND	0.016	mg/kg wet							U
Nitroglycerin [2C]	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene [2C]	ND	0.016	mg/kg wet							U
PETN	ND	0.016	mg/kg wet							U
PETN [2C]	ND	0.016	mg/kg wet							U
RDX	ND	0.016	mg/kg wet							U
RDX [2C]	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline [2C]	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
Tetryl	ND	0.016	mg/kg wet							U
Tetryl [2C]	ND	0.016	mg/kg wet							U
HMX	ND	0.016	mg/kg wet							U
HMX [2C]	ND	0.016	mg/kg wet							U
Surrogate: 2,2´-Dinitrobiphenyl	*0.346*		*mg/kg wet*	*0.4000*		*86.5*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.299*		*mg/kg wet*	*0.4000*		*74.8*	*39.9-153*			
LCS (A904224-BS1)			Prepared: 04/30/2019 Analyzed: 04/30/2019 22:34							
Nitrobenzene	0.374	0.016	mg/kg wet	0.4000		93.4	74-135			
Nitrobenzene [2C]	0.388	0.016	mg/kg wet	0.4000		97.0	80.5-128			
2-Nitrotoluene	0.388	0.016	mg/kg wet	0.4000		97.1	69.9-140			
2-Nitrotoluene [2C]	0.398	0.016	mg/kg wet	0.4000		99.5	77-132			
3-Nitrotoluene	0.386	0.016	mg/kg wet	0.4000		96.5	69.5-137			
3-Nitrotoluene [2C]	0.392	0.016	mg/kg wet	0.4000		97.9	77.1-132			

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
LCS (A904224-BS1)				Prepared: 04/30/2019 Analyzed: 04/30/2019 22:34						
4-Nitrotoluene	0.393	0.016	mg/kg wet	0.4000		98.2	66.3-143			
4-Nitrotoluene [2C]	0.395	0.016	mg/kg wet	0.4000		98.8	80.5-135			
Nitroglycerin	0.372	0.016	mg/kg wet	0.4000		93.0	71.5-125			
Nitroglycerin [2C]	0.375	0.016	mg/kg wet	0.4000		93.8	69.2-119			
1,3-Dinitrobenzene	0.374	0.016	mg/kg wet	0.4000		93.6	60.8-134			
1,3-Dinitrobenzene [2C]	0.333	0.016	mg/kg wet	0.4000		83.3	65.6-134			
2,6-Dinitrotoluene	0.356	0.016	mg/kg wet	0.4000		89.0	67.4-126			
2,6-Dinitrotoluene [2C]	0.353	0.016	mg/kg wet	0.4000		88.3	70.6-122			
2,4-Dinitrotoluene	0.365	0.016	mg/kg wet	0.4000		91.2	61.5-130			
2,4-Dinitrotoluene [2C]	0.350	0.016	mg/kg wet	0.4000		87.5	69.8-124			
1,3,5-Trinitrobenzene	0.357	0.016	mg/kg wet	0.4000		89.3	65.1-130			
1,3,5-Trinitrobenzene [2C]	0.333	0.016	mg/kg wet	0.4000		83.3	71.3-122			
2,4,6-Trinitrotoluene	0.365	0.016	mg/kg wet	0.4000		91.3	65.6-131			
2,4,6-Trinitrotoluene [2C]	0.354	0.016	mg/kg wet	0.4000		88.6	66.8-126			
PETN	0.375	0.016	mg/kg wet	0.4000		93.6	67-128			
PETN [2C]	0.378	0.016	mg/kg wet	0.4000		94.4	64.4-123			
RDX	0.379	0.016	mg/kg wet	0.4000		94.8	66.1-133			
RDX [2C]	0.381	0.016	mg/kg wet	0.4000		95.3	73.7-121			
4-Amino-2,6-dinitrotoluene	0.350	0.016	mg/kg wet	0.4000		87.5	61.6-129			
4-Amino-2,6-dinitrotoluene [2C]	0.340	0.016	mg/kg wet	0.4000		85.1	66.8-122			
3,5-Dinitroaniline	0.363	0.016	mg/kg wet	0.4000		90.6	53.2-133			
3,5-Dinitroaniline [2C]	0.332	0.016	mg/kg wet	0.4000		83.0	66.5-126			
2-Amino-4,6-dinitrotoluene	0.354	0.016	mg/kg wet	0.4000		88.5	57.7-131			
2-Amino-4,6-dinitrotoluene [2C]	0.340	0.016	mg/kg wet	0.4000		85.1	67.3-124			
Tetryl	0.355	0.016	mg/kg wet	0.4000		88.7	57.9-134			
Tetryl [2C]	0.343	0.016	mg/kg wet	0.4000		85.8	65.1-119			
HMX	0.382	0.016	mg/kg wet	0.4000		95.6	42.7-139			
HMX [2C]	0.362	0.016	mg/kg wet	0.4000		90.5	56.1-134			
Surrogate: 2,2´-Dinitrobiphenyl	*0.368*		*mg/kg wet*	*0.4000*		*92.0*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.358*		*mg/kg wet*	*0.4000*		*89.4*	*39.9-153*			
Matrix Spike (A904224-MS1)	**Source: A191619-43**			Prepared: 04/30/2019 Analyzed: 05/01/2019 00:22						
Nitrobenzene	0.456	0.019	mg/kg dry	0.4695	ND	97.0	65.2-141			
Nitrobenzene [2C]	0.512	0.019	mg/kg dry	0.4695	ND	109	69.8-131			
2-Nitrotoluene	0.485	0.019	mg/kg dry	0.4695	0.0142	100	72.4-138			
2-Nitrotoluene [2C]	0.525	0.019	mg/kg dry	0.4695	ND	112	71.1-132			
3-Nitrotoluene	0.473	0.019	mg/kg dry	0.4695	0.00666	99.4	67.7-138			
3-Nitrotoluene [2C]	0.558	0.019	mg/kg dry	0.4695	0.0148	116	72.8-135			
4-Nitrotoluene	0.496	0.019	mg/kg dry	0.4695	0.0207	101	72.5-139			
4-Nitrotoluene [2C]	0.582	0.019	mg/kg dry	0.4695	0.0229	119	74.9-136			
Nitroglycerin	0.425	0.019	mg/kg dry	0.4695	0.00374	89.7	18.7-155			
Nitroglycerin [2C]	0.415	0.019	mg/kg dry	0.4695	0.00264	87.8	20.4-150			
1,3-Dinitrobenzene	0.501	0.019	mg/kg dry	0.4695	0.0539	95.2	37-149			
1,3-Dinitrobenzene [2C]	0.782	0.019	mg/kg dry	0.4695	ND	166	38.1-157			M

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
Matrix Spike (A904224-MS1)	**Source: A191619-43**		Prepared: 04/30/2019 Analyzed: 05/01/2019 00:22							
2,6-Dinitrotoluene	0.495	0.019	mg/kg dry	0.4695	0.0681	90.8	46-142			
2,6-Dinitrotoluene [2C]	0.685	0.019	mg/kg dry	0.4695	0.0788	129	51.5-137			
2,4-Dinitrotoluene	0.964	0.019	mg/kg dry	0.4695	0.546	89.2	31.3-165			
2,4-Dinitrotoluene [2C]	1.49	0.019	mg/kg dry	0.4695	0.716	164	28.3-169			
1,3,5-Trinitrobenzene	0.660	0.019	mg/kg dry	0.4695	0.244	88.5	20.6-157			
1,3,5-Trinitrobenzene [2C]	1.12	0.019	mg/kg dry	0.4695	0.318	171	14.4-162			M
2,4,6-Trinitrotoluene	2.11	0.019	mg/kg dry	0.4695	1.70	88.8	13.8-165			
2,4,6-Trinitrotoluene [2C]	2.17	0.19	mg/kg dry	0.4695	1.49	145	13.6-169			D
PETN	0.323	0.019	mg/kg dry	0.4695	ND	68.8	11.5-150			
PETN [2C]	0.354	0.019	mg/kg dry	0.4695	0.0140	72.4	11.5-146			
RDX	0.451	0.019	mg/kg dry	0.4695	ND	96.0	10.3-153			
RDX [2C]	0.505	0.019	mg/kg dry	0.4695	0.00605	106	10.5-154			
4-Amino-2,6-dinitrotoluene	0.849	0.019	mg/kg dry	0.4695	0.466	81.6	12.2-168			
4-Amino-2,6-dinitrotoluene [2C]	1.43	0.019	mg/kg dry	0.4695	0.637	170	13.6-175			
3,5-Dinitroaniline	0.568	0.019	mg/kg dry	0.4695	0.136	92.0	12.2-162			
3,5-Dinitroaniline [2C]	0.907	0.019	mg/kg dry	0.4695	0.164	158	10.3-165			
2-Amino-4,6-dinitrotoluene	0.876	0.019	mg/kg dry	0.4695	0.474	85.7	11.9-165			
2-Amino-4,6-dinitrotoluene [2C]	1.56	0.019	mg/kg dry	0.4695	0.706	181	11.3-172			M
Tetryl	0.473	0.019	mg/kg dry	0.4695	ND	101	11.4-160			
Tetryl [2C]	0.717	0.019	mg/kg dry	0.4695	ND	153	12.2-157			
HMX	0.372	0.019	mg/kg dry	0.4695	ND	79.2	10.3-143			
HMX [2C]	0.408	0.019	mg/kg dry	0.4695	ND	87.0	11.3-160			
Surrogate: 2,2'-Dinitrobiphenyl	*0.450*		*mg/kg dry*	*0.4695*		*95.8*	*55.6-133*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*0.753*		*mg/kg dry*	*0.4695*		*160*	*39.9-153*			*S*
Matrix Spike Dup (A904224-MSD1)	**Source: A191619-43**		Prepared: 04/30/2019 Analyzed: 05/01/2019 00:43							
Nitrobenzene	0.467	0.019	mg/kg dry	0.4695	ND	99.5	65.2-141	2.49	20	
Nitrobenzene [2C]	0.589	0.019	mg/kg dry	0.4695	ND	125	69.8-131	14.0	20	
2-Nitrotoluene	0.502	0.019	mg/kg dry	0.4695	0.0142	104	72.4-138	3.33	20	
2-Nitrotoluene [2C]	0.612	0.019	mg/kg dry	0.4695	ND	130	71.1-132	15.4	20	
3-Nitrotoluene	0.485	0.019	mg/kg dry	0.4695	0.00666	102	67.7-138	2.40	20	
3-Nitrotoluene [2C]	0.653	0.019	mg/kg dry	0.4695	0.0148	136	72.8-135	15.7	20	M
4-Nitrotoluene	0.517	0.019	mg/kg dry	0.4695	0.0207	106	72.5-139	4.10	20	
4-Nitrotoluene [2C]	0.685	0.019	mg/kg dry	0.4695	0.0229	141	74.9-136	16.2	20	M
Nitroglycerin	0.436	0.019	mg/kg dry	0.4695	0.00374	92.0	18.7-155	2.50	20	
Nitroglycerin [2C]	0.494	0.019	mg/kg dry	0.4695	0.00264	105	20.4-150	17.5	20	
1,3-Dinitrobenzene	0.526	0.019	mg/kg dry	0.4695	0.0539	101	37-149	4.95	20	
1,3-Dinitrobenzene [2C]	0.886	0.019	mg/kg dry	0.4695	ND	189	38.1-157	12.5	20	M
2,6-Dinitrotoluene	0.519	0.019	mg/kg dry	0.4695	0.0681	96.0	46-142	4.79	20	
2,6-Dinitrotoluene [2C]	0.799	0.019	mg/kg dry	0.4695	0.0788	153	51.5-137	15.4	20	M
2,4-Dinitrotoluene	1.08	0.019	mg/kg dry	0.4695	0.546	114	31.3-165	11.5	20	
2,4-Dinitrotoluene [2C]	1.11	0.19	mg/kg dry	0.4695	0.716	83.9	28.3-169	29.1	20	D, X
1,3,5-Trinitrobenzene	0.704	0.019	mg/kg dry	0.4695	0.244	97.8	20.6-157	6.38	20	
1,3,5-Trinitrobenzene [2C]	1.38	0.019	mg/kg dry	0.4695	0.318	226	14.4-162	20.8	20	M, X

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904224 - EPA 3570										
Matrix Spike Dup (A904224-MSD1)	**Source: A191619-43**		Prepared: 04/30/2019 Analyzed: 05/01/2019 00:43							
2,4,6-Trinitrotoluene	2.20	0.019	mg/kg dry	0.4695	1.70	108	13.8-165	4.21	20	
2,4,6-Trinitrotoluene [2C]	2.10	0.19	mg/kg dry	0.4695	1.49	129	13.6-169	3.45	20	D
PETN	0.326	0.019	mg/kg dry	0.4695	ND	69.5	11.5-150	1.03	20	
PETN [2C]	0.410	0.019	mg/kg dry	0.4695	0.0140	84.3	11.5-146	14.6	20	
RDX	0.463	0.019	mg/kg dry	0.4695	ND	98.7	10.3-153	2.79	20	
RDX [2C]	0.579	0.019	mg/kg dry	0.4695	0.00605	122	10.5-154	13.7	20	
4-Amino-2,6-dinitrotoluene	0.894	0.019	mg/kg dry	0.4695	0.466	91.1	12.2-168	5.14	20	
4-Amino-2,6-dinitrotoluene [2C]	1.74	0.019	mg/kg dry	0.4695	0.637	235	13.6-175	19.5	20	M
3,5-Dinitroaniline	0.591	0.019	mg/kg dry	0.4695	0.136	96.9	12.2-162	3.97	20	
3,5-Dinitroaniline [2C]	1.11	0.019	mg/kg dry	0.4695	0.164	202	10.3-165	20.2	20	M, X
2-Amino-4,6-dinitrotoluene	0.934	0.019	mg/kg dry	0.4695	0.474	98.1	11.9-165	6.41	20	
2-Amino-4,6-dinitrotoluene [2C]	0.857	0.19	mg/kg dry	0.4695	0.706	32.2	11.3-172	57.9	20	D, X
Tetryl	0.482	0.019	mg/kg dry	0.4695	ND	103	11.4-160	1.72	20	
Tetryl [2C]	0.869	0.019	mg/kg dry	0.4695	ND	185	12.2-157	19.2	20	M
HMX	0.385	0.019	mg/kg dry	0.4695	ND	82.0	10.3-143	3.56	20	
HMX [2C]	0.467	0.019	mg/kg dry	0.4695	ND	99.4	11.3-160	13.4	20	
Surrogate: 2,2´-Dinitrobiphenyl	*0.458*		*mg/kg dry*	*0.4695*		*97.6*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.866*		*mg/kg dry*	*0.4695*		*185*	*39.9-153*			*S*
Batch A905176 - EPA 3570										
Blank (A905176-BLK1)			Prepared: 05/06/2019 Analyzed: 05/08/2019 15:16							
Nitrobenzene	ND	0.016	mg/kg wet							U
Nitrobenzene [2C]	ND	0.016	mg/kg wet							U
2-Nitrotoluene	ND	0.016	mg/kg wet							U
2-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
3-Nitrotoluene	ND	0.016	mg/kg wet							U
3-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
4-Nitrotoluene	ND	0.016	mg/kg wet							U
4-Nitrotoluene [2C]	ND	0.016	mg/kg wet							U
Nitroglycerin	ND	0.016	mg/kg wet							U
Nitroglycerin [2C]	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene	ND	0.016	mg/kg wet							U
1,3-Dinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,6-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene	ND	0.016	mg/kg wet							U
2,4-Dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene	ND	0.016	mg/kg wet							U
1,3,5-Trinitrobenzene [2C]	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene	ND	0.016	mg/kg wet							U
2,4,6-Trinitrotoluene [2C]	ND	0.016	mg/kg wet							U
PETN	ND	0.016	mg/kg wet							U
PETN [2C]	ND	0.016	mg/kg wet							U

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A905176 - EPA 3570										
Blank (A905176-BLK1)				Prepared: 05/06/2019 Analyzed: 05/08/2019 15:16						
RDX	ND	0.016	mg/kg wet							U
RDX [2C]	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene	ND	0.016	mg/kg wet							U
4-Amino-2,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline	ND	0.016	mg/kg wet							U
3,5-Dinitroaniline [2C]	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene	ND	0.016	mg/kg wet							U
2-Amino-4,6-dinitrotoluene [2C]	ND	0.016	mg/kg wet							U
Tetryl	ND	0.016	mg/kg wet							U
Tetryl [2C]	ND	0.016	mg/kg wet							U
HMX	ND	0.016	mg/kg wet							U
HMX [2C]	ND	0.016	mg/kg wet							U
Surrogate: 2,2´-Dinitrobiphenyl	*0.386*		*mg/kg wet*	*0.4000*		*96.5*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.374*		*mg/kg wet*	*0.4000*		*93.6*	*39.9-153*			
LCS (A905176-BS1)				Prepared: 05/06/2019 Analyzed: 05/08/2019 15:38						
Nitrobenzene	0.379	0.016	mg/kg wet	0.4000		94.9	74-135			
Nitrobenzene [2C]	0.400	0.016	mg/kg wet	0.4000		100	80.5-128			
2-Nitrotoluene	0.394	0.016	mg/kg wet	0.4000		98.6	69.9-140			
2-Nitrotoluene [2C]	0.410	0.016	mg/kg wet	0.4000		103	77-132			
3-Nitrotoluene	0.393	0.016	mg/kg wet	0.4000		98.3	69.5-137			
3-Nitrotoluene [2C]	0.418	0.016	mg/kg wet	0.4000		105	77.1-132			
4-Nitrotoluene	0.399	0.016	mg/kg wet	0.4000		99.8	66.3-143			
4-Nitrotoluene [2C]	0.466	0.016	mg/kg wet	0.4000		117	80.5-135			
Nitroglycerin	0.392	0.016	mg/kg wet	0.4000		98.1	71.5-125			
Nitroglycerin [2C]	0.399	0.016	mg/kg wet	0.4000		99.8	69.2-119			
1,3-Dinitrobenzene	0.377	0.016	mg/kg wet	0.4000		94.3	60.8-134			
1,3-Dinitrobenzene [2C]	0.260	0.016	mg/kg wet	0.4000		65.0	65.6-134			
2,6-Dinitrotoluene	0.364	0.016	mg/kg wet	0.4000		90.9	67.4-126			
2,6-Dinitrotoluene [2C]	0.395	0.016	mg/kg wet	0.4000		98.8	70.6-122			
2,4-Dinitrotoluene	0.374	0.016	mg/kg wet	0.4000		93.6	61.5-130			
2,4-Dinitrotoluene [2C]	0.402	0.016	mg/kg wet	0.4000		100	69.8-124			
1,3,5-Trinitrobenzene	0.364	0.016	mg/kg wet	0.4000		91.0	65.1-130			
1,3,5-Trinitrobenzene [2C]	0.380	0.016	mg/kg wet	0.4000		95.1	71.3-122			
2,4,6-Trinitrotoluene	0.376	0.016	mg/kg wet	0.4000		94.1	65.6-131			
2,4,6-Trinitrotoluene [2C]	0.396	0.016	mg/kg wet	0.4000		98.9	66.8-126			
PETN	0.386	0.016	mg/kg wet	0.4000		96.5	67-128			
PETN [2C]	0.393	0.016	mg/kg wet	0.4000		98.2	64.4-123			
RDX	0.410	0.016	mg/kg wet	0.4000		103	66.1-133			
RDX [2C]	0.424	0.016	mg/kg wet	0.4000		106	73.7-121			
4-Amino-2,6-dinitrotoluene	0.379	0.016	mg/kg wet	0.4000		94.6	61.6-129			
4-Amino-2,6-dinitrotoluene [2C]	0.382	0.016	mg/kg wet	0.4000		95.6	66.8-122			
3,5-Dinitroaniline	0.378	0.016	mg/kg wet	0.4000		94.4	53.2-133			
3,5-Dinitroaniline [2C]	0.389	0.016	mg/kg wet	0.4000		97.3	66.5-126			

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A905176 - EPA 3570										
LCS (A905176-BS1)				Prepared: 05/06/2019 Analyzed: 05/08/2019 15:38						
2-Amino-4,6-dinitrotoluene	0.376	0.016	mg/kg wet	0.4000		94.1	57.7-131			
2-Amino-4,6-dinitrotoluene [2C]	0.391	0.016	mg/kg wet	0.4000		97.8	67.3-124			
Tetryl	0.372	0.016	mg/kg wet	0.4000		93.1	57.9-134			
Tetryl [2C]	0.379	0.016	mg/kg wet	0.4000		94.8	65.1-119			
HMX	0.411	0.016	mg/kg wet	0.4000		103	42.7-139			
HMX [2C]	0.403	0.016	mg/kg wet	0.4000		101	56.1-134			
Surrogate: 2,2´-Dinitrobiphenyl	*0.394*		*mg/kg wet*	*0.4000*		*98.5*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*0.402*		*mg/kg wet*	*0.4000*		*101*	*39.9-153*			
Matrix Spike (A905176-MS1)	**Source: A191901-01**			Prepared: 05/06/2019 Analyzed: 05/08/2019 17:26						
Nitrobenzene	0.604	0.024	mg/kg dry	0.6094	0.00853	97.7	65.2-141			
Nitrobenzene [2C]	0.641	0.024	mg/kg dry	0.6094	0.00562	104	69.8-131			
2-Nitrotoluene	0.671	0.024	mg/kg dry	0.6094	0.00905	109	72.4-138			
2-Nitrotoluene [2C]	0.701	0.024	mg/kg dry	0.6094	ND	115	71.1-132			
3-Nitrotoluene	0.642	0.024	mg/kg dry	0.6094	ND	105	67.7-138			
3-Nitrotoluene [2C]	0.731	0.024	mg/kg dry	0.6094	ND	120	72.8-135			
4-Nitrotoluene	0.667	0.024	mg/kg dry	0.6094	0.0111	108	72.5-139			
4-Nitrotoluene [2C]	0.718	0.024	mg/kg dry	0.6094	0.0148	115	74.9-136			
Nitroglycerin	0.938	0.024	mg/kg dry	0.6094	0.189	123	18.7-155			
Nitroglycerin [2C]	0.970	0.024	mg/kg dry	0.6094	0.184	129	20.4-150			
1,3-Dinitrobenzene	0.590	0.024	mg/kg dry	0.6094	0.00978	95.3	37-149			
1,3-Dinitrobenzene [2C]	0.801	0.024	mg/kg dry	0.6094	ND	131	38.1-157			
2,6-Dinitrotoluene	0.586	0.024	mg/kg dry	0.6094	0.0239	92.2	46-142			
2,6-Dinitrotoluene [2C]	0.842	0.024	mg/kg dry	0.6094	0.0248	134	51.5-137			
2,4-Dinitrotoluene	0.772	0.024	mg/kg dry	0.6094	0.155	101	31.3-165			
2,4-Dinitrotoluene [2C]	1.15	0.024	mg/kg dry	0.6094	0.187	159	28.3-169			
1,3,5-Trinitrobenzene	0.557	0.024	mg/kg dry	0.6094	0.0234	87.6	20.6-157			
1,3,5-Trinitrobenzene [2C]	0.924	0.024	mg/kg dry	0.6094	0.0464	144	14.4-162			
2,4,6-Trinitrotoluene	2.88	0.024	mg/kg dry	0.6094	3.01	NR	13.8-165			M
2,4,6-Trinitrotoluene [2C]	5.02	0.024	mg/kg dry	0.6094	4.43	96.1	13.6-169			
PETN	0.548	0.024	mg/kg dry	0.6094	0.0135	87.8	11.5-150			
PETN [2C]	0.558	0.024	mg/kg dry	0.6094	0.0232	87.7	11.5-146			
RDX	0.553	0.024	mg/kg dry	0.6094	ND	90.8	10.3-153			
RDX [2C]	0.623	0.024	mg/kg dry	0.6094	0.0104	101	10.5-154			
4-Amino-2,6-dinitrotoluene	0.962	0.024	mg/kg dry	0.6094	0.349	101	12.2-168			
4-Amino-2,6-dinitrotoluene [2C]	1.46	0.024	mg/kg dry	0.6094	0.448	166	13.6-175			
3,5-Dinitroaniline	0.652	0.024	mg/kg dry	0.6094	ND	107	12.2-162			
3,5-Dinitroaniline [2C]	0.895	0.024	mg/kg dry	0.6094	0.0247	143	10.3-165			
2-Amino-4,6-dinitrotoluene	1.04	0.024	mg/kg dry	0.6094	0.485	91.1	11.9-165			
2-Amino-4,6-dinitrotoluene [2C]	1.51	0.024	mg/kg dry	0.6094	0.578	153	11.3-172			
Tetryl	0.281	0.024	mg/kg dry	0.6094	0.0194	43.0	11.4-160			
Tetryl [2C]	0.442	0.024	mg/kg dry	0.6094	ND	72.5	12.2-157			
HMX	0.385	0.024	mg/kg dry	0.6094	ND	63.2	10.3-143			
HMX [2C]	0.423	0.024	mg/kg dry	0.6094	0.0673	58.4	11.3-160			

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A905176 - EPA 3570										
Matrix Spike (A905176-MS1)	**Source: A191901-01**		Prepared: 05/06/2019 Analyzed: 05/08/2019 17:26							
Surrogate: 2,2´-Dinitrobiphenyl	*0.648*		*mg/kg dry*	*0.6094*		*106*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.03*		*mg/kg dry*	*0.6094*		*170*	*39.9-153*			*S*
Matrix Spike Dup (A905176-MSD1)	**Source: A191901-01**		Prepared: 05/06/2019 Analyzed: 05/08/2019 17:47							
Nitrobenzene	0.611	0.024	mg/kg dry	0.6094	0.00853	98.9	65.2-141	1.15	20	
Nitrobenzene [2C]	0.703	0.024	mg/kg dry	0.6094	0.00562	115	69.8-131	9.23	20	
2-Nitrotoluene	0.692	0.024	mg/kg dry	0.6094	0.00905	112	72.4-138	3.03	20	
2-Nitrotoluene [2C]	0.786	0.024	mg/kg dry	0.6094	ND	129	71.1-132	11.5	20	
3-Nitrotoluene	0.649	0.024	mg/kg dry	0.6094	ND	107	67.7-138	1.11	20	
3-Nitrotoluene [2C]	0.829	0.024	mg/kg dry	0.6094	ND	136	72.8-135	12.7	20	M
4-Nitrotoluene	0.680	0.024	mg/kg dry	0.6094	0.0111	110	72.5-139	1.90	20	
4-Nitrotoluene [2C]	0.709	0.024	mg/kg dry	0.6094	0.0148	114	74.9-136	1.23	20	
Nitroglycerin	0.688	0.024	mg/kg dry	0.6094	0.189	81.9	18.7-155	30.8	20	X
Nitroglycerin [2C]	0.772	0.024	mg/kg dry	0.6094	0.184	96.6	20.4-150	22.7	20	X
1,3-Dinitrobenzene	0.584	0.024	mg/kg dry	0.6094	0.00978	94.2	37-149	1.17	20	
1,3-Dinitrobenzene [2C]	0.749	0.024	mg/kg dry	0.6094	ND	123	38.1-157	6.68	20	
2,6-Dinitrotoluene	0.599	0.024	mg/kg dry	0.6094	0.0239	94.3	46-142	2.16	20	
2,6-Dinitrotoluene [2C]	0.928	0.024	mg/kg dry	0.6094	0.0248	148	51.5-137	9.72	20	M
2,4-Dinitrotoluene	0.852	0.024	mg/kg dry	0.6094	0.155	114	31.3-165	9.80	20	
2,4-Dinitrotoluene [2C]	1.39	0.024	mg/kg dry	0.6094	0.187	198	28.3-169	18.9	20	M
1,3,5-Trinitrobenzene	0.507	0.024	mg/kg dry	0.6094	0.0234	79.3	20.6-157	9.54	20	
1,3,5-Trinitrobenzene [2C]	1.02	0.024	mg/kg dry	0.6094	0.0464	160	14.4-162	10.2	20	
2,4,6-Trinitrotoluene	15.7	0.024	mg/kg dry	0.6094	3.01	NR	13.8-165	138	20	X, M
2,4,6-Trinitrotoluene [2C]	30.1	0.024	mg/kg dry	0.6094	4.43	NR	13.6-169	143	20	M, X
PETN	0.460	0.024	mg/kg dry	0.6094	0.0135	73.3	11.5-150	17.4	20	
PETN [2C]	0.596	0.024	mg/kg dry	0.6094	0.0232	94.0	11.5-146	6.73	20	
RDX	0.536	0.024	mg/kg dry	0.6094	ND	88.0	10.3-153	3.13	20	
RDX [2C]	0.665	0.024	mg/kg dry	0.6094	0.0104	107	10.5-154	6.49	20	
4-Amino-2,6-dinitrotoluene	0.969	0.024	mg/kg dry	0.6094	0.349	102	12.2-168	0.710	20	
4-Amino-2,6-dinitrotoluene [2C]	1.68	0.024	mg/kg dry	0.6094	0.448	202	13.6-175	14.0	20	M
3,5-Dinitroaniline	0.630	0.024	mg/kg dry	0.6094	ND	103	12.2-162	3.34	20	
3,5-Dinitroaniline [2C]	0.991	0.024	mg/kg dry	0.6094	0.0247	159	10.3-165	10.1	20	
2-Amino-4,6-dinitrotoluene	1.02	0.024	mg/kg dry	0.6094	0.485	88.2	11.9-165	1.69	20	
2-Amino-4,6-dinitrotoluene [2C]	1.76	0.024	mg/kg dry	0.6094	0.578	194	11.3-172	15.5	20	M
Tetryl	0.381	0.024	mg/kg dry	0.6094	0.0194	59.4	11.4-160	30.2	20	X
Tetryl [2C]	0.688	0.024	mg/kg dry	0.6094	ND	113	12.2-157	43.5	20	X
HMX	0.332	0.024	mg/kg dry	0.6094	ND	54.5	10.3-143	14.8	20	
HMX [2C]	0.447	0.024	mg/kg dry	0.6094	0.0673	62.3	11.3-160	5.58	20	
Surrogate: 2,2´-Dinitrobiphenyl	*0.637*		*mg/kg dry*	*0.6094*		*104*	*55.6-133*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.14*		*mg/kg dry*	*0.6094*		*187*	*39.9-153*			*S*

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904226 - % Solids										
Duplicate (A904226-DUP1)	**Source: A191723-14**		Prepared: 04/30/2019	Analyzed: 05/01/2019 10:33						
% Solids	83.4	0.00	% by Weight		84.6			1.40	20	
Batch A905181 - % Solids										
Duplicate (A905181-DUP1)	**Source: A191821-08**		Prepared: 05/07/2019	Analyzed: 05/08/2019 09:01						
% Solids	79.3	0.00	% by Weight		80.5			1.58	20	

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Revised Report

Kennedy Jenks Consultants	Project: Ashland Kenvil - Kenvil, NJ
214 Carnegie Center, Suite 103	Project Number: 1540001*61
Princeton NJ, 08540	Project Manager: Lora Sterner

Notes and Definitions

X	Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.
U	Analyte included in the analysis, but not detected
S	Surrogate recovery was outside of laboratory control limits due to an apparent matrix effect.
M	The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.
LC	Results may be biased low because of low continuing calibration verification (CCV).
H	The sample was held beyond the accepted holding time.
E1	Estimated value because of quality control sample exceedances.
D	Data reported from a dilution
ND	Analyte NOT DETECTED at or above the reporting limit or limit of detection (if listed).
NR	Not Reported
dry	Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
RPD	Relative Percent Difference

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CHAIN OF CUSTODY

No. 10868 Page: 3 of: 6

Lab Work Order #: A191619

Report To: Lora Sterner
Company: Kennedy Jenks
Address 1: 214 Carnegie Center, Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154000161 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day Hold time
Sampled By (Print): Lora Sterner

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-B13-19(03.0-03.5)	4/16/19	1303	S	1		X			48	
TP-RD-B13-20(00.0-00.5)	4/18/19	1045		1	X				13	
TP-RD-B13-20(01.0-01.5)	4/16/19	1330		1		X			49	
TP-RD-B11-21(01.0-01.5)		1450		1	X			"21" in description	14	
TP-RD-B11-21(03.0-03.5)		1453		1	X			changed to "28" per Lora ✓ 06-18-19	15	
TP-RD-B11-21(05.0-05.5)		1455		1	X				16	
TP-RD-B11-21(07.0-07.5)		1457		1	X				17	
TP-RD-B11-21(09.0-09.5)		1500		1		X			50	
TP-RD-B11-20(07.0-07.5)		1523		1	X			"20" in description changed to "27" per Lora ✓ 06-18-19	18	
TP-RD-B11-20(09.0-09.5)		1525		1		X			51	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Lora Sterner	4/18/19	1300	Kari-Ann Kelly	4/19/19	1045
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1°C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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A191901

CHAIN OF CUSTODY

No. 10866 Page: 1 of: 6

Lab Work Order #: ~~A191619~~

Report To: Lora Stemer
Company: Kennedy Jenks
Address 1: 214 Carnegie Center, Suite 0
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.

Project Number: 154000161 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ

Preservation Codes
Analyses Requested

Turn Around (check one): ☑ Normal ☐ Rush
If Rush, Report Due Date: Results w/in 14 day Hold time
Sampled By (Print): Lora Stemer

Invoice To: Lora Stemer
Company: Kennedy Jenks
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A: EDB na 8095	A: HOLD (EDB)					Comments	Lab ID	Lab Receipt Time
D14-667-03(00.0-00.5)	4/16/19	0840	S	1	X							~~01~~	
D14-667-03(01.0-01.5)		0843		1	X							~~02~~	
D14-667-03(03.0-03.5)		0845		1	X							~~03~~	
D14-667-03(05.0-05.5)		0848		1		X						~~40~~	01
TP-RD-D14-04(01.0-01.5)		0912		1	X							~~04~~	
TP-RD-D14-04(03.0-03.5)		0915		1		X						~~41~~	
TP-RD-D14-05(01.0-01.5)		0930		1	X							~~05~~	
TP-RD-D14-05(03.0-03.5)		0933		1		X						~~42~~	
TP-RD-D14-02(01.0-01.5)		0945		1	X							~~06~~	
TP-RD-D14-02(03.0-03.5)		0947		1		X						~~43~~	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By: [signature] Date: 4/18/19 Time: 1300
Received By: Kari-Ann Killin Date: 4/19/19 Time: 1045
Relinquished By: Date: Time:
Received By: Date: Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 3.1 °C
Thermometer #/ Exp. Date: 160142274 7/13/19
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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January 12, 2018

Lora Sterner
Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton, NJ 08540

RE: Ashland Kenvil - Kenvil, NJ

Enclosed are the analytical results for the samples received by the laboratory on the dates listed on the following page(s).

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Jessica Esser

Project Manager

Certification List			Expires
ADEQ	Arkansas Department of Environmental Quality	17-065-0	09/26/2018
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2018
ILEPA	Illinois Secondary NELAP Accreditation	003174	04/30/2018
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2018
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2018
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2018
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018

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Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Ashland Kenvil - Kenvil, NJ
Project Number: 1540001*36
Project Manager: Lora Sterner

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EB120617	A174910-01	Water	12/06/2017	12/07/2017
Blank Water	A174910-02	Water	12/06/2017	12/07/2017
TP-RD-A11-22(01.0-01.5)	A175011-01	Soil	11/29/2017	12/13/2017
TP-RD-A11-22(02.0-02.5)	A175011-02	Soil	11/29/2017	12/13/2017
TP-RD-A11-22(04.0-04.5)	A175011-03	Soil	11/29/2017	12/13/2017
TP-RD-A11-23(01.0-01.5)	A175011-04	Soil	11/29/2017	12/13/2017
TP-RD-A11-23(02.0-02.5)	A175011-05	Soil	11/29/2017	12/13/2017
TP-RD-A11-23(04.0-04.5)	A175011-06	Soil	11/29/2017	12/13/2017
TP-RD-B11-09(01.0-01.5)	A175011-07	Soil	11/29/2017	12/13/2017
TP-RD-B11-09(02.0-02.5)	A175011-08	Soil	11/29/2017	12/13/2017
TP-RD-B11-09(04.0-04.5)	A175011-09	Soil	11/29/2017	12/13/2017
TP-RD-B11-10(01.0-01.5)	A175011-10	Soil	11/29/2017	12/13/2017
TP-RD-B11-10(02.0-02.5)	A175011-11	Soil	11/29/2017	12/13/2017
TP-RD-B11-10(04.0-04.5)	A175011-12	Soil	11/29/2017	12/13/2017
TP-RD-B11-11(01.0-01.5)	A175011-13	Soil	11/29/2017	12/13/2017
TP-RD-B11-11(03.0-03.5)	A175011-14	Soil	11/29/2017	12/13/2017
TP-RD-B11-12(01.0-01.5)	A175011-15	Soil	11/29/2017	12/13/2017
TP-RD-B11-12(03.0-03.5)	A175011-16	Soil	11/29/2017	12/13/2017
TP-RD-B11-13(01.0-01.5)	A175011-17	Soil	11/29/2017	12/13/2017
TP-RD-B11-13(03.0-03.5)	A175011-18	Soil	11/29/2017	12/13/2017
TP-RD-B11-14(01.0-01.5)	A175011-19	Soil	11/29/2017	12/13/2017
TP-RD-B11-14(03.0-03.5)	A175011-20	Soil	11/29/2017	12/13/2017
TP-RD-B11-15(03.0-03.5)	A175011-21	Soil	11/29/2017	12/13/2017
TP-RD-B11-16(01.0-01.5)	A175011-22	Soil	11/29/2017	12/13/2017
TP-RD-B11-16(03.0-03.5)	A175011-23	Soil	11/29/2017	12/13/2017
TP-RD-B11-17(01.0-01.5)	A175011-24	Soil	11/29/2017	12/13/2017
TP-RD-B11-17(03.0-03.5)	A175011-25	Soil	11/29/2017	12/13/2017
TP-RD-B11-18(01.0-01.5)	A175011-26	Soil	11/29/2017	12/13/2017
TP-RD-B11-18(03.0-03.5)	A175011-27	Soil	11/29/2017	12/13/2017
TP-RD-B11-19(01.0-01.5)	A175011-28	Soil	11/29/2017	12/13/2017

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-RD-B11-19(03.0-03.5)	A175011-29	Soil	11/29/2017	12/13/2017
TP-RD-B12-06(01.0-01.5)	A175011-30	Soil	11/30/2017	12/13/2017
TP-RD-B12-06(03.0-03.5)	A175011-31	Soil	11/30/2017	12/13/2017
TP-RD-B12-06(05.0-05.5)	A175011-32	Soil	11/30/2017	12/13/2017
TP-RD-B12-09(01.0-01.5)	A175011-33	Soil	11/30/2017	12/13/2017
TP-RD-B12-09(03.0-03.5)	A175011-34	Soil	11/30/2017	12/13/2017
TP-RD-B12-09(05.0-05.5)	A175011-35	Soil	11/30/2017	12/13/2017
TP-RD-C11-06(01.0-01.5)	A175011-36	Soil	11/30/2017	12/13/2017
TP-RD-C11-06(03.0-03.5)	A175011-37	Soil	11/30/2017	12/13/2017
TP-RD-C11-07(01.0-01.5)	A175011-38	Soil	11/30/2017	12/13/2017
TP-RD-C11-07(03.0-03.5)	A175011-39	Soil	11/30/2017	12/13/2017
TP-RD-C11-08(01.0-01.5)	A175011-40	Soil	11/30/2017	12/13/2017
TP-RD-C11-08(03.0-03.5)	A175011-41	Soil	11/30/2017	12/13/2017
TP-RD-C11-05(03.0-03.5)	A175011-42	Soil	11/30/2017	12/13/2017
TP-RD-C11-09(01.0-01.5)	A175011-43	Soil	11/30/2017	12/13/2017
TP-RD-C11-09(03.0-03.5)	A175011-44	Soil	11/30/2017	12/13/2017
TP-RD-C11-09(05.0-05.5)	A175011-45	Soil	11/30/2017	12/13/2017
TP-RD-C11-11(01.0-01.5)	A175011-46	Soil	11/30/2017	12/13/2017
TP-RD-C11-11(03.0-03.5)	A175011-47	Soil	11/30/2017	12/13/2017
TP-RD-C11-12(01.0-01.5)	A175011-48	Soil	11/30/2017	12/13/2017
TP-RD-C11-12(03.0-03.5)	A175011-49	Soil	11/30/2017	12/13/2017
TP-RD-C11-10(03.0-03.5)	A175011-50	Soil	11/30/2017	12/13/2017
TP-RD-C11-13(01.0-01.5)	A175011-51	Soil	11/30/2017	12/13/2017
TP-RD-C11-13(03.0-03.5)	A175011-52	Soil	11/30/2017	12/13/2017
TP-RD-C11-14(01.0-01.5)	A175011-53	Soil	11/30/2017	12/13/2017
TP-RD-C11-14(03.0-03.5)	A175011-54	Soil	11/30/2017	12/13/2017
TP-RD-B14-04(03.0-03.5)	A175011-55	Soil	11/30/2017	12/13/2017
TP-RD-B14-03(01.0-01.5)	A175011-56	Soil	11/30/2017	12/13/2017
TP-RD-B14-03(03.0-03.5)	A175011-57	Soil	11/30/2017	12/13/2017
TP-RD-B13-11(01.0-01.5)	A175011-58	Soil	12/01/2017	12/13/2017
TP-RD-B13-11(03.0-03.5)	A175011-59	Soil	12/01/2017	12/13/2017

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-RD-B13-11(05.0-05.5)	A175011-60	Soil	12/01/2017	12/13/2017
TP-RD-B13-12(01.0-01.5)	A175011-61	Soil	12/01/2017	12/13/2017
TP-RD-B13-12(03.0-03.5)	A175011-62	Soil	12/01/2017	12/13/2017
TP-RD-B13-12(05.0-05.5)	A175011-63	Soil	12/01/2017	12/13/2017
TP-RD-B13-14(01.0-01.5)	A175011-64	Soil	12/01/2017	12/13/2017
TP-RD-B13-14(03.0-03.5)	A175011-65	Soil	12/01/2017	12/13/2017
TP-RD-B13-14(05.0-05.5)	A175011-66	Soil	12/01/2017	12/13/2017
TP-RD-B13-15(01.0-01.5)	A175011-67	Soil	12/01/2017	12/13/2017
TP-RD-B13-15(03.0-03.5)	A175011-68	Soil	12/01/2017	12/13/2017
TP-RD-B13-15(05.0-05.5)	A175011-69	Soil	12/01/2017	12/13/2017
TP-RD-B13-05(01.0-01.5)	A175011-70	Soil	12/01/2017	12/13/2017
TP-RD-B13-05(03.0-03.5)	A175011-71	Soil	12/01/2017	12/13/2017
TP-RD-B13-05(05.0-05.5)	A175011-72	Soil	12/01/2017	12/13/2017
TP-RD-B13-13(01.0-01.5)	A175011-73	Soil	12/01/2017	12/13/2017
TP-RD-B13-13(03.0-03.5)	A175011-74	Soil	12/01/2017	12/13/2017
TP-RD-B13-13(05.0-05.5)	A175011-75	Soil	12/01/2017	12/13/2017
TP-RD-A13-05(01.0-01.5)	A175011-76	Soil	12/01/2017	12/13/2017
TP-RD-A13-05(03.0-03.5)	A175011-77	Soil	12/01/2017	12/13/2017
TP-RD-A13-04(01.0-01.5)	A175011-78	Soil	12/01/2017	12/13/2017
TP-RD-A13-04(03.0-03.5)	A175011-79	Soil	12/01/2017	12/13/2017
TP-RD-A13-03(03.0-03.5)	A175011-80	Soil	12/01/2017	12/13/2017
TP-RD-A13-07(01.0-01.5)	A175011-81	Soil	12/01/2017	12/13/2017
TP-RD-A13-07(03.0-03.5)	A175011-82	Soil	12/01/2017	12/13/2017
TP-RD-A13-06(01.0-01.5)	A175011-83	Soil	12/01/2017	12/13/2017
TP-RD-A13-06(03.0-03.5)	A175011-84	Soil	12/01/2017	12/13/2017
TP-RD-D13-01(01.0-01.5)	A175011-85	Soil	12/01/2017	12/13/2017
TP-RD-D13-01(03.0-03.5)	A175011-86	Soil	12/01/2017	12/13/2017
TP-RD-D13-01(05.0-05.5)	A175011-87	Soil	12/01/2017	12/13/2017
TP-RD-D14-01(01.0-01.5)	A175011-88	Soil	12/01/2017	12/13/2017
TP-RD-D14-01(03.0-03.5)	A175011-89	Soil	12/01/2017	12/13/2017
TP-RD-D14-01(05.0-05.5)	A175011-90	Soil	12/01/2017	12/13/2017

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Project Manager: Lora Sterner

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-RD-C13-04A(01.0-01.5)	A175011-91	Soil	12/04/2017	12/13/2017
TP-RD-B12-13(01.0-01.5)	A175011-92	Soil	12/04/2017	12/13/2017
TP-RD-A11-24(01.0-01.5)	A175011-93	Soil	12/04/2017	12/13/2017
TP-RD-B11-20(01.0-01.5)	A175011-94	Soil	12/04/2017	12/13/2017
TP-RD-B11-22(01.0-01.5)	A175011-95	Soil	12/04/2017	12/13/2017
TP-RD-B11-21(01.0-01.5)	A175011-96	Soil	12/04/2017	12/13/2017
TP-RD-B11-23(01.0-01.5)	A175011-97	Soil	12/04/2017	12/13/2017
TP-RD-B11-25(01.0-01.5)	A175011-98	Soil	12/04/2017	12/13/2017
TP-RD-B11-24(01.0-01.5)	A175011-99	Soil	12/04/2017	12/13/2017
TP-RD-B11-26(01.0-01.5)	A175011-AA	Soil	12/05/2017	12/13/2017
TP-RD-B12-15(01.0-01.5)	A175011-AB	Soil	12/05/2017	12/13/2017
TP-RD-B12-14(01.0-01.5)	A175011-AC	Soil	12/05/2017	12/13/2017
TP-RD-B12-12(01.0-01.5)	A175011-AD	Soil	12/05/2017	12/13/2017
TP-RD-B12-10(01.0-01.5)	A175011-AE	Soil	12/05/2017	12/13/2017
BD112917A	A175011-AF	Soil	11/29/2017	12/13/2017
BD112917B	A175011-AG	Soil	11/29/2017	12/13/2017
BD113017A	A175011-AH	Soil	11/30/2017	12/13/2017
BD113017B	A175011-AI	Soil	11/30/2017	12/13/2017
BD120117A	A175011-AJ	Soil	12/01/2017	12/13/2017
BD120117B	A175011-AK	Soil	12/01/2017	12/13/2017
BD120417	A175011-AL	Soil	12/04/2017	12/13/2017
BD120517	A175011-AM	Soil	12/05/2017	12/13/2017
TP-RD-B14-03(05.0-05.5)	A175011-BF	Soil	11/30/2017	12/13/2017
TP-RD-A13-03(05.0-05.5)	A175011-BI	Soil	12/01/2017	12/13/2017

A174910 CASE NARRATIVE

Sample Receipt Information:
2 samples were received on 12/07/2017. Samples were received at 2.3 degrees Celsius. Samples were received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

A175011 CASE NARRATIVE

Sample Receipt Information:
164 samples were received on 12/13/2017. Samples were received at 2.1 degrees Celsius. Samples were received in acceptable condition.

Samples were kept frozen by the client from the date of collection until 12/11/17. Samples A175011-BF and A175011-BI were kept frozen at Pace Analytical from 12/13/17 until the time of extraction.

Please see the chain of custody (COC) document at the end of this report for additional information.

Continuing Calibration Verification (CCV):
The LC footnote on sample A175011-86 states that there was a low CCV recovery for HMX. The lower control limit is 80% and the lowest recovery was 64.5%.

The LC footnote on samples A175011-BF and A175011-BI states that there was a low CCV recovery for HMX. The lower control limit is 80% and the lowest recovery was 73.9%.

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Princeton NJ, 08540	Project Manager: Lora Sterner

EB120617

A174910-01 (Water)

Date Sampled
12/06/2017 11:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712021**			
Nitrobenzene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
2-Nitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
3-Nitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
4-Nitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
Nitroglycerin	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
1,3-Dinitrobenzene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:36	EPA 8095	
2,6-Dinitrotoluene	**0.037**	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
2,4-Dinitrotoluene	**0.19**	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
2,4,6-Trinitrotoluene	**0.028**	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
PETN	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
RDX	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.050	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
3,5-Dinitroaniline	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
Tetryl	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
HMX	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*111 %*		*60-140*	*12/11/2017*	*12/11/2017 18:24*	*EPA 8095*	

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Princeton NJ, 08540	Project Manager: Lora Sterner

Blank Water

A174910-02 (Water)

Date Sampled
12/06/2017 00:00

Pace Analytical - Madison

Explosive Compounds by EPA Method 8095 — **Preparation Batch: A712021**

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Nitrobenzene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
2-Nitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
3-Nitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
4-Nitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:14	EPA 8095	
Nitroglycerin	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
1,3-Dinitrobenzene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:14	EPA 8095	
2,6-Dinitrotoluene	**0.037**	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
2,4-Dinitrotoluene	**0.18**	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
2,4,6-Trinitrotoluene	**0.027**	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
PETN	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
RDX	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	0.050	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
3,5-Dinitroaniline	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
Tetryl	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
HMX	ND	0.025	ug/L	1	12/11/2017	12/11/2017 18:03	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*110 %*		*60-140*	*12/11/2017*	*12/11/2017 18:03*	*EPA 8095*	

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TP-RD-A11-22(01.0-01.5)

A175011-01 (Soil)

Date Sampled
11/29/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 18:58	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 18:58	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 18:58	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:05	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*82.7 %*		*63.7-134*	*12/14/2017*	*12/15/2017 19:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**86.6**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A11-22(02.0-02.5)

A175011-02 (Soil)

Date Sampled
11/29/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:20	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:20	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:20	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:27	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*79.2 %*		*63.7-134*	*12/14/2017*	*12/15/2017 19:27*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**85.6**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A11-22(04.0-04.5)

A175011-03 (Soil)

Date Sampled
11/29/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:42	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:42	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:42	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 19:49	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*83.9 %*		*63.7-134*	*12/14/2017*	*12/15/2017 19:49*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**86.2**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A11-23(01.0-01.5)

A175011-04 (Soil)

Date Sampled
11/29/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:04	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:04	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:04	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:04	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:12	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*90.4 %*		*63.7-134*	*12/14/2017*	*12/15/2017 20:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**83.8**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A11-23(02.0-02.5)

A175011-05 (Soil)

Date Sampled
11/29/2017 08:20

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:26	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:26	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:26	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 20:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*84.7 %*		*63.7-134*	*12/14/2017*	*12/15/2017 20:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**85.5**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A11-23(04.0-04.5)

A175011-06 (Soil)

Date Sampled
11/29/2017 08:20

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:48	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:48	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 20:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*84.1 %*		*63.7-134*	*12/14/2017*	*12/15/2017 20:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**88.1**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-09(01.0-01.5)

A175011-07 (Soil)

Date Sampled
11/29/2017 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:10	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:10	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:18	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*93.2 %*		*63.7-134*	*12/14/2017*	*12/15/2017 21:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**85.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-09(02.0-02.5)

A175011-08 (Soil)

Date Sampled
11/29/2017 08:40

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:32	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:32	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:32	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 21:40	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*88.8 %*		*63.7-134*	*12/14/2017*	*12/15/2017 21:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**86.6**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-09(04.0-04.5)

A175011-09 (Soil)

Date Sampled
11/29/2017 08:40

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*75.2 %*		*63.7-134*	*12/14/2017*	*12/15/2017 22:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**90.1**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-10(01.0-01.5)

A175011-10 (Soil)

Date Sampled
11/29/2017 09:05

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:38	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:38	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/15/2017 22:46	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*72.2 %*		*63.7-134*	*12/14/2017*	*12/15/2017 22:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**87.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-10(02.0-02.5)

A175011-11 (Soil)

Date Sampled
11/29/2017 09:05

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:00	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:00	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
PETN	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:00	EPA 8095	M
RDX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
HMX	ND	120	ug/kg dry	1	12/14/2017	12/15/2017 23:08	EPA 8095	M
Surrogate: 2,2'-Dinitrobiphenyl		*88.9 %*		*63.7-134*	*12/14/2017*	*12/15/2017 23:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**84.1**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-10(04.0-04.5)

A175011-12 (Soil)

Date Sampled
11/29/2017 09:05

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:05	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:05	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:05	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/16/2017 00:13	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*87.2 %*		*63.7-134*	*12/14/2017*	*12/16/2017 00:13*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**86.2**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-11(01.0-01.5)

A175011-13 (Soil)

Date Sampled
11/29/2017 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:27	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:27	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:27	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:35	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*82.6 %*		*63.7-134*	*12/14/2017*	*12/16/2017 00:35*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**90.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

TP-RD-B11-11(03.0-03.5)

A175011-14 (Soil)

Date Sampled
11/29/2017 10:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:49	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:49	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:57	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 00:49	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*86.9 %*		*63.7-134*	*12/14/2017*	*12/16/2017 00:57*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**90.2**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-12(01.0-01.5)

A175011-15 (Soil)

Date Sampled
11/29/2017 10:15

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:11	EPA 8095	
Nitroglycerin	**180**	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:11	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:11	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:19	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*83.7 %*		*63.7-134*	*12/14/2017*	*12/16/2017 01:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**90.2**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-12(03.0-03.5)

A175011-16 (Soil)

Date Sampled
11/29/2017 10:15

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:33	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:33	EPA 8095	M
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 01:41	EPA 8095	M, X
Surrogate: 2,2'-Dinitrobiphenyl		*88.3 %*		*63.7-134*	*12/14/2017*	*12/16/2017 01:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**89.8**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-13(01.0-01.5)

A175011-17 (Soil)

Date Sampled
11/29/2017 10:30

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:09	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*75.2 %*		*63.7-134*	*12/14/2017*	*12/16/2017 03:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**88.4**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-13(03.0-03.5)

A175011-18 (Soil)

Date Sampled
11/29/2017 10:30

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:22	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*80.3 %*		*63.7-134*	*12/14/2017*	*12/16/2017 03:31*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**87.7**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-14(01.0-01.5)

A175011-19 (Soil)

Date Sampled
11/29/2017 10:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:44	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:44	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:44	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 03:52	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*77.9 %*		*63.7-134*	*12/14/2017*	*12/16/2017 03:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**90.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-14(03.0-03.5)

A175011-20 (Soil)

Date Sampled
11/29/2017 10:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712043**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:06	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:06	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:06	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/16/2017 04:14	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*74.4 %*		*63.7-134*	*12/14/2017*	*12/16/2017 04:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712044**			
% Solids	**90.1**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-15(03.0-03.5)

A175011-21 (Soil)

Date Sampled
11/29/2017 12:30

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 10:02	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 10:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 10:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 10:02	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 10:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 10:02	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 07:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*83.3 %*		*63.7-134*	*12/14/2017*	*12/20/2017 07:39*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**89.9**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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TP-RD-B11-16(01.0-01.5)

A175011-22 (Soil)

Date Sampled
11/29/2017 13:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 10:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 08:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*79.4 %*		*63.7-134*	*12/14/2017*	*12/20/2017 08:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**87.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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TP-RD-B11-16(03.0-03.5)

A175011-23 (Soil)

Date Sampled
11/29/2017 13:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:47	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:47	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*74.0 %*		*63.7-134*	*12/14/2017*	*12/20/2017 08:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**84.7**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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TP-RD-B11-17(01.0-01.5)

A175011-24 (Soil)

Date Sampled
11/29/2017 13:35

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 11:10	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 11:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 08:46	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*74.0 %*		*63.7-134*	*12/14/2017*	*12/20/2017 08:46*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**85.0**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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TP-RD-B11-17(03.0-03.5)

A175011-25 (Soil)

Date Sampled
11/29/2017 13:35

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 11:33	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*70.4 %*		*63.7-134*	*12/14/2017*	*12/20/2017 09:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**85.0**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-18(01.0-01.5)

A175011-26 (Soil)

Date Sampled
11/29/2017 14:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 11:56	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 11:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*69.8 %*		*63.7-134*	*12/14/2017*	*12/20/2017 09:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**84.1**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-18(03.0-03.5)

A175011-27 (Soil)

Date Sampled
11/29/2017 14:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 12:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 09:52	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*73.4 %*		*63.7-134*	*12/14/2017*	*12/20/2017 09:52*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**85.1**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-19(01.0-01.5)

A175011-28 (Soil)

Date Sampled
11/29/2017 14:35

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 12:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:14	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*71.0 %*		*63.7-134*	*12/14/2017*	*12/20/2017 10:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**85.0**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-19(03.0-03.5)

A175011-29 (Soil)

Date Sampled
11/29/2017 14:35

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 10:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*75.7 %*		*63.7-134*	*12/14/2017*	*12/20/2017 10:58*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**86.4**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-06(01.0-01.5)

A175011-30 (Soil)

Date Sampled
11/30/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
2,4-Dinitrotoluene	**140**	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
2,4,6-Trinitrotoluene	**190**	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 11:21	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 13:50	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*69.5 %*		*63.7-134*	*12/14/2017*	*12/20/2017 11:21*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**79.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-06(03.0-03.5)

A175011-31 (Soil)

Date Sampled
11/30/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 14:13	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 14:13	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 14:13	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 11:43	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*83.3 %*		*63.7-134*	*12/14/2017*	*12/20/2017 11:43*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**89.9**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-06(05.0-05.5)

A175011-32 (Soil)

Date Sampled
11/30/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 14:36	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
RDX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 14:36	EPA 8095	M
Tetryl	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
HMX	ND	110	ug/kg dry	1	12/14/2017	12/20/2017 12:05	EPA 8095	M
Surrogate: 2,2'-Dinitrobiphenyl		*91.6 %*		*63.7-134*	*12/14/2017*	*12/20/2017 12:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**94.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-09(01.0-01.5)

A175011-33 (Soil)

Date Sampled
11/30/2017 08:26

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:45	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:12	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*73.5 %*		*63.7-134*	*12/14/2017*	*12/20/2017 13:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**86.5**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-09(03.0-03.5)

A175011-34 (Soil)

Date Sampled
11/30/2017 08:26

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:08	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:08	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*75.2 %*		*63.7-134*	*12/14/2017*	*12/20/2017 13:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**86.3**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-09(05.0-05.5)

A175011-35 (Soil)

Date Sampled
11/30/2017 08:26

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:31	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:31	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:31	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 13:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*78.9 %*		*63.7-134*	*12/14/2017*	*12/20/2017 13:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**86.2**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

TP-RD-C11-06(01.0-01.5)

A175011-36 (Soil)

Date Sampled
11/30/2017 08:55

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
2,4-Dinitrotoluene	**400**	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
2,4,6-Trinitrotoluene	**1300**	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
4-Amino-2,6-dinitrotoluene	**820**	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
2-Amino-4,6-dinitrotoluene	**890**	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 14:19	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*72.0 %*		*63.7-134*	*12/14/2017*	*12/20/2017 14:19*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**79.0**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-06(03.0-03.5)

A175011-37 (Soil)

Date Sampled
11/30/2017 08:55

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 17:40	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 17:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:04	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*72.2 %*		*63.7-134*	*12/14/2017*	*12/20/2017 15:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**83.2**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-07(01.0-01.5)

A175011-38 (Soil)

Date Sampled
11/30/2017 09:18

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
2,4,6-Trinitrotoluene	**270**	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
PETN	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M, X
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
4-Amino-2,6-dinitrotoluene	**380**	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 18:03	EPA 8095	M
2-Amino-4,6-dinitrotoluene	**180**	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M, X
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 15:26	EPA 8095	M, X
Surrogate: 2,2'-Dinitrobiphenyl		*76.1 %*		*63.7-134*	*12/14/2017*	*12/20/2017 15:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**83.5**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-07(03.0-03.5)

A175011-39 (Soil)

Date Sampled
11/30/2017 09:18

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
2,4,6-Trinitrotoluene	**260**	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
PETN	**120**	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
4-Amino-2,6-dinitrotoluene	**200**	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 19:11	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/14/2017	12/20/2017 16:34	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*77.0 %*		*63.7-134*	*12/14/2017*	*12/20/2017 16:34*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**83.5**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-08(01.0-01.5)

A175011-40 (Soil)

Date Sampled
11/30/2017 09:42

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712048**			
Nitrobenzene	**240**	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 19:34	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
2,6-Dinitrotoluene	**130**	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
2,4-Dinitrotoluene	**510**	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 19:34	EPA 8095	
2,4,6-Trinitrotoluene	**500**	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	**1200**	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
2-Amino-4,6-dinitrotoluene	**1000**	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/14/2017	12/20/2017 16:56	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*71.4 %*		*63.7-134*	*12/14/2017*	*12/20/2017 16:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712049**			
% Solids	**79.6**	0.00	% by Weight	1	12/14/2017	12/15/2017 08:00	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-08(03.0-03.5)

A175011-41 (Soil)

Date Sampled
11/30/2017 09:42

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:45	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
2,4,6-Trinitrotoluene	**240**	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	**290**	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
2-Amino-4,6-dinitrotoluene	**150**	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/16/2017 23:37	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*73.4 %*		*60-140*	*12/15/2017*	*12/16/2017 23:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**83.2**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-05(03.0-03.5)

A175011-42 (Soil)

Date Sampled
11/30/2017 10:10

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 00:06	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 00:06	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 00:06	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
2,4,6-Trinitrotoluene	**150**	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
4-Amino-2,6-dinitrotoluene	**530**	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	**320**	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/16/2017 23:59	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*72.0 %*		*60-140*	*12/15/2017*	*12/16/2017 23:59*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**79.6**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

TP-RD-C11-09(01.0-01.5)

A175011-43 (Soil)

Date Sampled
11/30/2017 10:46

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:28	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
2,4-Dinitrotoluene	**210**	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 00:21	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*94.4 %*		*60-140*	*12/15/2017*	*12/17/2017 00:21*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**83.9**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-09(03.0-03.5)

A175011-44 (Soil)

Date Sampled
11/30/2017 10:46

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:42	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 00:50	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*79.4 %*		*60-140*	*12/15/2017*	*12/17/2017 00:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**88.3**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-09(05.0-05.5)

A175011-45 (Soil)

Date Sampled
11/30/2017 10:46

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 01:04	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*82.7 %*		*60-140*	*12/15/2017*	*12/17/2017 01:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**90.7**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-11(01.0-01.5)

A175011-46 (Soil)

Date Sampled
11/30/2017 11:12

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
Nitroglycerin	**210**	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:26	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*73.1 %*		*60-140*	*12/15/2017*	*12/17/2017 01:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**75.1**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-11(03.0-03.5)

A175011-47 (Soil)

Date Sampled
11/30/2017 11:12

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
Nitroglycerin	**190**	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:56	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 01:48	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*75.0 %*		*60-140*	*12/15/2017*	*12/17/2017 01:48*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**77.8**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-12(01.0-01.5)

A175011-48 (Soil)

Date Sampled
11/30/2017 12:42

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 02:10	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*78.7 %*		*60-140*	*12/15/2017*	*12/17/2017 02:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**83.6**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-12(03.0-03.5)

A175011-49 (Soil)

Date Sampled
11/30/2017 12:42

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 02:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*79.1 %*		*60-140*	*12/15/2017*	*12/17/2017 02:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**77.8**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-10(03.0-03.5)

A175011-50 (Soil)

Date Sampled
11/30/2017 13:13

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:23	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
Nitroglycerin	**990**	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
2,6-Dinitrotoluene	**120**	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
2,4-Dinitrotoluene	**220**	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
PETN	**990**	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:23	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 03:15	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*69.4 %*		*60-140*	*12/15/2017*	*12/17/2017 03:15*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**82.4**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-13(01.0-01.5)

A175011-51 (Soil)

Date Sampled
11/30/2017 13:34

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:44	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:36	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:44	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*76.5 %*		*60-140*	*12/15/2017*	*12/17/2017 03:36*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**78.1**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-13(03.0-03.5)

A175011-52 (Soil)

Date Sampled
11/30/2017 13:34

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 04:06	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
Nitroglycerin	**940**	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 04:06	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 04:06	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 04:06	EPA 8095	
PETN	**840**	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 04:06	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 03:58	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*61.6 %*		*60-140*	*12/15/2017*	*12/17/2017 03:58*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**79.5**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C11-14(01.0-01.5)

A175011-53 (Soil)

Date Sampled
11/30/2017 14:14

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:20	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*80.0 %*		*60-140*	*12/15/2017*	*12/17/2017 04:20*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**85.8**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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TP-RD-C11-14(03.0-03.5)

A175011-54 (Soil)

Date Sampled
11/30/2017 14:14

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 04:42	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*83.7 %*		*60-140*	*12/15/2017*	*12/17/2017 04:42*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**85.8**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B14-04(03.0-03.5)

A175011-55 (Soil)

Date Sampled
11/30/2017 14:32

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
2,4,6-Trinitrotoluene	**230**	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:04	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*74.0 %*		*60-140*	*12/15/2017*	*12/17/2017 05:04*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**84.2**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B14-03(01.0-01.5)

A175011-56 (Soil)

Date Sampled
11/30/2017 14:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 05:26	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*73.3 %*		*60-140*	*12/15/2017*	*12/17/2017 05:26*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**79.2**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B14-03(03.0-03.5)

A175011-57 (Soil)

Date Sampled
11/30/2017 14:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
2,4,6-Trinitrotoluene	**1600**	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	**130**	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 05:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*83.3 %*		*60-140*	*12/15/2017*	*12/17/2017 05:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**86.3**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-11(01.0-01.5)

A175011-58 (Soil)

Date Sampled
12/01/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
2,4-Dinitrotoluene	**110**	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
2,4,6-Trinitrotoluene	**310**	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*77.2 %*		*60-140*	*12/15/2017*	*12/17/2017 06:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**92.7**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-11(03.0-03.5)

A175011-59 (Soil)

Date Sampled
12/01/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
2,4-Dinitrotoluene	**160**	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
2,4,6-Trinitrotoluene	**270**	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 06:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*76.7 %*		*60-140*	*12/15/2017*	*12/17/2017 06:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**91.3**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-11(05.0-05.5)

A175011-60 (Soil)

Date Sampled
12/01/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712050**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:22	EPA 8095	M
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:14	EPA 8095	M
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 07:22	EPA 8095	M, X
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*84.9 %*		*60-140*	*12/15/2017*	*12/17/2017 07:14*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712054**			
% Solids	**90.0**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-12(01.0-01.5)

A175011-61 (Soil)

Date Sampled
12/01/2017 08:20

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:49	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:49	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:49	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:49	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:49	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:49	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 12:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*74.2 %*		*60-140*	*12/15/2017*	*12/17/2017 12:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**89.9**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-12(03.0-03.5)

A175011-62 (Soil)

Date Sampled
12/01/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:11	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:11	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:11	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:11	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:11	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:11	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*69.5 %*		*60-140*	*12/15/2017*	*12/17/2017 13:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**90.4**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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TP-RD-B13-12(05.0-05.5)

A175011-63 (Soil)

Date Sampled
12/01/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:35	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:35	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:35	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:35	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 13:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*75.9 %*		*60-140*	*12/15/2017*	*12/17/2017 13:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**94.0**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-14(01.0-01.5)

A175011-64 (Soil)

Date Sampled
12/01/2017 08:43

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
Nitroglycerin	**630**	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:58	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 13:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*66.1 %*		*60-140*	*12/15/2017*	*12/17/2017 13:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**84.3**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-14(03.0-03.5)

A175011-65 (Soil)

Date Sampled
12/01/2017 08:43

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:21	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:21	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
Nitroglycerin	**1500**	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:21	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:21	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:21	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:21	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:21	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 14:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*74.2 %*		*60-140*	*12/15/2017*	*12/17/2017 14:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**81.5**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-14(05.0-05.5)

A175011-66 (Soil)

Date Sampled
12/01/2017 08:43

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:43	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:43	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:43	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:43	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:43	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:43	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/17/2017 14:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*66.9 %*		*60-140*	*12/15/2017*	*12/17/2017 14:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**79.8**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-15(01.0-01.5)

A175011-67 (Soil)

Date Sampled
12/01/2017 09:12

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
Nitroglycerin	**3300**	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:05	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 15:15	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*67.8 %*		*60-140*	*12/15/2017*	*12/17/2017 15:15*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**84.3**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-15(03.0-03.5)

A175011-68 (Soil)

Date Sampled
12/01/2017 09:12

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:13	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:13	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
Nitroglycerin	**570**	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:13	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:13	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:13	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:13	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:13	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*70.4 %*		*60-140*	*12/15/2017*	*12/17/2017 16:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**81.5**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-15(05.0-05.5)

A175011-69 (Soil)

Date Sampled
12/01/2017 09:12

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
Nitroglycerin	**6600**	1200	ug/kg dry	10	12/15/2017	12/17/2017 17:08	EPA 8095	D
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
2,4-Dinitrotoluene	**210**	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:59	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:59	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:59	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:59	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:59	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 16:59	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:08	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*73.1 %*		*60-140*	*12/15/2017*	*12/17/2017 17:08*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**82.8**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-05(01.0-01.5)

A175011-70 (Soil)

Date Sampled
12/01/2017 09:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:21	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:21	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:21	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:21	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:21	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:21	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:21	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*81.8 %*		*60-140*	*12/15/2017*	*12/17/2017 17:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**86.1**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-05(03.0-03.5)

A175011-71 (Soil)

Date Sampled
12/01/2017 09:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:44	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:44	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:44	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:44	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:44	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 17:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*74.1 %*		*60-140*	*12/15/2017*	*12/17/2017 17:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**86.7**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-05(05.0-05.5)

A175011-72 (Soil)

Date Sampled
12/01/2017 09:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:06	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:06	EPA 8095	M
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:06	EPA 8095	M
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:06	EPA 8095	M
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:06	EPA 8095	M
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 18:15	EPA 8095	M
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*75.5 %*		*60-140*	*12/15/2017*	*12/17/2017 18:15*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**93.9**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-13(01.0-01.5)

A175011-73 (Soil)

Date Sampled
12/01/2017 10:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
Nitroglycerin	**160**	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:14	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/17/2017 19:23	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*80.5 %*		*60-140*	*12/15/2017*	*12/17/2017 19:23*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**84.6**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-13(03.0-03.5)

A175011-74 (Soil)

Date Sampled
12/01/2017 10:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:37	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:37	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:37	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:37	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 19:45	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.7 %*		*60-140*	*12/15/2017*	*12/17/2017 19:45*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**95.1**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B13-13(05.0-05.5)

A175011-75 (Soil)

Date Sampled
12/01/2017 10:25

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
2-Nitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:22	EPA 8095	
3-Nitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
4-Nitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
Nitroglycerin	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:22	EPA 8095	
1,3-Dinitrobenzene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
2,6-Dinitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
2,4-Dinitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
1,3,5-Trinitrobenzene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:22	EPA 8095	
2,4,6-Trinitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
PETN	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
RDX	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:22	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:22	EPA 8095	
3,5-Dinitroaniline	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:22	EPA 8095	
Tetryl	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:22	EPA 8095	
HMX	ND	100	ug/kg dry	1	12/15/2017	12/17/2017 20:30	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*98.8 %*		*60-140*	*12/15/2017*	*12/17/2017 20:30*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**96.9**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-05(01.0-01.5)

A175011-76 (Soil)

Date Sampled
12/01/2017 10:52

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:45	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
2,4,6-Trinitrotoluene	**300**	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:45	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:45	EPA 8095	
4-Amino-2,6-dinitrotoluene	**120**	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:45	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:45	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 20:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*75.1 %*		*60-140*	*12/15/2017*	*12/17/2017 20:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**89.6**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-05(03.0-03.5)

A175011-77 (Soil)

Date Sampled
12/01/2017 10:52

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:08	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:08	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
2,4,6-Trinitrotoluene	**570**	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:08	EPA 8095	
4-Amino-2,6-dinitrotoluene	**160**	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:08	EPA 8095	
2-Amino-4,6-dinitrotoluene	**110**	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:16	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:08	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl [2C]		*96.6 %*		*60-140*	*12/15/2017*	*12/17/2017 21:16*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**94.4**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-04(01.0-01.5)

A175011-78 (Soil)

Date Sampled
12/01/2017 11:13

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:30	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:30	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:30	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:30	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:30	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:30	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:38	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*82.5 %*		*60-140*	*12/15/2017*	*12/17/2017 21:38*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**90.1**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-04(03.0-03.5)

A175011-79 (Soil)

Date Sampled
12/01/2017 11:13

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:53	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 21:53	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:01	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*101 %*		*60-140*	*12/15/2017*	*12/17/2017 22:01*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**93.5**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-03(03.0-03.5)

A175011-80 (Soil)

Date Sampled
12/01/2017 11:34

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712051**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:16	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:16	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
2,4-Dinitrotoluene	**250**	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
1,3,5-Trinitrobenzene	**280**	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
2,4,6-Trinitrotoluene	**43000**	11000	ug/kg dry	100	12/15/2017	12/17/2017 22:24	EPA 8095	D
PETN	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	**850**	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:16	EPA 8095	
2-Amino-4,6-dinitrotoluene	**690**	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:24	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/17/2017 22:16	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*86.0 %*		*60-140*	*12/15/2017*	*12/17/2017 22:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712055**			
% Solids	**90.7**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-07(01.0-01.5)

A175011-81 (Soil)

Date Sampled
12/01/2017 12:01

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:17	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*85.8 %*		*60-140*	*12/15/2017*	*12/18/2017 03:17*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**93.3**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-07(03.0-03.5)

A175011-82 (Soil)

Date Sampled
12/01/2017 12:01

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 03:40	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*85.7 %*		*60-140*	*12/15/2017*	*12/18/2017 03:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**94.5**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-06(01.0-01.5)

A175011-83 (Soil)

Date Sampled
12/01/2017 12:23

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:59	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 04:02	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*59.9 %*		*60-140*	*12/15/2017*	*12/18/2017 04:02*	*EPA 8095*	*S*
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**85.6**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-06(03.0-03.5)

A175011-84 (Soil)

Date Sampled
12/01/2017 12:23

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 04:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*96.0 %*		*60-140*	*12/15/2017*	*12/18/2017 04:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**91.7**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D13-01(01.0-01.5)

A175011-85 (Soil)

Date Sampled
12/01/2017 12:51

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/18/2017 04:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*72.8 %*		*60-140*	*12/15/2017*	*12/18/2017 04:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**79.2**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D13-01(03.0-03.5)

A175011-86 (Soil)

Date Sampled
12/01/2017 12:51

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
2-Nitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
3-Nitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
4-Nitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
Nitroglycerin	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
1,3-Dinitrobenzene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
2,6-Dinitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
2,4-Dinitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
1,3,5-Trinitrobenzene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
2,4,6-Trinitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
PETN	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
RDX	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
3,5-Dinitroaniline	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
Tetryl	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 05:10	EPA 8095	
HMX	ND	160	ug/kg dry	1	12/15/2017	12/18/2017 13:06	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*74.9 %*		*60-140*	*12/15/2017*	*12/18/2017 05:10*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**62.9**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D13-01(05.0-05.5)

A175011-87 (Soil)

Date Sampled
12/01/2017 12:51

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
2,4,6-Trinitrotoluene	**160**	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:32	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*67.7 %*		*60-140*	*12/15/2017*	*12/18/2017 05:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**81.7**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-01(01.0-01.5)

A175011-88 (Soil)

Date Sampled
12/01/2017 13:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
2,4,6-Trinitrotoluene	**200**	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 05:55	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*68.0 %*		*60-140*	*12/15/2017*	*12/18/2017 05:55*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**85.0**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-01(03.0-03.5)

A175011-89 (Soil)

Date Sampled
12/01/2017 13:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
2-Nitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
3-Nitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
4-Nitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
Nitroglycerin	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
1,3-Dinitrobenzene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
2,6-Dinitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
2,4-Dinitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
1,3,5-Trinitrobenzene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
2,4,6-Trinitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
PETN	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
RDX	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
3,5-Dinitroaniline	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
Tetryl	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
HMX	ND	140	ug/kg dry	1	12/15/2017	12/18/2017 06:40	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*70.3 %*		*60-140*	*12/15/2017*	*12/18/2017 06:40*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**69.3**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-D14-01(05.0-05.5)

A175011-90 (Soil)

Date Sampled
12/01/2017 13:10

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:02	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*78.4 %*		*60-140*	*12/15/2017*	*12/18/2017 07:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**84.6**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-C13-04A(01.0-01.5)

A175011-91 (Soil)

Date Sampled
12/04/2017 10:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
4-Amino-2,6-dinitrotoluene	**340**	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
2-Amino-4,6-dinitrotoluene	**350**	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:24	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*70.2 %*		*60-140*	*12/15/2017*	*12/18/2017 07:24*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**82.8**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-13(01.0-01.5)

A175011-92 (Soil)

Date Sampled
12/04/2017 11:20

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 07:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*67.5 %*		*60-140*	*12/15/2017*	*12/18/2017 07:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**85.7**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A11-24(01.0-01.5)

A175011-93 (Soil)

Date Sampled
12/04/2017 10:50

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*67.4 %*		*60-140*	*12/15/2017*	*12/18/2017 08:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**81.5**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-20(01.0-01.5)

A175011-94 (Soil)

Date Sampled
12/04/2017 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M, X
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M, X
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M, X
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M, X
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M, X
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M, X
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 08:32	EPA 8095	M, X
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*72.1 %*		*60-140*	*12/15/2017*	*12/18/2017 08:32*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**85.0**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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TP-RD-B11-22(01.0-01.5)

A175011-95 (Soil)

Date Sampled
12/04/2017 12:03

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 09:39	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*57.5 %*		*60-140*	*12/15/2017*	*12/18/2017 09:39*	*EPA 8095*	*S*
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**88.4**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-21(01.0-01.5)

A175011-96 (Soil)

Date Sampled
12/04/2017 13:01

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 10:02	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*60.2 %*		*60-140*	*12/15/2017*	*12/18/2017 10:02*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**86.0**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-23(01.0-01.5)

A175011-97 (Soil)

Date Sampled
12/04/2017 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
2,4,6-Trinitrotoluene	**110**	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 10:47	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*72.2 %*		*60-140*	*12/15/2017*	*12/18/2017 10:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**88.4**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-25(01.0-01.5)

A175011-98 (Soil)

Date Sampled
12/04/2017 14:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:09	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*70.7 %*		*60-140*	*12/15/2017*	*12/18/2017 11:09*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**83.9**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-24(01.0-01.5)

A175011-99 (Soil)

Date Sampled
12/04/2017 14:35

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/18/2017 11:31	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*57.1 %*		*60-140*	*12/15/2017*	*12/18/2017 11:31*	*EPA 8095*	*S*
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**88.4**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B11-26(01.0-01.5)

A175011-AA (Soil)

Date Sampled
12/05/2017 08:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712052**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/18/2017 11:53	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl [2C]		*70.7 %*		*60-140*	*12/15/2017*	*12/18/2017 11:53*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712056**			
% Solids	**84.5**	0.00	% by Weight	1	12/15/2017	12/16/2017 13:20	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-15(01.0-01.5)

A175011-AB (Soil)

Date Sampled
12/05/2017 08:20

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:45	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 20:37	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*81.1 %*		*63.7-134*	*12/15/2017*	*12/19/2017 20:37*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**90.2**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-14(01.0-01.5)

A175011-AC (Soil)

Date Sampled
12/05/2017 08:40

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	
Nitroglycerin	**650**	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 21:07	EPA 8095	M
2,4,6-Trinitrotoluene	**220**	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
PETN	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
RDX	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M
HMX	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 20:59	EPA 8095	M, X
Surrogate: 2,2'-Dinitrobiphenyl		*76.0 %*		*63.7-134*	*12/15/2017*	*12/19/2017 20:59*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**85.0**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-12(01.0-01.5)

A175011-AD (Soil)

Date Sampled
12/05/2017 09:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
2-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
3-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
4-Nitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
Nitroglycerin	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
1,3-Dinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:16	EPA 8095	
2,6-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
2,4-Dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
1,3,5-Trinitrobenzene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
2,4,6-Trinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
PETN	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
RDX	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
3,5-Dinitroaniline	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
Tetryl	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
HMX	ND	130	ug/kg dry	1	12/15/2017	12/19/2017 22:06	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*76.4 %*		*63.7-134*	*12/15/2017*	*12/19/2017 22:06*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**78.5**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B12-10(01.0-01.5)

A175011-AE (Soil)

Date Sampled
12/05/2017 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:38	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:28	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*69.9 %*		*63.7-134*	*12/15/2017*	*12/19/2017 22:28*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**83.6**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD112917A

A175011-AF (Soil)

Date Sampled
11/29/2017 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/19/2017 22:50	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*74.0 %*		*63.7-134*	*12/15/2017*	*12/19/2017 22:50*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**84.6**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD112917B

A175011-AG (Soil)

Date Sampled
11/29/2017 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:24	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:24	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:12	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*75.7 %*		*63.7-134*	*12/15/2017*	*12/19/2017 23:12*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**89.8**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD113017A

A175011-AH (Soil)

Date Sampled
11/30/2017 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:09	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:09	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:09	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/19/2017 23:56	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*89.1 %*		*63.7-134*	*12/15/2017*	*12/19/2017 23:56*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**94.5**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD113017B

A175011-AI (Soil)

Date Sampled
11/30/2017 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
2,4,6-Trinitrotoluene	**390**	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
4-Amino-2,6-dinitrotoluene	**460**	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
2-Amino-4,6-dinitrotoluene	**220**	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 00:18	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*72.2 %*		*63.7-134*	*12/15/2017*	*12/20/2017 00:18*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**82.6**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD120117A

A175011-AJ (Soil)

Date Sampled
12/01/2017 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
2,4-Dinitrotoluene	**200**	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
2,4,6-Trinitrotoluene	**190**	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:54	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 00:41	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*81.1 %*		*63.7-134*	*12/15/2017*	*12/20/2017 00:41*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**89.8**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD120117B

A175011-AK (Soil)

Date Sampled
12/01/2017 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
2,4,6-Trinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:17	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:17	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/15/2017	12/20/2017 01:03	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*78.7 %*		*63.7-134*	*12/15/2017*	*12/20/2017 01:03*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**93.9**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD120417

A175011-AL (Soil)

Date Sampled
12/04/2017 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
Nitroglycerin	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
2,4,6-Trinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:25	EPA 8095	
Surrogate: 2,2'-Dinitrobiphenyl		*69.3 %*		*63.7-134*	*12/15/2017*	*12/20/2017 01:25*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**85.3**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

BD120517

A175011-AM (Soil)

Date Sampled
12/05/2017 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison								
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712053**			
Nitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
2-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
3-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
4-Nitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
Nitroglycerin	**1000**	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
1,3-Dinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
2,6-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
2,4-Dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
1,3,5-Trinitrobenzene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
2,4,6-Trinitrotoluene	**180**	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
PETN	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
RDX	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
4-Amino-2,6-dinitrotoluene	**170**	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
3,5-Dinitroaniline	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
Tetryl	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
HMX	ND	120	ug/kg dry	1	12/15/2017	12/20/2017 01:47	EPA 8095	
Surrogate: 2,2´-Dinitrobiphenyl		*69.3 %*		*63.7-134*	*12/15/2017*	*12/20/2017 01:47*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712057**			
% Solids	**84.6**	0.00	% by Weight	1	12/18/2017	12/19/2017 09:50	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-B14-03(05.0-05.5)

A175011-BF (Soil)

Date Sampled
11/30/2017 14:45

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712093**			
Nitrobenzene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
2,4-Dinitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
2,4,6-Trinitrotoluene	**380**	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
PETN	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
RDX	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
4-Amino-2,6-dinitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
2-Amino-4,6-dinitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
Tetryl	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 22:43	EPA 8095	LC
Surrogate: 2,2'-Dinitrobiphenyl		*99.8 %*		*63.7-134*	*12/27/2017*	*12/27/2017 22:43*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712096**			
% Solids	**93.4**	0.00	% by Weight	1	12/27/2017	12/28/2017 17:51	SM 2540B	

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Princeton NJ, 08540	Project Manager: Lora Sterner

TP-RD-A13-03(05.0-05.5)

A175011-BI (Soil)

Date Sampled
12/01/2017 11:34

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Explosive Compounds by EPA Method 8095					**Preparation Batch: A712093**			
Nitrobenzene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
2-Nitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
3-Nitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
4-Nitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
Nitroglycerin	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
1,3-Dinitrobenzene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
2,6-Dinitrotoluene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
2,4-Dinitrotoluene	**120**	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
1,3,5-Trinitrobenzene	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
2,4,6-Trinitrotoluene	**17000**	1100	ug/kg dry	10	12/27/2017	12/28/2017 12:05	EPA 8095	D, M1
PETN	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	M
RDX	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
4-Amino-2,6-dinitrotoluene	**850**	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	M
3,5-Dinitroaniline	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
2-Amino-4,6-dinitrotoluene	**680**	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	M
Tetryl	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	
HMX	ND	110	ug/kg dry	1	12/27/2017	12/27/2017 23:05	EPA 8095	LC, M
Surrogate: 2,2'-Dinitrobiphenyl		*106 %*		*63.7-134*	*12/27/2017*	*12/27/2017 23:05*	*EPA 8095*	
Classical Chemistry Parameters					**Preparation Batch: A712096**			
% Solids	**92.8**	0.00	% by Weight	1	12/27/2017	12/28/2017 17:51	SM 2540B	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712021 - EPA 3511										
Blank (A712021-BLK1)				Prepared: 12/11/2017 Analyzed: 12/11/2017 17:42						
Nitrobenzene	ND	0.025	ug/L							
Nitrobenzene [2C]	ND	0.025	ug/L							
2-Nitrotoluene	ND	0.025	ug/L							
2-Nitrotoluene [2C]	ND	0.025	ug/L							
3-Nitrotoluene	ND	0.025	ug/L							
3-Nitrotoluene [2C]	ND	0.025	ug/L							
4-Nitrotoluene	ND	0.025	ug/L							
4-Nitrotoluene [2C]	ND	0.025	ug/L							
Nitroglycerin	ND	0.025	ug/L							
Nitroglycerin [2C]	ND	0.025	ug/L							
1,3-Dinitrobenzene	ND	0.025	ug/L							
1,3-Dinitrobenzene [2C]	ND	0.025	ug/L							
2,6-Dinitrotoluene	ND	0.025	ug/L							
2,6-Dinitrotoluene [2C]	ND	0.025	ug/L							
2,4-Dinitrotoluene	ND	0.025	ug/L							
2,4-Dinitrotoluene [2C]	ND	0.025	ug/L							
1,3,5-Trinitrobenzene	ND	0.025	ug/L							
1,3,5-Trinitrobenzene [2C]	ND	0.025	ug/L							
2,4,6-Trinitrotoluene	ND	0.025	ug/L							
2,4,6-Trinitrotoluene [2C]	ND	0.025	ug/L							
PETN	ND	0.025	ug/L							
PETN [2C]	ND	0.025	ug/L							
RDX	ND	0.025	ug/L							
RDX [2C]	ND	0.025	ug/L							
4-Amino-2,6-dinitrotoluene	ND	0.050	ug/L							
4-Amino-2,6-dinitrotoluene [2C]	ND	0.050	ug/L							
3,5-Dinitroaniline	ND	0.025	ug/L							
3,5-Dinitroaniline [2C]	ND	0.025	ug/L							
2-Amino-4,6-dinitrotoluene	ND	0.025	ug/L							
2-Amino-4,6-dinitrotoluene [2C]	ND	0.025	ug/L							
Tetryl	ND	0.025	ug/L							
Tetryl [2C]	ND	0.025	ug/L							
HMX	ND	0.025	ug/L							
HMX [2C]	ND	0.025	ug/L							
Surrogate: 2,2´-Dinitrobiphenyl	*1.13*		*ug/L*	*1.000*		*113*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.21*		*ug/L*	*1.000*		*121*	*60-140*			
LCS (A712021-BS1)				Prepared: 12/11/2017 Analyzed: 12/11/2017 18:46						
Nitrobenzene	2.48	0.025	ug/L	2.500		99.2	70-130			
Nitrobenzene [2C]	2.36	0.025	ug/L	2.500		94.5	70-130			
2-Nitrotoluene	2.62	0.025	ug/L	2.500		105	70-130			
2-Nitrotoluene [2C]	2.45	0.025	ug/L	2.500		97.8	70-130			
3-Nitrotoluene	2.65	0.025	ug/L	2.500		106	70-130			
3-Nitrotoluene [2C]	2.52	0.025	ug/L	2.500		101	70-130			

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712021 - EPA 3511										
LCS (A712021-BS1)				Prepared: 12/11/2017 Analyzed: 12/11/2017 18:46						
4-Nitrotoluene	2.73	0.025	ug/L	2.500		109	70-130			
4-Nitrotoluene [2C]	2.55	0.025	ug/L	2.500		102	70-130			
Nitroglycerin	2.36	0.025	ug/L	2.500		94.4	70-130			
Nitroglycerin [2C]	2.40	0.025	ug/L	2.500		96.2	70-130			
1,3-Dinitrobenzene	2.25	0.025	ug/L	2.500		89.9	70-130			
1,3-Dinitrobenzene [2C]	2.36	0.025	ug/L	2.500		94.2	70-130			
2,6-Dinitrotoluene	2.40	0.025	ug/L	2.500		96.2	70-130			
2,6-Dinitrotoluene [2C]	2.41	0.025	ug/L	2.500		96.3	70-130			
2,4-Dinitrotoluene	2.35	0.025	ug/L	2.500		93.9	70-130			
2,4-Dinitrotoluene [2C]	2.38	0.025	ug/L	2.500		95.1	70-130			
1,3,5-Trinitrobenzene	2.25	0.025	ug/L	2.500		89.9	70-130			
1,3,5-Trinitrobenzene [2C]	2.45	0.025	ug/L	2.500		98.1	70-130			
2,4,6-Trinitrotoluene	2.86	0.025	ug/L	2.500		115	70-130			
2,4,6-Trinitrotoluene [2C]	2.94	0.025	ug/L	2.500		118	70-130			
PETN	2.23	0.025	ug/L	2.500		89.3	70-130			
PETN [2C]	2.40	0.025	ug/L	2.500		95.9	70-130			
RDX	2.33	0.025	ug/L	2.500		93.3	70-130			
RDX [2C]	2.40	0.025	ug/L	2.500		96.0	70-130			
4-Amino-2,6-dinitrotoluene	2.53	0.050	ug/L	2.500		101	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.46	0.050	ug/L	2.500		98.4	70-130			
3,5-Dinitroaniline	2.38	0.025	ug/L	2.500		95.3	70-130			
3,5-Dinitroaniline [2C]	2.33	0.025	ug/L	2.500		93.0	70-130			
2-Amino-4,6-dinitrotoluene	2.43	0.025	ug/L	2.500		97.0	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.38	0.025	ug/L	2.500		95.2	70-130			
Tetryl	2.51	0.025	ug/L	2.500		100	70-130			
Tetryl [2C]	2.25	0.025	ug/L	2.500		90.1	70-130			
HMX	2.46	0.025	ug/L	2.500		98.5	70-130			
HMX [2C]	2.45	0.025	ug/L	2.500		98.2	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*1.17*		*ug/L*	*1.000*		*117*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.21*		*ug/L*	*1.000*		*121*	*60-140*			
Matrix Spike (A712021-MS1)		**Source: A174910-01**		Prepared: 12/11/2017 Analyzed: 12/11/2017 19:07						
Nitrobenzene	2.49	0.025	ug/L	2.500	ND	99.6	70-130			
Nitrobenzene [2C]	2.36	0.025	ug/L	2.500	ND	94.3	70-130			
2-Nitrotoluene	2.60	0.025	ug/L	2.500	ND	104	70-130			
2-Nitrotoluene [2C]	2.43	0.025	ug/L	2.500	ND	97.4	70-130			
3-Nitrotoluene	2.63	0.025	ug/L	2.500	ND	105	70-130			
3-Nitrotoluene [2C]	2.51	0.025	ug/L	2.500	0.0138	100	70-130			
4-Nitrotoluene	2.71	0.025	ug/L	2.500	ND	108	70-130			
4-Nitrotoluene [2C]	2.53	0.025	ug/L	2.500	ND	101	70-130			
Nitroglycerin	2.39	0.025	ug/L	2.500	ND	95.5	70-130			
Nitroglycerin [2C]	2.42	0.025	ug/L	2.500	0.00268	96.7	70-130			
1,3-Dinitrobenzene	1.86	0.025	ug/L	2.500	0.0223	73.5	70-130			
1,3-Dinitrobenzene [2C]	2.36	0.025	ug/L	2.500	ND	94.3	70-130			

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712021 - EPA 3511										
Matrix Spike (A712021-MS1)	**Source: A174910-01**			Prepared: 12/11/2017 Analyzed: 12/11/2017 19:07						
2,6-Dinitrotoluene	2.31	0.025	ug/L	2.500	0.0372	90.9	70-130			
2,6-Dinitrotoluene [2C]	2.42	0.025	ug/L	2.500	0.0400	95.2	70-130			
2,4-Dinitrotoluene	2.51	0.025	ug/L	2.500	0.185	92.9	70-130			
2,4-Dinitrotoluene [2C]	2.55	0.025	ug/L	2.500	0.202	93.9	70-130			
1,3,5-Trinitrobenzene	2.18	0.025	ug/L	2.500	ND	87.2	70-130			
1,3,5-Trinitrobenzene [2C]	2.35	0.025	ug/L	2.500	ND	94.0	70-130			
2,4,6-Trinitrotoluene	2.89	0.025	ug/L	2.500	0.0276	115	70-130			
2,4,6-Trinitrotoluene [2C]	2.95	0.025	ug/L	2.500	0.0309	117	70-130			
PETN	2.27	0.025	ug/L	2.500	0.00183	90.6	70-130			
PETN [2C]	2.41	0.025	ug/L	2.500	0.00895	95.9	70-130			
RDX	2.31	0.025	ug/L	2.500	ND	92.5	70-130			
RDX [2C]	2.40	0.025	ug/L	2.500	0.480	76.8	70-130			
4-Amino-2,6-dinitrotoluene	2.38	0.050	ug/L	2.500	ND	95.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	2.45	0.050	ug/L	2.500	0.0386	96.3	70-130			
3,5-Dinitroaniline	2.65	0.025	ug/L	2.500	0.595	82.2	70-130			
3,5-Dinitroaniline [2C]	2.35	0.025	ug/L	2.500	ND	94.0	70-130			
2-Amino-4,6-dinitrotoluene	2.36	0.025	ug/L	2.500	ND	94.3	70-130			
2-Amino-4,6-dinitrotoluene [2C]	2.42	0.025	ug/L	2.500	ND	96.7	70-130			
Tetryl	2.43	0.025	ug/L	2.500	ND	97.1	70-130			
Tetryl [2C]	2.21	0.025	ug/L	2.500	ND	88.6	70-130			
HMX	3.11	0.025	ug/L	2.500	ND	125	70-130			
HMX [2C]	2.62	0.025	ug/L	2.500	ND	105	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*1.15*		*ug/L*	*1.000*		*115*	*60-140*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*1.20*		*ug/L*	*1.000*		*120*	*60-140*			
Matrix Spike Dup (A712021-MSD1)	**Source: A174910-01**			Prepared: 12/11/2017 Analyzed: 12/11/2017 19:29						
Nitrobenzene	2.53	0.025	ug/L	2.500	ND	101	70-130	1.61	20	
Nitrobenzene [2C]	2.37	0.025	ug/L	2.500	ND	94.7	70-130	0.470	20	
2-Nitrotoluene	2.63	0.025	ug/L	2.500	ND	105	70-130	1.39	20	
2-Nitrotoluene [2C]	2.45	0.025	ug/L	2.500	ND	98.1	70-130	0.750	20	
3-Nitrotoluene	2.65	0.025	ug/L	2.500	ND	106	70-130	0.897	20	
3-Nitrotoluene [2C]	2.54	0.025	ug/L	2.500	0.0138	101	70-130	0.960	20	
4-Nitrotoluene	2.72	0.025	ug/L	2.500	ND	109	70-130	0.507	20	
4-Nitrotoluene [2C]	2.56	0.025	ug/L	2.500	ND	102	70-130	0.880	20	
Nitroglycerin	2.38	0.025	ug/L	2.500	ND	95.1	70-130	0.395	20	
Nitroglycerin [2C]	2.38	0.025	ug/L	2.500	0.00268	95.0	70-130	1.76	20	
1,3-Dinitrobenzene	1.86	0.025	ug/L	2.500	0.0223	73.3	70-130	0.294	20	
1,3-Dinitrobenzene [2C]	2.34	0.025	ug/L	2.500	ND	93.6	70-130	0.792	20	
2,6-Dinitrotoluene	2.36	0.025	ug/L	2.500	0.0372	92.8	70-130	2.00	20	
2,6-Dinitrotoluene [2C]	2.44	0.025	ug/L	2.500	0.0400	95.9	70-130	0.711	20	
2,4-Dinitrotoluene	2.54	0.025	ug/L	2.500	0.185	94.3	70-130	1.36	20	
2,4-Dinitrotoluene [2C]	2.56	0.025	ug/L	2.500	0.202	94.4	70-130	0.428	20	
1,3,5-Trinitrobenzene	2.15	0.025	ug/L	2.500	ND	85.9	70-130	1.40	20	
1,3,5-Trinitrobenzene [2C]	2.36	0.025	ug/L	2.500	ND	94.3	70-130	0.331	20	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712021 - EPA 3511										
Matrix Spike Dup (A712021-MSD1)	**Source: A174910-01**			Prepared: 12/11/2017 Analyzed: 12/11/2017 19:29						
2,4,6-Trinitrotoluene	2.88	0.025	ug/L	2.500	0.0276	114	70-130	0.265	20	
2,4,6-Trinitrotoluene [2C]	2.97	0.025	ug/L	2.500	0.0309	118	70-130	0.650	20	
PETN	2.16	0.025	ug/L	2.500	0.00183	86.4	70-130	4.66	20	
PETN [2C]	2.41	0.025	ug/L	2.500	0.00895	95.9	70-130	0.0483	20	
RDX	2.24	0.025	ug/L	2.500	ND	89.4	70-130	3.34	20	
RDX [2C]	2.41	0.025	ug/L	2.500	0.480	77.4	70-130	0.588	20	
4-Amino-2,6-dinitrotoluene	2.33	0.050	ug/L	2.500	ND	93.1	70-130	2.34	20	
4-Amino-2,6-dinitrotoluene [2C]	2.45	0.050	ug/L	2.500	0.0386	96.3	70-130	0.0127	20	
3,5-Dinitroaniline	2.57	0.025	ug/L	2.500	0.595	79.0	70-130	3.05	20	
3,5-Dinitroaniline [2C]	2.33	0.025	ug/L	2.500	ND	93.3	70-130	0.817	20	
2-Amino-4,6-dinitrotoluene	2.24	0.025	ug/L	2.500	ND	89.6	70-130	5.14	20	
2-Amino-4,6-dinitrotoluene [2C]	2.39	0.025	ug/L	2.500	ND	95.7	70-130	1.05	20	
Tetryl	2.41	0.025	ug/L	2.500	ND	96.4	70-130	0.779	20	
Tetryl [2C]	2.25	0.025	ug/L	2.500	ND	90.0	70-130	1.60	20	
HMX	2.68	0.025	ug/L	2.500	ND	107	70-130	14.8	20	
HMX [2C]	2.62	0.025	ug/L	2.500	ND	105	70-130	0.0744	20	
Surrogate: 2,2'-Dinitrobiphenyl	*1.16*		*ug/L*	*1.000*		*116*	*60-140*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*1.21*		*ug/L*	*1.000*		*121*	*60-140*			
Batch A712043 - EPA 3570										
Blank (A712043-BLK1)				Prepared: 12/14/2017 Analyzed: 12/15/2017 18:20						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712043 - EPA 3570										
Blank (A712043-BLK1)				Prepared: 12/14/2017 Analyzed: 12/15/2017 18:20						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*398*		*ug/kg wet*	*400.0*		*99.4*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*354*		*ug/kg wet*	*400.0*		*88.4*	*60-140*			
LCS (A712043-BS1)				Prepared: 12/14/2017 Analyzed: 12/15/2017 18:43						
Nitrobenzene	400	100	ug/kg wet	400.0		100	70-130			
Nitrobenzene [2C]	420	100	ug/kg wet	400.0		105	70-130			
2-Nitrotoluene	407	100	ug/kg wet	400.0		102	70-130			
2-Nitrotoluene [2C]	426	100	ug/kg wet	400.0		107	70-130			
3-Nitrotoluene	384	100	ug/kg wet	400.0		96.1	70-130			
3-Nitrotoluene [2C]	407	100	ug/kg wet	400.0		102	70-130			
4-Nitrotoluene	396	100	ug/kg wet	400.0		99.1	70-130			
4-Nitrotoluene [2C]	414	100	ug/kg wet	400.0		104	70-130			
Nitroglycerin	376	100	ug/kg wet	400.0		93.9	70-130			
Nitroglycerin [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
1,3-Dinitrobenzene	388	100	ug/kg wet	400.0		96.9	70-130			
1,3-Dinitrobenzene [2C]	398	100	ug/kg wet	400.0		99.6	70-130			
2,6-Dinitrotoluene	374	100	ug/kg wet	400.0		93.6	70-130			
2,6-Dinitrotoluene [2C]	383	100	ug/kg wet	400.0		95.8	70-130			
2,4-Dinitrotoluene	379	100	ug/kg wet	400.0		94.7	70-130			
2,4-Dinitrotoluene [2C]	379	100	ug/kg wet	400.0		94.8	70-130			
1,3,5-Trinitrobenzene	388	100	ug/kg wet	400.0		97.1	70-130			
1,3,5-Trinitrobenzene [2C]	376	100	ug/kg wet	400.0		94.0	70-130			
2,4,6-Trinitrotoluene	463	100	ug/kg wet	400.0		116	70-130			
2,4,6-Trinitrotoluene [2C]	458	100	ug/kg wet	400.0		115	70-130			
PETN	379	100	ug/kg wet	400.0		94.8	70-130			
PETN [2C]	393	100	ug/kg wet	400.0		98.3	70-130			
RDX	386	100	ug/kg wet	400.0		96.5	70-130			
RDX [2C]	402	100	ug/kg wet	400.0		100	70-130			
4-Amino-2,6-dinitrotoluene	376	100	ug/kg wet	400.0		94.0	70-130			
4-Amino-2,6-dinitrotoluene [2C]	376	100	ug/kg wet	400.0		94.1	70-130			
3,5-Dinitroaniline	369	100	ug/kg wet	400.0		92.2	70-130			
3,5-Dinitroaniline [2C]	371	100	ug/kg wet	400.0		92.8	70-130			

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712043 - EPA 3570										
LCS (A712043-BS1)				Prepared: 12/14/2017 Analyzed: 12/15/2017 18:43						
2-Amino-4,6-dinitrotoluene	366	100	ug/kg wet	400.0		91.6	70-130			
2-Amino-4,6-dinitrotoluene [2C]	366	100	ug/kg wet	400.0		91.6	70-130			
Tetryl	381	100	ug/kg wet	400.0		95.1	70-130			
Tetryl [2C]	343	100	ug/kg wet	400.0		85.8	70-130			
HMX	378	100	ug/kg wet	400.0		94.4	70-130			
HMX [2C]	375	100	ug/kg wet	400.0		93.9	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*364*		*ug/kg wet*	*400.0*		*91.0*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*375*		*ug/kg wet*	*400.0*		*93.7*	*60-140*			
Matrix Spike (A712043-MS1)	**Source: A175011-11**			Prepared: 12/14/2017 Analyzed: 12/15/2017 23:30						
Nitrobenzene	398	120	ug/kg dry	475.8	0.497	83.6	70-130			
Nitrobenzene [2C]	451	120	ug/kg dry	475.8	ND	94.8	70-130			
2-Nitrotoluene	421	120	ug/kg dry	475.8	ND	88.5	70-130			
2-Nitrotoluene [2C]	463	120	ug/kg dry	475.8	28.6	91.2	70-130			
3-Nitrotoluene	422	120	ug/kg dry	475.8	ND	88.6	70-130			
3-Nitrotoluene [2C]	472	120	ug/kg dry	475.8	4.11	98.4	70-130			
4-Nitrotoluene	413	120	ug/kg dry	475.8	2.16	86.3	70-130			
4-Nitrotoluene [2C]	457	120	ug/kg dry	475.8	ND	96.1	70-130			
Nitroglycerin	240	120	ug/kg dry	475.8	3.26	49.7	70-130			M
Nitroglycerin [2C]	248	120	ug/kg dry	475.8	2.11	51.7	70-130			M
1,3-Dinitrobenzene	307	120	ug/kg dry	475.8	ND	64.4	70-130			M
1,3-Dinitrobenzene [2C]	338	120	ug/kg dry	475.8	ND	70.9	70-130			
2,6-Dinitrotoluene	314	120	ug/kg dry	475.8	2.47	65.5	70-130			M
2,6-Dinitrotoluene [2C]	350	120	ug/kg dry	475.8	2.30	73.1	70-130			
2,4-Dinitrotoluene	339	120	ug/kg dry	475.8	40.2	62.9	70-130			M
2,4-Dinitrotoluene [2C]	364	120	ug/kg dry	475.8	31.8	69.9	70-130			M
1,3,5-Trinitrobenzene	260	120	ug/kg dry	475.8	ND	54.5	70-130			M
1,3,5-Trinitrobenzene [2C]	290	120	ug/kg dry	475.8	1.60	60.7	70-130			M
2,4,6-Trinitrotoluene	336	120	ug/kg dry	475.8	11.2	68.3	70-130			M
2,4,6-Trinitrotoluene [2C]	377	120	ug/kg dry	475.8	11.4	76.7	70-130			
PETN	192	120	ug/kg dry	475.8	1.69	40.0	70-130			M
PETN [2C]	214	120	ug/kg dry	475.8	ND	44.9	70-130			M
RDX	147	120	ug/kg dry	475.8	ND	30.9	70-130			M
RDX [2C]	150	120	ug/kg dry	475.8	4.04	30.6	70-130			M
4-Amino-2,6-dinitrotoluene	227	120	ug/kg dry	475.8	40.8	39.2	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	247	120	ug/kg dry	475.8	39.3	43.6	70-130			M
3,5-Dinitroaniline	213	120	ug/kg dry	475.8	ND	44.8	70-130			M
3,5-Dinitroaniline [2C]	236	120	ug/kg dry	475.8	3.30	48.8	70-130			M
2-Amino-4,6-dinitrotoluene	213	120	ug/kg dry	475.8	16.2	41.4	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	232	120	ug/kg dry	475.8	13.7	45.8	70-130			M
Tetryl	160	120	ug/kg dry	475.8	ND	33.6	70-130			M
Tetryl [2C]	164	120	ug/kg dry	475.8	5.43	33.3	70-130			M
HMX	51.7	120	ug/kg dry	475.8	ND	10.9	70-130			M
HMX [2C]	48.0	120	ug/kg dry	475.8	11.3	7.71	70-130			M

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712043 - EPA 3570										
Matrix Spike (A712043-MS1)	**Source: A175011-11**			Prepared: 12/14/2017 Analyzed: 12/15/2017 23:30						
Surrogate: 2,2´-Dinitrobiphenyl	*210*		*ug/kg dry*	*475.8*		*44.2*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*232*		*ug/kg dry*	*475.8*		*48.8*	*60-140*			*S*
Matrix Spike (A712043-MS2)	**Source: A175011-16**			Prepared: 12/14/2017 Analyzed: 12/16/2017 02:25						
Nitrobenzene	395	110	ug/kg dry	445.2	0.441	88.5	70-130			
Nitrobenzene [2C]	396	110	ug/kg dry	445.2	ND	89.0	70-130			
2-Nitrotoluene	422	110	ug/kg dry	445.2	ND	94.7	70-130			
2-Nitrotoluene [2C]	407	110	ug/kg dry	445.2	27.5	85.2	70-130			
3-Nitrotoluene	395	110	ug/kg dry	445.2	2.52	88.2	70-130			
3-Nitrotoluene [2C]	423	110	ug/kg dry	445.2	3.24	94.2	70-130			
4-Nitrotoluene	416	110	ug/kg dry	445.2	ND	93.5	70-130			
4-Nitrotoluene [2C]	402	110	ug/kg dry	445.2	ND	90.2	70-130			
Nitroglycerin	182	110	ug/kg dry	445.2	ND	41.0	70-130			M
Nitroglycerin [2C]	166	110	ug/kg dry	445.2	2.12	36.8	70-130			M
1,3-Dinitrobenzene	266	110	ug/kg dry	445.2	ND	59.9	70-130			M
1,3-Dinitrobenzene [2C]	267	110	ug/kg dry	445.2	ND	59.9	70-130			M
2,6-Dinitrotoluene	276	110	ug/kg dry	445.2	0.748	61.7	70-130			M
2,6-Dinitrotoluene [2C]	278	110	ug/kg dry	445.2	0.628	62.4	70-130			M
2,4-Dinitrotoluene	291	110	ug/kg dry	445.2	6.20	64.0	70-130			M
2,4-Dinitrotoluene [2C]	286	110	ug/kg dry	445.2	6.66	62.7	70-130			M
1,3,5-Trinitrobenzene	210	110	ug/kg dry	445.2	ND	47.1	70-130			M
1,3,5-Trinitrobenzene [2C]	205	110	ug/kg dry	445.2	1.17	45.8	70-130			M
2,4,6-Trinitrotoluene	272	110	ug/kg dry	445.2	5.47	59.9	70-130			M
2,4,6-Trinitrotoluene [2C]	273	110	ug/kg dry	445.2	6.26	60.0	70-130			M
PETN	136	110	ug/kg dry	445.2	1.59	30.1	70-130			M
PETN [2C]	133	110	ug/kg dry	445.2	ND	29.8	70-130			M
RDX	102	110	ug/kg dry	445.2	ND	23.0	70-130			M
RDX [2C]	88.1	110	ug/kg dry	445.2	5.46	18.6	70-130			M
4-Amino-2,6-dinitrotoluene	160	110	ug/kg dry	445.2	ND	36.0	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	155	110	ug/kg dry	445.2	1.09	34.6	70-130			M
3,5-Dinitroaniline	161	110	ug/kg dry	445.2	2.73	35.5	70-130			M
3,5-Dinitroaniline [2C]	154	110	ug/kg dry	445.2	1.51	34.2	70-130			M
2-Amino-4,6-dinitrotoluene	159	110	ug/kg dry	445.2	ND	35.7	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	147	110	ug/kg dry	445.2	ND	33.1	70-130			M
Tetryl	105	110	ug/kg dry	445.2	ND	23.6	70-130			M
Tetryl [2C]	98.9	110	ug/kg dry	445.2	1.47	21.9	70-130			M
HMX	30.9	110	ug/kg dry	445.2	ND	6.94	70-130			M
HMX [2C]	24.8	110	ug/kg dry	445.2	ND	5.56	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*162*		*ug/kg dry*	*445.2*		*36.3*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*156*		*ug/kg dry*	*445.2*		*35.1*	*60-140*			*S*
Matrix Spike Dup (A712043-MSD1)	**Source: A175011-11**			Prepared: 12/14/2017 Analyzed: 12/15/2017 23:52						
Nitrobenzene	426	120	ug/kg dry	475.8	0.497	89.5	70-130	6.80	20	
Nitrobenzene [2C]	438	120	ug/kg dry	475.8	ND	92.0	70-130	3.04	20	

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712043 - EPA 3570										
Matrix Spike Dup (A712043-MSD1)	**Source: A175011-11**			Prepared: 12/14/2017 Analyzed: 12/15/2017 23:52						
2-Nitrotoluene	453	120	ug/kg dry	475.8	ND	95.2	70-130	7.30	20	
2-Nitrotoluene [2C]	448	120	ug/kg dry	475.8	28.6	88.2	70-130	3.17	20	
3-Nitrotoluene	456	120	ug/kg dry	475.8	ND	95.9	70-130	7.88	20	
3-Nitrotoluene [2C]	458	120	ug/kg dry	475.8	4.11	95.4	70-130	3.12	20	
4-Nitrotoluene	440	120	ug/kg dry	475.8	2.16	92.1	70-130	6.52	20	
4-Nitrotoluene [2C]	446	120	ug/kg dry	475.8	ND	93.8	70-130	2.49	20	
Nitroglycerin	232	120	ug/kg dry	475.8	3.26	48.1	70-130	3.23	20	M
Nitroglycerin [2C]	222	120	ug/kg dry	475.8	2.11	46.2	70-130	11.2	20	M
1,3-Dinitrobenzene	310	120	ug/kg dry	475.8	ND	65.1	70-130	1.06	20	M
1,3-Dinitrobenzene [2C]	326	120	ug/kg dry	475.8	ND	68.4	70-130	3.62	20	M
2,6-Dinitrotoluene	318	120	ug/kg dry	475.8	2.47	66.2	70-130	1.05	20	M
2,6-Dinitrotoluene [2C]	326	120	ug/kg dry	475.8	2.30	68.1	70-130	6.98	20	M
2,4-Dinitrotoluene	340	120	ug/kg dry	475.8	40.2	62.9	70-130	0.113	20	M
2,4-Dinitrotoluene [2C]	340	120	ug/kg dry	475.8	31.8	64.8	70-130	6.83	20	M
1,3,5-Trinitrobenzene	260	120	ug/kg dry	475.8	ND	54.5	70-130	0.0239	20	M
1,3,5-Trinitrobenzene [2C]	263	120	ug/kg dry	475.8	1.60	55.0	70-130	9.88	20	M
2,4,6-Trinitrotoluene	337	120	ug/kg dry	475.8	11.2	68.5	70-130	0.209	20	M
2,4,6-Trinitrotoluene [2C]	346	120	ug/kg dry	475.8	11.4	70.3	70-130	8.54	20	
PETN	183	120	ug/kg dry	475.8	1.69	38.1	70-130	5.01	20	M
PETN [2C]	193	120	ug/kg dry	475.8	ND	40.5	70-130	10.3	20	M
RDX	144	120	ug/kg dry	475.8	ND	30.3	70-130	2.05	20	M
RDX [2C]	133	120	ug/kg dry	475.8	4.04	27.1	70-130	11.8	20	M
4-Amino-2,6-dinitrotoluene	217	120	ug/kg dry	475.8	40.8	37.1	70-130	4.60	20	M
4-Amino-2,6-dinitrotoluene [2C]	216	120	ug/kg dry	475.8	39.3	37.2	70-130	13.1	20	M
3,5-Dinitroaniline	205	120	ug/kg dry	475.8	ND	43.2	70-130	3.73	20	M
3,5-Dinitroaniline [2C]	205	120	ug/kg dry	475.8	3.30	42.4	70-130	13.9	20	M
2-Amino-4,6-dinitrotoluene	207	120	ug/kg dry	475.8	16.2	40.1	70-130	3.17	20	M
2-Amino-4,6-dinitrotoluene [2C]	202	120	ug/kg dry	475.8	13.7	39.6	70-130	13.7	20	M
Tetryl	156	120	ug/kg dry	475.8	ND	32.7	70-130	2.64	20	M
Tetryl [2C]	149	120	ug/kg dry	475.8	5.43	30.1	70-130	9.71	20	M
HMX	62.0	120	ug/kg dry	475.8	ND	13.0	70-130	18.1	20	M
HMX [2C]	50.7	120	ug/kg dry	475.8	11.3	8.27	70-130	5.32	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*212*		*ug/kg dry*	*475.8*		*44.6*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*215*		*ug/kg dry*	*475.8*		*45.2*	*60-140*			*S*
Matrix Spike Dup (A712043-MSD2)	**Source: A175011-16**			Prepared: 12/14/2017 Analyzed: 12/16/2017 02:47						
Nitrobenzene	351	110	ug/kg dry	445.2	0.441	78.7	70-130	11.8	20	
Nitrobenzene [2C]	401	110	ug/kg dry	445.2	ND	90.2	70-130	1.33	20	
2-Nitrotoluene	376	110	ug/kg dry	445.2	ND	84.5	70-130	11.4	20	
2-Nitrotoluene [2C]	416	110	ug/kg dry	445.2	27.5	87.2	70-130	2.21	20	
3-Nitrotoluene	347	110	ug/kg dry	445.2	2.52	77.5	70-130	12.9	20	
3-Nitrotoluene [2C]	426	110	ug/kg dry	445.2	3.24	95.0	70-130	0.848	20	
4-Nitrotoluene	370	110	ug/kg dry	445.2	ND	83.0	70-130	11.9	20	
4-Nitrotoluene [2C]	408	110	ug/kg dry	445.2	ND	91.8	70-130	1.72	20	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712043 - EPA 3570										
Matrix Spike Dup (A712043-MSD2)	**Source: A175011-16**			Prepared: 12/14/2017 Analyzed: 12/16/2017 02:47						
Nitroglycerin	166	110	ug/kg dry	445.2	ND	37.3	70-130	9.49	20	M
Nitroglycerin [2C]	174	110	ug/kg dry	445.2	2.12	38.6	70-130	4.78	20	M
1,3-Dinitrobenzene	245	110	ug/kg dry	445.2	ND	55.1	70-130	8.24	20	M
1,3-Dinitrobenzene [2C]	305	110	ug/kg dry	445.2	ND	68.5	70-130	13.4	20	M
2,6-Dinitrotoluene	250	110	ug/kg dry	445.2	0.748	56.0	70-130	9.75	20	M
2,6-Dinitrotoluene [2C]	283	110	ug/kg dry	445.2	0.628	63.3	70-130	1.53	20	M
2,4-Dinitrotoluene	265	110	ug/kg dry	445.2	6.20	58.2	70-130	9.22	20	M
2,4-Dinitrotoluene [2C]	291	110	ug/kg dry	445.2	6.66	63.9	70-130	1.83	20	M
1,3,5-Trinitrobenzene	194	110	ug/kg dry	445.2	ND	43.7	70-130	7.62	20	M
1,3,5-Trinitrobenzene [2C]	214	110	ug/kg dry	445.2	1.17	47.7	70-130	4.16	20	M
2,4,6-Trinitrotoluene	254	110	ug/kg dry	445.2	5.47	55.8	70-130	6.95	20	M
2,4,6-Trinitrotoluene [2C]	283	110	ug/kg dry	445.2	6.26	62.3	70-130	3.63	20	M
PETN	121	110	ug/kg dry	445.2	1.59	26.8	70-130	11.4	20	M
PETN [2C]	142	110	ug/kg dry	445.2	ND	31.9	70-130	6.73	20	M
RDX	92.8	110	ug/kg dry	445.2	ND	20.8	70-130	9.84	20	M
RDX [2C]	92.6	110	ug/kg dry	445.2	5.46	19.6	70-130	5.02	20	M
4-Amino-2,6-dinitrotoluene	147	110	ug/kg dry	445.2	ND	33.1	70-130	8.50	20	M
4-Amino-2,6-dinitrotoluene [2C]	162	110	ug/kg dry	445.2	1.09	36.1	70-130	4.33	20	M
3,5-Dinitroaniline	144	110	ug/kg dry	445.2	2.73	31.6	70-130	11.4	20	M
3,5-Dinitroaniline [2C]	164	110	ug/kg dry	445.2	1.51	36.5	70-130	6.40	20	M
2-Amino-4,6-dinitrotoluene	145	110	ug/kg dry	445.2	ND	32.6	70-130	8.85	20	M
2-Amino-4,6-dinitrotoluene [2C]	156	110	ug/kg dry	445.2	ND	35.1	70-130	5.81	20	M
Tetryl	100	110	ug/kg dry	445.2	ND	22.5	70-130	4.99	20	M
Tetryl [2C]	104	110	ug/kg dry	445.2	1.47	23.0	70-130	4.79	20	M
HMX	24.1	110	ug/kg dry	445.2	ND	5.40	70-130	24.9	20	X, M
HMX [2C]	22.3	110	ug/kg dry	445.2	ND	5.00	70-130	10.6	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*145*		*ug/kg dry*	*445.2*		*32.6*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*163*		*ug/kg dry*	*445.2*		*36.5*	*60-140*			*S*

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712048 - EPA 3570										
Blank (A712048-BLK1)				Prepared: 12/14/2017 Analyzed: 12/20/2017 06:56						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*391*		*ug/kg wet*	*400.0*		*97.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*269*		*ug/kg wet*	*400.0*		*67.3*	*60-140*			
LCS (A712048-BS1)				Prepared: 12/14/2017 Analyzed: 12/20/2017 07:18						
Nitrobenzene	396	100	ug/kg wet	400.0		98.9	70-130			
Nitrobenzene [2C]	351	100	ug/kg wet	400.0		87.8	70-130			
2-Nitrotoluene	407	100	ug/kg wet	400.0		102	70-130			
2-Nitrotoluene [2C]	349	100	ug/kg wet	400.0		87.3	70-130			
3-Nitrotoluene	391	100	ug/kg wet	400.0		97.7	70-130			
3-Nitrotoluene [2C]	336	100	ug/kg wet	400.0		84.0	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712048 - EPA 3570										
LCS (A712048-BS1)				Prepared: 12/14/2017 Analyzed: 12/20/2017 07:18						
4-Nitrotoluene	401	100	ug/kg wet	400.0		100	70-130			
4-Nitrotoluene [2C]	353	100	ug/kg wet	400.0		88.2	70-130			
Nitroglycerin	365	100	ug/kg wet	400.0		91.1	70-130			
Nitroglycerin [2C]	344	100	ug/kg wet	400.0		86.1	70-130			
1,3-Dinitrobenzene	378	100	ug/kg wet	400.0		94.5	70-130			
1,3-Dinitrobenzene [2C]	325	100	ug/kg wet	400.0		81.2	70-130			
2,6-Dinitrotoluene	369	100	ug/kg wet	400.0		92.2	70-130			
2,6-Dinitrotoluene [2C]	319	100	ug/kg wet	400.0		79.8	70-130			
2,4-Dinitrotoluene	372	100	ug/kg wet	400.0		93.1	70-130			
2,4-Dinitrotoluene [2C]	327	100	ug/kg wet	400.0		81.8	70-130			
1,3,5-Trinitrobenzene	386	100	ug/kg wet	400.0		96.6	70-130			
1,3,5-Trinitrobenzene [2C]	352	100	ug/kg wet	400.0		88.0	70-130			
2,4,6-Trinitrotoluene	459	100	ug/kg wet	400.0		115	70-130			
2,4,6-Trinitrotoluene [2C]	432	100	ug/kg wet	400.0		108	70-130			
PETN	337	100	ug/kg wet	400.0		84.3	70-130			
PETN [2C]	353	100	ug/kg wet	400.0		88.1	70-130			
RDX	376	100	ug/kg wet	400.0		94.1	70-130			
RDX [2C]	342	100	ug/kg wet	400.0		85.6	70-130			
4-Amino-2,6-dinitrotoluene	369	100	ug/kg wet	400.0		92.3	70-130			
4-Amino-2,6-dinitrotoluene [2C]	340	100	ug/kg wet	400.0		84.9	70-130			
3,5-Dinitroaniline	373	100	ug/kg wet	400.0		93.4	70-130			
3,5-Dinitroaniline [2C]	336	100	ug/kg wet	400.0		84.0	70-130			
2-Amino-4,6-dinitrotoluene	370	100	ug/kg wet	400.0		92.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	329	100	ug/kg wet	400.0		82.2	70-130			
Tetryl	370	100	ug/kg wet	400.0		92.5	70-130			
Tetryl [2C]	330	100	ug/kg wet	400.0		82.4	70-130			
HMX	351	100	ug/kg wet	400.0		87.6	70-130			
HMX [2C]	325	100	ug/kg wet	400.0		81.4	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*379*		*ug/kg wet*	*400.0*		*94.7*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*325*		*ug/kg wet*	*400.0*		*81.2*	*60-140*			
Matrix Spike (A712048-MS1)	**Source: A175011-32**			Prepared: 12/14/2017 Analyzed: 12/20/2017 12:27						
Nitrobenzene	387	110	ug/kg dry	424.1	ND	91.2	70-130			
Nitrobenzene [2C]	423	110	ug/kg dry	424.1	ND	99.8	70-130			
2-Nitrotoluene	404	110	ug/kg dry	424.1	ND	95.3	70-130			
2-Nitrotoluene [2C]	426	110	ug/kg dry	424.1	ND	100	70-130			
3-Nitrotoluene	380	110	ug/kg dry	424.1	ND	89.5	70-130			
3-Nitrotoluene [2C]	430	110	ug/kg dry	424.1	ND	101	70-130			
4-Nitrotoluene	404	110	ug/kg dry	424.1	ND	95.2	70-130			
4-Nitrotoluene [2C]	447	110	ug/kg dry	424.1	ND	105	70-130			
Nitroglycerin	215	110	ug/kg dry	424.1	ND	50.8	70-130			M
Nitroglycerin [2C]	242	110	ug/kg dry	424.1	ND	57.0	70-130			M
1,3-Dinitrobenzene	294	110	ug/kg dry	424.1	ND	69.4	70-130			M
1,3-Dinitrobenzene [2C]	343	110	ug/kg dry	424.1	ND	81.0	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712048 - EPA 3570										
Matrix Spike (A712048-MS1)	**Source: A175011-32**			Prepared: 12/14/2017 Analyzed: 12/20/2017 12:27						
2,6-Dinitrotoluene	306	110	ug/kg dry	424.1	0.863	72.0	70-130			
2,6-Dinitrotoluene [2C]	337	110	ug/kg dry	424.1	ND	79.6	70-130			
2,4-Dinitrotoluene	312	110	ug/kg dry	424.1	2.61	72.9	70-130			
2,4-Dinitrotoluene [2C]	335	110	ug/kg dry	424.1	2.96	78.3	70-130			
1,3,5-Trinitrobenzene	253	110	ug/kg dry	424.1	ND	59.8	70-130			M
1,3,5-Trinitrobenzene [2C]	271	110	ug/kg dry	424.1	ND	64.0	70-130			M
2,4,6-Trinitrotoluene	329	110	ug/kg dry	424.1	4.77	76.5	70-130			
2,4,6-Trinitrotoluene [2C]	344	110	ug/kg dry	424.1	5.68	79.9	70-130			
PETN	161	110	ug/kg dry	424.1	ND	38.0	70-130			M
PETN [2C]	183	110	ug/kg dry	424.1	ND	43.1	70-130			M
RDX	160	110	ug/kg dry	424.1	ND	37.8	70-130			M
RDX [2C]	172	110	ug/kg dry	424.1	5.04	39.4	70-130			M
4-Amino-2,6-dinitrotoluene	214	110	ug/kg dry	424.1	3.87	49.6	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	237	110	ug/kg dry	424.1	5.54	54.5	70-130			M
3,5-Dinitroaniline	207	110	ug/kg dry	424.1	ND	48.8	70-130			M
3,5-Dinitroaniline [2C]	228	110	ug/kg dry	424.1	ND	53.8	70-130			M
2-Amino-4,6-dinitrotoluene	211	110	ug/kg dry	424.1	2.02	49.4	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	221	110	ug/kg dry	424.1	ND	52.2	70-130			M
Tetryl	163	110	ug/kg dry	424.1	ND	38.4	70-130			M
Tetryl [2C]	140	110	ug/kg dry	424.1	2.01	32.6	70-130			M
HMX	30.4	110	ug/kg dry	424.1	ND	7.18	70-130			M
HMX [2C]	47.6	110	ug/kg dry	424.1	ND	11.2	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*228*		*ug/kg dry*	*424.1*		*53.7*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*233*		*ug/kg dry*	*424.1*		*54.9*	*60-140*			*S*
Matrix Spike (A712048-MS2)	**Source: A175011-38**			Prepared: 12/14/2017 Analyzed: 12/20/2017 15:49						
Nitrobenzene	447	120	ug/kg dry	478.8	ND	93.4	70-130			
Nitrobenzene [2C]	449	120	ug/kg dry	478.8	ND	93.8	70-130			
2-Nitrotoluene	480	120	ug/kg dry	478.8	ND	100	70-130			
2-Nitrotoluene [2C]	479	120	ug/kg dry	478.8	ND	100	70-130			
3-Nitrotoluene	472	120	ug/kg dry	478.8	ND	98.7	70-130			
3-Nitrotoluene [2C]	493	120	ug/kg dry	478.8	ND	103	70-130			
4-Nitrotoluene	481	120	ug/kg dry	478.8	ND	101	70-130			
4-Nitrotoluene [2C]	506	120	ug/kg dry	478.8	ND	106	70-130			
Nitroglycerin	210	120	ug/kg dry	478.8	5.25	42.8	70-130			M
Nitroglycerin [2C]	201	120	ug/kg dry	478.8	7.68	40.3	70-130			M
1,3-Dinitrobenzene	278	120	ug/kg dry	478.8	ND	58.0	70-130			M
1,3-Dinitrobenzene [2C]	368	120	ug/kg dry	478.8	6.42	75.5	70-130			
2,6-Dinitrotoluene	330	120	ug/kg dry	478.8	5.44	67.9	70-130			M
2,6-Dinitrotoluene [2C]	355	120	ug/kg dry	478.8	5.76	73.0	70-130			
2,4-Dinitrotoluene	351	120	ug/kg dry	478.8	28.1	67.4	70-130			M
2,4-Dinitrotoluene [2C]	360	120	ug/kg dry	478.8	32.8	68.4	70-130			M
1,3,5-Trinitrobenzene	254	120	ug/kg dry	478.8	ND	52.9	70-130			M
1,3,5-Trinitrobenzene [2C]	249	120	ug/kg dry	478.8	ND	52.1	70-130			M

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712048 - EPA 3570										
Matrix Spike (A712048-MS2)	**Source: A175011-38**			Prepared: 12/14/2017 Analyzed: 12/20/2017 15:49						
2,4,6-Trinitrotoluene	468	120	ug/kg dry	478.8	267	41.9	70-130			M
2,4,6-Trinitrotoluene [2C]	460	120	ug/kg dry	478.8	293	34.8	70-130			M
PETN	328	120	ug/kg dry	478.8	66.7	54.5	70-130			M
PETN [2C]	325	120	ug/kg dry	478.8	77.6	51.7	70-130			M
RDX	112	120	ug/kg dry	478.8	ND	23.4	70-130			M
RDX [2C]	108	120	ug/kg dry	478.8	7.78	20.9	70-130			M
4-Amino-2,6-dinitrotoluene	378	120	ug/kg dry	478.8	384	NR	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	375	120	ug/kg dry	478.8	424	NR	70-130			M
3,5-Dinitroaniline	192	120	ug/kg dry	478.8	13.0	37.3	70-130			M
3,5-Dinitroaniline [2C]	177	120	ug/kg dry	478.8	5.34	35.8	70-130			M
2-Amino-4,6-dinitrotoluene	269	120	ug/kg dry	478.8	181	18.2	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	260	120	ug/kg dry	478.8	204	11.8	70-130			M
Tetryl	139	120	ug/kg dry	478.8	ND	29.0	70-130			M
Tetryl [2C]	98.9	120	ug/kg dry	478.8	8.40	18.9	70-130			M
HMX	31.3	120	ug/kg dry	478.8	ND	6.53	70-130			M
HMX [2C]	27.6	120	ug/kg dry	478.8	ND	5.76	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*204*		*ug/kg dry*	*478.8*		*42.7*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*198*		*ug/kg dry*	*478.8*		*41.3*	*60-140*			*S*
Matrix Spike Dup (A712048-MSD1)	**Source: A175011-32**			Prepared: 12/14/2017 Analyzed: 12/20/2017 12:49						
Nitrobenzene	390	110	ug/kg dry	424.1	ND	92.1	70-130	0.896	20	
Nitrobenzene [2C]	418	110	ug/kg dry	424.1	ND	98.7	70-130	1.19	20	
2-Nitrotoluene	409	110	ug/kg dry	424.1	ND	96.5	70-130	1.18	20	
2-Nitrotoluene [2C]	428	110	ug/kg dry	424.1	ND	101	70-130	0.442	20	
3-Nitrotoluene	402	110	ug/kg dry	424.1	ND	94.8	70-130	5.75	20	
3-Nitrotoluene [2C]	426	110	ug/kg dry	424.1	ND	100	70-130	1.06	20	
4-Nitrotoluene	411	110	ug/kg dry	424.1	ND	96.9	70-130	1.79	20	
4-Nitrotoluene [2C]	442	110	ug/kg dry	424.1	ND	104	70-130	1.15	20	
Nitroglycerin	227	110	ug/kg dry	424.1	ND	53.6	70-130	5.40	20	M
Nitroglycerin [2C]	235	110	ug/kg dry	424.1	ND	55.5	70-130	2.60	20	M
1,3-Dinitrobenzene	305	110	ug/kg dry	424.1	ND	71.9	70-130	3.52	20	
1,3-Dinitrobenzene [2C]	352	110	ug/kg dry	424.1	ND	83.0	70-130	2.50	20	
2,6-Dinitrotoluene	320	110	ug/kg dry	424.1	0.863	75.3	70-130	4.47	20	
2,6-Dinitrotoluene [2C]	333	110	ug/kg dry	424.1	ND	78.4	70-130	1.45	20	
2,4-Dinitrotoluene	323	110	ug/kg dry	424.1	2.61	75.6	70-130	3.58	20	
2,4-Dinitrotoluene [2C]	333	110	ug/kg dry	424.1	2.96	77.9	70-130	0.537	20	
1,3,5-Trinitrobenzene	272	110	ug/kg dry	424.1	ND	64.2	70-130	7.21	20	M
1,3,5-Trinitrobenzene [2C]	273	110	ug/kg dry	424.1	ND	64.3	70-130	0.542	20	M
2,4,6-Trinitrotoluene	343	110	ug/kg dry	424.1	4.77	79.8	70-130	4.12	20	
2,4,6-Trinitrotoluene [2C]	347	110	ug/kg dry	424.1	5.68	80.5	70-130	0.744	20	
PETN	179	110	ug/kg dry	424.1	ND	42.1	70-130	10.3	20	M
PETN [2C]	184	110	ug/kg dry	424.1	ND	43.3	70-130	0.493	20	M
RDX	166	110	ug/kg dry	424.1	ND	39.1	70-130	3.30	20	M
RDX [2C]	166	110	ug/kg dry	424.1	5.04	37.9	70-130	3.92	20	M

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712048 - EPA 3570										
Matrix Spike Dup (A712048-MSD1)	**Source: A175011-32**			Prepared: 12/14/2017 Analyzed: 12/20/2017 12:49						
4-Amino-2,6-dinitrotoluene	225	110	ug/kg dry	424.1	3.87	52.1	70-130	4.86	20	M
4-Amino-2,6-dinitrotoluene [2C]	228	110	ug/kg dry	424.1	5.54	52.5	70-130	3.51	20	M
3,5-Dinitroaniline	220	110	ug/kg dry	424.1	ND	52.0	70-130	6.32	20	M
3,5-Dinitroaniline [2C]	222	110	ug/kg dry	424.1	ND	52.4	70-130	2.63	20	M
2-Amino-4,6-dinitrotoluene	219	110	ug/kg dry	424.1	2.02	51.1	70-130	3.49	20	M
2-Amino-4,6-dinitrotoluene [2C]	214	110	ug/kg dry	424.1	ND	50.5	70-130	3.15	20	M
Tetryl	171	110	ug/kg dry	424.1	ND	40.2	70-130	4.50	20	M
Tetryl [2C]	138	110	ug/kg dry	424.1	2.01	32.1	70-130	1.65	20	M
HMX	27.4	110	ug/kg dry	424.1	ND	6.45	70-130	10.7	20	M
HMX [2C]	41.7	110	ug/kg dry	424.1	ND	9.83	70-130	13.2	20	M
Surrogate: 2,2'-Dinitrobiphenyl	*243*		*ug/kg dry*	*424.1*		*57.2*	*63.7-134*			*S*
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*228*		*ug/kg dry*	*424.1*		*53.7*	*60-140*			*S*
Matrix Spike Dup (A712048-MSD2)	**Source: A175011-38**			Prepared: 12/14/2017 Analyzed: 12/20/2017 16:11						
Nitrobenzene	411	120	ug/kg dry	478.8	ND	85.9	70-130	8.38	20	
Nitrobenzene [2C]	473	120	ug/kg dry	478.8	ND	98.7	70-130	5.06	20	
2-Nitrotoluene	489	120	ug/kg dry	478.8	ND	102	70-130	1.93	20	
2-Nitrotoluene [2C]	509	120	ug/kg dry	478.8	ND	106	70-130	6.06	20	
3-Nitrotoluene	438	120	ug/kg dry	478.8	ND	91.4	70-130	7.60	20	
3-Nitrotoluene [2C]	524	120	ug/kg dry	478.8	ND	109	70-130	6.03	20	
4-Nitrotoluene	451	120	ug/kg dry	478.8	ND	94.1	70-130	6.59	20	
4-Nitrotoluene [2C]	530	120	ug/kg dry	478.8	ND	111	70-130	4.78	20	
Nitroglycerin	194	120	ug/kg dry	478.8	5.25	39.5	70-130	7.94	20	M
Nitroglycerin [2C]	220	120	ug/kg dry	478.8	7.68	44.3	70-130	8.96	20	M
1,3-Dinitrobenzene	279	120	ug/kg dry	478.8	ND	58.3	70-130	0.512	20	M
1,3-Dinitrobenzene [2C]	378	120	ug/kg dry	478.8	6.42	77.5	70-130	2.64	20	
2,6-Dinitrotoluene	306	120	ug/kg dry	478.8	5.44	62.8	70-130	7.61	20	M
2,6-Dinitrotoluene [2C]	364	120	ug/kg dry	478.8	5.76	74.8	70-130	2.46	20	
2,4-Dinitrotoluene	321	120	ug/kg dry	478.8	28.1	61.2	70-130	8.76	20	M
2,4-Dinitrotoluene [2C]	373	120	ug/kg dry	478.8	32.8	71.1	70-130	3.49	20	
1,3,5-Trinitrobenzene	228	120	ug/kg dry	478.8	ND	47.7	70-130	10.5	20	M
1,3,5-Trinitrobenzene [2C]	261	120	ug/kg dry	478.8	ND	54.5	70-130	4.51	20	M
2,4,6-Trinitrotoluene	433	120	ug/kg dry	478.8	267	34.7	70-130	7.64	20	M
2,4,6-Trinitrotoluene [2C]	470	120	ug/kg dry	478.8	293	37.0	70-130	2.22	20	M
PETN	832	120	ug/kg dry	478.8	66.7	160	70-130	87.1	20	X, M
PETN [2C]	1210	120	ug/kg dry	478.8	77.6	236	70-130	115	20	M, X
RDX	99.9	120	ug/kg dry	478.8	ND	20.9	70-130	11.3	20	M
RDX [2C]	114	120	ug/kg dry	478.8	7.78	22.2	70-130	5.54	20	M
4-Amino-2,6-dinitrotoluene	329	120	ug/kg dry	478.8	384	NR	70-130	14.1	20	M
4-Amino-2,6-dinitrotoluene [2C]	372	120	ug/kg dry	478.8	424	NR	70-130	0.698	20	M
3,5-Dinitroaniline	171	120	ug/kg dry	478.8	13.0	33.1	70-130	11.2	20	M
3,5-Dinitroaniline [2C]	184	120	ug/kg dry	478.8	5.34	37.4	70-130	4.22	20	M
2-Amino-4,6-dinitrotoluene	231	120	ug/kg dry	478.8	181	10.4	70-130	14.9	20	M, X
2-Amino-4,6-dinitrotoluene [2C]	264	120	ug/kg dry	478.8	204	12.5	70-130	1.41	20	M

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712048 - EPA 3570										
Matrix Spike Dup (A712048-MSD2)	**Source: A175011-38**			Prepared: 12/14/2017 Analyzed: 12/20/2017 16:11						
Tetryl	123	120	ug/kg dry	478.8	ND	25.8	70-130	11.7	20	M
Tetryl [2C]	117	120	ug/kg dry	478.8	8.40	22.8	70-130	17.1	20	M
HMX	23.0	120	ug/kg dry	478.8	ND	4.81	70-130	30.4	20	M, X
HMX [2C]	32.1	120	ug/kg dry	478.8	ND	6.70	70-130	15.1	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*181*		*ug/kg dry*	*478.8*		*37.8*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*208*		*ug/kg dry*	*478.8*		*43.4*	*60-140*			*S*
Batch A712050 - EPA 3570										
Blank (A712050-BLK1)				Prepared: 12/15/2017 Analyzed: 12/16/2017 23:01						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712050 - EPA 3570										
Blank (A712050-BLK1)				Prepared: 12/15/2017 Analyzed: 12/16/2017 23:01						
Surrogate: 2,2´-Dinitrobiphenyl	*371*		*ug/kg wet*	*400.0*		*92.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*387*		*ug/kg wet*	*400.0*		*96.8*	*60-140*			
LCS (A712050-BS1)				Prepared: 12/15/2017 Analyzed: 12/16/2017 23:23						
Nitrobenzene	402	100	ug/kg wet	400.0		101	70-130			
Nitrobenzene [2C]	429	100	ug/kg wet	400.0		107	70-130			
2-Nitrotoluene	420	100	ug/kg wet	400.0		105	70-130			
2-Nitrotoluene [2C]	422	100	ug/kg wet	400.0		105	70-130			
3-Nitrotoluene	382	100	ug/kg wet	400.0		95.5	70-130			
3-Nitrotoluene [2C]	418	100	ug/kg wet	400.0		104	70-130			
4-Nitrotoluene	407	100	ug/kg wet	400.0		102	70-130			
4-Nitrotoluene [2C]	425	100	ug/kg wet	400.0		106	70-130			
Nitroglycerin	393	100	ug/kg wet	400.0		98.2	70-130			
Nitroglycerin [2C]	403	100	ug/kg wet	400.0		101	70-130			
1,3-Dinitrobenzene	380	100	ug/kg wet	400.0		95.1	70-130			
1,3-Dinitrobenzene [2C]	393	100	ug/kg wet	400.0		98.2	70-130			
2,6-Dinitrotoluene	383	100	ug/kg wet	400.0		95.8	70-130			
2,6-Dinitrotoluene [2C]	387	100	ug/kg wet	400.0		96.6	70-130			
2,4-Dinitrotoluene	388	100	ug/kg wet	400.0		96.9	70-130			
2,4-Dinitrotoluene [2C]	385	100	ug/kg wet	400.0		96.2	70-130			
1,3,5-Trinitrobenzene	392	100	ug/kg wet	400.0		98.1	70-130			
1,3,5-Trinitrobenzene [2C]	387	100	ug/kg wet	400.0		96.7	70-130			
2,4,6-Trinitrotoluene	474	100	ug/kg wet	400.0		118	70-130			
2,4,6-Trinitrotoluene [2C]	466	100	ug/kg wet	400.0		117	70-130			
PETN	423	100	ug/kg wet	400.0		106	70-130			
PETN [2C]	388	100	ug/kg wet	400.0		97.0	70-130			
RDX	400	100	ug/kg wet	400.0		100	70-130			
RDX [2C]	389	100	ug/kg wet	400.0		97.1	70-130			
4-Amino-2,6-dinitrotoluene	382	100	ug/kg wet	400.0		95.6	70-130			
4-Amino-2,6-dinitrotoluene [2C]	378	100	ug/kg wet	400.0		94.5	70-130			
3,5-Dinitroaniline	384	100	ug/kg wet	400.0		96.0	70-130			
3,5-Dinitroaniline [2C]	371	100	ug/kg wet	400.0		92.8	70-130			
2-Amino-4,6-dinitrotoluene	390	100	ug/kg wet	400.0		97.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	366	100	ug/kg wet	400.0		91.5	70-130			
Tetryl	377	100	ug/kg wet	400.0		94.3	70-130			
Tetryl [2C]	365	100	ug/kg wet	400.0		91.2	70-130			
HMX	362	100	ug/kg wet	400.0		90.6	70-130			
HMX [2C]	376	100	ug/kg wet	400.0		93.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*384*		*ug/kg wet*	*400.0*		*96.0*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*387*		*ug/kg wet*	*400.0*		*96.9*	*60-140*			
Matrix Spike (A712050-MS1)	**Source: A175011-60**			Prepared: 12/15/2017 Analyzed: 12/17/2017 07:44						
Nitrobenzene	334	110	ug/kg dry	444.5	ND	75.1	70-130			
Nitrobenzene [2C]	370	110	ug/kg dry	444.5	ND	83.2	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712050 - EPA 3570										
Matrix Spike (A712050-MS1)	**Source: A175011-60**			Prepared: 12/15/2017 Analyzed: 12/17/2017 07:44						
2-Nitrotoluene	353	110	ug/kg dry	444.5	ND	79.4	70-130			
2-Nitrotoluene [2C]	378	110	ug/kg dry	444.5	5.20	83.9	70-130			
3-Nitrotoluene	332	110	ug/kg dry	444.5	1.33	74.5	70-130			
3-Nitrotoluene [2C]	391	110	ug/kg dry	444.5	1.80	87.5	70-130			
4-Nitrotoluene	352	110	ug/kg dry	444.5	ND	79.3	70-130			
4-Nitrotoluene [2C]	389	110	ug/kg dry	444.5	ND	87.5	70-130			
Nitroglycerin	153	110	ug/kg dry	444.5	2.54	33.9	70-130			M
Nitroglycerin [2C]	167	110	ug/kg dry	444.5	2.01	37.0	70-130			M
1,3-Dinitrobenzene	240	110	ug/kg dry	444.5	22.1	49.0	70-130			M
1,3-Dinitrobenzene [2C]	321	110	ug/kg dry	444.5	10.5	69.9	70-130			M
2,6-Dinitrotoluene	251	110	ug/kg dry	444.5	5.10	55.2	70-130			M
2,6-Dinitrotoluene [2C]	271	110	ug/kg dry	444.5	4.87	59.8	70-130			M
2,4-Dinitrotoluene	320	110	ug/kg dry	444.5	87.3	52.5	70-130			M
2,4-Dinitrotoluene [2C]	346	110	ug/kg dry	444.5	94.8	56.4	70-130			M
1,3,5-Trinitrobenzene	190	110	ug/kg dry	444.5	32.3	35.4	70-130			M
1,3,5-Trinitrobenzene [2C]	198	110	ug/kg dry	444.5	3.97	43.7	70-130			M
2,4,6-Trinitrotoluene	291	110	ug/kg dry	444.5	102	42.4	70-130			M
2,4,6-Trinitrotoluene [2C]	319	110	ug/kg dry	444.5	124	43.9	70-130			M
PETN	129	110	ug/kg dry	444.5	ND	29.0	70-130			M
PETN [2C]	163	110	ug/kg dry	444.5	ND	36.6	70-130			M
RDX	82.2	110	ug/kg dry	444.5	ND	18.5	70-130			M
RDX [2C]	105	110	ug/kg dry	444.5	50.8	12.2	70-130			M
4-Amino-2,6-dinitrotoluene	133	110	ug/kg dry	444.5	14.1	26.7	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	152	110	ug/kg dry	444.5	15.3	30.6	70-130			M
3,5-Dinitroaniline	129	110	ug/kg dry	444.5	ND	29.1	70-130			M
3,5-Dinitroaniline [2C]	149	110	ug/kg dry	444.5	5.48	32.4	70-130			M
2-Amino-4,6-dinitrotoluene	136	110	ug/kg dry	444.5	14.0	27.5	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	144	110	ug/kg dry	444.5	14.3	29.3	70-130			M
Tetryl	98.6	110	ug/kg dry	444.5	ND	22.2	70-130			M
Tetryl [2C]	94.9	110	ug/kg dry	444.5	ND	21.4	70-130			M
HMX	57.5	110	ug/kg dry	444.5	29.9	6.21	70-130			M
HMX [2C]	25.4	110	ug/kg dry	444.5	ND	5.71	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*139*		*ug/kg dry*	*444.5*		*31.2*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*155*		*ug/kg dry*	*444.5*		*34.8*	*60-140*			*S*
Matrix Spike Dup (A712050-MSD1)	**Source: A175011-60**			Prepared: 12/15/2017 Analyzed: 12/17/2017 08:06						
Nitrobenzene	336	110	ug/kg dry	444.5	ND	75.6	70-130	0.602	20	
Nitrobenzene [2C]	371	110	ug/kg dry	444.5	ND	83.5	70-130	0.337	20	
2-Nitrotoluene	358	110	ug/kg dry	444.5	ND	80.5	70-130	1.46	20	
2-Nitrotoluene [2C]	380	110	ug/kg dry	444.5	5.20	84.3	70-130	0.483	20	
3-Nitrotoluene	362	110	ug/kg dry	444.5	1.33	81.1	70-130	8.51	20	
3-Nitrotoluene [2C]	391	110	ug/kg dry	444.5	1.80	87.6	70-130	0.0423	20	
4-Nitrotoluene	356	110	ug/kg dry	444.5	ND	80.2	70-130	1.15	20	
4-Nitrotoluene [2C]	389	110	ug/kg dry	444.5	ND	87.6	70-130	0.134	20	

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712050 - EPA 3570										
Matrix Spike Dup (A712050-MSD1)	**Source: A175011-60**			Prepared: 12/15/2017 Analyzed: 12/17/2017 08:06						
Nitroglycerin	166	110	ug/kg dry	444.5	2.54	36.8	70-130	8.02	20	M
Nitroglycerin [2C]	175	110	ug/kg dry	444.5	2.01	38.9	70-130	4.95	20	M
1,3-Dinitrobenzene	244	110	ug/kg dry	444.5	22.1	50.0	70-130	1.78	20	M
1,3-Dinitrobenzene [2C]	289	110	ug/kg dry	444.5	10.5	62.7	70-130	10.5	20	M
2,6-Dinitrotoluene	254	110	ug/kg dry	444.5	5.10	56.0	70-130	1.39	20	M
2,6-Dinitrotoluene [2C]	271	110	ug/kg dry	444.5	4.87	59.8	70-130	0.0386	20	M
2,4-Dinitrotoluene	349	110	ug/kg dry	444.5	87.3	58.8	70-130	8.41	20	M
2,4-Dinitrotoluene [2C]	365	110	ug/kg dry	444.5	94.8	60.8	70-130	5.50	20	M
1,3,5-Trinitrobenzene	192	110	ug/kg dry	444.5	32.3	35.9	70-130	1.09	20	M
1,3,5-Trinitrobenzene [2C]	195	110	ug/kg dry	444.5	3.97	42.9	70-130	1.89	20	M
2,4,6-Trinitrotoluene	295	110	ug/kg dry	444.5	102	43.3	70-130	1.36	20	M
2,4,6-Trinitrotoluene [2C]	310	110	ug/kg dry	444.5	124	41.7	70-130	3.00	20	M
PETN	129	110	ug/kg dry	444.5	ND	29.0	70-130	0.283	20	M
PETN [2C]	165	110	ug/kg dry	444.5	ND	37.2	70-130	1.60	20	M
RDX	80.3	110	ug/kg dry	444.5	ND	18.1	70-130	2.40	20	M
RDX [2C]	115	110	ug/kg dry	444.5	50.8	14.5	70-130	9.03	20	M
4-Amino-2,6-dinitrotoluene	131	110	ug/kg dry	444.5	14.1	26.2	70-130	1.71	20	M
4-Amino-2,6-dinitrotoluene [2C]	150	110	ug/kg dry	444.5	15.3	30.4	70-130	0.784	20	M
3,5-Dinitroaniline	126	110	ug/kg dry	444.5	ND	28.3	70-130	2.93	20	M
3,5-Dinitroaniline [2C]	169	110	ug/kg dry	444.5	5.48	36.7	70-130	12.1	20	M
2-Amino-4,6-dinitrotoluene	138	110	ug/kg dry	444.5	14.0	27.9	70-130	1.22	20	M
2-Amino-4,6-dinitrotoluene [2C]	140	110	ug/kg dry	444.5	14.3	28.2	70-130	3.47	20	M
Tetryl	115	110	ug/kg dry	444.5	ND	25.8	70-130	15.2	20	M
Tetryl [2C]	89.3	110	ug/kg dry	444.5	ND	20.1	70-130	6.07	20	M
HMX	159	110	ug/kg dry	444.5	29.9	29.0	70-130	93.8	20	M, X
HMX [2C]	122	110	ug/kg dry	444.5	ND	27.4	70-130	131	20	M, X
Surrogate: 2,2'-Dinitrobiphenyl	*157*		*ug/kg dry*	*444.5*		*35.3*	*63.7-134*			*S*
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*153*		*ug/kg dry*	*444.5*		*34.5*	*60-140*			*S*

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712051 - EPA 3570										
Blank (A712051-BLK1)				Prepared: 12/15/2017 Analyzed: 12/17/2017 12:05						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*385*		*ug/kg wet*	*400.0*		*96.2*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*382*		*ug/kg wet*	*400.0*		*95.4*	*60-140*			
LCS (A712051-BS1)				Prepared: 12/15/2017 Analyzed: 12/17/2017 12:27						
Nitrobenzene	401	100	ug/kg wet	400.0		100	70-130			
Nitrobenzene [2C]	414	100	ug/kg wet	400.0		103	70-130			
2-Nitrotoluene	417	100	ug/kg wet	400.0		104	70-130			
2-Nitrotoluene [2C]	408	100	ug/kg wet	400.0		102	70-130			
3-Nitrotoluene	409	100	ug/kg wet	400.0		102	70-130			
3-Nitrotoluene [2C]	404	100	ug/kg wet	400.0		101	70-130			

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Project Number: 1540001*36
Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712051 - EPA 3570										
LCS (A712051-BS1)				Prepared: 12/15/2017 Analyzed: 12/17/2017 12:27						
4-Nitrotoluene	410	100	ug/kg wet	400.0		103	70-130			
4-Nitrotoluene [2C]	422	100	ug/kg wet	400.0		106	70-130			
Nitroglycerin	389	100	ug/kg wet	400.0		97.2	70-130			
Nitroglycerin [2C]	411	100	ug/kg wet	400.0		103	70-130			
1,3-Dinitrobenzene	372	100	ug/kg wet	400.0		93.0	70-130			
1,3-Dinitrobenzene [2C]	395	100	ug/kg wet	400.0		98.9	70-130			
2,6-Dinitrotoluene	378	100	ug/kg wet	400.0		94.6	70-130			
2,6-Dinitrotoluene [2C]	385	100	ug/kg wet	400.0		96.3	70-130			
2,4-Dinitrotoluene	380	100	ug/kg wet	400.0		94.9	70-130			
2,4-Dinitrotoluene [2C]	380	100	ug/kg wet	400.0		95.0	70-130			
1,3,5-Trinitrobenzene	377	100	ug/kg wet	400.0		94.2	70-130			
1,3,5-Trinitrobenzene [2C]	386	100	ug/kg wet	400.0		96.6	70-130			
2,4,6-Trinitrotoluene	457	100	ug/kg wet	400.0		114	70-130			
2,4,6-Trinitrotoluene [2C]	469	100	ug/kg wet	400.0		117	70-130			
PETN	389	100	ug/kg wet	400.0		97.3	70-130			
PETN [2C]	412	100	ug/kg wet	400.0		103	70-130			
RDX	383	100	ug/kg wet	400.0		95.8	70-130			
RDX [2C]	389	100	ug/kg wet	400.0		97.1	70-130			
4-Amino-2,6-dinitrotoluene	366	100	ug/kg wet	400.0		91.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	373	100	ug/kg wet	400.0		93.3	70-130			
3,5-Dinitroaniline	368	100	ug/kg wet	400.0		92.1	70-130			
3,5-Dinitroaniline [2C]	371	100	ug/kg wet	400.0		92.8	70-130			
2-Amino-4,6-dinitrotoluene	368	100	ug/kg wet	400.0		91.9	70-130			
2-Amino-4,6-dinitrotoluene [2C]	367	100	ug/kg wet	400.0		91.8	70-130			
Tetryl	359	100	ug/kg wet	400.0		89.8	70-130			
Tetryl [2C]	370	100	ug/kg wet	400.0		92.6	70-130			
HMX	382	100	ug/kg wet	400.0		95.6	70-130			
HMX [2C]	385	100	ug/kg wet	400.0		96.4	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*378*		*ug/kg wet*	*400.0*		*94.6*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*384*		*ug/kg wet*	*400.0*		*96.0*	*60-140*			
Matrix Spike (A712051-MS1)	**Source: A175011-72**			Prepared: 12/15/2017 Analyzed: 12/17/2017 18:29						
Nitrobenzene	350	110	ug/kg dry	426.1	ND	82.1	70-130			
Nitrobenzene [2C]	333	110	ug/kg dry	426.1	ND	78.1	70-130			
2-Nitrotoluene	367	110	ug/kg dry	426.1	ND	86.1	70-130			
2-Nitrotoluene [2C]	349	110	ug/kg dry	426.1	4.26	81.0	70-130			
3-Nitrotoluene	343	110	ug/kg dry	426.1	3.78	79.7	70-130			
3-Nitrotoluene [2C]	350	110	ug/kg dry	426.1	1.03	82.0	70-130			
4-Nitrotoluene	378	110	ug/kg dry	426.1	ND	88.7	70-130			
4-Nitrotoluene [2C]	379	110	ug/kg dry	426.1	ND	89.0	70-130			
Nitroglycerin	175	110	ug/kg dry	426.1	3.23	40.2	70-130			M
Nitroglycerin [2C]	166	110	ug/kg dry	426.1	ND	39.0	70-130			M
1,3-Dinitrobenzene	241	110	ug/kg dry	426.1	ND	56.5	70-130			M
1,3-Dinitrobenzene [2C]	248	110	ug/kg dry	426.1	ND	58.3	70-130			M

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Project Number: 1540001*36
Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712051 - EPA 3570										
Matrix Spike (A712051-MS1)	**Source: A175011-72**			Prepared: 12/15/2017 Analyzed: 12/17/2017 18:29						
2,6-Dinitrotoluene	258	110	ug/kg dry	426.1	ND	60.5	70-130			M
2,6-Dinitrotoluene [2C]	263	110	ug/kg dry	426.1	ND	61.7	70-130			M
2,4-Dinitrotoluene	261	110	ug/kg dry	426.1	0.473	61.1	70-130			M
2,4-Dinitrotoluene [2C]	266	110	ug/kg dry	426.1	ND	62.5	70-130			M
1,3,5-Trinitrobenzene	188	110	ug/kg dry	426.1	ND	44.2	70-130			M
1,3,5-Trinitrobenzene [2C]	205	110	ug/kg dry	426.1	0.480	47.9	70-130			M
2,4,6-Trinitrotoluene	259	110	ug/kg dry	426.1	0.883	60.6	70-130			M
2,4,6-Trinitrotoluene [2C]	280	110	ug/kg dry	426.1	0.986	65.4	70-130			M
PETN	135	110	ug/kg dry	426.1	ND	31.7	70-130			M
PETN [2C]	194	110	ug/kg dry	426.1	ND	45.6	70-130			M
RDX	103	110	ug/kg dry	426.1	ND	24.2	70-130			M
RDX [2C]	99.1	110	ug/kg dry	426.1	8.47	21.3	70-130			M
4-Amino-2,6-dinitrotoluene	149	110	ug/kg dry	426.1	ND	34.9	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	159	110	ug/kg dry	426.1	0.340	37.3	70-130			M
3,5-Dinitroaniline	151	110	ug/kg dry	426.1	3.52	34.7	70-130			M
3,5-Dinitroaniline [2C]	159	110	ug/kg dry	426.1	0.766	37.2	70-130			M
2-Amino-4,6-dinitrotoluene	148	110	ug/kg dry	426.1	ND	34.8	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	154	110	ug/kg dry	426.1	ND	36.2	70-130			M
Tetryl	116	110	ug/kg dry	426.1	ND	27.3	70-130			M
Tetryl [2C]	122	110	ug/kg dry	426.1	6.08	27.3	70-130			M
HMX	34.5	110	ug/kg dry	426.1	ND	8.10	70-130			M
HMX [2C]	34.8	110	ug/kg dry	426.1	ND	8.17	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*156*		*ug/kg dry*	*426.1*		*36.7*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*169*		*ug/kg dry*	*426.1*		*39.6*	*60-140*			*S*
Matrix Spike Dup (A712051-MSD1)	**Source: A175011-72**			Prepared: 12/15/2017 Analyzed: 12/17/2017 18:52						
Nitrobenzene	375	110	ug/kg dry	426.1	ND	87.9	70-130	6.82	20	
Nitrobenzene [2C]	342	110	ug/kg dry	426.1	ND	80.3	70-130	2.73	20	
2-Nitrotoluene	396	110	ug/kg dry	426.1	ND	92.9	70-130	7.68	20	
2-Nitrotoluene [2C]	357	110	ug/kg dry	426.1	4.26	82.8	70-130	2.15	20	
3-Nitrotoluene	370	110	ug/kg dry	426.1	3.78	85.9	70-130	7.45	20	
3-Nitrotoluene [2C]	357	110	ug/kg dry	426.1	1.03	83.6	70-130	1.87	20	
4-Nitrotoluene	408	110	ug/kg dry	426.1	ND	95.8	70-130	7.75	20	
4-Nitrotoluene [2C]	384	110	ug/kg dry	426.1	ND	90.2	70-130	1.37	20	
Nitroglycerin	195	110	ug/kg dry	426.1	3.23	44.9	70-130	10.8	20	M
Nitroglycerin [2C]	182	110	ug/kg dry	426.1	ND	42.7	70-130	9.08	20	M
1,3-Dinitrobenzene	269	110	ug/kg dry	426.1	ND	63.1	70-130	11.2	20	M
1,3-Dinitrobenzene [2C]	269	110	ug/kg dry	426.1	ND	63.0	70-130	7.79	20	M
2,6-Dinitrotoluene	285	110	ug/kg dry	426.1	ND	66.8	70-130	9.93	20	M
2,6-Dinitrotoluene [2C]	269	110	ug/kg dry	426.1	ND	63.0	70-130	2.05	20	M
2,4-Dinitrotoluene	288	110	ug/kg dry	426.1	0.473	67.5	70-130	9.96	20	M
2,4-Dinitrotoluene [2C]	273	110	ug/kg dry	426.1	ND	64.1	70-130	2.54	20	M
1,3,5-Trinitrobenzene	220	110	ug/kg dry	426.1	ND	51.6	70-130	15.6	20	M
1,3,5-Trinitrobenzene [2C]	210	110	ug/kg dry	426.1	0.480	49.2	70-130	2.68	20	M

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712051 - EPA 3570										
Matrix Spike Dup (A712051-MSD1)	**Source: A175011-72**			Prepared: 12/15/2017 Analyzed: 12/17/2017 18:52						
2,4,6-Trinitrotoluene	285	110	ug/kg dry	426.1	0.883	66.7	70-130	9.50	20	M
2,4,6-Trinitrotoluene [2C]	287	110	ug/kg dry	426.1	0.986	67.2	70-130	2.70	20	M
PETN	152	110	ug/kg dry	426.1	ND	35.6	70-130	11.4	20	M
PETN [2C]	180	110	ug/kg dry	426.1	ND	42.2	70-130	7.74	20	M
RDX	125	110	ug/kg dry	426.1	ND	29.4	70-130	19.3	20	M
RDX [2C]	112	110	ug/kg dry	426.1	8.47	24.3	70-130	12.2	20	M
4-Amino-2,6-dinitrotoluene	176	110	ug/kg dry	426.1	ND	41.2	70-130	16.6	20	M
4-Amino-2,6-dinitrotoluene [2C]	168	110	ug/kg dry	426.1	0.340	39.3	70-130	5.11	20	M
3,5-Dinitroaniline	173	110	ug/kg dry	426.1	3.52	39.7	70-130	13.3	20	M
3,5-Dinitroaniline [2C]	170	110	ug/kg dry	426.1	0.766	39.7	70-130	6.55	20	M
2-Amino-4,6-dinitrotoluene	172	110	ug/kg dry	426.1	ND	40.3	70-130	14.5	20	M
2-Amino-4,6-dinitrotoluene [2C]	161	110	ug/kg dry	426.1	ND	37.8	70-130	4.26	20	M
Tetryl	140	110	ug/kg dry	426.1	ND	32.8	70-130	18.2	20	M
Tetryl [2C]	129	110	ug/kg dry	426.1	6.08	28.8	70-130	5.30	20	M
HMX	45.4	110	ug/kg dry	426.1	ND	10.7	70-130	27.2	20	M, X
HMX [2C]	35.4	110	ug/kg dry	426.1	ND	8.31	70-130	1.74	20	M
Surrogate: 2,2´-Dinitrobiphenyl	*185*		*ug/kg dry*	*426.1*		*43.4*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*182*		*ug/kg dry*	*426.1*		*42.8*	*60-140*			*S*
Batch A712052 - EPA 3570										
Blank (A712052-BLK1)				Prepared: 12/15/2017 Analyzed: 12/18/2017 10:28						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712052 - EPA 3570										
Blank (A712052-BLK1)				Prepared: 12/15/2017 Analyzed: 12/18/2017 10:28						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*383*		*ug/kg wet*	*400.0*		*95.8*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*400*		*ug/kg wet*	*400.0*		*99.9*	*60-140*			
LCS (A712052-BS1)				Prepared: 12/15/2017 Analyzed: 12/18/2017 10:51						
Nitrobenzene	395	100	ug/kg wet	400.0		98.9	70-130			
Nitrobenzene [2C]	467	100	ug/kg wet	400.0		117	70-130			
2-Nitrotoluene	416	100	ug/kg wet	400.0		104	70-130			
2-Nitrotoluene [2C]	463	100	ug/kg wet	400.0		116	70-130			
3-Nitrotoluene	376	100	ug/kg wet	400.0		93.9	70-130			
3-Nitrotoluene [2C]	455	100	ug/kg wet	400.0		114	70-130			
4-Nitrotoluene	398	100	ug/kg wet	400.0		99.4	70-130			
4-Nitrotoluene [2C]	462	100	ug/kg wet	400.0		116	70-130			
Nitroglycerin	341	100	ug/kg wet	400.0		85.3	70-130			
Nitroglycerin [2C]	451	100	ug/kg wet	400.0		113	70-130			
1,3-Dinitrobenzene	354	100	ug/kg wet	400.0		88.4	70-130			
1,3-Dinitrobenzene [2C]	382	100	ug/kg wet	400.0		95.5	70-130			
2,6-Dinitrotoluene	366	100	ug/kg wet	400.0		91.5	70-130			
2,6-Dinitrotoluene [2C]	410	100	ug/kg wet	400.0		103	70-130			
2,4-Dinitrotoluene	359	100	ug/kg wet	400.0		89.8	70-130			
2,4-Dinitrotoluene [2C]	404	100	ug/kg wet	400.0		101	70-130			
1,3,5-Trinitrobenzene	359	100	ug/kg wet	400.0		89.7	70-130			
1,3,5-Trinitrobenzene [2C]	401	100	ug/kg wet	400.0		100	70-130			
2,4,6-Trinitrotoluene	438	100	ug/kg wet	400.0		109	70-130			
2,4,6-Trinitrotoluene [2C]	482	100	ug/kg wet	400.0		121	70-130			
PETN	376	100	ug/kg wet	400.0		94.1	70-130			
PETN [2C]	400	100	ug/kg wet	400.0		99.9	70-130			
RDX	359	100	ug/kg wet	400.0		89.7	70-130			
RDX [2C]	421	100	ug/kg wet	400.0		105	70-130			
4-Amino-2,6-dinitrotoluene	345	100	ug/kg wet	400.0		86.1	70-130			
4-Amino-2,6-dinitrotoluene [2C]	407	100	ug/kg wet	400.0		102	70-130			
3,5-Dinitroaniline	337	100	ug/kg wet	400.0		84.2	70-130			
3,5-Dinitroaniline [2C]	399	100	ug/kg wet	400.0		99.7	70-130			

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712052 - EPA 3570										
LCS (A712052-BS1)				Prepared: 12/15/2017 Analyzed: 12/18/2017 10:51						
2-Amino-4,6-dinitrotoluene	334	100	ug/kg wet	400.0		83.4	70-130			
2-Amino-4,6-dinitrotoluene [2C]	396	100	ug/kg wet	400.0		99.0	70-130			
Tetryl	330	100	ug/kg wet	400.0		82.6	70-130			
Tetryl [2C]	394	100	ug/kg wet	400.0		98.5	70-130			
HMX	306	100	ug/kg wet	400.0		76.5	70-130			
HMX [2C]	409	100	ug/kg wet	400.0		102	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*383*		*ug/kg wet*	*400.0*		*95.7*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*440*		*ug/kg wet*	*400.0*		*110*	*60-140*			
Matrix Spike (A712052-MS1)	**Source: A175011-94**			Prepared: 12/15/2017 Analyzed: 12/18/2017 16:49						
Nitrobenzene	364	120	ug/kg dry	470.4	0.385	77.3	70-130			
Nitrobenzene [2C]	465	120	ug/kg dry	470.4	ND	98.8	70-130			
2-Nitrotoluene	400	120	ug/kg dry	470.4	ND	85.0	70-130			
2-Nitrotoluene [2C]	481	120	ug/kg dry	470.4	4.67	101	70-130			
3-Nitrotoluene	369	120	ug/kg dry	470.4	2.52	78.0	70-130			
3-Nitrotoluene [2C]	502	120	ug/kg dry	470.4	1.78	106	70-130			
4-Nitrotoluene	393	120	ug/kg dry	470.4	ND	83.6	70-130			
4-Nitrotoluene [2C]	497	120	ug/kg dry	470.4	ND	106	70-130			
Nitroglycerin	174	120	ug/kg dry	470.4	9.74	34.9	70-130			M
Nitroglycerin [2C]	249	120	ug/kg dry	470.4	7.18	51.5	70-130			M
1,3-Dinitrobenzene	234	120	ug/kg dry	470.4	ND	49.8	70-130			M
1,3-Dinitrobenzene [2C]	303	120	ug/kg dry	470.4	ND	64.5	70-130			M
2,6-Dinitrotoluene	268	120	ug/kg dry	470.4	6.75	55.6	70-130			M
2,6-Dinitrotoluene [2C]	330	120	ug/kg dry	470.4	6.32	68.9	70-130			M
2,4-Dinitrotoluene	312	120	ug/kg dry	470.4	61.4	53.2	70-130			M
2,4-Dinitrotoluene [2C]	375	120	ug/kg dry	470.4	54.9	68.0	70-130			M
1,3,5-Trinitrobenzene	188	120	ug/kg dry	470.4	ND	40.0	70-130			M
1,3,5-Trinitrobenzene [2C]	235	120	ug/kg dry	470.4	0.528	49.8	70-130			M
2,4,6-Trinitrotoluene	286	120	ug/kg dry	470.4	39.5	52.5	70-130			M
2,4,6-Trinitrotoluene [2C]	340	120	ug/kg dry	470.4	39.3	63.9	70-130			M
PETN	144	120	ug/kg dry	470.4	ND	30.7	70-130			M
PETN [2C]	249	120	ug/kg dry	470.4	ND	53.0	70-130			M
RDX	90.2	120	ug/kg dry	470.4	ND	19.2	70-130			M
RDX [2C]	114	120	ug/kg dry	470.4	8.74	22.5	70-130			M
4-Amino-2,6-dinitrotoluene	160	120	ug/kg dry	470.4	62.0	20.8	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	193	120	ug/kg dry	470.4	62.1	27.8	70-130			M
3,5-Dinitroaniline	142	120	ug/kg dry	470.4	ND	30.1	70-130			M
3,5-Dinitroaniline [2C]	171	120	ug/kg dry	470.4	7.17	34.9	70-130			M
2-Amino-4,6-dinitrotoluene	151	120	ug/kg dry	470.4	39.9	23.6	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	179	120	ug/kg dry	470.4	36.9	30.3	70-130			M
Tetryl	111	120	ug/kg dry	470.4	ND	23.7	70-130			M
Tetryl [2C]	138	120	ug/kg dry	470.4	6.47	27.9	70-130			M
HMX	28.6	120	ug/kg dry	470.4	ND	6.07	70-130			M
HMX [2C]	35.8	120	ug/kg dry	470.4	17.8	3.85	70-130			M

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712052 - EPA 3570										
Matrix Spike (A712052-MS1)	**Source: A175011-94**			Prepared: 12/15/2017 Analyzed: 12/18/2017 16:49						
Surrogate: 2,2´-Dinitrobiphenyl	*163*		*ug/kg dry*	*470.4*		*34.6*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*205*		*ug/kg dry*	*470.4*		*43.5*	*60-140*			*S*
Matrix Spike Dup (A712052-MSD1)	**Source: A175011-94**			Prepared: 12/15/2017 Analyzed: 12/18/2017 17:11						
Nitrobenzene	339	120	ug/kg dry	470.4	0.385	72.0	70-130	7.06	20	
Nitrobenzene [2C]	385	120	ug/kg dry	470.4	ND	81.9	70-130	18.8	20	
2-Nitrotoluene	376	120	ug/kg dry	470.4	ND	80.0	70-130	6.00	20	
2-Nitrotoluene [2C]	404	120	ug/kg dry	470.4	4.67	84.8	70-130	17.5	20	
3-Nitrotoluene	348	120	ug/kg dry	470.4	2.52	73.4	70-130	6.03	20	
3-Nitrotoluene [2C]	417	120	ug/kg dry	470.4	1.78	88.3	70-130	18.4	20	
4-Nitrotoluene	368	120	ug/kg dry	470.4	ND	78.2	70-130	6.68	20	
4-Nitrotoluene [2C]	416	120	ug/kg dry	470.4	ND	88.4	70-130	17.7	20	
Nitroglycerin	158	120	ug/kg dry	470.4	9.74	31.5	70-130	9.65	20	M
Nitroglycerin [2C]	202	120	ug/kg dry	470.4	7.18	41.4	70-130	21.0	20	X, M
1,3-Dinitrobenzene	229	120	ug/kg dry	470.4	ND	48.8	70-130	2.17	20	M
1,3-Dinitrobenzene [2C]	259	120	ug/kg dry	470.4	ND	55.0	70-130	16.0	20	M
2,6-Dinitrotoluene	247	120	ug/kg dry	470.4	6.75	51.2	70-130	8.17	20	M
2,6-Dinitrotoluene [2C]	274	120	ug/kg dry	470.4	6.32	56.9	70-130	18.6	20	M
2,4-Dinitrotoluene	268	120	ug/kg dry	470.4	61.4	43.9	70-130	15.0	20	M
2,4-Dinitrotoluene [2C]	295	120	ug/kg dry	470.4	54.9	51.0	70-130	23.8	20	M, X
1,3,5-Trinitrobenzene	180	120	ug/kg dry	470.4	ND	38.4	70-130	4.29	20	M
1,3,5-Trinitrobenzene [2C]	198	120	ug/kg dry	470.4	0.528	41.9	70-130	17.3	20	M
2,4,6-Trinitrotoluene	264	120	ug/kg dry	470.4	39.5	47.8	70-130	7.95	20	M
2,4,6-Trinitrotoluene [2C]	290	120	ug/kg dry	470.4	39.3	53.3	70-130	15.9	20	M
PETN	132	120	ug/kg dry	470.4	ND	28.1	70-130	8.67	20	M
PETN [2C]	188	120	ug/kg dry	470.4	ND	40.0	70-130	28.0	20	M, X
RDX	83.0	120	ug/kg dry	470.4	ND	17.7	70-130	8.28	20	M
RDX [2C]	91.8	120	ug/kg dry	470.4	8.74	17.7	70-130	22.0	20	M, X
4-Amino-2,6-dinitrotoluene	148	120	ug/kg dry	470.4	62.0	18.2	70-130	7.82	20	M
4-Amino-2,6-dinitrotoluene [2C]	161	120	ug/kg dry	470.4	62.1	21.1	70-130	17.6	20	M, X
3,5-Dinitroaniline	130	120	ug/kg dry	470.4	ND	27.7	70-130	8.56	20	M
3,5-Dinitroaniline [2C]	144	120	ug/kg dry	470.4	7.17	29.0	70-130	17.4	20	M
2-Amino-4,6-dinitrotoluene	139	120	ug/kg dry	470.4	39.9	21.0	70-130	8.58	20	M
2-Amino-4,6-dinitrotoluene [2C]	148	120	ug/kg dry	470.4	36.9	23.6	70-130	19.1	20	M, X
Tetryl	103	120	ug/kg dry	470.4	ND	21.9	70-130	8.02	20	M
Tetryl [2C]	114	120	ug/kg dry	470.4	6.47	22.9	70-130	18.7	20	M
HMX	27.7	120	ug/kg dry	470.4	ND	5.88	70-130	3.22	20	M
HMX [2C]	32.2	120	ug/kg dry	470.4	17.8	3.07	70-130	10.7	20	M, X
Surrogate: 2,2´-Dinitrobiphenyl	*148*		*ug/kg dry*	*470.4*		*31.5*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*169*		*ug/kg dry*	*470.4*		*36.0*	*60-140*			*S*

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712053 - EPA 3570										
Blank (A712053-BLK1)				Prepared: 12/15/2017 Analyzed: 12/19/2017 19:53						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*352*		*ug/kg wet*	*400.0*		*87.9*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*399*		*ug/kg wet*	*400.0*		*99.9*	*60-140*			
LCS (A712053-BS1)				Prepared: 12/15/2017 Analyzed: 12/19/2017 20:15						
Nitrobenzene	438	100	ug/kg wet	400.0		109	70-130			
Nitrobenzene [2C]	449	100	ug/kg wet	400.0		112	70-130			
2-Nitrotoluene	459	100	ug/kg wet	400.0		115	70-130			
2-Nitrotoluene [2C]	478	100	ug/kg wet	400.0		120	70-130			
3-Nitrotoluene	432	100	ug/kg wet	400.0		108	70-130			
3-Nitrotoluene [2C]	462	100	ug/kg wet	400.0		116	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712053 - EPA 3570										
LCS (A712053-BS1)				Prepared: 12/15/2017 Analyzed: 12/19/2017 20:15						
4-Nitrotoluene	441	100	ug/kg wet	400.0		110	70-130			
4-Nitrotoluene [2C]	472	100	ug/kg wet	400.0		118	70-130			
Nitroglycerin	410	100	ug/kg wet	400.0		102	70-130			
Nitroglycerin [2C]	421	100	ug/kg wet	400.0		105	70-130			
1,3-Dinitrobenzene	408	100	ug/kg wet	400.0		102	70-130			
1,3-Dinitrobenzene [2C]	445	100	ug/kg wet	400.0		111	70-130			
2,6-Dinitrotoluene	405	100	ug/kg wet	400.0		101	70-130			
2,6-Dinitrotoluene [2C]	404	100	ug/kg wet	400.0		101	70-130			
2,4-Dinitrotoluene	404	100	ug/kg wet	400.0		101	70-130			
2,4-Dinitrotoluene [2C]	404	100	ug/kg wet	400.0		101	70-130			
1,3,5-Trinitrobenzene	405	100	ug/kg wet	400.0		101	70-130			
1,3,5-Trinitrobenzene [2C]	415	100	ug/kg wet	400.0		104	70-130			
2,4,6-Trinitrotoluene	485	100	ug/kg wet	400.0		121	70-130			
2,4,6-Trinitrotoluene [2C]	491	100	ug/kg wet	400.0		123	70-130			
PETN	408	100	ug/kg wet	400.0		102	70-130			
PETN [2C]	442	100	ug/kg wet	400.0		110	70-130			
RDX	410	100	ug/kg wet	400.0		103	70-130			
RDX [2C]	413	100	ug/kg wet	400.0		103	70-130			
4-Amino-2,6-dinitrotoluene	394	100	ug/kg wet	400.0		98.5	70-130			
4-Amino-2,6-dinitrotoluene [2C]	410	100	ug/kg wet	400.0		103	70-130			
3,5-Dinitroaniline	400	100	ug/kg wet	400.0		100	70-130			
3,5-Dinitroaniline [2C]	404	100	ug/kg wet	400.0		101	70-130			
2-Amino-4,6-dinitrotoluene	406	100	ug/kg wet	400.0		102	70-130			
2-Amino-4,6-dinitrotoluene [2C]	398	100	ug/kg wet	400.0		99.5	70-130			
Tetryl	385	100	ug/kg wet	400.0		96.1	70-130			
Tetryl [2C]	352	100	ug/kg wet	400.0		88.1	70-130			
HMX	376	100	ug/kg wet	400.0		93.9	70-130			
HMX [2C]	380	100	ug/kg wet	400.0		94.9	70-130			
Surrogate: 2,2´-Dinitrobiphenyl	*404*		*ug/kg wet*	*400.0*		*101*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*403*		*ug/kg wet*	*400.0*		*101*	*60-140*			
Matrix Spike (A712053-MS1)	**Source: A175011-AC**			Prepared: 12/15/2017 Analyzed: 12/19/2017 21:21						
Nitrobenzene	401	120	ug/kg dry	470.7	ND	85.2	70-130			
Nitrobenzene [2C]	398	120	ug/kg dry	470.7	ND	84.6	70-130			
2-Nitrotoluene	420	120	ug/kg dry	470.7	ND	89.2	70-130			
2-Nitrotoluene [2C]	446	120	ug/kg dry	470.7	ND	94.8	70-130			
3-Nitrotoluene	428	120	ug/kg dry	470.7	ND	91.0	70-130			
3-Nitrotoluene [2C]	451	120	ug/kg dry	470.7	ND	95.8	70-130			
4-Nitrotoluene	422	120	ug/kg dry	470.7	ND	89.7	70-130			
4-Nitrotoluene [2C]	450	120	ug/kg dry	470.7	16.4	92.1	70-130			
Nitroglycerin	388	120	ug/kg dry	470.7	647	NR	70-130			M
Nitroglycerin [2C]	370	120	ug/kg dry	470.7	639	NR	70-130			M
1,3-Dinitrobenzene	252	120	ug/kg dry	470.7	4.25	52.6	70-130			M
1,3-Dinitrobenzene [2C]	318	120	ug/kg dry	470.7	11.5	65.2	70-130			M

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214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712053 - EPA 3570										
Matrix Spike (A712053-MS1)	**Source: A175011-AC**			Prepared: 12/15/2017 Analyzed: 12/19/2017 21:21						
2,6-Dinitrotoluene	294	120	ug/kg dry	470.7	2.34	62.0	70-130			M
2,6-Dinitrotoluene [2C]	298	120	ug/kg dry	470.7	2.18	62.9	70-130			M
2,4-Dinitrotoluene	324	120	ug/kg dry	470.7	27.5	63.0	70-130			M
2,4-Dinitrotoluene [2C]	319	120	ug/kg dry	470.7	28.6	61.7	70-130			M
1,3,5-Trinitrobenzene	224	120	ug/kg dry	470.7	2.82	46.9	70-130			M
1,3,5-Trinitrobenzene [2C]	225	120	ug/kg dry	470.7	ND	47.7	70-130			M
2,4,6-Trinitrotoluene	352	120	ug/kg dry	470.7	223	27.4	70-130			M
2,4,6-Trinitrotoluene [2C]	345	120	ug/kg dry	470.7	224	25.7	70-130			M
PETN	188	120	ug/kg dry	470.7	ND	40.0	70-130			M
PETN [2C]	189	120	ug/kg dry	470.7	ND	40.1	70-130			M
RDX	102	120	ug/kg dry	470.7	ND	21.7	70-130			M
RDX [2C]	105	120	ug/kg dry	470.7	4.18	21.4	70-130			M
4-Amino-2,6-dinitrotoluene	209	120	ug/kg dry	470.7	102	22.7	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	205	120	ug/kg dry	470.7	103	21.7	70-130			M
3,5-Dinitroaniline	156	120	ug/kg dry	470.7	ND	33.1	70-130			M
3,5-Dinitroaniline [2C]	163	120	ug/kg dry	470.7	2.11	34.1	70-130			M
2-Amino-4,6-dinitrotoluene	186	120	ug/kg dry	470.7	59.6	26.9	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	184	120	ug/kg dry	470.7	64.2	25.5	70-130			M
Tetryl	117	120	ug/kg dry	470.7	ND	24.8	70-130			M
Tetryl [2C]	84.4	120	ug/kg dry	470.7	2.76	17.3	70-130			M
HMX	24.2	120	ug/kg dry	470.7	ND	5.14	70-130			M
HMX [2C]	29.4	120	ug/kg dry	470.7	4.21	5.36	70-130			M
Surrogate: 2,2´-Dinitrobiphenyl	*177*		*ug/kg dry*	*470.7*		*37.6*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*180*		*ug/kg dry*	*470.7*		*38.2*	*60-140*			*S*
Matrix Spike Dup (A712053-MSD1)	**Source: A175011-AC**			Prepared: 12/15/2017 Analyzed: 12/19/2017 21:44						
Nitrobenzene	402	120	ug/kg dry	470.7	ND	85.4	70-130	0.224	20	
Nitrobenzene [2C]	460	120	ug/kg dry	470.7	ND	97.8	70-130	14.5	20	
2-Nitrotoluene	429	120	ug/kg dry	470.7	ND	91.0	70-130	2.05	20	
2-Nitrotoluene [2C]	513	120	ug/kg dry	470.7	ND	109	70-130	14.0	20	
3-Nitrotoluene	428	120	ug/kg dry	470.7	ND	91.0	70-130	0.00693	20	
3-Nitrotoluene [2C]	515	120	ug/kg dry	470.7	ND	109	70-130	13.2	20	
4-Nitrotoluene	425	120	ug/kg dry	470.7	ND	90.2	70-130	0.596	20	
4-Nitrotoluene [2C]	520	120	ug/kg dry	470.7	16.4	107	70-130	14.5	20	
Nitroglycerin	367	120	ug/kg dry	470.7	647	NR	70-130	5.42	20	M
Nitroglycerin [2C]	400	120	ug/kg dry	470.7	639	NR	70-130	7.94	20	M
1,3-Dinitrobenzene	287	120	ug/kg dry	470.7	4.25	60.1	70-130	13.1	20	M
1,3-Dinitrobenzene [2C]	325	120	ug/kg dry	470.7	11.5	66.5	70-130	1.99	20	M
2,6-Dinitrotoluene	303	120	ug/kg dry	470.7	2.34	63.9	70-130	3.07	20	M
2,6-Dinitrotoluene [2C]	344	120	ug/kg dry	470.7	2.18	72.7	70-130	14.4	20	
2,4-Dinitrotoluene	326	120	ug/kg dry	470.7	27.5	63.3	70-130	0.441	20	M
2,4-Dinitrotoluene [2C]	362	120	ug/kg dry	470.7	28.6	70.8	70-130	12.5	20	
1,3,5-Trinitrobenzene	228	120	ug/kg dry	470.7	2.82	47.9	70-130	1.98	20	M
1,3,5-Trinitrobenzene [2C]	257	120	ug/kg dry	470.7	ND	54.6	70-130	13.4	20	M

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Princeton NJ, 08540	Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712053 - EPA 3570										
Matrix Spike Dup (A712053-MSD1)	**Source: A175011-AC**			Prepared: 12/15/2017 Analyzed: 12/19/2017 21:44						
2,4,6-Trinitrotoluene	357	120	ug/kg dry	470.7	223	28.5	70-130	1.49	20	M
2,4,6-Trinitrotoluene [2C]	380	120	ug/kg dry	470.7	224	33.1	70-130	9.59	20	M, X
PETN	184	120	ug/kg dry	470.7	ND	39.0	70-130	2.40	20	M
PETN [2C]	219	120	ug/kg dry	470.7	ND	46.5	70-130	14.9	20	M
RDX	113	120	ug/kg dry	470.7	ND	23.9	70-130	9.79	20	M
RDX [2C]	134	120	ug/kg dry	470.7	4.18	27.5	70-130	24.2	20	M, X
4-Amino-2,6-dinitrotoluene	220	120	ug/kg dry	470.7	102	25.1	70-130	5.18	20	M
4-Amino-2,6-dinitrotoluene [2C]	254	120	ug/kg dry	470.7	103	32.0	70-130	21.1	20	M, X
3,5-Dinitroaniline	168	120	ug/kg dry	470.7	ND	35.6	70-130	7.29	20	M
3,5-Dinitroaniline [2C]	200	120	ug/kg dry	470.7	2.11	42.1	70-130	20.6	20	X, M
2-Amino-4,6-dinitrotoluene	199	120	ug/kg dry	470.7	59.6	29.6	70-130	6.46	20	M
2-Amino-4,6-dinitrotoluene [2C]	222	120	ug/kg dry	470.7	64.2	33.6	70-130	18.7	20	M, X
Tetryl	121	120	ug/kg dry	470.7	ND	25.6	70-130	3.28	20	M
Tetryl [2C]	110	120	ug/kg dry	470.7	2.76	22.8	70-130	26.2	20	M, X
HMX	30.6	120	ug/kg dry	470.7	ND	6.51	70-130	23.4	20	M, X
HMX [2C]	41.6	120	ug/kg dry	470.7	4.21	7.95	70-130	34.3	20	M, X
Surrogate: 2,2´-Dinitrobiphenyl	*188*		*ug/kg dry*	*470.7*		*40.0*	*63.7-134*			*S*
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*219*		*ug/kg dry*	*470.7*		*46.4*	*60-140*			*S*
Batch A712093 - EPA 3570										
Blank (A712093-BLK1)				Prepared: 12/27/2017 Analyzed: 12/27/2017 22:22						
Nitrobenzene	ND	100	ug/kg wet							
Nitrobenzene [2C]	ND	100	ug/kg wet							
2-Nitrotoluene	ND	100	ug/kg wet							
2-Nitrotoluene [2C]	ND	100	ug/kg wet							
3-Nitrotoluene	ND	100	ug/kg wet							
3-Nitrotoluene [2C]	ND	100	ug/kg wet							
4-Nitrotoluene	ND	100	ug/kg wet							
4-Nitrotoluene [2C]	ND	100	ug/kg wet							
Nitroglycerin	ND	100	ug/kg wet							
Nitroglycerin [2C]	ND	100	ug/kg wet							
1,3-Dinitrobenzene	ND	100	ug/kg wet							
1,3-Dinitrobenzene [2C]	ND	100	ug/kg wet							
2,6-Dinitrotoluene	ND	100	ug/kg wet							
2,6-Dinitrotoluene [2C]	ND	100	ug/kg wet							
2,4-Dinitrotoluene	ND	100	ug/kg wet							
2,4-Dinitrotoluene [2C]	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene	ND	100	ug/kg wet							
1,3,5-Trinitrobenzene [2C]	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene	ND	100	ug/kg wet							
2,4,6-Trinitrotoluene [2C]	ND	100	ug/kg wet							
PETN	ND	100	ug/kg wet							
PETN [2C]	ND	100	ug/kg wet							

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Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712093 - EPA 3570										
Blank (A712093-BLK1)				Prepared: 12/27/2017 Analyzed: 12/27/2017 22:22						
RDX	ND	100	ug/kg wet							
RDX [2C]	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene	ND	100	ug/kg wet							
4-Amino-2,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
3,5-Dinitroaniline	ND	100	ug/kg wet							
3,5-Dinitroaniline [2C]	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene	ND	100	ug/kg wet							
2-Amino-4,6-dinitrotoluene [2C]	ND	100	ug/kg wet							
Tetryl	ND	100	ug/kg wet							
Tetryl [2C]	ND	100	ug/kg wet							
HMX	ND	100	ug/kg wet							
HMX [2C]	ND	100	ug/kg wet							
Surrogate: 2,2´-Dinitrobiphenyl	*367*		*ug/kg wet*	*400.0*		*91.6*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*368*		*ug/kg wet*	*400.0*		*92.0*	*60-140*			
LCS (A712093-BS1)				Prepared: 12/27/2017 Analyzed: 12/27/2017 22:00						
Nitrobenzene	464	100	ug/kg wet	400.0		116	70-130			
Nitrobenzene [2C]	428	100	ug/kg wet	400.0		107	70-130			
2-Nitrotoluene	474	100	ug/kg wet	400.0		118	70-130			
2-Nitrotoluene [2C]	433	100	ug/kg wet	400.0		108	70-130			
3-Nitrotoluene	453	100	ug/kg wet	400.0		113	70-130			
3-Nitrotoluene [2C]	422	100	ug/kg wet	400.0		105	70-130			
4-Nitrotoluene	470	100	ug/kg wet	400.0		117	70-130			
4-Nitrotoluene [2C]	433	100	ug/kg wet	400.0		108	70-130			
Nitroglycerin	417	100	ug/kg wet	400.0		104	70-130			
Nitroglycerin [2C]	377	100	ug/kg wet	400.0		94.3	70-130			
1,3-Dinitrobenzene	434	100	ug/kg wet	400.0		108	70-130			
1,3-Dinitrobenzene [2C]	341	100	ug/kg wet	400.0		85.3	70-130			
2,6-Dinitrotoluene	433	100	ug/kg wet	400.0		108	70-130			
2,6-Dinitrotoluene [2C]	382	100	ug/kg wet	400.0		95.4	70-130			
2,4-Dinitrotoluene	434	100	ug/kg wet	400.0		108	70-130			
2,4-Dinitrotoluene [2C]	381	100	ug/kg wet	400.0		95.3	70-130			
1,3,5-Trinitrobenzene	428	100	ug/kg wet	400.0		107	70-130			
1,3,5-Trinitrobenzene [2C]	381	100	ug/kg wet	400.0		95.1	70-130			
2,4,6-Trinitrotoluene	496	100	ug/kg wet	400.0		124	70-130			
2,4,6-Trinitrotoluene [2C]	439	100	ug/kg wet	400.0		110	70-130			
PETN	402	100	ug/kg wet	400.0		100	70-130			
PETN [2C]	373	100	ug/kg wet	400.0		93.3	70-130			
RDX	440	100	ug/kg wet	400.0		110	70-130			
RDX [2C]	383	100	ug/kg wet	400.0		95.9	70-130			
4-Amino-2,6-dinitrotoluene	424	100	ug/kg wet	400.0		106	70-130			
4-Amino-2,6-dinitrotoluene [2C]	362	100	ug/kg wet	400.0		90.5	70-130			
3,5-Dinitroaniline	414	100	ug/kg wet	400.0		103	70-130			
3,5-Dinitroaniline [2C]	350	100	ug/kg wet	400.0		87.5	70-130			

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Project Number: 1540001*36
Project Manager: Lora Sterner

Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712093 - EPA 3570										
LCS (A712093-BS1)				Prepared: 12/27/2017 Analyzed: 12/27/2017 22:00						
2-Amino-4,6-dinitrotoluene	424	100	ug/kg wet	400.0		106	70-130			
2-Amino-4,6-dinitrotoluene [2C]	351	100	ug/kg wet	400.0		87.6	70-130			
Tetryl	443	100	ug/kg wet	400.0		111	70-130			
Tetryl [2C]	357	100	ug/kg wet	400.0		89.3	70-130			
HMX	356	100	ug/kg wet	400.0		89.0	70-130			
HMX [2C]	351	100	ug/kg wet	400.0		87.7	70-130			
Surrogate: 2,2'-Dinitrobiphenyl	*450*		*ug/kg wet*	*400.0*		*113*	*63.7-134*			
Surrogate: 2,2'-Dinitrobiphenyl [2C]	*371*		*ug/kg wet*	*400.0*		*92.7*	*60-140*			
Matrix Spike (A712093-MS1)	**Source: A175011-BI**			Prepared: 12/27/2017 Analyzed: 12/27/2017 23:26						
Nitrobenzene	510	110	ug/kg dry	431.0	ND	118	70-130			
Nitrobenzene [2C]	425	110	ug/kg dry	431.0	ND	98.5	70-130			
2-Nitrotoluene	518	110	ug/kg dry	431.0	ND	120	70-130			
2-Nitrotoluene [2C]	427	110	ug/kg dry	431.0	ND	99.1	70-130			
3-Nitrotoluene	506	110	ug/kg dry	431.0	ND	117	70-130			
3-Nitrotoluene [2C]	430	110	ug/kg dry	431.0	ND	99.7	70-130			
4-Nitrotoluene	521	110	ug/kg dry	431.0	ND	121	70-130			
4-Nitrotoluene [2C]	442	110	ug/kg dry	431.0	ND	102	70-130			
Nitroglycerin	457	110	ug/kg dry	431.0	4.90	105	70-130			
Nitroglycerin [2C]	398	110	ug/kg dry	431.0	5.68	90.9	70-130			
1,3-Dinitrobenzene	499	110	ug/kg dry	431.0	19.6	111	70-130			
1,3-Dinitrobenzene [2C]	396	110	ug/kg dry	431.0	19.0	87.5	70-130			
2,6-Dinitrotoluene	497	110	ug/kg dry	431.0	12.4	112	70-130			
2,6-Dinitrotoluene [2C]	419	110	ug/kg dry	431.0	12.5	94.4	70-130			
2,4-Dinitrotoluene	598	110	ug/kg dry	431.0	121	111	70-130			
2,4-Dinitrotoluene [2C]	511	110	ug/kg dry	431.0	124	89.8	70-130			
1,3,5-Trinitrobenzene	542	110	ug/kg dry	431.0	ND	126	70-130			
1,3,5-Trinitrobenzene [2C]	340	110	ug/kg dry	431.0	44.2	68.5	70-130			M
2,4,6-Trinitrotoluene	13900	1100	ug/kg dry	431.0	17100	NR	70-130			D, M1
2,4,6-Trinitrotoluene [2C]	10800	1100	ug/kg dry	431.0	16000	NR	70-130			D, M1
PETN	ND	110	ug/kg dry	431.0	ND		70-130			M
PETN [2C]	1880	1100	ug/kg dry	431.0	3420	NR	70-130			D, M
RDX	456	110	ug/kg dry	431.0	ND	106	70-130			
RDX [2C]	373	110	ug/kg dry	431.0	161	49.0	70-130			M
4-Amino-2,6-dinitrotoluene	1510	110	ug/kg dry	431.0	854	151	70-130			M
4-Amino-2,6-dinitrotoluene [2C]	1230	110	ug/kg dry	431.0	770	108	70-130			
3,5-Dinitroaniline	515	110	ug/kg dry	431.0	ND	120	70-130			
3,5-Dinitroaniline [2C]	367	110	ug/kg dry	431.0	25.0	79.4	70-130			
2-Amino-4,6-dinitrotoluene	1260	110	ug/kg dry	431.0	678	136	70-130			M
2-Amino-4,6-dinitrotoluene [2C]	1060	110	ug/kg dry	431.0	625	101	70-130			
Tetryl	466	110	ug/kg dry	431.0	ND	108	70-130			
Tetryl [2C]	315	110	ug/kg dry	431.0	ND	73.0	70-130			
HMX	541	110	ug/kg dry	431.0	ND	125	70-130			
HMX [2C]	427	110	ug/kg dry	431.0	ND	99.0	70-130			

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Explosive Compounds by EPA Method 8095 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712093 - EPA 3570										
Matrix Spike (A712093-MS1)	**Source: A175011-BI**			Prepared: 12/27/2017 Analyzed: 12/27/2017 23:26						
Surrogate: 2,2´-Dinitrobiphenyl	*467*		*ug/kg dry*	*431.0*		*108*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*396*		*ug/kg dry*	*431.0*		*91.9*	*60-140*			
Matrix Spike Dup (A712093-MSD1)	**Source: A175011-BI**			Prepared: 12/27/2017 Analyzed: 12/27/2017 23:48						
Nitrobenzene	535	110	ug/kg dry	431.0	ND	124	70-130	4.81	20	
Nitrobenzene [2C]	482	110	ug/kg dry	431.0	ND	112	70-130	12.7	20	
2-Nitrotoluene	539	110	ug/kg dry	431.0	ND	125	70-130	3.87	20	
2-Nitrotoluene [2C]	481	110	ug/kg dry	431.0	ND	112	70-130	11.9	20	
3-Nitrotoluene	532	110	ug/kg dry	431.0	ND	123	70-130	5.06	20	
3-Nitrotoluene [2C]	490	110	ug/kg dry	431.0	ND	114	70-130	13.1	20	
4-Nitrotoluene	545	110	ug/kg dry	431.0	ND	126	70-130	4.46	20	
4-Nitrotoluene [2C]	503	110	ug/kg dry	431.0	ND	117	70-130	13.0	20	
Nitroglycerin	488	110	ug/kg dry	431.0	4.90	112	70-130	6.37	20	
Nitroglycerin [2C]	435	110	ug/kg dry	431.0	5.68	99.6	70-130	9.00	20	
1,3-Dinitrobenzene	539	110	ug/kg dry	431.0	19.6	120	70-130	7.64	20	
1,3-Dinitrobenzene [2C]	510	110	ug/kg dry	431.0	19.0	114	70-130	25.1	20	X
2,6-Dinitrotoluene	520	110	ug/kg dry	431.0	12.4	118	70-130	4.50	20	
2,6-Dinitrotoluene [2C]	475	110	ug/kg dry	431.0	12.5	107	70-130	12.4	20	
2,4-Dinitrotoluene	625	110	ug/kg dry	431.0	121	117	70-130	4.39	20	
2,4-Dinitrotoluene [2C]	590	110	ug/kg dry	431.0	124	108	70-130	14.4	20	
1,3,5-Trinitrobenzene	586	110	ug/kg dry	431.0	ND	136	70-130	7.78	20	M
1,3,5-Trinitrobenzene [2C]	516	110	ug/kg dry	431.0	44.2	110	70-130	41.3	20	X
2,4,6-Trinitrotoluene	17100	1100	ug/kg dry	431.0	17100	13.7	70-130	20.9	20	D, M1
2,4,6-Trinitrotoluene [2C]	15200	1100	ug/kg dry	431.0	16000	NR	70-130	34.1	20	D, M1
PETN	ND	110	ug/kg dry	431.0	ND		70-130		20	M
PETN [2C]	1640	1100	ug/kg dry	431.0	3420	NR	70-130	13.5	20	D, M
RDX	486	110	ug/kg dry	431.0	ND	113	70-130	6.38	20	
RDX [2C]	469	110	ug/kg dry	431.0	161	71.3	70-130	22.9	20	X
4-Amino-2,6-dinitrotoluene	1500	110	ug/kg dry	431.0	854	149	70-130	0.578	20	M
4-Amino-2,6-dinitrotoluene [2C]	1420	110	ug/kg dry	431.0	770	150	70-130	13.7	20	M, X
3,5-Dinitroaniline	555	110	ug/kg dry	431.0	ND	129	70-130	7.39	20	
3,5-Dinitroaniline [2C]	461	110	ug/kg dry	431.0	25.0	101	70-130	22.7	20	X
2-Amino-4,6-dinitrotoluene	1270	110	ug/kg dry	431.0	678	138	70-130	0.750	20	M
2-Amino-4,6-dinitrotoluene [2C]	1250	110	ug/kg dry	431.0	625	144	70-130	16.2	20	M, X
Tetryl	509	110	ug/kg dry	431.0	ND	118	70-130	8.70	20	
Tetryl [2C]	386	110	ug/kg dry	431.0	ND	89.6	70-130	20.4	20	X
HMX	585	110	ug/kg dry	431.0	ND	136	70-130	7.85	20	M
HMX [2C]	496	110	ug/kg dry	431.0	ND	115	70-130	15.0	20	
Surrogate: 2,2´-Dinitrobiphenyl	*484*		*ug/kg dry*	*431.0*		*112*	*63.7-134*			
Surrogate: 2,2´-Dinitrobiphenyl [2C]	*468*		*ug/kg dry*	*431.0*		*108*	*60-140*			

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2525 Advance Road
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Kennedy Jenks Consultants
214 Carnegie Center, Suite 103
Princeton NJ, 08540

Project: Hercules Inc. - Kenvil Works Facility
Project Number: 1540001*36
Project Manager: Lora Sterner

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712044 - % Solids										
Duplicate (A712044-DUP1)		**Source: A175011-11**		Prepared: 12/14/2017 Analyzed: 12/15/2017 08:00						
% Solids	93.1	0.00	% by Weight		84.1			10.2	20	
Batch A712049 - % Solids										
Duplicate (A712049-DUP1)		**Source: A175011-32**		Prepared: 12/14/2017 Analyzed: 12/15/2017 08:00						
% Solids	94.1	0.00	% by Weight		94.3			0.238	20	
Batch A712054 - % Solids										
Duplicate (A712054-DUP1)		**Source: A175011-60**		Prepared: 12/15/2017 Analyzed: 12/16/2017 13:20						
% Solids	90.0	0.00	% by Weight		90.0			0.0270	20	
Batch A712055 - % Solids										
Duplicate (A712055-DUP1)		**Source: A175011-72**		Prepared: 12/15/2017 Analyzed: 12/16/2017 13:20						
% Solids	93.7	0.00	% by Weight		93.9			0.174	20	
Batch A712056 - % Solids										
Duplicate (A712056-DUP1)		**Source: A175011-94**		Prepared: 12/15/2017 Analyzed: 12/16/2017 13:20						
% Solids	84.6	0.00	% by Weight		85.0			0.458	20	
Batch A712057 - % Solids										
Duplicate (A712057-DUP1)		**Source: A175011-AC**		Prepared: 12/18/2017 Analyzed: 12/19/2017 09:50						
% Solids	84.6	0.00	% by Weight		85.0			0.470	20	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A712096 - % Solids										
Duplicate (A712096-DUP1)		**Source: A175011-BI**		Prepared: 12/27/2017 Analyzed: 12/28/2017 17:51						
% Solids	93.4	0.00	% by Weight		92.8			0.651	20	

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Kennedy Jenks Consultants	Project: Hercules Inc. - Kenvil Works Facility
214 Carnegie Center, Suite 103	Project Number: 1540001*36
Princeton NJ, 08540	Project Manager: Lora Sterner

Notes and Definitions

X	Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.
S	Surrogate recovery was outside of laboratory control limits due to an apparent matrix effect.
M1	Spike recoveries were not evaluated because of elevated levels of the spiked analyte in the parent sample.
M	The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.
LC	Resuts may be biased low because of low continuing calibration verification (CCV).
D	Data reported from a dilution
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
RPD	Relative Percent Difference

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CHAIN OF CUSTODY

No. 8386

Page: 1 of: 1

Lab Work Order #: A174910

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E via 8095						Comments	Lab ID	Lab Receipt Time
EB120617	12/6/17	11:00	W	3	X						MS/MSD	01	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/6/17	1130	[signature]	12/7/17	0940

Custody Seal: ☒ NA ☐ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.3°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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CHAIN OF CUSTODY

No. 8485 Page: 1 of: 17

Lab Work Order #: A175011

Project Number: 154000I*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A (BTEX 8095)	Comments	Lab ID	Lab Receipt Time
TP-RD-A11-22(01.0-01.5)	11/29	800	S	1	X		01	
TP-RD-A11-22(02.0-02.5)		800		1	X		02	
TP-RD-A11-22(04.0-04.5)		800		1	X		03	
TP-RD-A11-23(01.0-01.5)		820		1	X		04	
TP-RD-A11-23(02.0-02.5)		820		1	X		05	
TP-RD-A11-23(04.0-04.5)		820		1	X		06	
TP-RD-B11-09(01.0-01.5)		840		1	X		07	
TP-RD-B11-09(02.0-02.5)		840		1	X		08	
TP-RD-B11-09(04.0-04.5)		840		1	X		09	
TP-RD-B11-10(01.0-01.5)		905		1	X		10	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Lora Sterner	12/11/17	1000	Kari-Ann Killeen	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ~~☒~~ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

for

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CHAIN OF CUSTODY

No. 8486 Page: 2 of: 17

Lab Work Order #: A175011

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: 154002136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-10(02.0-02.5)	11/29	905	S	1	X		MS/MSD	11	
TP-RD-B11-10(04.0-04.5)		905		1	X			12	
TP-RD-B11-11(01.0-01.5)		1000		1	X			13	
TP-RD-B11-11(03.0-03.5)		1000		1	X			14	
TP-RD-B11-11(05.0-05.5)		1000		1	X		HOLD	AN	
TP-RD-B11-12(01.0-01.5)		1015		1	X			15	
TP-RD-B11-12(03.0-03.5)		1015		1	X		MS/MSD	16	
TP-RD-B11-12(05.0-05.5)		1015		1	X		HOLD	AO	
TP-RD-B11-13(01.0-01.5)		1030		1	X			17	
TP-RD-B11-13(03.0-03.5)	↓	1030	↓	1	X			18	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Lora Stemer	12/11/17	1000	Kari-Ann Killeen	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 8487

Lab Work Order #: A175011

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company:
Address 1:
Address 2:

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E&E Vita 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B11-13 (05.0-05.5)	11/29	1030	S	1	X						HOLD	AP	
TP-RD-B11-14 (01.0-01.5)		1045		1	X							19	
TP-RD-B11-14 (03.0-03.5)		1045		1	X							20	
TP-RD-B11-14 (05.0-05.5)		1045		1	X						HOLD	AQ	
TP-RD-B11-15 (03.0-03.5)		1230		1	X							21	
TP-RD-B11-15 (05.0-05.5)		1230		1	X						HOLD	AR	
TP-RD-B11-16 (01.0-01.5)		1300		1	X							22	
TP-RD-B11-16 (03.0-03.5)		1300		1	X							23	
TP-RD-B11-16 (05.0-05.5)		1300		1	X						HOLD	AS	
TP-RD-B11-17 (01.0-01.5)		1335		1	X							24	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killin	12/13/17	1215

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 8488

Lab Work Order #: A175011

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154000 1*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Tengberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A E&E WA 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B11-17(03.0-03.5)	11/29	1335	S	1	X							25	
TP-RD-B11-17(05.0-05.5)	↓	1335	↓	1	X						HOLD	AT	
TP-RD-B11-18(01.0-01.5)	↓	1400	↓	1	X							26	
TP-RD-B11-18(03.0-03.5)	↓	1400	↓	1	X							27	
TP-RD-B11-18(05.0-05.5)	↓	1400	↓	1	X						HOLD	AU	
TP-RD-B11-19(01.0-01.5)	↓	1435	↓	1	X							28	
TP-RD-B11-19(03.0-03.5)	↓	1435	↓	1	X							29	
TP-RD-B11-19(05.0-05.5)	↓	1435	↓	1	X						HOLD	AV	
TP-RD-B12-06(01.0-01.5)	11/30	800	↓	1	X							30	
TP-RD-B12-06(03.0-03.5)	11/30	800	↓	1	X							31	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Kilein	12/13/17	1315

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 8489

Lab Work Order #: A175011

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Preservation Codes
Analyses Requested: A

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E+E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B12-06 (05.0-05.5)	11/30	800	S	1	X						MS/MSD	32	
TP-RD-B12-09 (01.0-01.5)		826		1	X							33	
TP-RD-B12-09 (03.0-03.5)		826		1	X							34	
TP-RD-B12-09 (05.0-05.5)		826		1	X							35	
TP-RD-C11-06 (01.0-01.5)		855		1	X							36	
TP-RD-C11-06 (03.0-03.5)		855		1	X							37	
TP-RD-C11-06 (05.0-05.5)		855		1	X						HOLD	AW	
TP-RD-C11-07 (01.0-01.5)		918		1	X						MS/MSD	38	
TP-RD-C11-07 (03.0-03.5)		918		1	X							39	
TP-RD-C11-07 (05.0-05.5)		918		1	X						HOLD	AX	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killi	12/13/17	1315

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: FedEx
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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CHAIN OF CUSTODY

No. 8490

Page: 6 of: 17

Lab Work Order #: A175011

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E?E hg 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-C11-08 (01.0-01.5)	11/30	942	S	1	X							40	
TP-RD-C11-08 (03.0-03.5)	↓	942	↓	1	X							41	
TP-RD-C11-08 (05.0-05.5)	↓	942	↓	1	X						HOLD	AY	
TP-RD-C11-05 (03.0-03.5)	↓	1010	↓	1	X							42	
TP-RD-C11-05 (05.0-05.5)	↓	1010	↓	1	X						HOLD	AZ	
TP-RD-C11-09 (01.0-01.5)	↓	1046	↓	1	X							43	
TP-RD-C11-09 (03.0-03.5)	↓	1046	↓	1	X							44	
TP-RD-C11-09 (05.0-05.5)	↓	1046	↓	1	X							45	
TP-RD-C11-11 (01.0-01.5)	↓	1112	↓	1	X							46	
TP-RD-C11-11 (03.0-03.5)	↓	1112	↓	1	X							47	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killian	12/13/17	1315

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: FedEx
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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2525 Advance Road
Madison, WI 53718
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608-221-4889 (fax)

CHAIN OF CUSTODY

No. 08757 Page: 7 of: 17

Lab Work Order #: A175011

Project Number: 154000I*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Preservation Codes
Analyses Requested

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E2E via 8095						Comments	Lab ID	Lab Receipt Time
					A								
TP-RD-C11-12(01.0-01.5)	11/30	1242	S	1	X							48	
TP-RD-C11-12(03.0-03.5)		1242		1	X							49	
TP-RD-C11-10(03.0-03.5)		1313		1	X							50	
TP-RD-C11-10(05.0-05.5)		1313		1	X						HOLD	BA	
TP-RD-C11-13(01.0-01.5)		1334		1	X							51	
TP-RD-C11-13(03.0-03.5)		1334		1	X							52	
TP-RD-C11-13(05.0-05.5)		1334		1	X						HOLD	BB	
TP-RD-C11-14(01.0-01.5)		1414		1	X							53	
TP-RD-C11-14(03.0-03.5)		1414		1	X							54	
TP-RD-C11-14(05.0-05.5)	↓	1414	↓	1	X						HOLD	BC	

Report To: Lora Siemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasiemer@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killian	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 08758

Lab Work Order #: A175011

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*86 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Preservation Codes
Analyses Requested

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A: EOE via 8025						Comments	Lab ID	Lab Receipt Time
TP-RD-B14-04(01.0-01.5)	11/30	1432	S	1	X						HOLD	BD	
TP-RD-B14-04(03.0-03.5)	↓	1432	↓	1	X							55	
TP-RD-B14-04(05.0-05.5)	↓	1432	↓	1	X						HOLD	BE	
TP-RD-B14-03(01.0-01.5)	↓	1445	↓	1	X							56	
TP-RD-B14-03(03.0-03.5)	↓	1445	↓	1	X							57	
TP-RD-B14-03(05.0-05.5)	↓	1445	↓	1	X						~~HOLD~~ analysis added 12-27-17	BF	
TP-RD-B13-11(01.0-01.5)	12/1	800	↓	1	X							58	
TP-RD-B13-11(03.0-03.5)	↓	800	↓	1	X							59	
TP-RD-B13-11(05.0-05.5)	↓	800	↓	1	X						MS/MSD	60	
TP-RD-B13-12(01.0-01.5)	↓	820	↓	1	X							61	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killin	12/13/17	1315

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 08759

Page: 9 of: 17

Lab Work Order #: A175011

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Preservation Codes
Analyses Requested

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A Ex Eva 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B13-12(03.0-03.5)	12/1	820	S	1	X							62	
TP-RD-B13-12(05.0-05.5)	↓	820	↓	1	X							63	
TP-RD-B13-14(01.0-01.5)	↓	843	↓	1	X							64	
TP-RD-B13-14(03.0-03.5)	↓	843	↓	1	X							65	
TP-RD-B13-14(05.0-05.5)	↓	843	↓	1	X							66	
TP-RD-B13-15(01.0-01.5)	↓	912	↓	1	X							67	
TP-RD-B13-15(03.0-03.5)	↓	912	↓	1	X							68	
TP-RD-B13-15(05.0-05.5)	↓	912	↓	1	X							69	
TP-RD-B13-05(01.0-01.5)	↓	945	↓	1	X							70	
TP-RD-B13-05(03.0-03.5)	↓	945	↓	1	X							71	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari Ann Killian	12/13/17	1315

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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CHAIN OF CUSTODY

No. 08760

Lab Work Order #: A175011

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 1540001*36 PO Number:
Project Name: Ashland Kenyl
Project Location (City, State): Kenyl, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Fengberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Preservation Codes
Analyses Requested: A

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	E+E via 8095						Comments	Lab ID	Lab Receipt Time
TP-RD-B13-05(05.0-05.5)	12/1	945	S	1	X						MS/MSD	72	
TP-RD-B13-13(01.0-01.5)	↓	1025	↓	1	X							73	
TP-RD-B13-13(03.0-03.5)	↓	1025	↓	1	X							74	
TP-RD-B13-13(05.0-05.5)	↓	1025	↓	1	X							75	
TP-RD-A13-05(01.0-01.5)	↓	1052	↓	1	X							76	
TP-RD-A13-05(03.0-03.5)	↓	1052	↓	1	X							77	
TP-RD-A13-05(05.0-05.5)	↓	1052	↓	1	X						HOLD	BG	
TP-RD-A13-04(01.0-01.5)	↓	1113	↓	1	X							78	
TP-RD-A13-04(03.0-03.5)	↓	1113	↓	1	X							79	
TP-RD-A13-04(05.0-05.5)	↓	1113	↓	1	X						HOLD	BH	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killin	12/13/17	1315

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: FedEx
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 08761 Page: 11 of: 17

Lab Work Order #: A175011

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Preservation Codes
Analyses Requested

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	EnCore 8015						Comments	Lab ID	Lab Receipt Time
~~TP-RD-A13-03(01.0-01.5)~~	12/1	1134	S	1	X						~~HOLD~~ LES	—	
TP-RD-A13-03(03.0-03.5)	12/11	1134		1	X							80	
TP-RD-A13-03(05.0-05.5)		1134		1	X						~~HOLD~~ analysis added 12-27-17 JP	BI	
TP-RD-A13-07(01.0-01.5)		1201		1	X							81	
TP-RD-A13-07(03.0-03.5)		1201		1	X							82	
TP-RD-A13-07(05.0-05.5)		1201		1	X						HOLD	BJ	
TP-RD-A13-06(01.0-01.5)		1223		1	X							83	
TP-RD-A13-06(03.0-03.5)		1223		1	X							84	
TP-RD-A13-06(05.0-05.5)		1223		1	X						HOLD	BK	
TP-RD-D13-01(01.0-01.5)	↓	1251	↓	1	X							85	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari Ann Killin	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: FedEx
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

Rev. 12/15

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CHAIN OF CUSTODY

No. 08762 Page: 12 of: 17

Lab Work Order #: A175011

Project Number: 154000136 PO Number:
Project Name: Ashland Kenni
Project Location (City, State): Kenni, NJ
Turn Around (check one): ☐ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 2141 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes: Ice via 8085	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-D13-01 (03.0-03.5)	12/1	1251	S	1	X			86	
TP-RD-D13-01 (05.0-05.5)		1251		1	X			87	
TP-RD-D14-01 (01.0-01.5)		1310		1	X			88	
TP-RD-D14-01 (03.0-03.5)		1310		1	X			89	
TP-RD-D14-01 (05.0-05.5)		1310		1	X			90	
TP-RD-C13-04A (01.0-01.5)	12/4	1000		1	X			91	
TP-RD-C13-04A (03.0-03.5)		1000		1	X		HOLD	BL	
TP-RD-C13-04A (05.0-05.5)		1000		1	X		HOLD	BM	
TP-RD-B12-13 (01.0-01.5)		1120		1	X			92	
TP-RD-B12-13 (03.0-03.5)		1120		1	X		HOLD	BN	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Lora Stemer	12/11/17	1000	Kari-Ann Killin	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 08764 Page: 13 of: 17

Lab Work Order #: A175011

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Engberg

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes: EDE via 8015	Analyses Requested: 4	Comments	Lab ID	Lab Receipt Time
TP-RD-B12-13(05.0-05.5)	12/4	11/20	S	1	X		HOLD	BO	
TP-RD-A11-24(01.0-01.5)		1050		1	X			93	
TP-RD-A11-24(03.0-03.5)		1050		1	X		HOLD	BP	
TP-RD-A11-24(05.0-05.5)		1050		1	X		HOLD	BQ	
TP-RD-B11-20(01.0-01.5)		1140		1	X		MS/MSD	94	
TP-RD-B11-20(03.0-03.5)		1140		1	X		HOLD	BR	
TP-RD-B11-20(05.0-05.5)		1140		1	X		HOLD	BS	
TP-RD-B11-22(01.0-01.5)		1203		1	X			95	
TP-RD-B11-22(03.0-03.5)		1203		1	X		HOLD	BT	
TP-RD-B11-22(05.0-05.5)		1203		1	X		HOLD	BU	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	[signature]	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: fedex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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CHAIN OF CUSTODY

No. 08765 Page: 14 of: 17

Lab Work Order #: A175011

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorastemer@kennedyjenks.com

Project Number: 154000[*]36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kate Engberg

Preservation Codes
Analyses Requested

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	A: TPH via 8015						Comments	Lab ID	Lab Receipt Time
TP-RD-B11-21 (01.0-01.5)	12/4	1301	S	1	X							96	
TP-RD-B11-21 (03.0-03.5)		1301		1	X						HOLD	BV	
TP-RD-B11-21 (05.0-05.5)		1301		1	X						HOLD	BW	
TP-RD-B11-23 (01.0-01.5)		1340		1	X							97	
TP-RD-B11-23 (03.0-03.5)		1340		1	X						HOLD	BX	
TP-RD-B11-23 (05.0-05.5)		1340		1	X						HOLD	BY	
TP-RD-B11-25 (01.0-01.5)		1400		1	X							98	
TP-RD-B11-25 (03.0-03.5)		1400		1	X						HOLD	BZ	
TP-RD-B11-25 (05.0-05.5)		1400		1	X						HOLD	CA	
TP-RD-B11-24 (01.0-01.5)	↓	1435	↓	1	X							99	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killin	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: Fed Ex
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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608-221-4889 (fax)

CHAIN OF CUSTODY

No. 08766

Lab Work Order #: A175011

Report To: Lara Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Fengberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes	Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
TP-RD-B11-24(03.0-03.5)	12/4	1435	S	1	X		HOLD	CB	
TP-RD-B11-24(05.0-05.5)	12/4	1435		1	X		HOLD	CC	
TP-RD-B11-26(01.0-01.5)	12/5	800		1	X			AA	
TP-RD-B11-26(03.0-03.5)		800		1	X		HOLD	CD	
TP-RD-B11-26(05.0-05.5)		800		1	X		HOLD	CE	
TP-RD-B12-15(01.0-01.5)		820		1	X			AB	
TP-RD-B12-15(03.0-03.5)		820		1	X		HOLD	CF	
TP-RD-B12-15(05.0-05.5)		820		1	X		HOLD	CG	
TP-RD-B12-14(01.0-01.5)		840		1	X		MS/MSD	AC	
TP-RD-B12-14(03.0-03.5)		840		1	X		HOLD	CH	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

	Date	Time		Date	Time
Relinquished By:	12/11/17	1000	Received By: Kari-Ann Kellin	12/13/17	1315
Relinquished By:			Received By:		

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: FedEx
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

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2525 Advance Road
Madison, WI 53718
608-221-8700 (phone)
608-221-4889 (fax)

CHAIN OF CUSTODY

No. 08767 Page: 16 of: 17

Lab Work Order #: A175011

Project Number: 154000136 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Kane Engberg

Preservation Codes
Analyses Requested

Report To: Lora Sterner
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lorasterner@kennedyjenks.com
Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	BTEX via 8021	Comments	Lab ID	Lab Receipt Time
TP-RD-B12-14(05.0-05.5)	12/5	840	S	1	X	HOLD	CI	
TP-RD-B12-12(01.0-01.5)		900		1	X		AD	
TP-RD-B12-12(03.0-03.5)		900		1	X	HOLD	CJ	
TP-RD-B12-12(05.0-05.5)		900		1	X	HOLD	CK	
TP-RD-B12-10(01.0-01.5)		925		1	X		AE	
TP-RD-B12-10(03.0-03.5)		925		1	X	HOLD	CL	
TP-RD-B12-10(05.0-05.5)		925		1	X	HOLD	CM	
~~TP-RD-B12-11(01.0-01.5)~~		~~1000~~		1	X	~~(LES)~~	—	
~~TP-RD-B12-11(03.0-03.5)~~		~~1000~~		1	X	~~HOLD (LES)~~	—	
~~TP-RD-B12-11(05.0-05.5)~~	~~12/5~~	~~1000~~		1	X	~~HOLD (LES)~~	—	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)
Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/11/17	1000	Kari-Ann Killin	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact | Shipped Via: Fed Ex | Receipt Temp: 2.1°C | Thermometer #/ Exp. Date: 160142274 1/21/18 | Temp Blank: ☒ Y ☐ N

Rev. 12/15

Pace Analytical - ECCS Division
2525 Advance Road
Madison, WI 53718
608-221-8700 (phone)
608-221-4889 (fax)

CHAIN OF CUSTODY

No. 08769

Lab Work Order #: A175011

Report To: Lora Stemer
Company: Kennedy/Jenks Consultants
Address 1: 214 Carnegie Center Dr. Suite 103
Address 2: Princeton, NJ 08540
E-mail Address: lbrasterner@kennedyjenks.com

Project Number: 154000131*36 PO Number:
Project Name: Ashland Kenvil
Project Location (City, State): Kenvil, NJ
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): Katie Ringberg

Invoice To: SAA
Company: SAA
Address 1: SAA
Address 2: SAA

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A (EnCore)						Comments	Lab ID	Lab Receipt Time
BD112917A	11/29	—	S	1	X							AF	
BD112917B	11/29	—	|	1	X							AG	
BD113017A	11/30	—	|	1	X							AH	
BD113017B	11/30	—	|	1	X							AI	
BD120117A	12/1	—	|	1	X							AJ	
BD120117B	12/1	—	|	1	X							AK	
BD120417	12/4	—	|	1	X							AL	
BD120517	12/5	—	↓	1	X							AM	
												—	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

	Date	Time		Date	Time
Relinquished By:	12/1/17	1000	Received By: Kari-Ann Kelli	12/13/17	1315
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☒ Intact ☐ Not Intact
Shipped Via: FedEx
Receipt Temp: 2.1°C
Thermometer #/ Exp. Date: 160142274 1/21/18
Temp Blank: ☒ Y ☐ N

Rev. 12/15

Exhibit 4

NJDEP EDD Receipt (via e-mail)

From:	DEP SRPEDD
To:	Katie Engberg
Subject:	000741, LSR120001, E94632, HB242695, (Directory: TNTRD) - Passed
Date:	Friday, June 21, 2019 2:12:32 PM
Attachments:	DTST.TXT EDSA_Error_Log.html erdtst-7-1-8.txt erresult-7-1-8.txt ersample-7-1-8.txt HZRESULT.TXT HZSAMPLE.TXT rstp-7-1-8.txt SampleLoc-7-1-8.KML

***** EXTERNAL EMAIL*** This email includes an ATTACHMENT from outside of KJ and could contain malicious links. Ensure email is from a trusted sender before opening the attachment.**
Never enter your login credentials if prompted. Contact **IST** if you have any questions.

The EDD submission via email from (KatieEngberg@kennedyjenks.com) on (6/21/2019 10:44:11 AM) with the subjectline "[EXTERNAL] 14794, 000741"

The following identifiers were in the DTST file:

- Directory: TNTRD
- DESC: Ashland Kenvil TNT Refined Delineation
- SRPID: 000741
- Submit Date: 6/21/2019 0:00:00

This submission has been issued an SRP Catalog ID: HB242695

Submission status: Passed.

Please do **not** resubmit.

EDD data deliverable must be submitted only once.
- To fulfill Key Document requirements attach only a copy of this email as an appendix to the document.
- Do **not** resubmit any approved EDD deliverable as part of a portal submission.

Email ID: OEM_32967
Sub ID:SUB_342413

Exhibit 5

January 24, 2019 NJDEP Meeting Summary Memo and Approval

January 24, 2019

Mr. Kevin Schick
Chief - Bureau of Environmental Evaluation & Risk Assessment
New Jersey Deparment of Environmental Protection
Site Remediation & Waste Management Program
P.O. Box 420
Mail Code 401-05W
Trenton, NJ 08625

Subject: Alliant Tech Systems (PI#000741) – Technical Consultation Summary

Dear Mr. Schick:

Thank you for taking the time to meet with us to discuss the Alliant Tech Systems (a.k.a. Hercules Kenvil Works) facility in Kenvil, New Jersey. On December 5, 2018, representatives of the New Jersey Department of Environmental Protection (NJDEP) and Hercules LLC (Hercules) met to discuss the proposed remediation of 2,4,6-trinitrotoluene (TNT) at Hercules Kenvil Works Facility located in Kenvil, Morris County, New Jersey (Program Interest No. 000741) (the Facility). Attending the meeting were:

- Kevin Schick – NJDEP
- Swati Toppin – NJDEP
- Paul Sanders – NJDEP
- Ed Meeks – Hercules
- Mark Foley – WSP (Licensed Site Remediation Professional)
- John Lucey – O'Brien & Gere
- Scott Larew – Kennedy/Jenks Consultants

The Technical Consultation Attendance Sheet is included as Attachment 1.

The meeting objective was to build consensus on the technical scope, regulatory approach, and site-specific cleanup goals associated with the proposed TNT Area remedy. Hercules provided an overview of the proposed remedy for TNT in soil and groundwater that included a summary of academic research, treatability studies, and field pilot studies that yielded Facility-specific data relative to the biodegradation of TNT and its metabolites. This data provided the technical basis for the proposed remedies.

The proposed remedy includes:

- Ex-situ soil preparation (grain size reduction) and bioremediation to reduce TNT source mass and achieve TNT concentrations between the NJDEP's Residential and Non-Residential Direct Contact Soil Remediation Standard (21 to 95 milligrams per kilogram [mg/kg]) after a single treatment season.
- Bioremediation amendment will be mixed with the soil at the base of the excavation (in accordance with NJPDES permit conditions); then excavations will be backfilled with bioremediated material.

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3rd Floor
2000 Lenox Drive
Lawrenceville, NJ 08648

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wsp.com

- Pilot study data indicates that TNT continues to biodegrade in-situ following backfilling. TNT concentration reductions to at or below 1 mg/kg and less are anticipated.
- Long-term monitoring of TNT and its metabolites in soil to demonstrate bioremediation effectiveness
- Long-term monitoring of TNT and its metabolites in groundwater to demonstrate decreasing trends in concentration and plume extent

Hercules requested NJDEP's guidance on the establishment of a site-specific impact to groundwater soil remediation standard (SSIGWSRS) to guide remedial planning and remedial action work plan preparation. The discussion of the SSIGWSRS addressed two factors, the means of developing the value, and the utility of the value in the regulatory and remedial processes.

Method of SSIGWSRS Development

Hercules discussed the results of efforts to develop a SSIGWSRS for TNT using the standard NJDEP tools (i.e., synthetic precipitate leachate procedure (SPLP) spreadsheets, and SESOIL/AT123D modeling) and associated NJDEP guidance documents. NJDEP acknowledged the inherent variability associated with characterizing a solid (crystalline TNT) in a solid matrix (soil), and the influences of that variability on the SPLP method for developing a SSIGWSRS. Hercules indicated that they were unable to establish a predictable relationship between TNT concentrations in soil and associated SPLP leachate, and outlined steps taken in coordination with the analytical laboratory to reduce variability during the preparation and analysis.

NJDEP spoke to the SESOIL/AT123D model framework and the types of constituents the model is intended to assess. Specifically, NJDEP indicated that the model was developed to address highly mobile constituents (i.e., volatile organic compounds [VOCs]) that rapidly flush from soil and migrate through the vadose zone to groundwater. When discussing the potential use of the model to estimate TNT migration over time, NJDEP indicated that while TNT is soluble, its physiochemical properties cause it to move through the vadose zone and into groundwater at a rate well below that of VOCs and the range of rates contemplated during development of the model. NJDEP and Hercules agreed that the SESOIL/AT123D model is not the appropriate tool for developing a SSIGSWSRS for TNT.

Role of SSIGWSRS in Remedial Process

NJDEP understood Hercules' proactive effort to address the impact to groundwater pathway and remediation standard, and indicated that the involvement of their IGW technical staff may be premature given where the project is in the remedial process. NJDEP also noted the reduced reliance on a SSIGWSRS in instances where groundwater contamination already exists, such as this case. The parties agreed that the study results to date justify the proposed remedy, and are sufficient to support development of a remedial action work plan. Following active remediation of soil and monitoring of concentration trends in groundwater, Hercules will consult with NJDEP regarding development of a post-remediation site-specific impact to groundwater standard in the future.

As discussed, Hercules is working with Mark Romanell to resolve comments on the May 2016 Remedial Investigation Report – Groundwater, and move the CEA through the approval process. Hercules will provide milestone updates to the meeting attendees as the remedial action planning and implementation process proceeds.

Sincerely,

Mark Foley
Practice Leader

Technical Consultation
Attendance Sheet

Site Name: Hercules Kenvil	PI# 00741	Date: December 5, 2018
Meeting Location: NJDEP – 401 E. State Street, Trenton		
LSRP Name/#: Mark Foley		

Attendees

NAME	AFFILIATION	TELEPHONE	EMAIL
Kevin Schick	NJDEP/SRWMP/BEERA	(609) 984-1825	Kevin.schick@dep.nj.gov
Paul Sanders	NJDEP/SRWMP/BEERA	(609) 292-9998	Paul.sanders@dep.nj.gov
Swati Toppin	NJDEP/SRWMP/BEERA	(609) 777-1950	Swati.toppin@dep.nj.gov
John Lucey	OBG	302-562-2505	john.lucey@OBG.com
Ed Meeks	Ashland	302-995-3433	ed.meeks@ashland.com
Scott Larew	Kennedy/Jenks	609.661.3920	scott.larew@kennedyjenks.com
MARK FOLEY	WSP/LSR	609-512-3676	MARK.FOLEY@WSP.COM

From:	Foley, Mark
To:	Edward Meeks; John Lucey; Scott Larew
Subject:	FW: PI #000741 - Hercules Kenvil (Alliant Tech Systems) - TNT Technical Consultation Summary Memorandum
Date:	Friday, January 25, 2019 6:12:06 PM
Attachments:	image002.png image001.png 000741_Hercules-Kenvil_NJDEP Tech Consultation_Summary Memo_FINAL_01.24.2019.pdf

Ed, John, and Scott,

Please see note below from NJDEP regarding our technical consult meeting.

Ed, you will want to keep a record of this in your files along with the memo (attached).

Thanks
Mark

Mark Foley
Practice Leader
Water & Environment

Phone: +1 609 512 3676
Cell: +1 609 306 9687
Email: Mark.Foley@wsp.com

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2000 Lenox Drive, 3rd Floor
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WSP | Parsons Brinckerhoff is now WSP.

From: Schick, Kevin <Kevin.Schick@dep.nj.gov>
Sent: Friday, January 25, 2019 6:08 PM
To: Foley, Mark <Mark.Foley@wsp.com>
Cc: Toppin, Swati <Swati.Toppin@dep.nj.gov>; Sanders, Paul <Paul.Sanders@dep.nj.gov>
Subject: RE: PI #000741 - Hercules Kenvil (Alliant Tech Systems) - TNT Technical Consultation Summary Memorandum

Hello Mark,

The Hercules Kenvil (Alliant Tech. Systems) TNT Technical Consultation summary has been reviewed by the NJDEP attendees and has been found to be acceptable without any modification. The summary has been inserted into NJEMS for future reference.
Thank you.

Kevin Schick
NJDEP/Site Remediation & Waste Management Program
Chief - Bureau of Environmental Evaluation & Risk Assessment
P.O. Box 420
Mailcode 401-05W
Trenton, N.J. 08625
(609) 984 – 1825 (Direct Line)
kevin.schick@dep.nj.gov

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Appendix C

TNT Project Area Soil Secondary Constituents of Concern

Kennedy Jenks

214 Carnegie Center – Suite 103
Princeton, New Jersey 08540
609-285-2620

TNT Project Area Soil Secondary Constituents of Concern

August 2020

Prepared for

HERCULES

Ashland Hercules Research Center
500 Hercules Road
Wilmington, Delaware

K/J Project No. 1540001*57

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Section 1: Introduction

On behalf of Hercules LLC (Hercules), Kennedy Jenks Consultants Inc. (KJ) prepared this *TNT Project Area Soil Secondary Constituents of Concern Technical Memorandum* (Secondary COC Memo) presenting an evaluation of the TNT Project Area dataset for constituents that merit consideration as constituents of concern (COCs) in remedial planning beyond the target constituents[1]. This Secondary COC Memo supports the *TNT Project Area Soil Remedial Action Work Plan* (TNT RAWP) and focuses on the TNT Project Area of the Hercules Kenvil Works Facility, located in Kenvil, Morris County, New Jersey (the Facility; **Figure 1**).

1.1 Purpose and Objectives

The purpose of this memorandum is to identify constituents, beyond the target constituents, that will be retained as COCs for further evaluation following implementation of the remedy proposed in the TNT RAWP to address target constituents. This Secondary COC Memo evaluated the TNT Project Area dataset using methods established by NJDEP in the *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (Attainment Guidance) (New Jersey Department of Environmental Protection [NJDEP] 2012) and the *Guidance for the Evaluation of Immobile Chemicals for the Impact to Groundwater Pathway* (IC Guidance) (NJDEP 2008) to reduce the list of secondary COCs within the TNT Project Area. Additionally, this memorandum calculates the extent of each secondary COC within the TNT Project Area, and identifies COCs within and outside of the anticipated excavation areas identified in the TNT RAWP. This information will be used to support remedial planning during the implementation of the TNT RAWP. The remainder of this memorandum details the compliance evaluation process and results. A discussion of compliance evaluation results is also presented in **Section 3** of the TNT RAWP.

[1] As defined in the TNT RAWP, target constituents include: 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotuoluene (2,4-DNT), 2,6-dinitrotoluene (2,6-DNT), 2-amino-4,6-dinitrotoluene (2-ADNT), and 4-amino-2,6-dinitrotoluene (4-ADNT).

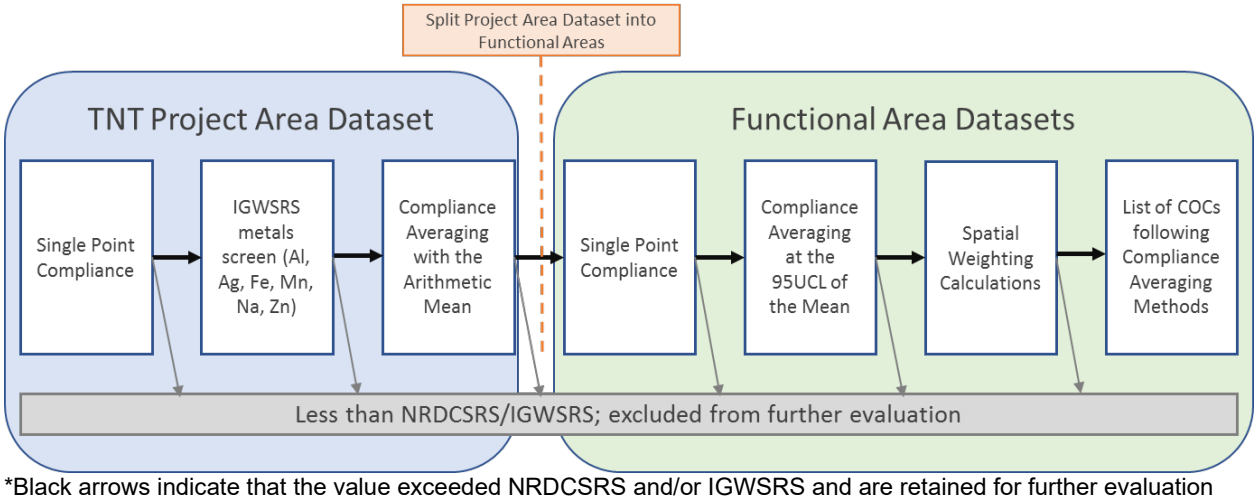
Section 2: Compliance Evaluation Methods

This compliance evaluation relies on the methods established in the NJDEP's *Remediation Standards* (New Jersey Administrative Code [N.J.A.C.] 7:26D) and Attainment Guidance encourages the use of, and provides multiple methods for, compliance averaging to demonstrate attainment of remediation standards and identify constituents requiring remediation.

The compliance evaluation to identify secondary COCs within the TNT project area followed the direct contact (NRDCSRS) and impact to groundwater (IGWSRS) pathways, as required by the Attainment Guidance. The direct contact pathway was evaluated using NRDCSRS based on the anticipated future use of the Facility as a commercial/industrial site, as dictated by a restrictive covenant (i.e., deed notice) that will be established by Hercules as part of Facility remediation.

The flow chart presented below visually represents the step-wise compliance averaging process outlined in **Sections 2.1** and **2.2**. Constituents that exceeded NRDCSRS and/or IGWSRS at a particular step were carried through to the next step in the sequence. Constituents that were less than NRDCSRS and/or IGWSRS at any stage of the process were then excluded from further evaluation. The compliance averaging process began with an evaluation of the full TNT Project Area dataset. Following the compliance evaluations required for the full dataset (**Section 2.1**), the dataset was separated by functional areas (**Section 2.2.1**) for the direct contact and impact to groundwater pathways, as required by the Attainment Guidance. These smaller datasets were then evaluated using the sequential steps illustrated below (i.e., single point compliance, compliance averaging at the 95th upper confidence level of the mean [95UCL], and spatial weighting). The process visualized in the flow chart below represents both the direct contact and impact to groundwater pathways. Any constituents remaining following this compliance evaluation were identified as COCs within their respective functional areas.

Figure A – Compliance Averaging Sequence



*Black arrows indicate that the value exceeded NRDCSRS and/or IGWSRS and are retained for further evaluation

Following the completion of the compliance averaging process, the COCs identified in the impact to groundwater pathway were evaluated using the IC Guidance. This guidance provides procedures that can be used to evaluate potential impacts to groundwater from immobile

constituents. The immobile constituent evaluation (**Section 2.3**) reviews the TNT Project Area soil data for any immobile constituents within the list of COCs identified by the impact to groundwater pathway of the compliance averaging process. Any sample locations with vertical delineation greater than 2 feet from groundwater was excluded from further evaluation.

Tables and figures to support this narrative are referenced accordingly.

2.1 TNT Project Area Dataset Evaluation

Compliance evaluation methods used to evaluate the TNT Project Area dataset are detailed in the following sections. The sections are presented in the step-wise order in which the methods were applied (**Figure A**).

2.1.1 Single Point Compliance

Single point compliance compares the maximum detected concentration for each constituent in the TNT Project Area soil dataset (n= ~400) (**Exhibit 1**) to their respective NJDEP non-residential direct contact soil remediation standard (NRDCSRS) and impact to groundwater soil remediation standard (IGWSRS). Screening results were evaluated as follows.

Direct Contact:

- Constituents with a maximum concentration less than or equal to their NRDCSRS demonstrate attainment of NRDCSRS and do not require further evaluation
- Constituents with a maximum concentration greater than their NRDCSRS require further compliance evaluation

Impact to Groundwater:

- Constituents with a maximum concentration less than or equal to their IGWSRS demonstrate attainment of IGWSRS and do not require further evaluation
- Constituents with a maximum concentration greater than their IGWSRS require further compliance evaluation

Exhibit 1 presents the TNT Project Area dataset screened against NRDCSRS and IGWSRS. **Table 1** presents constituents with maximum detected concentrations exceeding IGWSRS and/or NRDCSRS within the TNT Project Area.

2.1.2 Metals Remediation Standards Evaluation

NJDEP's Ground Water Quality Standards (GWQS) for aluminum, manganese, silver, and zinc are secondary standards based on aesthetic considerations (e.g., odor, taste, appearance), not human health toxicological endpoints. GWQS are used to back-calculate IGWSRS, and per NJDEP Impact to Groundwater Guidance (NJDEP 2014), IGWSRS must be based on health considerations (i.e., human toxicological endpoints). As such, the compliance evaluation for the impact to groundwater pathway excludes aluminum, manganese, silver, and zinc.

Table 1 notes the elimination of these constituents from the impact to groundwater pathway compliance evaluation.

2.1.3 Compliance Averaging Using the Arithmetic Mean

Consistent with the Attainment Guidance, compliance averaging using the arithmetic mean was used in situations where the dataset contained two or fewer distinct sample values or 9 or fewer total sample points for a constituent within the TNT Project Area.

Where a constituent's arithmetic mean exceeded the comparison criterion (i.e., NRDCSRS or IGWSRS), the constituent was retained for further evaluation using functional areas (Section 2.2).

An arithmetic mean less than or equal to the comparison criterion demonstrate attainment of the applicable remediation standard (i.e., NRDCSRS or IGWSRS), and that constituent does not require further evaluation.

Table 1 identifies constituents evaluated via this method and the associated screening results.

2.2 Functional Area Dataset Evaluation

Following the TNT Project Area dataset evaluation, the dataset was segregated by functional areas to calculate a compliance average that is protective of human health across an exposure area of a prescribed size. Each functional area dataset was evaluated using the methods illustrated in Figure A (i.e., single point compliance, 95UCL of the mean, and spatial weighting). The evaluation focused on the constituents retained following the TNT Project Area-wide screening evaluation (Section 2.1).

The following sections detail these methods.

2.2.1 Functional Areas

Consistent with the Attainment Guidance, functional areas were established within the TNT Project area to evaluate direct contact compliance with NRDCSRS (29 functional areas; **Figure 2**) and compliance with IGWSRS (23 functional areas; **Figure 3**). The datasets for each direct contact functional area were separated into two depth strata (Shallow: 0 to 2 feet below ground surface [ft bgs]; and Deep: greater than 2 ft bgs). The segregation of the data between depth strata within the IGWSRS functional areas required consideration of TNT Project Area topography (**Figure 3**). To account for topographic changes across functional areas, ground surface and groundwater table elevations were assigned to each sample location based on the nearest topographic (**Figure 3**) and potentiometric surface (**Figure 4**) contour lines. The use of groundwater table elevation data from the January 2019 event (**Figure 4**) provides a conservative assessment based on seasonal groundwater table elevation fluctuations and higher than normal precipitation amounts and corresponding groundwater elevations throughout 2018. Sample depth intervals were converted to elevations based on the estimated ground surface elevation for the sample location, and sample data were assigned a depth stratum (i.e., Shallow: more than 2 feet above the groundwater table; Deep: samples within 2 feet of the groundwater table) accordingly based on the location-specific estimated groundwater table elevation. In some areas, vertical delineation was achieved well above the groundwater table, and no samples were collected in

the deep stratum. Additionally, in some areas the groundwater table was within two feet of the ground surface, and no shallow stratum existed.

2.2.2 Functional Area Single Point Compliance

Maximum detected constituent concentrations from each functional area/stratum dataset were compared to their respective SRS for direct contact (i.e., NRDCSRS) or impact to groundwater (i.e., IGWSRS) pathway.

Where a constituent's maximum detected concentration exceeded the comparison criterion (i.e., NRDCSRS or IGWSRS), the constituent was retained for further evaluation of that functional area/stratum (Section 2.2.3).

A maximum detected concentration less than or equal to the comparison criterion demonstrate attainment of the applicable remediation standard (i.e., NRDCSRS or IGWSRS), and that constituent requires no further evaluation.

Tables 2 and **3** present functional area data screening tables for the direct contact and impact to groundwater pathways, respectively; corresponding datasets are presented in **Exhibits 2** and **3**.

2.2.3 Compliance Averaging at the 95 Percent Upper Confidence Limit of the Mean

In accordance with the Attainment Guidance, compliance averaging at the 95UCL was conducted for those constituents retained during the functional area dataset screen (**Section 2.2.2**).

Given the number of constituents and functional areas being considered, the evaluation included an additional screening step using the arithmetic mean. A comparison of the arithmetic mean of the functional area dataset to NRDCSRS and IGWSRS was used to identify those constituents whose 95UCL would exceed the screening criterion (95UCL of the mean is always greater than the arithmetic mean or average), no constituents were ruled out based on this screening. Where the arithmetic mean equaled or exceeded an SRS, it was inferred that the 95UCL value would also exceed SRS, and the constituent proceeded directly to evaluation by spatial weighting (**Section 2.2.4**). If the arithmetic mean was less than SRS, the constituent proceeded to 95UCL calculation. While not called for in the Attainment Guidance, this conservative evaluation streamlined the 95UCL calculation and screening process.

The arithmetic mean screening step managed functional area datasets as follows:

- Constituents with fewer than 10 samples within a functional area were retained for spatial weighting (**Section 2.2.4**), as the Attainment Guidance requires a minimum of 10 samples (including detects and non-detects) for the use of 95UCL.

- The arithmetic mean was calculated for constituents with 10 or more samples.

    - Detected values were used to calculate the arithmetic mean when 10 or more detect values exist.

- The entire dataset was used to calculate the arithmetic mean when fewer than 10 detected values exist, with half of the detection limit representing non-detect (ND) values.

Following identification of constituents requiring evaluation via 95UCL compliance averaging, 95UCL calculations were performed using the ProUCL software application (Version 5.1.002).

The 95UCL compliance averaging step managed functional area datasets as follows:

- Detected values were used to calculate the 95UCL when 10 or more detect values exist.
- The entire dataset was used to calculate the 95UCL when fewer than 10 detected values exist, with half of the detection limit representing ND values.

Constituents with 95UCLs less than or equal to SRS attained compliance and no further evaluation was required. Constituents with 95UCLs exceeding SRS were retained for evaluation by spatial weighting (**Section 2.2.4**).

Tables 2 and **3** summarize the results of the arithmetic mean screen and 95UCL compliance averaging for the direct contact and impact to groundwater pathways, respectively. **Exhibits 4** and **5** present the associated ProUCL output files.

2.2.4 Spatial Weighting Using Thiessen Polygons

In accordance with the Attainment Guidance, spatially-weighted averaging (area-weighted mean) can be used for direct contact and impact to groundwater exposure pathways to identify constituents requiring remediation. Functional areas used in this evaluation were the same as those defined in **Section 2.3**. This process weights the sample results according to the portion of the functional area they represent using Thiessen polygons[2].

Spatial-weighting calculations were performed using GIS software. For each functional area, GIS created Thiessen polygons around each sample. The reporting limit was used for non-detect values. Constituent concentrations were weighted proportional to the fraction of the overall area their polygon represents, and the fractional contributions added to generate a value representative of the entire functional area.

Area-weighted mean constituent concentrations less than or equal to SRS attained compliance and no further evaluation was required. Constituents with area-weighted mean values exceeding SRS were identified as COCs requiring remediation.

Tables 2 and **3** summarize spatial-weighting compliance averaging results. **Exhibits 6** and **7** present direct contact pathway data tables and COC-specific figures illustrating Thiessen polygon boundaries and areas, respectively. **Exhibits 8** and **9** present impact to groundwater pathway data tables and COC-specific figures illustrating Thiessen polygon boundaries and areas, respectively.

[2] Thiessen polygons are polygons whose boundaries define the area that is closest to each point relative to all other points; mathematically defined by the perpendicular bisectors of the lines between all points.

2.3 Immobile Constituents Evaluation

The COCs retained following spatial weighting evaluation (**Section 2.2.4**) for the impact to groundwater pathway were evaluated using the IC Guidance to evaluate their proximity to the groundwater table. Immobile constituents have a low transport potential due to high soil adsorption coefficients, and do not pose a threat to groundwater if 2-foot zone of clean soil exists between the constituent and groundwater. The NJDEP identifies a list of 31 chemicals as immobile constituents, that are likely to be strongly adsorbed to soil and are, under certain conditions, not likely to impact groundwater (NJDEP 2008).

The immobile constituent evaluation focused only on the shallow functional area results, as samples in the deep stratum are within 2 feet of groundwater. Lead represents the only immobile constituent identified in the shallow stratum in at least one functional area. **Section 3.3** summarizes the results of the evaluation of lead as an immobile constituent in select functional areas.

Section 3: Results

3.1 Direct Contact Compliance Averaging

The results of direct contact compliance evaluation identified 3 COCs exceeded NRDCSRS in the shallow (0 to 2 ft bgs) depth interval in 9 functional areas. **Table 2** presents the results of each stage of the compliance averaging process; these results are summarized below.

Functional Area	Lead	Arsenic	Nitroglycerin
1 - Shallow	x		
3 - Shallow	x		
5 - Shallow	x	x	
8 - Shallow	x	x	
9 - Shallow	x	x	
10 - Shallow	x		
19 - Shallow	x	x	
21 - Shallow	x		
27 - Shallow			x

x – indicates that the COC exceeds NRDCSRS within the functional area

3.2 Impact to Groundwater Compliance Averaging

The results of impact to groundwater compliance averaging identified 8 COCs within 10 shallow and 8 deep functional areas that exceeded IGWSRS. **Table 3** presents the results of each stage of the compliance averaging process; these results are summarized below.

Functional Areas	1,3-Dinitrobenzene	Nitrobenzene	Arsenic	Copper	Lead	Mercury	Nickel
5 - Shallow	x	x			x		
6 - Shallow					x		
7 - Shallow	x	x	x		x		
8 - Shallow	x		x		x	x	
9 - Deep			x		x	x	
10 - Shallow	x				x		
10 - Deep					x		
11 - Deep		x	x		x	x	
12 - Shallow					x		
13 - Shallow					x		
13 - Deep					x		
15 - Shallow					x		
15 - Deep					x		
16 - Shallow					x	x	
16 - Deep				x	x		x
17 - Deep						x	
18 - Deep	x						
19 - Shallow	x						

x – indicates that the COC exceeds IGWSRS within the Functional Area

3.3 Immobile Constituents Evaluation Results

The spatial weighting evaluation identified soil samples that drive the spatially-weighted exceedance (also discussed in **Section 4**). For shallow lead, 33 samples were identified as drivers of the spatially-weighted exceedance in 9 of the impact to groundwater functional areas. To evaluate lead as an immobile constituent within the TNT Project Area, the soil data for the 33 identified sample locations at all available depths was compiled and compared to its relative depth to groundwater (**Table 4**). Any sample location with vertical delineation greater than 2 feet from groundwater was excluded from further evaluation.

The results of the immobile constituent evaluation identified lead in soil at 8 sample locations vertically delineated at a depth greater than 2 feet from groundwater.

- TP-R-C10-439-1
- TP-R-C10-439-3
- TP-R-B10-2/B10-509-2
- TP-R-B10-2/B10-509-6
- TP-R-B10-508-4
- SB-R-B11-02
- TP-R-A11-504-1
- TP-R-A11-5-1

Table 4 presents the lead immobile constituent evaluation. **Figure 5** illustrates the eight sample locations listed above. Further discussion of these samples and their distribution relative to the TNT remedy is presented in **Section 4**.

Section 4: Influences of/on Remedy Implementation

The TNT Project Area remedy focuses on target constituents. The influence of the bioremediation remedy on these comingled secondary COCs requires an understanding of which comingled secondary COCs occur within areas of anticipated excavation presented in **Appendix H** of the TNT RAWP, as well as the influence of individual sample locations on spatially-weighted functional area concentrations. This information also informs decision making regarding the need for, and scope of, supplemental sampling activities.

A desktop evaluation identified samples driving the spatially weighted average concentrations exceeding SRS, and their locations relative to areas of anticipated excavation.

This assessment relied on an iterative process whereby the highest spatially-weighted concentration is replaced with zero and the influence of that change is evaluated by recalculating the spatially-weighted average for the functional area. This process was repeated until the spatially-weighted average concentration was less than the SRS for the subject pathway. Sample replaced in order to achieve SRS represent drivers of exceedance (or exceeding sample) for that functional area.

Constituent-specific figures illustrate the exceeding samples within each functional area and their location respective to anticipated excavation areas. **Figures 6** through **8** present constituent-specific figures for the direct contact compliance averaging evaluation. **Figures 9** through **20** present constituent- and depth-specific figures for the impact to groundwater compliance averaging evaluation.

Figure 9 presents exceeding samples for lead in the shallow strata across functional areas. The immobile constituent evaluation was not applied to sample locations that occur within anticipated excavation areas, as remedy implementation (i.e., excavation, treatment, and backfilling) will alter the depth and composition of the material at the existing sample location. Lead was identified as an immobile constituent at 2 locations (TP-R-C10-439-1 and TP-R-C10-439-3) occurring outside of excavation areas. As such, lead is no longer considered a COC at these locations.

Tables 5 and **6** present a summary of the excavation areas affected and the exceeding sample ID(s) for the direct contact and impact to groundwater evaluations, respectively. The following table summarizes results of this evaluation.

Secondary COC	Depth	Exceeding Sample in Excavation Area?	
		Direct Contact	*Impact to Groundwater*
Lead	Shallow	Y	Y
	Deep	--	Y
Arsenic	Shallow	Y	Y
	Deep	--	N
Mercury	Shallow	--	N
	Deep	--	N
Copper	Deep	--	N
Nickel	Deep	--	N
1,3-Dinitrobenzene	Shallow	--	Y
	Deep	--	Y
Nitrobenzene	Shallow	--	Y
	Deep	--	N
Nitroglycerin	Shallow	Y	--

'Y' = yes, 'N' = no, '--' = not applicable

Exceeding samples occur both within and beyond anticipated excavation areas (**Figures 6** through **20**). A discussion of these results and associated conclusions are presented in the following section.

Section 5: Discussion and Conclusions

This Secondary COC Memo identifies secondary COCs and defines their distribution within the TNT Project Area. Secondary COCs include:

COC	Direct Contact		Impact to Groundwater	
	Shallow	***Deep***	***Shallow***	***Deep***
1,3-Dinitrobenzene	X*		X*	X*
Nitrobenzene	X*		X*	X
Nitroglycerin				
Arsenic			X*	X
Copper				X
Lead	X*		X*	X*
Mercury			X	X
Nickel				X

* indicates that at least one exceeding sample coincides with an excavation area

The influences of remedy implementation on secondary COCs are expected to include:

- Bioremediation of energetic and explosive secondary COCs occurring in excavation areas
- Re-distribution of certain secondary COCs occurring in excavation areas
- No disturbance to secondary COCs at certain locations within the TNT Project Area

Acknowledging these influences, remedial strategies for secondary COCs within the TNT Project Area will be re-evaluated following remedy implementation.

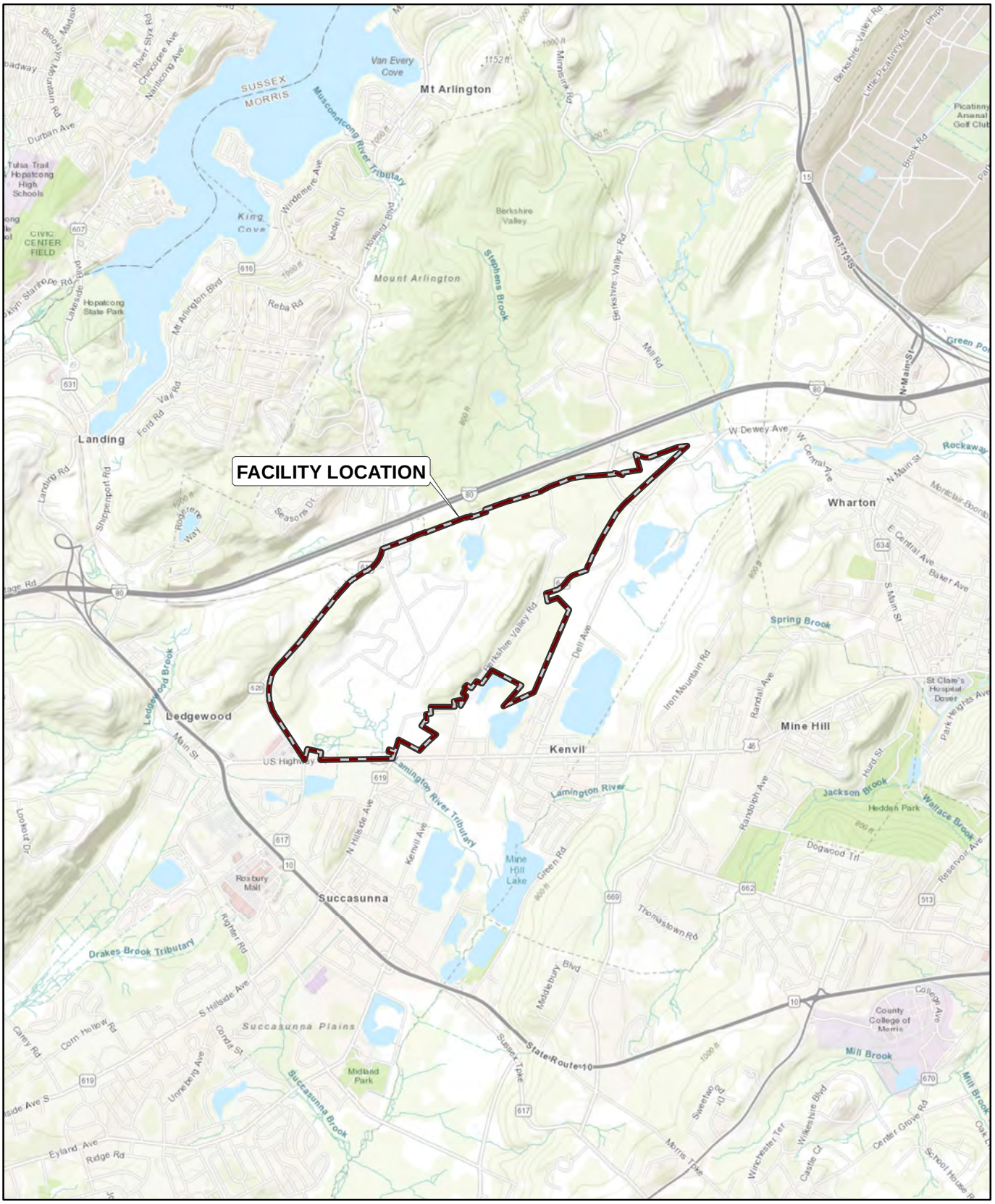
References

Hercules. 2016. Phase II Remedial Investigation Report. May 2016, Volumes I through VI.

NJDEP. 2012. Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria. New Jersey Department of Environmental Protection, Trenton, New Jersey. September.

NJDEP. 2014. Frequently Asked Questions for the Impact to Groundwater Pathway in Soil Remediation Standards. New Jersey Department of Environmental Protection, Trenton, New Jersey. March.

Figures



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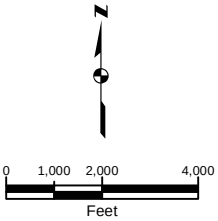
New Jersey



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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

FACILITY LOCATION MAP

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Kennedy Jenks

FIGURE
1

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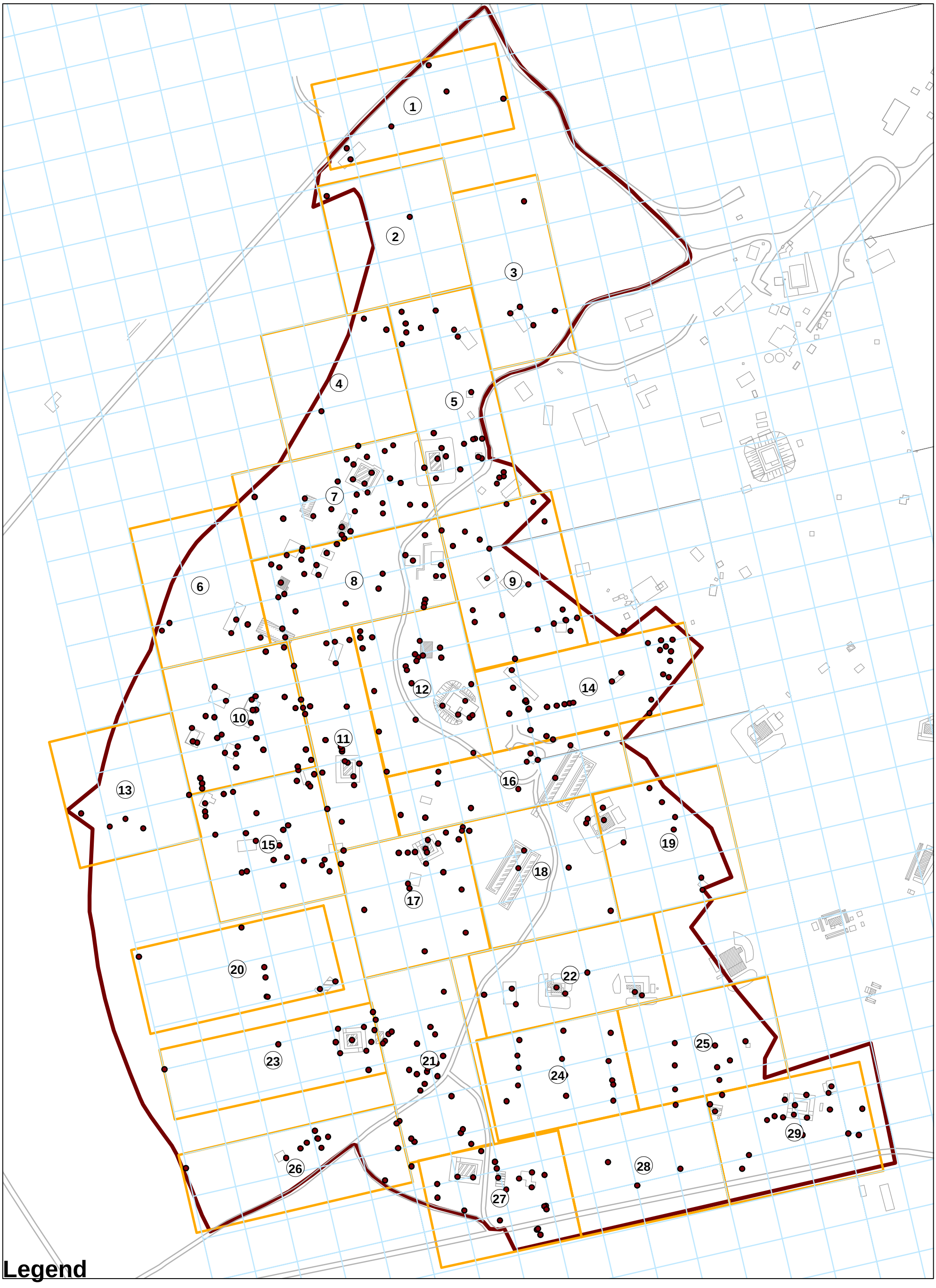

Legend

- TNT Project Area Dataset Soil Locations
- Direct Contact Functional Areas
- Project Area Boundary

Note:
The Project Area Boundary differs slightly in the southeast corner from the TNT Project Area Boundary. This is due to an absence of data within that area.

N

0 50 100
Scale: Feet

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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Direct Contact Compliance Averaging Functional Areas

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FIGURE
2

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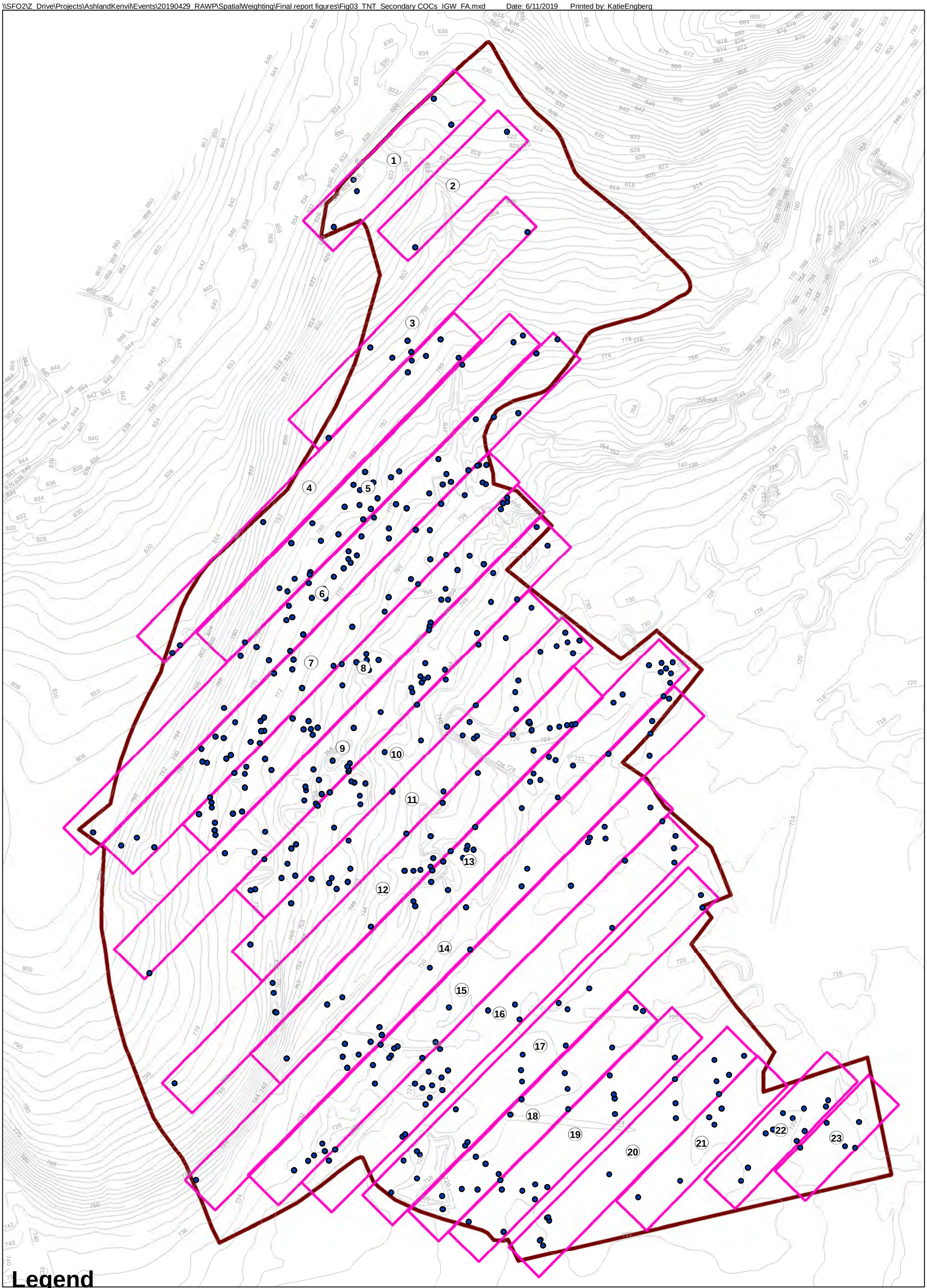

Legend

- TNT Project Area Dataset Soil Sample Location
- Topography
- Impact to Groundwater Functional Areas
- Project Area Boundary

N

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Scale: Feet

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Impact to Groundwater Compliance Averaging Functional Areas

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FIGURE
3

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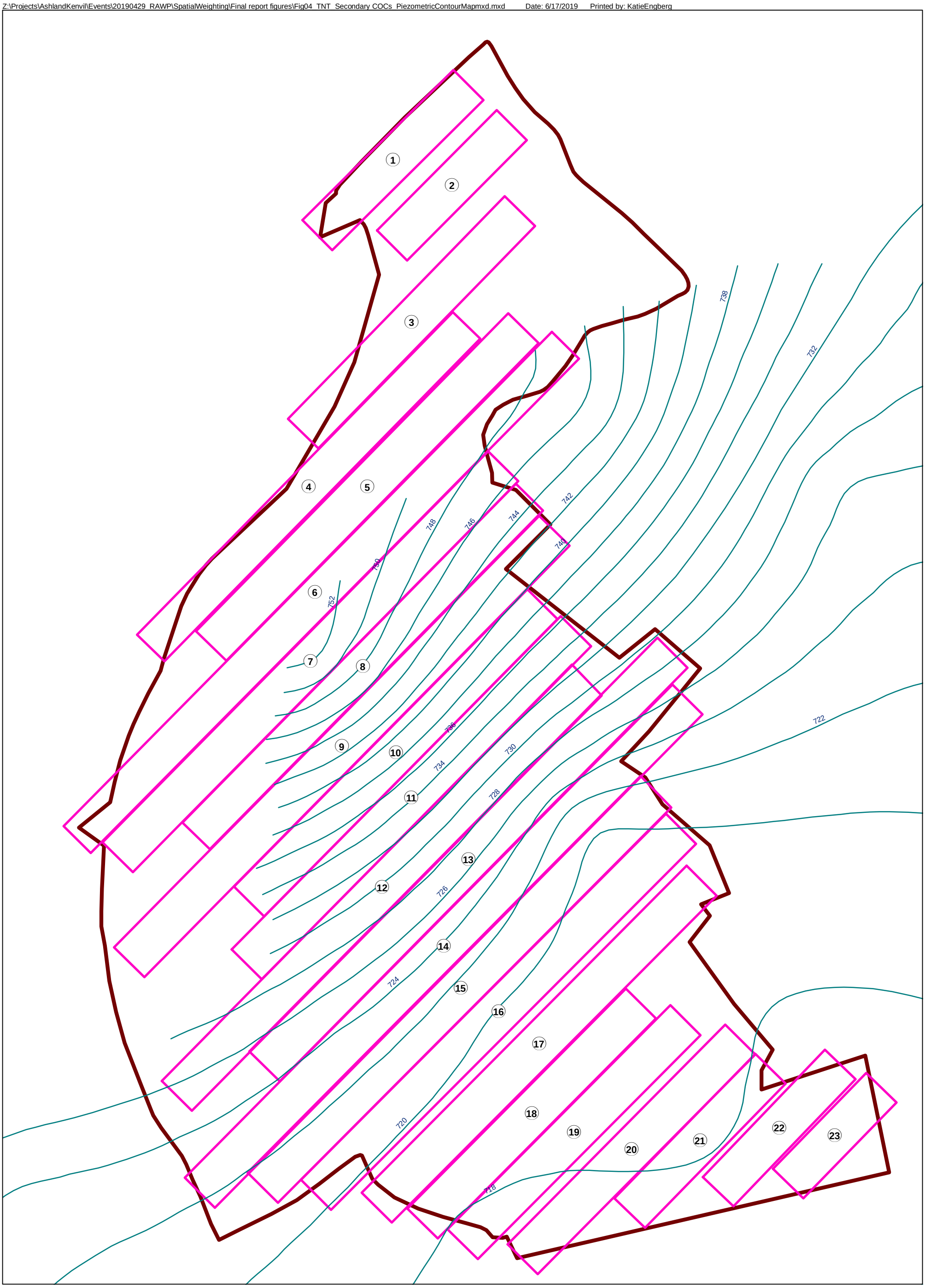

Legend

- Groundwater Elevation Contours
- Impact to Groundwater Functional Areas
- Project Area Boundary

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Scale: Feet

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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Potentiometric Surface Contour Map

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FIGURE
4

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TP-R-C10-439-1
TP-R-C10-439-3
C10-440-02
C10-12-03
C10-466-02
SD-C10-1-01
B10-3-01
B10-20-01
TP-R-B10-2/B10-509-2
TP-R-B10-508-4
C10-2176-02
TP-R-B10-2/B10-509-6
B10-7-02
B10-7-10
B10-503-06
TP-R-B10-501-1
B10-511-03
SB-R-B11-02
B10-2178-03
A11-570-05
TP-R-A11-504-1
B11-602C-08
A11-1-04
A11-1-01
TP-R-A11-7-1
TP-R-A11-4-2
TP-R-A11-5-1
A11-9-03
A12-8-05
B12-237-01
B12-450-03
SD-B13-3-01
A13-1-01

Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standards (IGWSRS)
- Excluded through Immobile Constituent Evaluation
- IGW Functional Areas
- Project Area Boundary

N

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Scale: Feet

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Immobile Constituent Evaluation - Lead

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FIGURE
5

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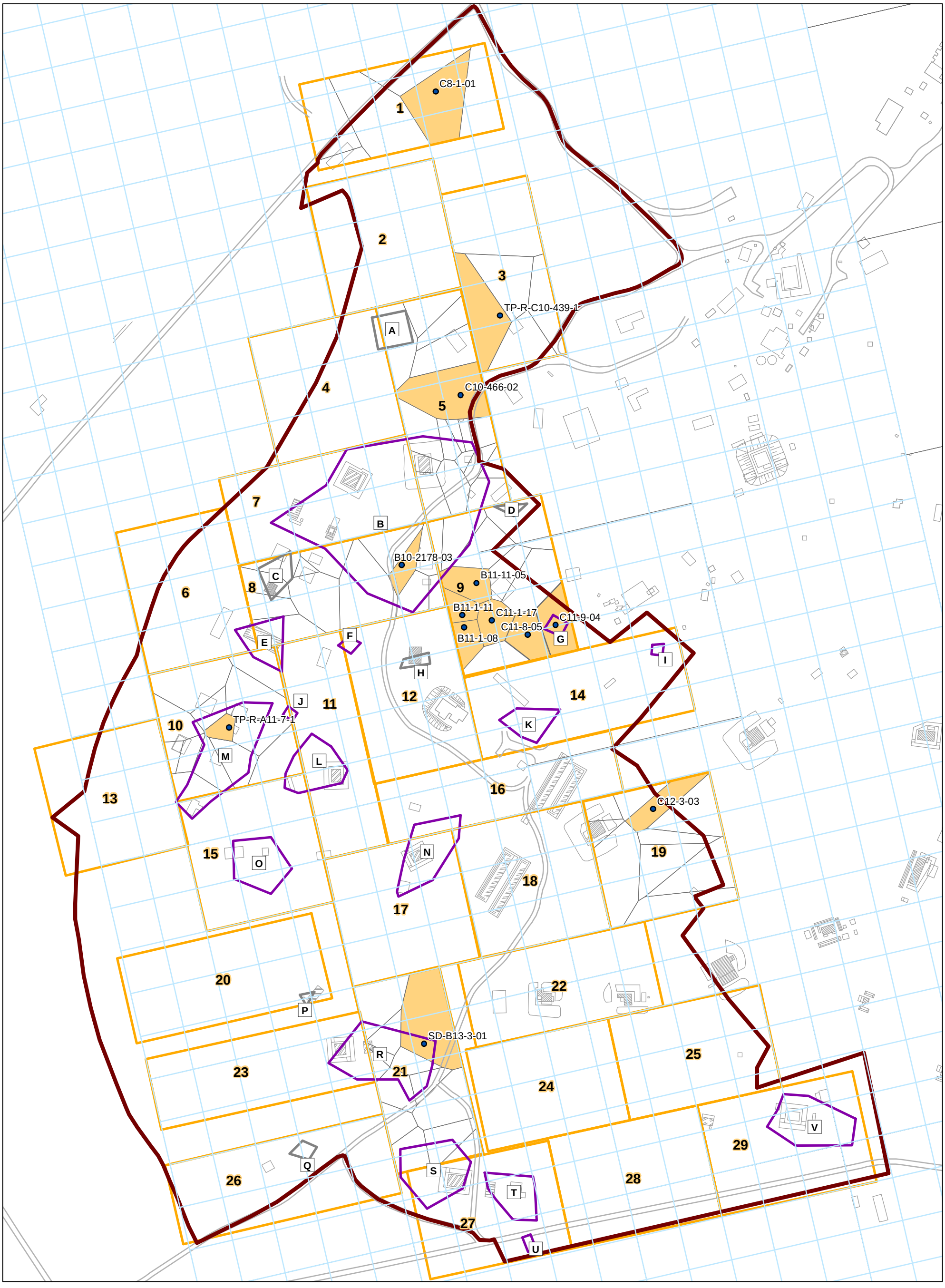

Legend

- Soil Sample Location
- Project Area Boundary
- Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- Direct Contact Functional Areas

N

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Scale: Feet

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Direct Contact Compliance Averaging Results - Lead (Shallow)

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FIGURE

6

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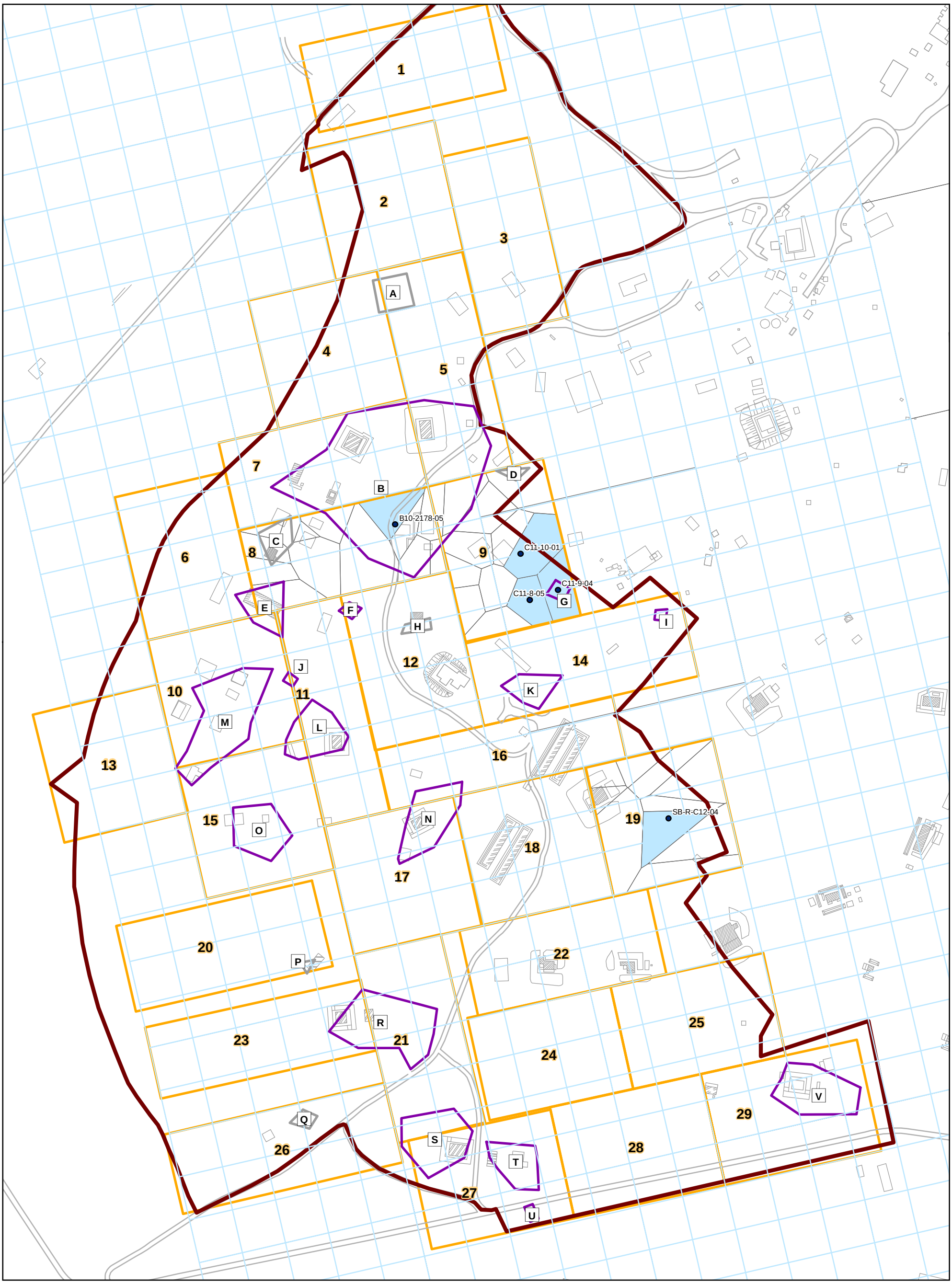

Legend

- Soil Sample Location
- Exceeds Non Residential Direct Contact Soil Remediation Standard (NRDCSRS)
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- Project Area Boundary
- Direct Contact Functional Areas

N

100 50 0 100 200 300 Feet

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Direct Contact Compliance Averaging Results - Arsenic (Shallow)

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FIGURE

7

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Legend

- Soil Sample Location
- Exceeds Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS)
- Project Area Boundary
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- Direct Contact Functional Areas

N

0 50 100

Scale: Feet

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Direct Contact Compliance Averaging Results - Nitroglycerin (Shallow)

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FIGURE

8

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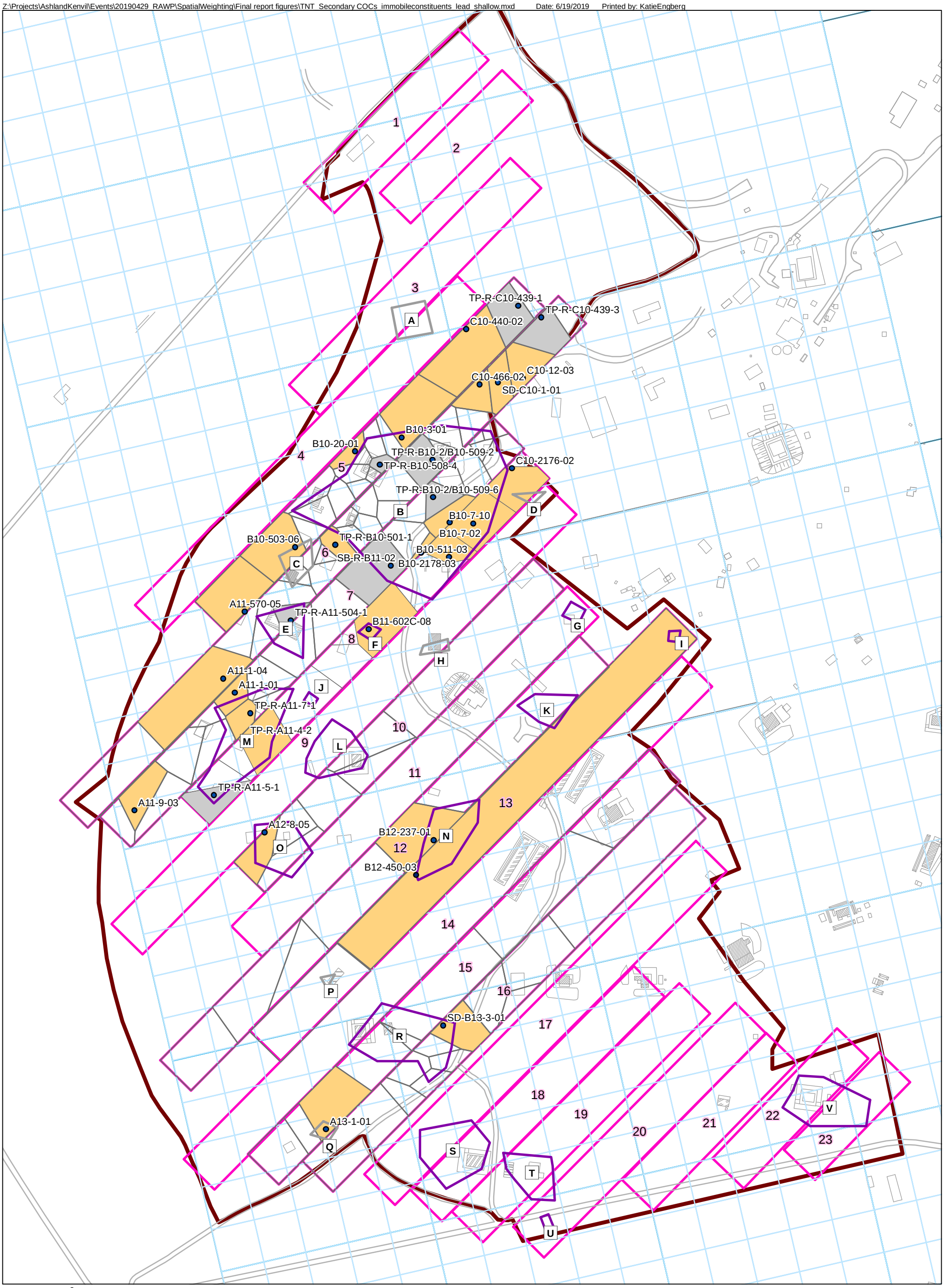

Legend

- Soil Sample Location
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- Exceeds Default Impact to Groundwater Soil Remediation Standards (IGWSRS)
- Excluded through Immobile Constituent Evaluation
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

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Impact to Groundwater Compliance Averaging Results - Lead (Shallow)

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FIGURE

9

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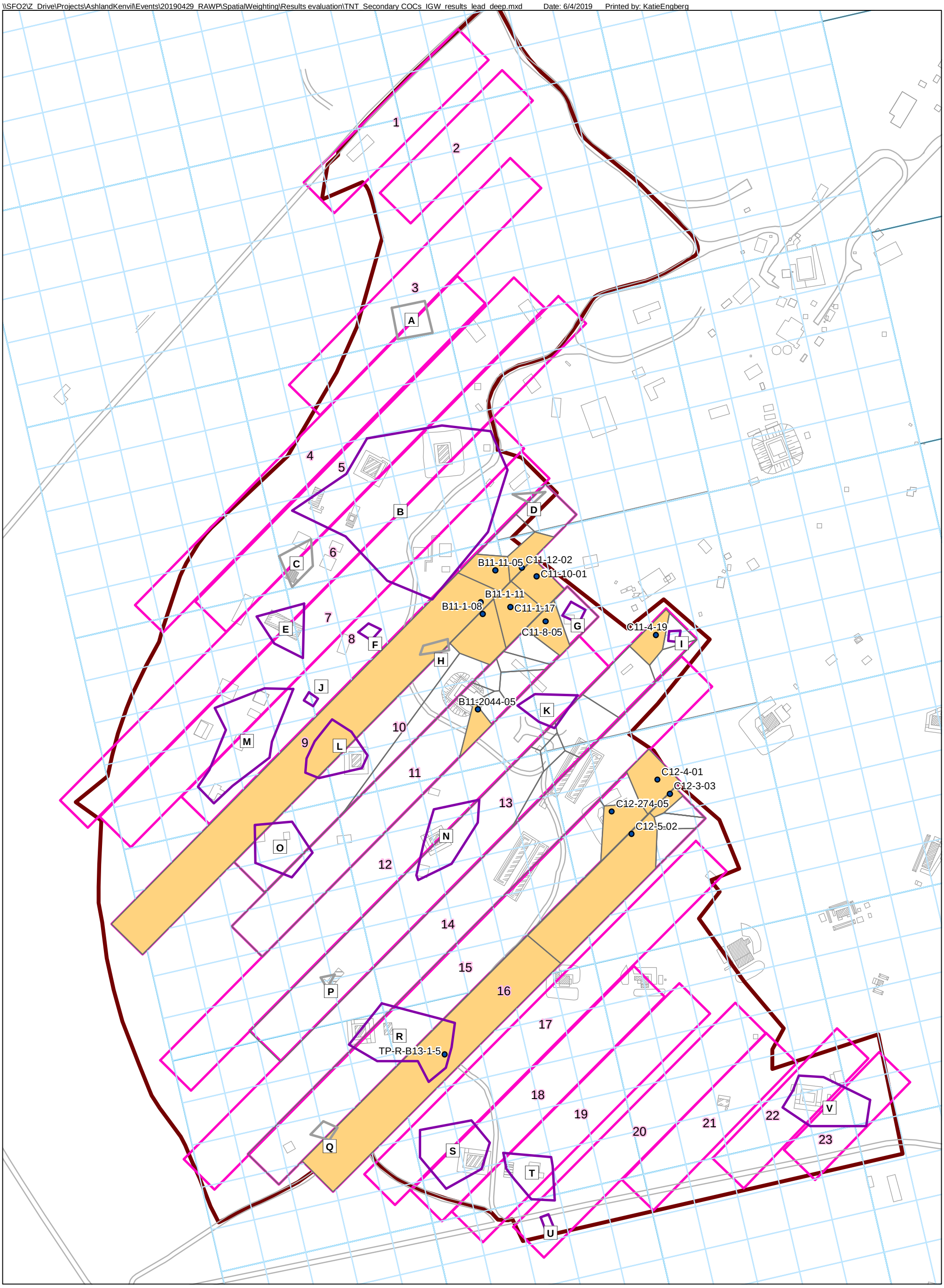

Legend

- Soil Sample Location
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- Exceeds Default Impact to Groundwater Soil Remediation Standards (IGWSRS)
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Lead (Deep)

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FIGURE

10

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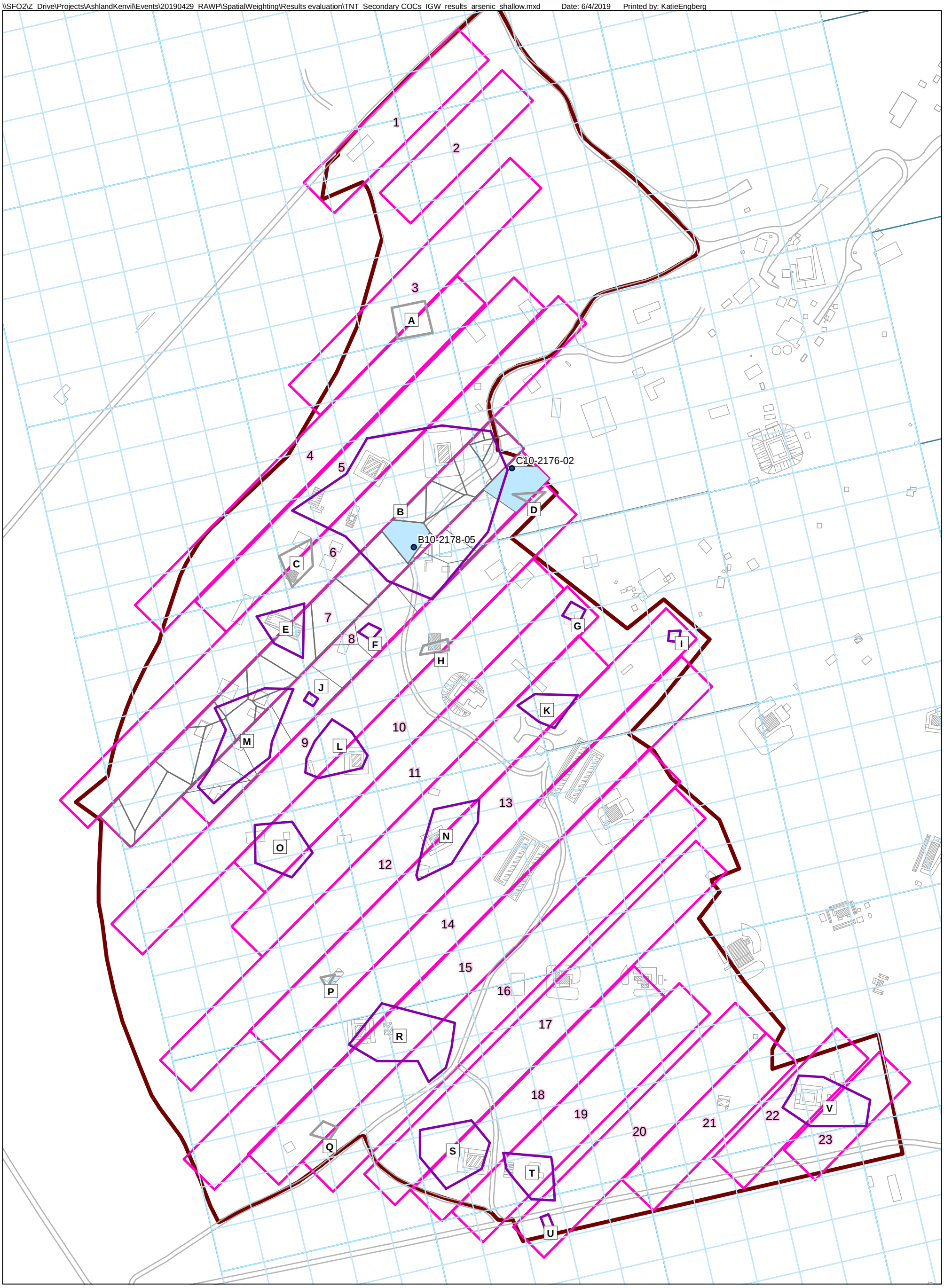

Legend

- Soil Sample Location
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Arsenic (Shallow)

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FIGURE

11

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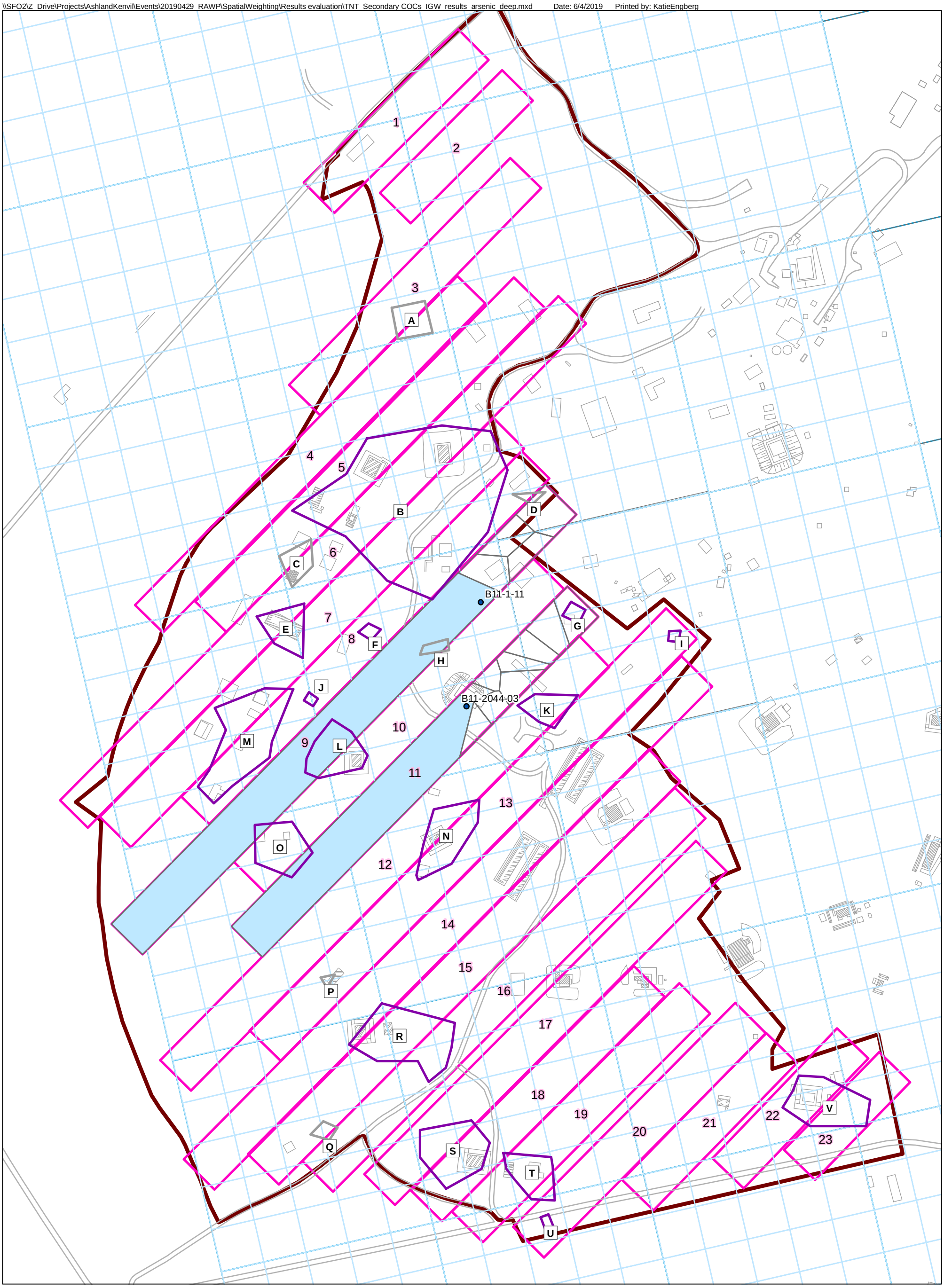

Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- Delineation Boundary
- 2017 Refined Delineation Investigation Area
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Arsenic (Deep)

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FIGURE

12

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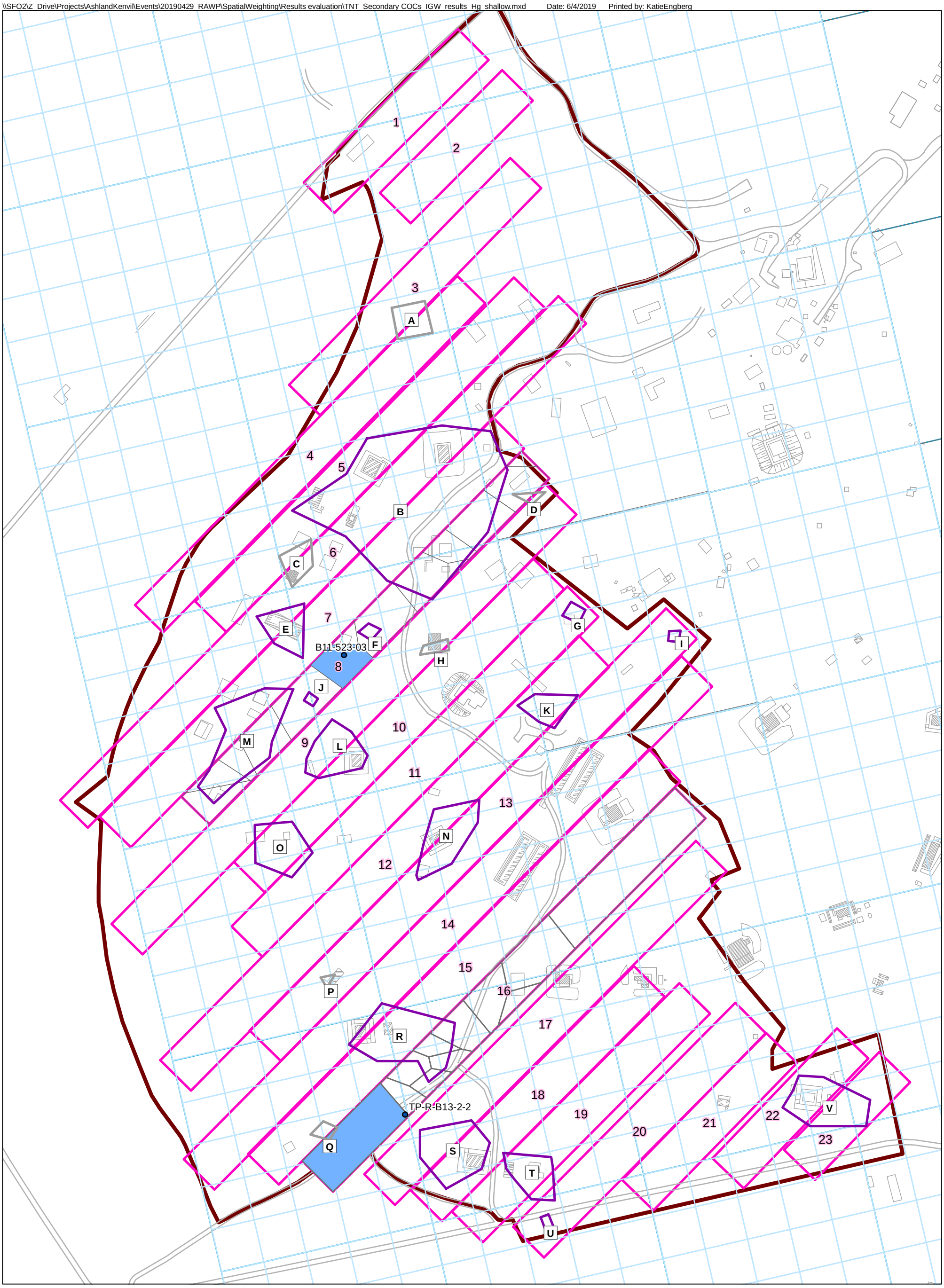

Legend

- Soil Sample Location
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Mercury (Shallow)

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FIGURE

13

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B11-1-11

B11-2044-03

Legend

- Soil Sample Location
- Delineation Boundary
- 2017 Refined Delineation Investigation Area
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

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TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Mercury (Deep)

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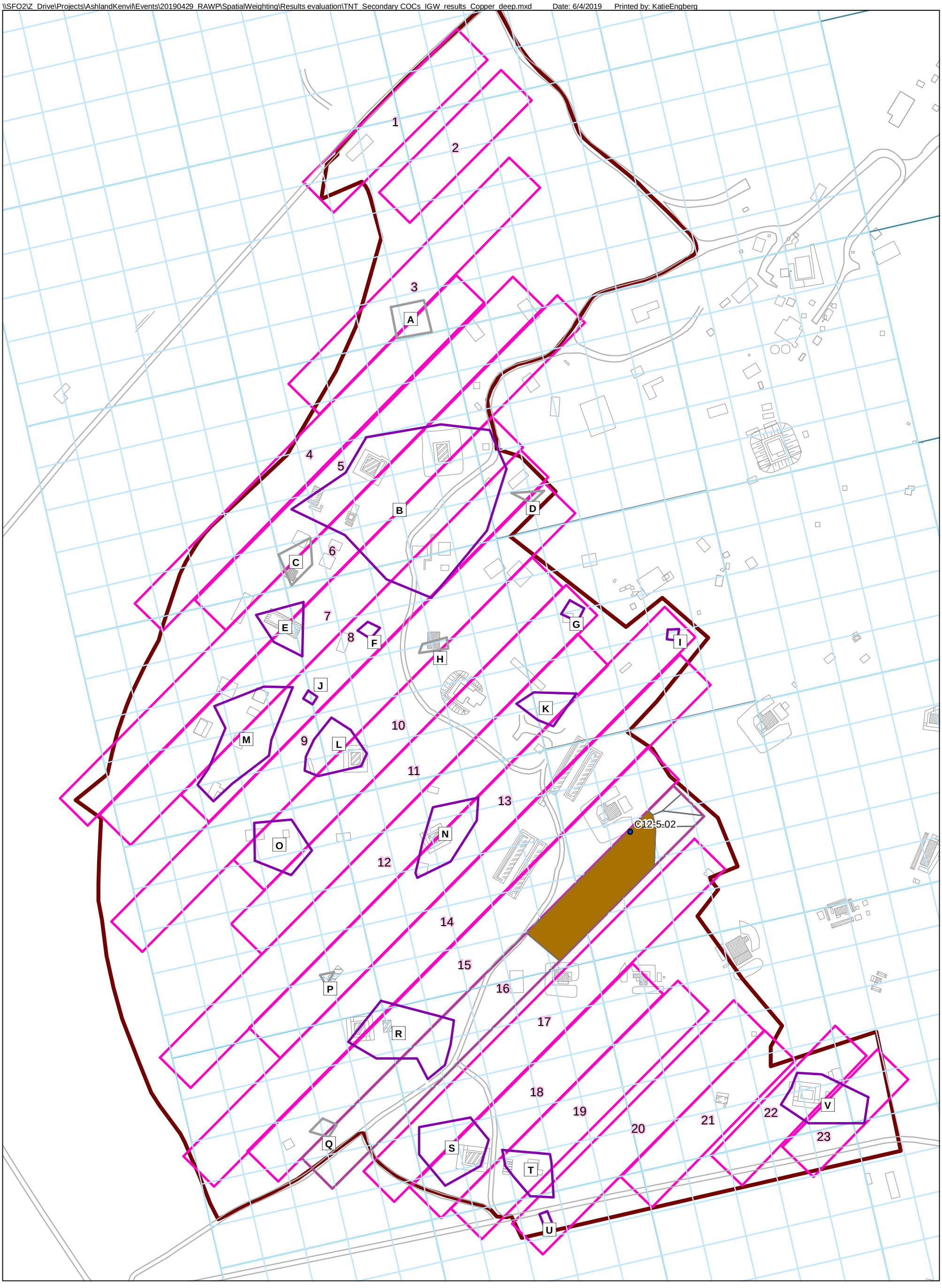
FIGURE

14

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\Results evaluation\TNT_Secondary COCs_IGW_results_Copper_deep.mxd Date: 6/4/2019 Printed by: KatieEngberg



Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- Delineation Boundary
- 2017 Refined Delineation Investigation Area
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Copper (Deep)

HERCULES

Kennedy Jenks

FIGURE

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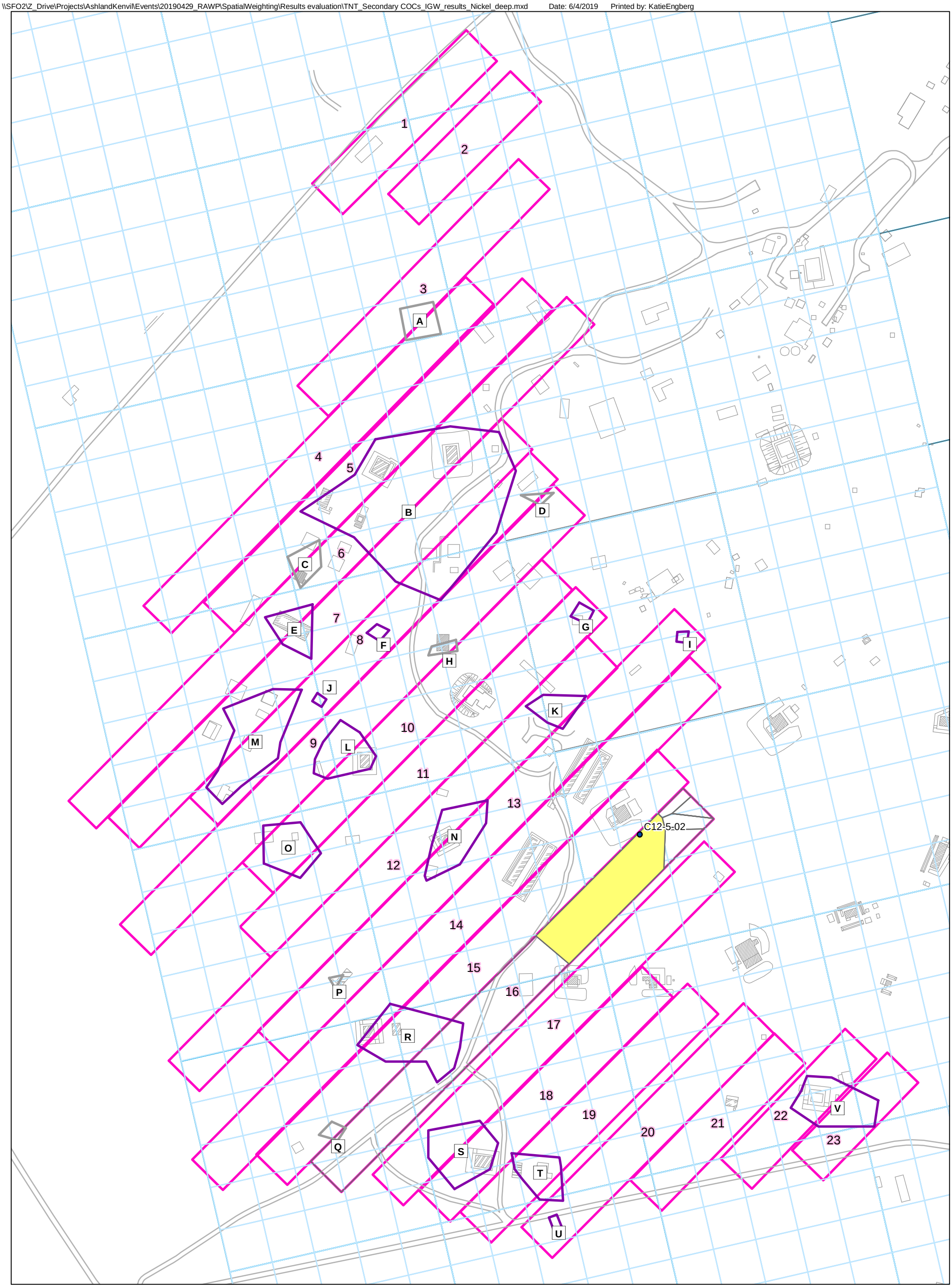
\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\Results evaluation\TNT_Secondary COCs_IGW_results_Nickel_deep.mxd Date: 6/4/2019 Printed by: KatieEngberg



Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- Delineation Boundary
- 2017 Refined Delineation Investigation Area
- IGW Functional Areas

N

0 50 100

Scale: Feet

HERCULES LLC
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Nickel (Deep)

HERCULES

Kennedy Jenks

FIGURE

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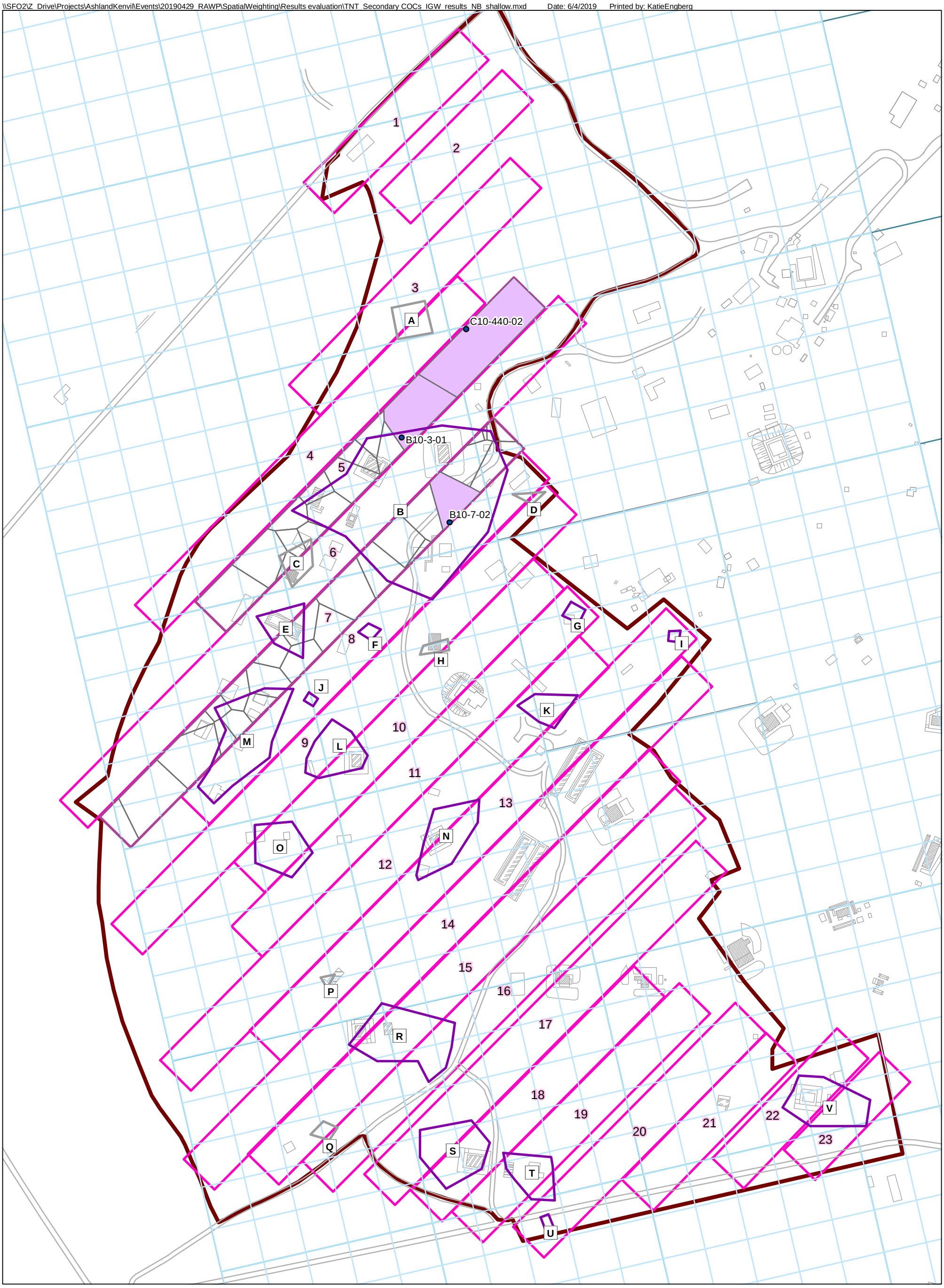
\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\Results evaluation\TNT_Secondary COCs_IGW_results_NB_shallow.mxd Date: 6/4/2019 Printed by: KatieEngberg



Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Nitrobenzene (Shallow)

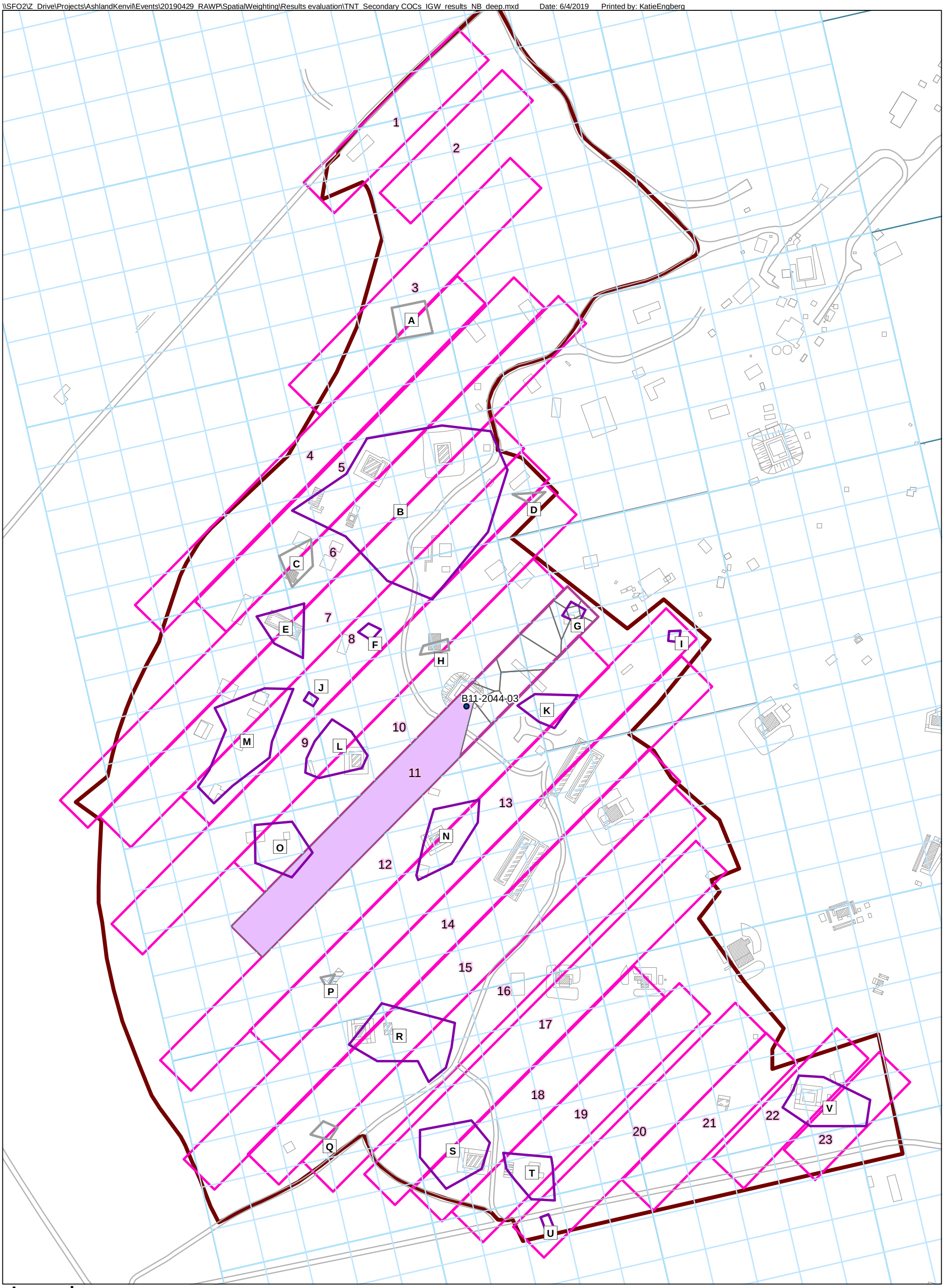
HERCULES

Kennedy Jenks

FIGURE

17

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\Results evaluation\TNT_Secondary COCs_IGW_results_NB_deep.mxd Date: 6/4/2019 Printed by: KatieEngberg



Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standards (IGWSRS)
- Delineation Boundary
- 2017 Refined Delineation Investigation Area
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - Nitrobenzene (Deep)

HERCULES

Kennedy Jenks

FIGURE

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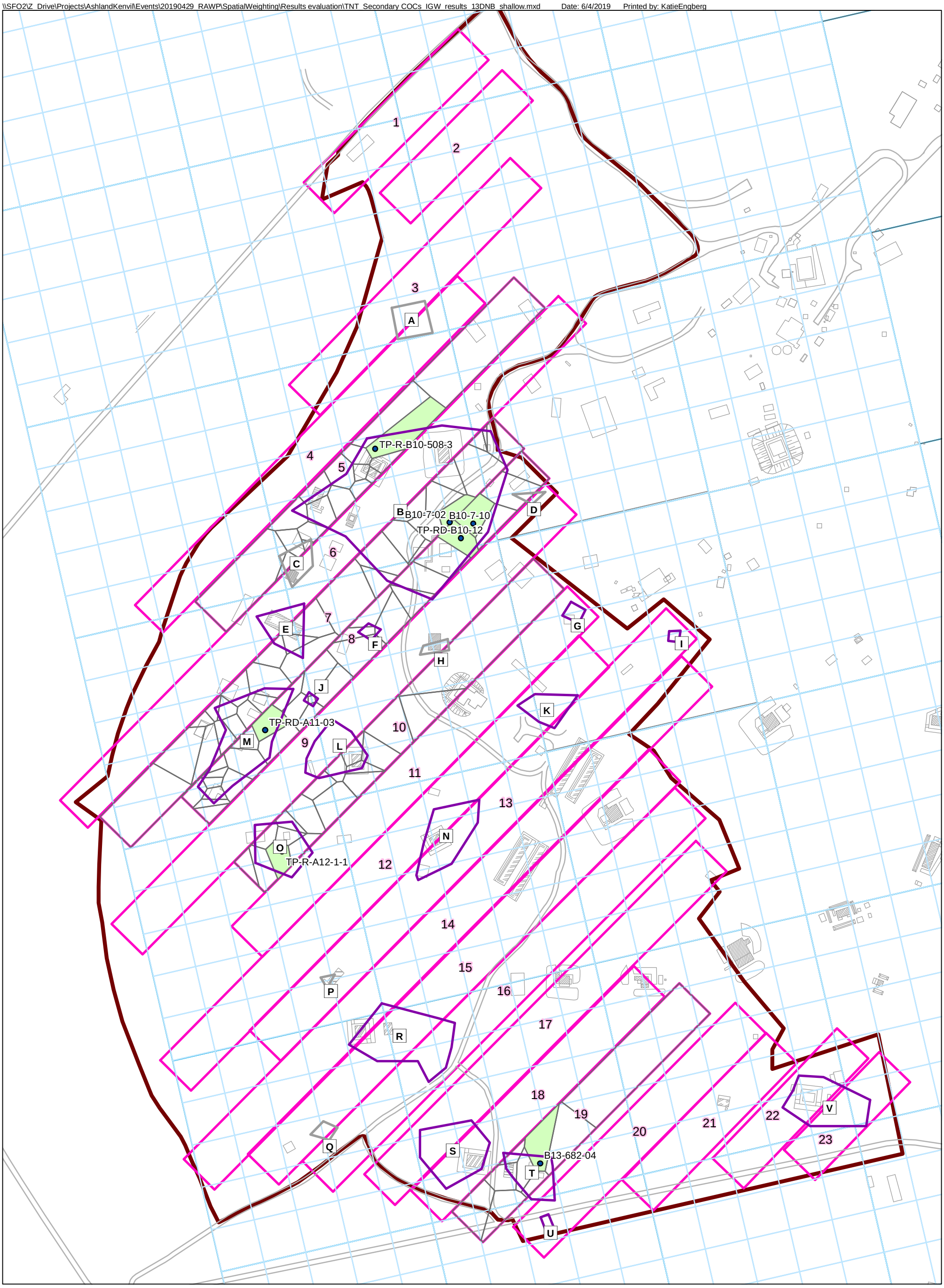
\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\Results evaluation\TNT_Secondary COCs_IGW_results_13DNB_shallow.mxd Date: 6/4/2019 Printed by: KatieEngberg



Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- 2017 Refined Delineation Investigation Area
- Delineation Boundary
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - 1,3-Dinitrobenzene (Shallow)

HERCULES

Kennedy Jenks

FIGURE

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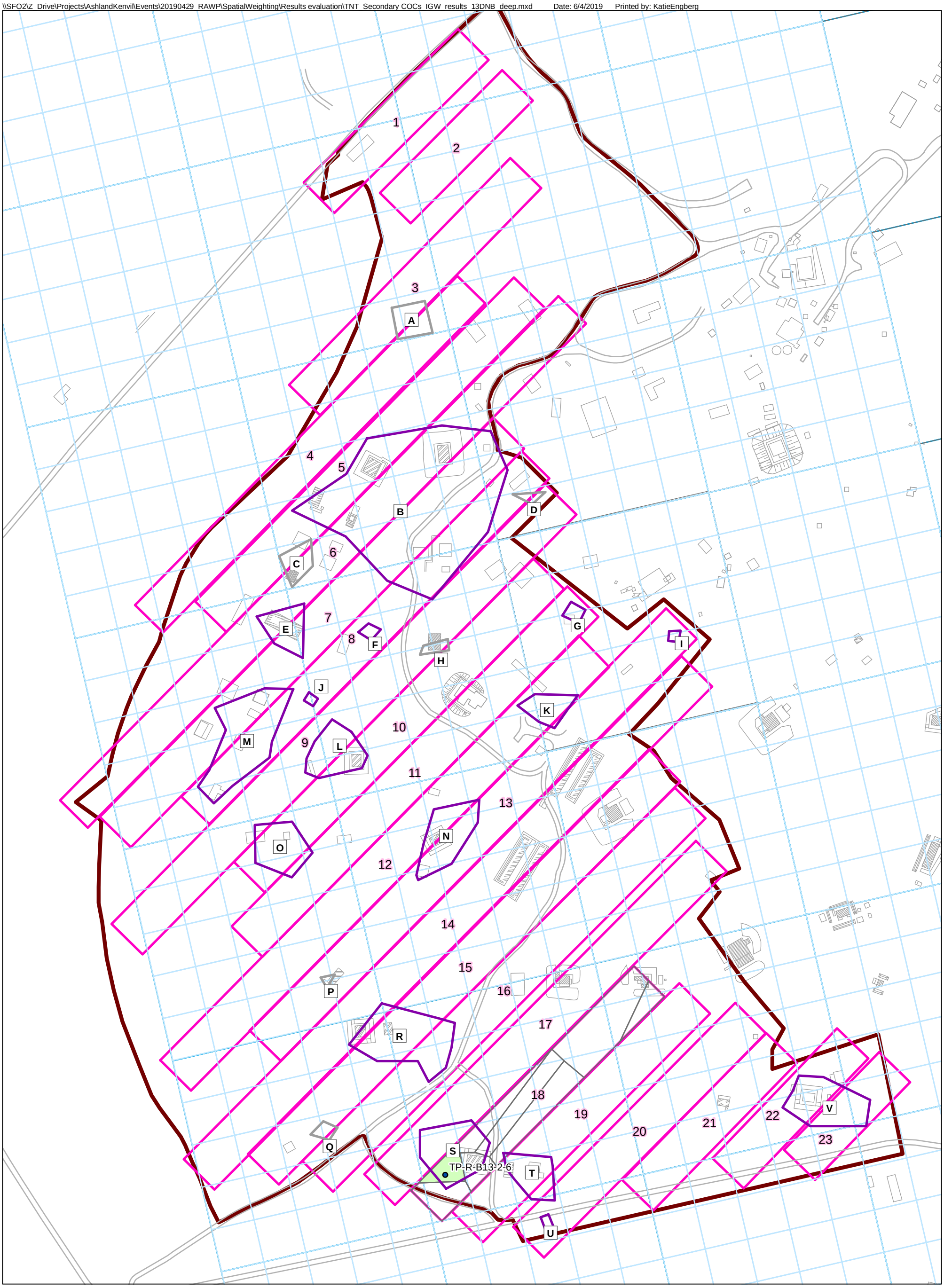
\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\Results evaluation\TNT_Secondary COCs_IGW_results_13DNB_deep.mxd Date: 6/4/2019 Printed by: KatieEngberg



Legend

- Soil Sample Location
- Exceeds Default Impact to Groundwater Soil Remediation Standard (IGWSRS)
- Delineation Boundary
- 2017 Refined Delineation Investigation Area
- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

Impact to Groundwater Compliance Averaging Results - 1,3-Dinitrobenzene (Deep)

HERCULES

Kennedy Jenks

FIGURE

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Tables

Table 1. TNT Project Area Exceedances and Summary Statistics
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC., Former Kenvil Works Facility
Kenvil, NJ

Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	Frequency of Detection	Min Detected	Max Detected	Min Detection Limit	Max Detection Limit	Max Concentration Sample	Median	Arithmetic Average	Geometric Mean	Standard Deviation	Number of Exceedances (IGWSRS)	Number of Exceedances (RDCSRS)	Number of Exceedances (NRDCSRS)	Arithmetic Mean (ND=0)*	Retained as COC (Y/N)	Rationale
Explosives and Energetics																					
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	62 / 860	100	120000	90.9	1000000	TP-R-B12-234-25.5N	60	2000	102	24100	38	8	1		**Y**	Max exceeds SRS
Nitrobenzene	98-95-3	ug/kg	200	340000	5000	9 / 701	85	5500	39	1000000	C11-9-040.5N	60.0	2050	77.3	26300	4	0	0		**Y**	Max exceeds SRS
Nitroglycerin	55-63-0	ug/kg		200000	46000	74 / 339	2000	476000000	442.204	20000000	B13-724-012N	3350	1450000	4790	25900000		18	2		**Y**	Max exceeds SRS
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	16 / 337	140	7600	99	1401738	TP-R-B10-5-15.0N	175	5760	210	58400		1	0		**Y**	Max exceeds SRS
Metals																					
Aluminum	7429-90-5	mg/kg	6000		78000	14 / 14	1920	46400			SO-R2-A-11-1_20131114	19600	20100	14600	12900	11	0			N	Aesthetic IGWSRS, Max less than NRDCSRS
Antimony	7440-36-0	mg/kg	6	450	31	125 / 377	0.21	27	0.32	28.8	C11-9-040.5N	1.08	1.2	0.786	2.16	4	0	0		**Y**	Max exceeds SRS
Arsenic	7440-38-2	mg/kg	19	19	19	362 / 377	1.02	334	2.02	28.8	B10-2178-051FD	3.7	8.63	4.05	27.4	24	27	27		**Y**	Max exceeds SRS
Beryllium	7440-41-7	mg/kg	1.08	140	16	369 / 377	0.0736	1.85	0.506	30	SO-R2-A-11-1_20131114	0.584	0.601	0.505	0.505	16	0	0		**Y**	Max exceeds SRS
Cadmium	7440-43-9	mg/kg	2	78	78	125 / 377	0.03	13.1	0.055	30	B11-602C-081N	0.279	0.555	0.335	0.962	4	0	0		**Y**	Max exceeds SRS
Copper	7440-50-8	mg/kg	11000	45000	3100	377 / 377	0.874	48500			B10-2178-051N	15.5	285	17.6	3470	2	2	2		**Y**	Max exceeds SRS
Lead	7439-92-1	mg/kg	90	800	400	376 / 377	0.868	93300	2.04	2.04	C12-3-032N	24	846	37	5420	122	62	42		**Y**	Max exceeds SRS
Manganese	7439-96-5	mg/kg	65	5900	11000	14 / 14	2.31	705			SO-R2-B-9-2D_20131114	389	351	191	225	12	0	0		N	Aesthetic IGWSRS, Max less than NRDCSRS
Mercury	7439-97-6	mg/kg	0.32	65	23	277 / 377	0.0041	10.3	0.03	0.155	C11-9-040.5N	0.0525	0.17	0.0597	0.655	27	0	0		**Y**	Max exceeds SRS
Nickel	7440-02-0	mg/kg	48	23000	1600	374 / 377	0.658	205	1.02	1.07	C12-5-022N	7.98	8.96	7.01	11.8	3	0	0		**Y**	Max exceeds SRS
Selenium	7782-49-2	mg/kg	11	5700	390	150 / 377	0.11	17.3	0.38	28.8	C11-30-051N	1.09	1.33	1.04	1.74	3	0	0		**Y**	Max exceeds SRS
Silver	7440-22-4	mg/kg	1	5700	390	74 / 377	0.08	6.3	0.15	30	C12-5-022N	0.266	0.31	0.24	0.585	9	0	0		N	Aesthetic IGWSRS, Max less than NRDCSRS
Thallium	7440-28-0	mg/kg	3			48 / 377	0.5	3.4	0.65	100	C11-30-061N	1.07	1.29	0.949	2.13	1				**Y**	Max exceeds SRS
Zinc	7440-66-6	mg/kg	930	110000	23000	377 / 377	1.24	27700			B10-2178-051N	48.1	195	49.7	1480	9	1	0		N	Aesthetic IGWSRS, Max less than NRDCSRS
SVOCs																					
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	2 / 400	1200	16800	78	4400000	B13-724-012N	1100	7680	1010	111000	2	0	0	48.52	N	Arithmetic Average less than SRS
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	110 / 400	4	9400	17	880000	C11-1-171N	95	1420	126	22000	0	1	0		**Y**	Max exceeds SRS
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	113 / 400	4	8200	17	880000	C11-1-171N	95	1410	123	22000	4	19	5		**Y**	Max exceeds SRS
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	105 / 400	5	9700	17	880000	C11-1-171N	100	1450	141	22000	0	1	0		**Y**	Max exceeds SRS
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	32 / 400	11	1200	17	880000	C11-1-171N	95	1340	120	22000	0	5	0		**Y**	Max exceeds SRS
Isophorone	78-59-1	ug/kg	280	2000000	510000	1 / 169	6200	6200	33	880000	C10-2176-021N	200	2870	152	33800	1	0	0	39.24	N	Arithmetic Average less than SRS
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	18 / 399	19	24000	33	880000	A11-570-051N	100	1400	126	22100	1	0	0		**Y**	Max exceeds SRS
VOCs																					
Methylene Chloride	75-09-2	ug/kg	10	230000	46000	2 / 163	560	680	5	2500	SB-R-B13-032.5N	345	326	227	148	2	0	0	8.32	N	Arithmetic Average less than SRS

Notes:
IGWSRS = Impact to Groundwater Soil Remediation Standard
RDCSRS = Residential Direct Contact Soil Remediation Standard
NRDCSRS = Non-Residential Direct Contact Soil Remediation Standard
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
ND = non-detect
* Arithmetic Average (ND=0) only run for constituents with two or fewer detections, as per NJDEP Compliance Averaging Regulations
SVOC = semi-volatile organic compound
VOC = volatile organic compound

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Single Point Compliance		Compliance Averaging at the 95UCL of the Mean							
COC	**Units**	**RDCSRS**	**NRDCSRS**	**# Exceeds RDCSRS**	**#Exceeds NRDCSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds RDCSRS**	**95UCL Exceeds NRDCSRS**
Functional Area (FA) 1 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	6	n < 10; proceed to spatial weighting						
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	2	2	6	n < 10; proceed to spatial weighting						
Benzo[a]pyrene	ug/kg	500	2000	1	1	6	n < 10; proceed to spatial weighting						
FA 1 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	5	n < 10; proceed to spatial weighting						
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 2 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 2 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 3 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	5	n < 10; proceed to spatial weighting						
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	2	2	5	n < 10; proceed to spatial weighting						
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 3 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 4 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 4 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 5 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	3	0								
Arsenic	mg/kg	19	19	2	2	17	100%	274	32.2	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	4	3	17	100%	3070	457	954.3	95% Adjusted Gamma UCL	1	1
Benzo[a]pyrene	ug/kg	500	2000	1	0								
FA 5 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	2	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 6 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	1	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 6 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 7 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	1	0								
Arsenic	mg/kg	19	19	1	1	22	100%	41	5.76	13.16	95% Chebyshev (Mean, Sd) UCL	0	0
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	6	3	22	100%	8400	922	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Benzo[a]pyrene	ug/kg	500	2000	1	0								
FA 7 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	1	0								
Nitroglycerin	ug/kg	46000	200000	4	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	3	1	23	100%	990	142	499.6	97.5% Chebyshev (Mean, Sd) UCL	1	1
Benzo[a]pyrene	ug/kg	500	2000	1	1	24	21%	3600	807	998.7	Gamma Adjusted KM-UCL	1	0
FA 8 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	14	100%	334	28.7	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Copper	mg/kg	3100	45000	1	1	14	100%	48500	3490	37940	99% Chebyshev (Mean, Sd) UCL	1	0
Lead	mg/kg	400	800	4	4	14	100%	17200	1580	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 8 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	2	2	7	n < 10; proceed to spatial weighting						
Benzo[a]pyrene	ug/kg	500	2000	0	0								

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern Hercules
LLC, Former Kenvil Works Facility
Kenvil, NJ

				Single Point Compliance		Compliance Averaging at the 95UCL of the Mean							
COC	**Units**	**RDCSRS**	**NRDCSRS**	**# Exceeds RDCSRS**	**#Exceeds NRDCSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds RDCSRS**	**95UCL Exceeds NRDCSRS**
FA 9 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	8	8	13	100%	115	37.5	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	12	10	13	100%	33800	7190	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Benzo[a]pyrene	ug/kg	500	2000	6	3	14	79%	8200	1530	3781	95% Chebyshev (Mean, Sd) UCL	1	1
FA 9 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 10 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	5	4	15	100%	13300	1430	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 10 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	1	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 11 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	2	0								
FA 11 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 12 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	9	100%	20	7.26	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	3	1	9	100%	858	240	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Benzo[a]pyrene	ug/kg	500	2000	1	0								
FA 12 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 13 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	2	1	4	n < 10; proceed to spatial weighting						
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 13 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 14 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	2	2	12	100%	104	20.8	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	3	1	12	100%	2070	411	857.6	95% Adjusted Gamma UCL	1	1
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 14 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 15 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	1	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	2	1	8	n < 10; proceed to spatial weighting						
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 15 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	1	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 16 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 16 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 17 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern Hercules
LLC, Former Kenvil Works Facility
Kenvil, NJ

				Single Point Compliance		Compliance Averaging at the 95UCL of the Mean							
COC	**Units**	**RDCSRS**	**NRDCSRS**	**# Exceeds RDCSRS**	**#Exceeds NRDCSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds RDCSRS**	**95UCL Exceeds NRDCSRS**
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	6	n < 10; proceed to spatial weighting						
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	1	1	6	n < 10; proceed to spatial weighting						
Benzo[a]pyrene	ug/kg	500	2000	3	0								
FA 17 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	1	1	7	n < 10; proceed to spatial weighting						
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	1	0								
FA 18 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 18 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 19 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	9	n < 10; proceed to spatial weighting						
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	3	3	9	n < 10; proceed to spatial weighting						
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 19 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 20 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 20 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 21 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	3	3	13	100%	36.1	9.18	21.95	95% Chebyshev (Mean, Sd) UCL	1	1
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	1	1	13	100%	3620	338	2776	99% Chebyshev (Mean, Sd) UCL	1	1
Benzo[a]pyrene	ug/kg	500	2000	1	0								
FA 21 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	1	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 22 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	1	1	8	n < 10; proceed to spatial weighting						
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 22 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 23 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	1	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 23 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 24 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 24 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 25 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Single Point Compliance		Compliance Averaging at the 95UCL of the Mean							
COC	**Units**	**RDCSRS**	**NRDCSRS**	**# Exceeds RDCSRS**	**#Exceeds NRDCSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds RDCSRS**	**95UCL Exceeds NRDCSRS**
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 25 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 26 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	1	0								
Benzo[a]pyrene	ug/kg	500	2000	1	0								
FA 26 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 27 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	3	0								
Nitroglycerin	ug/kg	46000	200000	4	1	15	33%	476000000	31800000	arithmetic mean > NRDCSRS; proceed to spatial weighting			
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 27 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	2	0								
Nitroglycerin	ug/kg	46000	200000	2	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 28 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 28 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 29 - Shallow													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	2	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								
FA 29 - Deep													
1,3-Dinitrobenzene	ug/kg	7800	100000	0	0								
Nitroglycerin	ug/kg	46000	200000	0	0								
Arsenic	mg/kg	19	19	0	0								
Copper	mg/kg	3100	45000	0	0								
Lead	mg/kg	400	800	0	0								
Benzo[a]pyrene	ug/kg	500	2000	0	0								

Notes:
RDCSRS - Residential Direct Contact Soil Remediation Standard
NRDCSRS - Non-Residential Direct Contact Soil Remediation Standard
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
95UCL - 95 percent upper confidence limit
ND = non-detect
COC - constituent of concern
Y - yes
N - no
Gray box indicates that the constituent of concern has screened out via one stage of the compliance averaging process

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern Hercules
LLC, Former Kenvil Works Facility
Kenvil, NJ

				Compliance Averaging Using Spatially Weighted Thiessen Polygons				Summary	
COC	**Units**	**RDCSRS**	**NRDCSRS**	**Spatially Weighted Mean**	**Spatial Weighting Exceeds RDCSRS**	**Spatial Weighting Exceeds NRDCSRS**	**Sample(s) Exceeding Criteria**	**COC (Y/N)**	**Rationale**
Functional Area (FA) 1 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	7.6	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	2333	1	1	C8-1-01	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000	296	0	0	--	N	spatially weighted average less than NRDCSRS
FA 1 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	5.6	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 2 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 2 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 3 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	11.9	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	1660.2	1	1	TP-R-C10-439-1	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 3 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 4 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 4 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 5 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	23.3	1	1	C10-2176-02	**Y**	greater than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	867.1	1	1	C10-466-02	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 5 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 6 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 6 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 7 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	95UCL less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	634.6	1	0	--	N	spatially weighted average less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 7 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	95UCL less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	95UCL less than NRDCSRS
FA 8 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	30	1	1	B10-2178-05	**Y**	greater than NRDCSRS
Copper	mg/kg	3100	45000					N	95UCL less than NRDCSRS
Lead	mg/kg	400	800	1256.1	1	1	B10-2178-03	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 8 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	96.8	0	0	--	N	spatially weighted average less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Compliance Averaging Using Spatially Weighted Thiessen Polygons				Summary	
COC	**Units**	**RDCSRS**	**NRDCSRS**	**Spatially Weighted Mean**	**Spatial Weighting Exceeds RDCSRS**	**Spatial Weighting Exceeds NRDCSRS**	**Sample(s) Exceeding Criteria**	**COC (Y/N)**	**Rationale**
FA 9 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	39.2	1	1	C11-8-05, C11-9-04, C11-10-01	**Y**	greater than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	5844.1	1	1	B11-11-05, B11-1-11, B11-1-08, C11-1-17, C11-8-05, C11-9-04	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000	1309.6	1	0	--	N	spatially weighted average less than NRDCSRS
FA 9 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 10 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	1072.5	1	1	TP-R-A11-7-1	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 10 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 11 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 11 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 12 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	6.1	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	176.75	0	0	--	N	spatially weighted average less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 12 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 13 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	630	1	0	--	N	spatially weighted average less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 13 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 14 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	18.6	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	345.9	0	0	--	N	spatially weighted average less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 14 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 15 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	324.1	0	0	--	N	spatially weighted average less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 15 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 16 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 16 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 17 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Compliance Averaging Using Spatially Weighted Thiessen Polygons				Summary	
COC	**Units**	**RDCSRS**	**NRDCSRS**	**Spatially Weighted Mean**	**Spatial Weighting Exceeds RDCSRS**	**Spatial Weighting Exceeds NRDCSRS**	**Sample(s) Exceeding Criteria**	**COC (Y/N)**	**Rationale**
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	8.1	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	275.6	0	0	--	N	spatially weighted average less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 17 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000	246.6	0	0	--	N	spatially weighted average less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 18 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 18 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 19 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	25	1	1	SB-R-C12-04	**Y**	greater than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	8743.6	1	1	C12-3-03	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 19 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 20 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 20 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 21 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	10.3	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800	895.8	1	1	SD-B13-3-01	**Y**	greater than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 21 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 22 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19	6.8	0	0	--	N	spatially weighted average less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 22 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 23 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 23 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 24 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 24 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 25 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS

Table 2. Compliance Averaging Summary Table - Direct Contact
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Compliance Averaging Using Spatially Weighted Thiessen Polygons				Summary	
COC	**Units**	**RDCSRS**	**NRDCSRS**	**Spatially Weighted Mean**	**Spatial Weighting Exceeds RDCSRS**	**Spatial Weighting Exceeds NRDCSRS**	**Sample(s) Exceeding Criteria**	**COC (Y/N)**	**Rationale**
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 25 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 26 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 26 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 27 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000	6876430.6	1	1	B13-724-01	**Y**	greater than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 27 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 28 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 28 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 29 - Shallow									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS
FA 29 - Deep									
1,3-Dinitrobenzene	ug/kg	7800	100000					N	max concentration less than NRDCSRS
Nitroglycerin	ug/kg	46000	200000					N	max concentration less than NRDCSRS
Arsenic	mg/kg	19	19					N	max concentration less than NRDCSRS
Copper	mg/kg	3100	45000					N	max concentration less than NRDCSRS
Lead	mg/kg	400	800					N	max concentration less than NRDCSRS
Benzo[a]pyrene	ug/kg	500	2000					N	max concentration less than NRDCSRS

Notes:
RDCSRS - Residential Direct Contact Soil Remediation Standard
NRDCSRS - Non-Residential Direct Contact Soil Remediation Standar
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
95UCL - 95 percent upper confidence limit
ND = non-detect
COC - constituent of concern
Y - yes
N - no
Gray box indicates that the constituent of concern has screened out

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Single Point Compliance		Compliance Averaging at the 95UCL of the Mean						
COC	**Units**	**IGWSRS**	**# Exceeds IGWSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds IGWSRS**
Functional Area (FA) 1 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	1	8	n < 10; proceed to spatial weighting					
Arsenic	mg/kg	19	1	9	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	2	9	n < 10; proceed to spatial weighting					
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	2	9	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	2	9	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	1	9	n < 10; proceed to spatial weighting					
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 2 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	5	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 3 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	1	15	20%	840	193	262.9	95% KM (t) UCL	0
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	9	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 4 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	1	9	n < 10; proceed to spatial weighting					
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 5 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	6	39	23%	40000	1320	arithmetic mean > IGWSRS; proceed to spatial weighting		
Nitrobenzene	ug/kg	200	1	24	4%	too few detections; proceed to spatial weighting				
Antimony	mg/kg	6	1	31	45%	7.7	1.38	2.5	95% KM (Chebyshev) UCL	0
Arsenic	mg/kg	19	2	31	97%	47.2	6.24	14.26	95% KM (Chebyshev) UCL	0
Beryllium	mg/kg	1.08	2	31	100%	1.38	0.618	0.699	95% Student's-t UCL	0
Cadmium	mg/kg	2	1	31	26%	8.8	0.717	1.726	95% KM (Chebyshev) UCL	0
Copper	mg/kg	11000	0							
Lead	mg/kg	90	18	31	100%	8400	944	arithmetic mean > IGWSRS; proceed to spatial weighting		
Mercury	mg/kg	0.32	4	31	74%	0.53	0.117	0.154	KM H-UCL	0
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	1	31	4%	too few detections; proceed to spatial weighting				
FA 6 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	6	68	10%	3500	1124	311.4	95% KM Approximate Gamma UCL	0
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	3	48	96%	1.85	0.132	0.695	95% KM Adjusted Gamma UCL	0
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	21	48	100%	3070	373	arithmetic mean > IGWSRS; proceed to spatial weighting		
Mercury	mg/kg	0.32	2	48	71%	0.497	0.0888	0.0859	KM H-UCL	0
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	1	40	33%	3600	444	602.7	95% KM (Chebyshev) UCL	0
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 7 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	2	72	7%	too few detections; proceed to spatial weighting				
Nitrobenzene	ug/kg	200	1	60	2%	too few detections; proceed to spatial weighting				
Antimony	mg/kg	6	1	36	31%	21.8	3.496	4.212	KM H-UCL	0
Arsenic	mg/kg	19	1	36	94%	334	13.72	53.03	95% KM (Chebyshev) UCL	1
Beryllium	mg/kg	1.08	5	36	94%	1.37	0.543	0.655	95% KM (t) UCL	0
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	1	36	92%	48500	1369	7239	95% Chebyshev (Mean, Sd) UCL	0
Lead	mg/kg	90	19	36	97%	17200	1120	arithmetic mean > IGWSRS; proceed to spatial weighting		
Mercury	mg/kg	0.32	1	36	67%	2.3	0.157	0.395	95% KM (Chebyshev) UCL	1
Nickel	mg/kg	48	1	36	97%	71.4	9.316	14.17	KM H-UCL	0
Selenium	mg/kg	11	1	36	42%	15.8	2.002	3.276	95% KM (Chebyshev) UCL	0
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Single Point Compliance		Compliance Averaging at the 95UCL of the Mean						
COC	**Units**	**IGWSRS**	**# Exceeds IGWSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds IGWSRS**
FA 8 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	3	98	5%	1300	4890	arithmetic mean > IGWSRS; proceed to spatial weighting		
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	2	19	79%	274	28.2	arithmetic mean > IGWSRS; proceed to spatial weighting		
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	1	19	63%	13.1	1.491	3.973	95% KM (Chebyshev) UCL	1
Copper	mg/kg	11000	0							
Lead	mg/kg	90	12	19	100%	3790	472	arithmetic mean > IGWSRS; proceed to spatial weighting		
Mercury	mg/kg	0.32	1	19	74%	3.1	0.315	0.94	95% KM (Chebyshev) UCL	1
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 8 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 9 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	8	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Zinc	mg/kg	930	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 9 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	4	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	4	4	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	1	4	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 10 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	4	40	13%	9300	628	arithmetic mean > IGWSRS; proceed to spatial weighting		
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	3	9	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 10 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	3	6	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	3	6	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	2	6	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	1	6	n < 10; proceed to spatial weighting					
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 11 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	6	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	2	6	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Single Point Compliance		Compliance Averaging at the 95UCL of the Mean						
COC	**Units**	**IGWSRS**	**# Exceeds IGWSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds IGWSRS**
FA 11 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	2	14	14%	5500	487	arithmetic mean > IGWSRS; proceed to spatial weighting		
Antimony	mg/kg	6	1	10	20%	27	15.1	25.5	975% KM (Chebyshev) UCL	1
Arsenic	mg/kg	19	5	11	100%	115	30.4	arithmetic mean > IGWSRS; proceed to spatial weighting		
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	7	11	100%	11800	1670	arithmetic mean > IGWSRS; proceed to spatial weighting		
Mercury	mg/kg	0.32	3	11	100%	10.3	1.17	arithmetic mean > IGWSRS; proceed to spatial weighting		
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	1	10	100%	17.3	3.822	12.11	95% Adjusted Gamma UCL	1
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	1	10	100%	3200	920	257.9	95% KM Bootstrap t UCL	0
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 12 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	1	19	5%	too few detections; proceed to spatial weighting				
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	9	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	9	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	1	9	n < 10; proceed to spatial weighting					
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 12 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	2	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	1	2	n < 10; proceed to spatial weighting					
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	2	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	1	2	n < 10; proceed to spatial weighting					
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 13 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	1	28	4%	too few detections; proceed to spatial weighting				
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	3	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 13 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	1	21	2%	570	327.5	226.1	95% KM (Chebyshev) UCL	1
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	4	9	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	1	9	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 14 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	8	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 14 - Deep										
1,3-Dinitrobenzene	ug/kg	500	1	8	n < 10; proceed to spatial weighting					
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	2	6	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	2	6	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							

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		Single Point Compliance		Compliance Averaging at the 95UCL of the Mean						
COC	**Units**	**IGWSRS**	**# Exceeds IGWSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds IGWSRS**
FA 15 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	2	23	9%	4800	1200	1577	95% KM (Chebyshev) UCL	1
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	2	9	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 15 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	2	4	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 16 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	1	12	17%	2.5	1.477	1.486	95% KM (Chebyshev) UCL	0
Copper	mg/kg	11000	0							
Lead	mg/kg	90	5	12	100%	3260	389	arithmetic mean > IGWSRS; proceed to spatial weighting		
Mercury	mg/kg	0.32	1	12	100%	2.44	0.25	1.12	95% Chebyshev (Mean, Sd) UCL	1
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 16 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	2	6	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	1	6	n < 10; proceed to spatial weighting					
Copper	mg/kg	11000	1	6	n < 10; proceed to spatial weighting					
Lead	mg/kg	90	3	6	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	1	6	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	1	6	n < 10; proceed to spatial weighting					
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 17 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	9	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	2	9	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	1	9	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 17 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	6	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	6	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	1	6	n < 10; proceed to spatial weighting					
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 18 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	1	12	8%	too few detections; proceed to spatial weighting				
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	8	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Single Point Compliance		Compliance Averaging at the 95UCL of the Mean						
COC	**Units**	**IGWSRS**	**# Exceeds IGWSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds IGWSRS**
FA 18 - Deep										
1,3-Dinitrobenzene	ug/kg	500	1	8	n < 10; proceed to spatial weighting					
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	1	5	n < 10; proceed to spatial weighting					
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 19 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	3	10	30%	9850	1560	arithmetic mean > IGWSRS; proceed to spatial weighting		
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	12	92%	156	40.67	85.99	95% Adjusted Gamma UCL	0
Mercury	mg/kg	0.32	2	12	67%	3.8	0.53	arithmetic mean > IGWSRS; proceed to spatial weighting		
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 19 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 20 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 20 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 21 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	1	5	n < 10; proceed to spatial weighting					
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 22 - Shallow										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Single Point Compliance		Compliance Averaging at the 95UCL of the Mean						
COC	**Units**	**IGWSRS**	**# Exceeds IGWSRS**	**# Distinct Observations**	**Frequency of Detection**	**Maximum Detect**	**Average**	**95UCL**	**Basis**	**95UCL Exceeds IGWSRS**
FA 22 - Deep										
1,3-Dinitrobenzene	ug/kg	500	2	9	n < 10; proceed to spatial weighting					
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							
FA 23 - Deep										
1,3-Dinitrobenzene	ug/kg	500	0							
Nitrobenzene	ug/kg	200	0							
Antimony	mg/kg	6	0							
Arsenic	mg/kg	19	0							
Beryllium	mg/kg	1.08	0							
Cadmium	mg/kg	2	0							
Copper	mg/kg	11000	0							
Lead	mg/kg	90	0							
Mercury	mg/kg	0.32	0							
Nickel	mg/kg	48	0							
Selenium	mg/kg	11	0							
Thallium	mg/kg	3	0							
Benzo[a]pyrene	ug/kg	3000	0							
N-Nitrosodiphenylamine	ug/kg	6000	0							

Notes:
IGWSRS - Impact to Groundwater Soil Remediation Standard
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
95UCL - 95 percent Upper Confidence Limit
ND = Non-detect
COC - Constituent of Concern
Y - yes
N - no

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

	Single Point Co		Compliance Averaging Using Spatially Weighted Thiessen Polygons			Summary	
COC	Units	IGWSRS	Spatially Weighted Mean	Spatial Weighting Exceeds IGWSRS	Sample(s) Exceeding Criteria	COC (Y/N)	Rationale
Functional Area (FA) 1 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6	4.1	0	--	N	spatially weighted average less than IGWSRS
Arsenic	mg/kg	19	9.9	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08	0.94	0	--	N	spatially weighted average less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	2032	1	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32	0.317	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000	751	0	--	N	spatially weighted average less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 2 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	13.9	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 3 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	95UCL less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	67.4	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 4 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08	0.98	0	--	N	spatially weighted average less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 5 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	3950	1	TP-R-B10-508-3	Y	greater than IGWSRS
Nitrobenzene	ug/kg	200	260	1	C10-440-02, B10-3-01	Y	greater than IGWSRS
Antimony	mg/kg	6				N	95UCL less than IGWSRS
Arsenic	mg/kg	19				N	95UCL less than IGWSRS
Beryllium	mg/kg	1.08				N	95UCL less than IGWSRS
Cadmium	mg/kg	2				N	95UCL less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	1376	1	A11-570-05, TP-R-C10-439-1, C10-440-02, B10-20-01, B10-503-06, TP-R-B10-508-4, B10-3-01	Y	greater than IGWSRS
Mercury	mg/kg	0.32				N	95UCL less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000	3871	0	--	N	spatially weighted average less than IGWSRS
FA 6 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	95UCL less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	95UCL less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	567.8	1	C10-12-03, TP-R-C10-439-3, TP-R-B10-2/B10-509-2, C10-466-02, SD-C10-1-01, A11-1-04, TP-R-B10-501-1, TP-R-A11-504-1	Y	greater than IGWSRS
Mercury	mg/kg	0.32				N	95UCL less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	95UCL less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 7 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	14104	1	B10-7-02	Y	greater than IGWSRS
Nitrobenzene	ug/kg	200	39583	1	B10-7-02	Y	greater than IGWSRS
Antimony	mg/kg	6					95UCL less than IGWSRS
Arsenic	mg/kg	19	19.8	1	B10-2178-05	Y	greater than IGWSRS
Beryllium	mg/kg	1.08					95UCL less than IGWSRS
Cadmium	mg/kg	2					max concentration less than IGWSRS
Copper	mg/kg	11000					95UCL less than IGWSRS
Lead	mg/kg	90	829.5	1	B10-2178-03, B10-7-02, SB-R-B11-02, TP-R-B10-2/B10-509-6, A11-9-03, A11-1-01, TP-R-A11-7-1	Y	greater than IGWSRS
Mercury	mg/kg	0.32	0.1	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	95UCL less than IGWSRS
Selenium	mg/kg	11				N	95UCL less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

	Single Point Co		Compliance Averaging Using Spatially Weighted Thiessen Polygons			Summary	
COC	**Units**	**IGWSRS**	**Spatially Weighted Mean**	**Spatial Weighting Exceeds IGWSRS**	**Sample(s) Exceeding Criteria**	**COC (Y/N)**	**Rationale**
FA 8 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	41471	1	B10-7-10, TP-RD-B10-12, TP-RD-A11-03	Y	greater than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	26.5	1	C10-2176-02	Y	greater than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2	2	0	--	N	spatially weighted average less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	764.5	1	TP-R-A11-5-1, B11-602C-08, C10-2176-02, B10-7-10, B10-511-03, TP-R-A11-4-2	Y	greater than IGWSRS
Mercury	mg/kg	0.32	0.37	1	B11-523-03	Y	greater than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 8 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 9 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	48.5	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Zinc	mg/kg	930				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 9 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	45.7	1	B11-1-11	Y	greater than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	27936	1	B11-1-11, C11-12-02, B11-11-05	Y	greater than IGWSRS
Mercury	mg/kg	0.32	1.03	1	B11-1-11	Y	greater than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 10 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	604.8	1	TP-R-A12-1-1	Y	greater than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	152.9	1	A12-8-05	Y	greater than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 10 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	18.5	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	2951	1	C11-10-01, B11-1-08, C11-1-17	Y	greater than IGWSRS
Mercury	mg/kg	0.32	0.17	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000	990.3	0	--	N	spatially weighted average less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 11 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	7.9	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32	0.24	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Single Point Co	Compliance Averaging Using Spatially Weighted Thiessen Polygons			Summary	
COC	Units	IGWSRS	Spatially Weighted Mean	Spatial Weighting Exceeds IGWSRS	Sample(s) Exceeding Criteria	COC (Y/N)	Rationale
FA 11 - Deep							
1,3-Dinitrobenzene	ug/kg	500					max concentration less than IGWSRS
Nitrobenzene	ug/kg	200	204	1	B11-2044-03	Y	greater than IGWSRS
Antimony	mg/kg	6	2.43	0	--	N	spatially weighted average less than IGWSRS
Arsenic	mg/kg	19	27.9	1	B11-2044-03	Y	greater than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	1111	1	C11-8-05, B11-2044-05	Y	greater than IGWSRS
Mercury	mg/kg	0.32	0.79	1	B11-2044-03	Y	greater than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11	1.84	0	--	N	spatially weighted average less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	95UCL less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 12 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	296	0	--	N	spatially weighted average less than IGWSRS
Nitrobenzene	ug/kg	200					max concentration less than IGWSRS
Antimony	mg/kg	6					max concentration less than IGWSRS
Arsenic	mg/kg	19	6.7	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08					max concentration less than IGWSRS
Cadmium	mg/kg	2					max concentration less than IGWSRS
Copper	mg/kg	11000					max concentration less than IGWSRS
Lead	mg/kg	90	201.2	1	B12-237-01	Y	greater than IGWSRS
Mercury	mg/kg	0.32					max concentration less than IGWSRS
Nickel	mg/kg	48	10.6	0	--	N	spatially weighted average less than IGWSRS
Selenium	mg/kg	11					max concentration less than IGWSRS
Thallium	mg/kg	3					max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000					max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000					max concentration less than IGWSRS
FA 12 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	15.2	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08	0.38	0	--	N	spatially weighted average less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	65.9	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3	1.1	0	--	N	spatially weighted average less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 13 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	219.9	0	--	N	spatially weighted average less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	125.4	1	B12-450-03	Y	greater than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 13 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200	156.4	0	--	N	spatially weighted average less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	156.8	1	C11-4-19	Y	greater than IGWSRS
Mercury	mg/kg	0.32	0.09	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 14 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	8.18	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 14 - Deep							
1,3-Dinitrobenzene	ug/kg	500	259.9	0	--	N	spatially weighted average less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	41.2	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32	0.13	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS

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Kenvil, NJ

		Single Point Co	Compliance Averaging Using Spatially Weighted Thiessen Polygons			Summary	
COC	Units	IGWSRS	Spatially Weighted Mean	Spatial Weighting Exceeds IGWSRS	Sample(s) Exceeding Criteria	COC (Y/N)	Rationale
FA 15 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	277.4	0	--	N	
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	104.2	1	A13-1-01	Y	greater than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 15 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	362.6	1	C12-4-01, C12-274-05	Y	greater than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 16 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	95UCL less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	321.7	1	SD-B13-3-01	Y	greater than IGWSRS
Mercury	mg/kg	0.32	0.55	1	TP-R-B13-2-2	Y	greater than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 16 - Deep							max concentration less than IGWSRS
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	12.8	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2	0.95	0	--	N	spatially weighted average less than IGWSRS
Copper	mg/kg	11000	14049	1	C12-5-02	Y	greater than IGWSRS
Lead	mg/kg	90	2310	1	C12-5-02, TP-R-B13-1-5, C12-3-03	Y	greater than IGWSRS
Mercury	mg/kg	0.32	0.06	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48	63.7	1	C12-5-02	Y	greater than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 17 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	11.3	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	47.1	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32	0.13	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 17 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	10	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	27.7	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32	0.34	1	TP-R-B13-2-8	Y	greater than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 18 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	325.9	0	--	N	spatially weighted average less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	39.6	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS

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Kenvil, NJ

		Single Point Co	Compliance Averaging Using Spatially Weighted Thiessen Polygons			Summary	
COC	Units	IGWSRS	Spatially Weighted Mean	Spatial Weighting Exceeds IGWSRS	Sample(s) Exceeding Criteria	COC (Y/N)	Rationale
FA 18 - Deep							
1,3-Dinitrobenzene	ug/kg	500	512.6	1	TP-R-B13-2-6	Y	greater than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19	3	0	--	N	spatially weighted average less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 19 - Shallow							
1,3-Dinitrobenzene	ug/kg	500	778.2	1	B13-682-04	Y	greater than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	95UCL less than IGWSRS
Mercury	mg/kg	0.32	0.26	0	--	N	spatially weighted average less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 19 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 20 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 20 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 21 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90	60.9	0	--	N	spatially weighted average less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 22 - Shallow							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS

Table 3. Compliance Averaging Summary Table - Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

		Single Point Co	Compliance Averaging Using Spatially Weighted Thiessen Polygons			Summary	
COC	Units	IGWSRS	Spatially Weighted Mean	Spatial Weighting Exceeds IGWSRS	Sample(s) Exceeding Criteria	COC (Y/N)	Rationale
FA 22 - Deep							
1,3-Dinitrobenzene	ug/kg	500	360.3	0	--	N	spatially weighted average less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS
FA 23 - Deep							
1,3-Dinitrobenzene	ug/kg	500				N	max concentration less than IGWSRS
Nitrobenzene	ug/kg	200				N	max concentration less than IGWSRS
Antimony	mg/kg	6				N	max concentration less than IGWSRS
Arsenic	mg/kg	19				N	max concentration less than IGWSRS
Beryllium	mg/kg	1.08				N	max concentration less than IGWSRS
Cadmium	mg/kg	2				N	max concentration less than IGWSRS
Copper	mg/kg	11000				N	max concentration less than IGWSRS
Lead	mg/kg	90				N	max concentration less than IGWSRS
Mercury	mg/kg	0.32				N	max concentration less than IGWSRS
Nickel	mg/kg	48				N	max concentration less than IGWSRS
Selenium	mg/kg	11				N	max concentration less than IGWSRS
Thallium	mg/kg	3				N	max concentration less than IGWSRS
Benzo[a]pyrene	ug/kg	3000				N	max concentration less than IGWSRS
N-Nitrosodiphenylamine	ug/kg	6000				N	max concentration less than IGWSRS

Notes:
IGWSRS - Impact to Groundwater Soil Remediation Standard
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
95UCL - 95 percent Upper Confidence Limit
ND = Non-detect
COC - Constituent of Concern
Y - yes
N - no

Table 4. Immobile Constituent Evaluation
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	A11-1-01	A11-1-04	A11-570-05	A11-9-03	A12-8-05	A13-1-01	B10-20-01	B10-20-01	B10-2178-03	B10-3-01
			Sample Date	10/8/1999	10/8/1999	10/14/1999	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/19/1999	6/16/2000
			Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft
			Sample ID	A11-1-011N	A11-1-041N	A11-570-051N	A11-9-031.3N	A12-8-052N	A13-1-012N	B10-20-011FD	B10-20-011N	B10-2178-031N	B10-3-011N
			Parent ID							B10-20-011N			
			Depth to Groundwater (ft bgs)	32	34	34	56	36	4	32	32	10	22
Chemical	CAS Number	Units	IGWSRS										
Lead	7439-92-1	mg/kg	90	1250	679	227	1700	1290	417	8400	5570	17200	213

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

NA = not analyzed

< = non-detect value

Table 4. Immobile Constituent Evaluation
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B10-503-06	B10-7-02	B10-7-10	B11-602C-08	B12-237-01	B12-450-03	C10-2176-02	C10-440-02	C10-466-02	SB-R-B11-02
			Sample Date	10/12/1999	11/18/1999	11/18/1999	10/14/1999	10/14/1999	10/15/1999	11/19/1999	10/8/1999	10/8/1999	5/25/2006
			Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.5-1.0 ft
			Sample ID	B10-503-062N	B10-7-021N	B10-7-101N	B11-602C-081N	B12-237-011.5N	B12-450-032N	C10-2176-021N	C10-440-022N	C10-466-021N	SB-R-B11-021.0FD
			Parent ID										SB-R-B11-021.0N
			Depth to Groundwater (ft bgs)	28	8	4	8	12	8	6	30	20	12
Chemical	CAS Number	Units	IGWSRS										
Lead	7439-92-1	mg/kg	90	244	1080	658	858	1540	158	377	1550	3070	183

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

NA = not analyzed

< = non-detect value

Table 4. Immobile Constituent Evaluation
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-B11-02	SB-R-B11-02	SD-B13-3-01	TP-R-A11-4-2	TP-R-A11-4-2	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A11-5-1	TP-R-A11-5-1	TP-R-A11-7-1
			Sample Date	5/25/2006	5/25/2006	5/1/2001	8/7/2006	8/7/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006
			Sample Depths	0.5-1.0 ft	6.0-6.5 ft	0.0-0.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	7.0-7.5 ft	1.5-2.0 ft	5.0-5.5 ft	1.5-2.0 ft
			Sample ID	SB-R-B11-021.0N	SB-R-B11-026.5N	SD-B13-3-010.5N	TP-R-A11-4-22.0N	TP-R-A11-4-28.5N	TP-R-A11-504-12.0N	TP-R-A11-504-17.5N	TP-R-A11-5-12.0N	TP-R-A11-5-15.5N	TP-R-A11-7-12.0N
			Parent ID										
			Depth to Groundwater (ft bgs)	12	12	6	28	28	22	22	38	38	26
Chemical	CAS Number	Units	IGWSRS										
Lead	7439-92-1	mg/kg	90	173	4.55	3260	3790	104	1350	7.55	411	7.02	13300

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

NA = not analyzed

< = non-detect value

Table 4. Immobile Constituent Evaluation
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-A11-7-1	TP-R-B10-2/B10-509-2	TP-R-B10-2/B10-509-2	TP-R-B10-2/B10-509-2	TP-R-B10-2/B10-509-6	TP-R-B10-2/B10-509-6	TP-R-B10-2/B10-509-6
			Sample Date	8/7/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
			Sample Depths	6.5-7.0 ft	1.5-2.0 ft	8.0-8.5 ft	9.5-10.0 ft	1.5-2.0 ft	1.5-2.0 ft	9.5-10.0 ft
			Sample ID	TP-R-A11-7-17.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-28.5N	TP-R-B10-2/B10-509-210.0N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-610.0N
			Parent ID					TP-R-B10-2/B10-509-62.0N		
			Depth to Groundwater (ft bgs)	26	20	20	20	12	12	12
Chemical	CAS Number	Units	IGWSRS							
Lead	7439-92-1	mg/kg	90	396	770	311	16	617	561	5.66

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

NA = not analyzed

< = non-detect value

Table 4. Immobile Constituent Evaluation
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-C10-439-1
			Sample Date	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006
			Sample Depths	1.5-2.0 ft	13.0-13.5 ft	7.5-8.0 ft	1.5-2.0 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft
			Sample ID	TP-R-B10-501-12.0N	TP-R-B10-501-113.5N	TP-R-B10-501-18.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-508-417.0N	TP-R-B10-508-46.0N	TP-R-C10-439-12.0N
			Parent ID				TP-R-B10-508-42.0N				
			Depth to Groundwater (ft bgs)	22	22	22	26	26	26	26	30
Chemical	CAS Number	Units	IGWSRS								
Lead	7439-92-1	mg/kg	90	1040	1880	1300	6820	4090	10.1	587	7510

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

NA = not analyzed

< = non-detect value

Table 4. Immobile Constituent Evaluation
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-C10-439-1	TP-R-C10-439-3	TP-R-C10-439-3	C10-12-03	C10-12-03	SD-C10-1-01	B10-511-03
			Sample Date	8/11/2006	8/11/2006	8/11/2006	11/16/1999	11/16/1999	4/25/2001	11/19/1999
			Sample Depths	8.0-8.5 ft	1.5-2.0 ft	10.0-10.5 ft	0.0-1.0 ft	0.0-1.0 ft	1.5-2.0 ft	0.0-2.0 ft
			Sample ID	TP-R-C10-439-18.5N	TP-R-C10-439-32.0N	TP-R-C10-439-310.5N	C10-12-031FD	C10-12-031N	SD-C10-1-012N	B10-511-032N
			Parent ID				C10-12-031N			
			Depth to Groundwater (ft bgs)	30	28	28	16	16	18	8
Chemical	CAS Number	Units	IGWSRS							
Lead	7439-92-1	mg/kg	90	3.92	1610	3.11	884	1110	840	1160

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

NA = not analyzed

< = non-detect value

Table 5. Constituents of Concern within Excavation Areas – Direct Contact
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Secondary COC	Depth	Exceeding Sample In Excavation Area?	Excavation Areas Affected	Exceeding Sample ID(s)	Figure Number
Lead	Shallow	Y	B, G, M, R	**B** (B10-2178-03), **G** (C11-9-04), **M** (TP-R-A11-7-1), **R** (SD-B13-3-01)	6
Arsenic	Shallow	Y	B, G	**B** (B10-2178-05), **G** (C11-9-04)	7
Nitroglycerin	Shallow	Y	T	B13-724-01	8

Notes:
COC = constituent of concern
Y = yes

Table 6. Constituents of Concern within Excavation Areas – Impact to Groundwater
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Secondary COC		Exceeding Sample In Excavation Area?	Excavation Areas Affected	Exceeding Sample ID(s)	Figure Number
Lead	Shallow	Y	B, E, F, M, N, O, R	**B** (B10-3-01, TP-R-B10-2/B10-509-2, TP-R-B10-508-4, TP-R-B10-2/B10-509-6, B10-7-10, B10-7-02, B10-511-03, B10-2178-03, SB-R-B11-02), **E** (TP-R-A11-504-1), **F** (B11-602C-08), **M** (TP-R-A11-7-1), **N** (B12-237-01), **O** (A12-8-05), **R** (SD-B13-3-01)	9
	Deep	Y	R	TP-R-B13-1-5	10
Arsenic	Shallow	Y	B	B10-2178-05	11
	Deep	N	--	--	12
Mercury	Shallow	N	--	--	13
	Deep	N	--	--	14
Copper	Deep	N	--	--	15
Nickel	Deep	N	--	--	16
Nitrobenzene	Shallow	Y	B	B10-3-01, B10-7-02	17
	Deep	N	--	--	18
1,3-Dinitrobenzene	Shallow	Y	B, M, O, T	**B** (TP-R-B10-508-3, B10-7-02, B10-7-10, TP-RD-B10-12), **M** (TP-RD-A11-03), **O** (TP-R-A12-1-1), T (B13-682-04)	19
	Deep	Y	S	TP-R-B13-2-6	20

Notes:
COC = constituent of concern
Y = yes
N = no

Exhibit 1

Project Area Dataset

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
Sample Date						10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
Sample Depths						0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
Sample ID						A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240	< 220	NA	NA	NA	< 250	740	NA	NA	NA	NA	NA	NA	NA	< 250	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	< 240	< 200	NA	< 240	< 220	NA	NA	NA	< 250	< 240	NA	NA	NA	NA	NA	NA	NA	< 250	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	< 39000	< 44.3	60900	88500	< 41.5	< 39903.09	NA	NA	< 40489.07	103000	NA	NA	NA	NA	NA	NA	NA	104000	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA	NA	< 5368.6	< 6354	< 6000	< 7080	< 5183	< 5690	NA	NA	< 5840	< 5537.1	NA	NA	NA	NA	NA	NA	NA	26200	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	< 480	< 400	NA	< 480	< 430	NA	NA	NA	< 500	< 480	NA	NA	NA	NA	NA	NA	NA	< 500	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	16.2	16.5	NA	NA	6.5	NA	NA	NA	10.9	NA	NA	9.8	NA	20.7	7.5	NA	NA	22.8	NA	NA	6.6	NA	NA
Gravel	Gravel	%				NA	16.2	19	NA	NA	54.4	NA	NA	NA	26.9	NA	NA	31.3	NA	33	37.6	NA	NA	19.3	NA	NA	35.8	NA	NA
Sand	Sand	%				NA	42.7	41.3	NA	NA	33.4	NA	NA	NA	46.6	NA	NA	31.9	NA	28.4	35.2	NA	NA	37.4	NA	NA	41.4	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	24.9	23.3	NA	NA	5.6	NA	NA	NA	15.6	NA	NA	27	NA	17.8	19.7	NA	NA	20.4	NA	NA	16.2	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	< 1	< 0.43	NA	< 0.52	< 0.54	NA	< 0.658053	0.52	< 0.6331	< 0.43	< 0.59	< 0.46	NA	NA	< 0.5	NA	< 0.62	< 0.773616	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	10.1	4.3	NA	3.2	2.1	NA	2.82	4.5	2.06	2.4	5.5	3	NA	NA	3	NA	4	3.43	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	0.38	0.63	NA	0.36	0.39	NA	0.93	0.61	0.126	0.25	0.72	0.49	NA	NA	NA	1	0.22	0.189	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	0.34	< 0.26	NA	< 0.31	< 0.32	NA	0.693	< 0.28	< 0.31655	< 0.26	0.04	0.53	NA	NA	0.18	NA	0.22	0.252	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	12.7	15.9	NA	10.5	11.2	NA	11.5	14.8	9.08	12.8	20.4	12.5	NA	NA	15.5	NA	9.7	10.3	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	19.8	13.1	NA	56	7	NA	7.98	23.8	5.41	27.6	22	27.8	NA	NA	14.5	NA	9.2	7.65	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	**1250**	**679**	NA	305	136	NA	36.7	227	13.9	14.1	**1700**	**577**	NA	NA	NA	5.4	57.9	37.8	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	0.15	0.06	NA	0.05	0.03	NA	0.037	0.37	< 0.0376	0.04	0.06	0.07	NA	NA	NA	< 0.03	0.11	0.035	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	10	9.3	NA	6.2	5.7	NA	4.69	10.8	2.49	4.3	10.2	8.4	NA	NA	6.6	NA	4.6	4.23	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	1.8	1	NA	0.67	0.59	NA	1.65	1	0.606	0.83	1.3	0.79	NA	NA	< 0.5	NA	0.57	0.767	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	0.48	< 0.26	NA	< 0.31	< 0.32	NA	0.316	< 0.28	< 0.31655	< 0.26	0.12	< 0.27	NA	NA	< 0.3	NA	0.12	< 0.386808	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	< 2	< 0.86	NA	< 1	0.68	NA	< 1.096755	< 0.94	< 1.055166	< 0.87	< 1.2	< 0.92	NA	NA	< 0.99	NA	< 1.2	< 1.289359	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	424	157	NA	39.1	30	NA	39.6	119	11.8	25.9	68.3	190	NA	NA	37.2	NA	49.6	18.2	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	84.4	66.1	NA	NA	88.7	73.2	82.9	70.1	87.7	86.6	77.9	83.1	85.4	84	79.2	84	NA	74.5	NA	88.4	77.2	76.8	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
Sample Date						10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
Sample Depths						0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
Sample ID						A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500	< 1900	NA	< 855.182	< 2000	< 780.822	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	< 866.724	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	51	< 460	NA	< 490	< 380	NA	< 428	55	< 390	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	21	< 460	NA	< 490	< 380	NA	< 428	< 400	< 390	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	NA	< 400	NA	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 427.591	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	< 750	< 910	NA	< 980	< 760	NA	< 855.182	< 800	< 780.822	< 800	< 840	< 800	NA	< 900	NA	NA	< 860	< 866.724	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500	< 1900	NA	< 855.182	< 2000	< 780.822	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	< 866.724	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500	< 1900	NA	NA	< 2000	NA	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 855.182	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	40.7	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	37	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	92	< 400	NA	< 450	NA	NA	70	50.7	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	35	< 460	NA	28	< 380	NA	< 427.591	37	< 390.411	< 400	98	< 400	NA	< 450	NA	NA	80	71.1	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	110	< 400	NA	< 450	NA	NA	110	< 433.362	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	NA	< 400	NA	< 400	< 420	< 400	NA	< 450	NA	NA	84	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
Sample Date						10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
Sample Depths						0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
Sample ID						A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	18	24	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	22	< 420	< 400	NA	< 450	NA	NA	43	< 433.362	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	97	< 400	NA	< 450	NA	NA	85	57.6	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	19	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	98	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	170	< 400	NA	< 450	NA	NA	130	101	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	NA	< 400	NA	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 427.591	< 400	NA	NA	< 420	< 400	NA	< 450	NA	NA	< 430	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	24000	< 390.411	2200	< 420	500	NA	< 450	NA	NA	< 430	< 433.362	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	< 1900	< 2300	NA	< 2500	< 1900	NA	< 855.182	< 2000	< 780.822	< 2000	< 2100	< 2000	NA	< 2300	NA	NA	< 2200	< 866.724	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	25	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	39	< 400	NA	< 450	NA	NA	97	78.4	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	< 420	< 400	NA	< 450	NA	NA	< 430	< 433.362	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	< 370	< 460	NA	< 490	< 380	NA	< 427.591	< 400	< 390.411	< 400	150	< 400	NA	< 450	NA	NA	200	< 433.362	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	11300	44000	NA	NA	73500	NA	NA	NA	14200	NA	NA	27700	NA	13800	57300	NA	NA	5250	NA	NA	121000	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	< 620	NA	NA	< 620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				< 1200	NA	NA	< 1200	< 1250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	< 1100
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	< 2500	NA	NA	< 2500	< 2500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2100	NA	NA	NA	NA	NA	< 2200
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 620	NA	NA	< 620	< 6250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Bromoform	75-25-2	ug/kg	30.00	280000	81000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	< 1200	NA	NA	< 1200	< 1250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	< 1100
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Chloroethane	75-00-3	ug/kg		1100000	220000	< 1200	NA	NA	< 1200	< 1250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	< 1100
Chloroform	67-66-3	ug/kg	400	2000	600	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Chloromethane	74-87-3	ug/kg		12000	4000	< 1200	NA	NA	290	< 1250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	360	NA	NA	NA	NA	NA	150

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05	A10-516-06	A11-1-01	A11-1-04	A11-1-04	A11-3-03	A11-3-05	A11-3-05	A11-570-01	A11-570-05	A11-8-02	A11-8-03	A11-9-03	A11-9-04	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-4-01	A12-4-02	A12-5-03
						Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/8/1999	10/8/1999	6/8/2000	10/8/1999	10/8/1999	6/8/2000	6/8/2000	10/14/1999	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/15/1999	6/8/2000	10/15/1999
						Sample Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft
						Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N	A10-516-060.5N	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N	A11-3-051N	A11-3-051.5N	A11-570-012N	A11-570-051N	A11-8-021.5N	A11-8-032N	A11-9-031.3N	A11-9-041N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-4-011N	A12-4-021.25N	A12-5-030.5N
						Parent ID																			A12-3-					
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	< 540
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	< 540
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	< 540
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	< 540
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	< 490	NA	NA	< 620	< 2500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	560
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	< 540
Toluene	108-88-3	ug/kg	7000	91000000	6300000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	< 540
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	< 540
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	< 620	NA	NA	< 620	< 625	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 530	NA	NA	NA	NA	NA	NA	< 540
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	< 1200	NA	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	NA	< 1100
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	0-2/B10-509-3(20	0-2/B10-509-3(20	0-2/B10-509-3(20	0-2/B10-509-7(2	B10-20-01	B10-20-01
Sample Date						10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/10/2017	10/10/2017	10/2/2017	10/15/1999	10/15/1999
Sample Depths						0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	A12-7-042N10/14/1999	0.0-2.0 ft A12-7-042N11/19/1999	0.0-2.0 ft	0.0-2.0 ft	A13-753-010.5N	A13-753-0110/15/1999	0.0-2.0 ft A13-753-012N10/15/1999	A13-753-0111/18/1999	0.0-2.0 ft A13-753-012N11/18/1999	1.5-2.0 ft TP-R-B10-2/B10-509-3(01.5-02.0)	2.0-2.5 ft TP-R-B10-2/B10-509-3(02.0-02.5)	3.0-3.5 ft TP-R-B10-2/B10-509-3(03.0-03.5)	4.5-5.0 ft TP-R-B10-2/B10-509-7(04.5-05.0)	0.0-1.0 ft	0.0-1.0 ft
Sample ID						A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N			A12-8-052N	A13-1-012N										B10-20-011FD	B10-20-011N
Parent ID										A12-6-022N		A12-7-031N																B10-20-011N	
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	< 217	< 227	< 200	< 220	NA	NA	< 240	45000	< 250	NA	< 240	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA	< 217	< 227	100	< 220	NA	NA	< 240	3100	< 250	NA	< 240	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	NA	NA	NA	NA	< 217	< 227	440	390	NA	NA	3200	**14600000**	2200	NA	< 240	NA	NA	NA	280	360	< 120	< 110	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA	NA	NA	< 240	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	NA	NA	NA	NA	< 217	< 227	990	1300	NA	NA	**8100**	< 220	1700	NA	< 240	NA	NA	NA	280	700	< 120	< 110	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	NA	NA	NA	NA	< 217	< 227	840	980	NA	NA	**5700**	< 220	990	NA	< 240	NA	NA	NA	720	960	< 120	< 110	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 120	< 120	< 110 J+	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	< 217	< 227	< 200	< 220	NA	NA	< 240	< 220	< 250	NA	< 240	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	< 40500	< 41957.96	102000	84100	NA	NA	NA	161000	97300	NA	72500	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA	< 6010	< 5980	< 5279.4	< 5714.3	NA	NA	NA	< 6376.5	< 5463.3	NA	< 543.1	NA	NA	NA	< 120 J+	< 120	< 120	< 110 J+	NA	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480	NA	NA	NA	< 120 J+	< 120	< 120	< 110 J+	NA	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120 J+	< 120	< 120	< 110 J+	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480	NA	NA	NA	< 120	< 120	< 120	< 110 J+	NA	NA
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	< 435	< 455	< 400	< 430	NA	NA	< 480	< 430	< 500	NA	< 480	NA	NA	NA	< 120	< 120	< 120	< 110	NA	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	10	12	NA	NA	NA	5.3	16.6	NA	NA	8.6	11	NA	7.4	NA	NA	NA	NA	NA	NA	NA	NA	3
Gravel	Gravel	%				NA	NA	30.3	39.9	NA	NA	NA	40.6	24.5	NA	NA	38.6	39	NA	28	NA	NA	NA	NA	NA	NA	NA	NA	70.6
Sand	Sand	%				NA	NA	43.5	36.3	NA	NA	NA	45.4	13.9	NA	NA	38.3	23.4	NA	44.9	NA	NA	NA	NA	NA	NA	NA	NA	23.1
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	16.2	11.8	NA	NA	NA	8.7	45	NA	NA	14.5	26.6	NA	19.6	NA	NA	NA	NA	NA	NA	NA	NA	3.3
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	< 0.58	< 0.651	< 0.640577	< 0.47	< 0.51	NA	< 0.58	NA	< 0.56	< 0.52	NA	NA	NA	NA	NA	< 0.54	NA	NA	NA	NA	7.7	< 11.6
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	3.2	2.03	1.79	2	2.7	NA	5.2	NA	6.3	5.9	NA	NA	NA	NA	4.3	NA	NA	NA	NA	**37.6**	**41**
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	0.13	0.119	0.117	0.11	0.1	NA	0.85	NA	0.67	0.71	NA	NA	NA	0.73	NA	NA	NA	NA	NA	0.51	0.54
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	< 0.35	< 0.325548	< 0.320288	< 0.28	< 0.31	NA	< 0.35	NA	< 0.34	< 0.31	NA	NA	NA	NA	0.32	NA	NA	NA	NA	8.8	6.1
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	100000	NA	NA	NA	8.3	13.4	11.6	6.9	5.4	NA	22.7	NA	22.9	18.1	NA	NA	NA	NA	16.2	NA	NA	NA	NA	39.6	27
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	7.2	5.5	5.27	7.2	8	NA	16.8	NA	874	23.3	NA	NA	NA	NA	17.3	NA	NA	NA	NA	177	128
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	91.1	11.3	4.94	33.9	75.7	NA	26.9	NA	**1290**	**417**	NA	NA	NA	334	NA	NA	NA	NA	NA	**8400**	**5570**
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	1.8	1.32	0.849	0.05	0.03	0.08	NA	NA	0.21	0.06	NA	NA	NA	NA	0.11	NA	NA	NA	NA	0.53	0.49
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	2.1	3.6	2.97	3	2.2	NA	14.7	NA	17.2	10.7	NA	NA	NA	NA	9	NA	NA	NA	NA	34.3	21.3
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	0.73	0.447	0.383	0.62	1	NA	0.93	NA	1.1	1	NA	NA	NA	NA	1.1	NA	NA	NA	NA	< 12.5	< 11.6
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	< 0.35	< 0.326	< 0.320288	< 0.28	< 0.31	NA	< 0.35	NA	< 0.34	< 0.31	NA	NA	NA	NA	< 0.33	NA	NA	NA	NA	3.4	< 7
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	< 1.2	< 1.09	< 1.067628	< 0.93	< 1	NA	< 1.2	NA	< 1.1	< 1	NA	NA	NA	NA	< 1.1	NA	NA	NA	NA	< 25	< 23.2
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	12.6	11.2	11.2	16.9	9.9	NA	89.8	NA	211	59.6	NA	NA	NA	NA	77.8	NA	NA	NA	NA	4430	4810
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	86	83.2	84.8	89.7	NA	NA
Percent Solids	SOLID	percent				88.5	NA	84.5	73.3	83	83.6	88.1	87.5	83.1	NA	NA	76.5	83.2	NA	83.7	NA	80	NA	NA	NA	NA	NA	61.4	72.5

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	0-2/B10-509-3(20	0-2/B10-509-3(20	0-2/B10-509-3(20	0-2/B10-509-7(2	B10-20-01	B10-20-01
Sample Date						10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/10/2017	10/10/2017	10/2/2017	10/15/1999	10/15/1999
Sample Depths						0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	2.0-2.5 ft	3.0-3.5 ft	4.5-5.0 ft	0.0-1.0 ft	0.0-1.0 ft
Sample ID						A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	TP-R-B10-2/B10-509-3(02.0-02.5)	TP-R-B10-2/B10-509-3(03.0-03.5)	TP-R-B10-2/B10-509-7(04.5-05.0)	B10-20-011FD	B10-20-011N
Parent ID										A12-6-022N		A12-7-031N																B10-20-011N	
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 1900	NA	< 2000	< 2200	< 803	< 797.162	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	< 2000	NA	NA	NA	NA	NA	NA	< 2700	< 2300
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 380	NA	< 400	< 440	< 402	< 399	46	41	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	190	96
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 380	NA	< 400	< 440	< 402	< 399	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	35	25
2-Chloronaphthalene	91-58-7	ug/kg				< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 380	NA	< 400	< 440	NA	NA	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 760	NA	< 800	< 880	< 803	< 797.162	< 760	< 760	NA	< 800	NA	< 1800000	< 800	NA	NA	< 790	NA	NA	NA	NA	NA	NA	< 1100	< 920
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 1900	NA	< 2000	< 2200	< 803	< 797.162	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	< 2000	NA	NA	NA	NA	NA	NA	< 2700	< 930
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 1900	NA	< 2000	< 2200	NA	NA	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	< 2000	NA	NA	NA	NA	NA	NA	< 2700	< 2300
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 380	NA	< 400	< 440	< 402	99.3	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Acenaphthylene	208-96-8	ug/kg		300000000		< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	19	NA	< 880000	41	NA	NA	33	NA	NA	NA	NA	NA	NA	43	26
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	< 380	NA	< 400	< 440	< 402	112	< 380	< 380	NA	64	NA	< 880000	75	NA	NA	33	NA	NA	NA	NA	NA	NA	67	31
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 380	NA	< 400	< 440	< 402	177	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	48	NA	48	140	< 402	129	78	67	NA	240	NA	< 880000	650	NA	NA	340	NA	NA	NA	NA	NA	NA	410	190
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 380	NA	46	170	< 402	148	75	63	NA	200	NA	< 880000	**580**	NA	NA	300	NA	NA	NA	NA	NA	NA	390	190
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 380	NA	< 400	320	< 402	< 398.581	97	80	NA	280	NA	< 880000	740	NA	NA	320	NA	NA	NA	NA	NA	NA	670	380
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	< 380	NA	< 400	140	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	170	NA	NA	180	NA	NA	NA	NA	NA	NA	300	250
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 380	NA	94	110	NA	NA	< 380	< 380	NA	100	NA	< 880000	340	NA	NA	220	NA	NA	NA	NA	NA	NA	320	170

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	-2/B10-509-3(20	-2/B10-509-3(20	-2/B10-509-3(20	-2/B10-509-7(2	B10-20-01	B10-20-01
						Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/10/2017	10/10/2017	10/2/2017	10/15/1999	10/15/1999
						Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	2.0-2.5 ft	3.0-3.5 ft	4.5-5.0 ft	0.0-1.0 ft	0.0-1.0 ft
						Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	TP-R-B10-2/B10-509-3(02.0-02.5)	TP-R-B10-2/B10-509-3(03.0-03.5)	TP-R-B10-2/B10-509-7(04.5-05.0)	B10-20-011FD	B10-20-011N
						Parent ID					A12-6-022N		A12-7-031N																B10-20-011N	
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	29	NA	33	67	< 402	35.5	140	< 380	NA	20	NA	< 880000	< 400	NA	NA	31	NA	NA	NA	NA	NA	NA	120	74
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	54	NA	78	130	< 402	155	72	61	NA	190	NA	< 880000	530	NA	NA	300	NA	NA	NA	NA	NA	NA	440	280
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Dimethylphthalate	131-11-3	ug/kg				< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 380	NA	< 400	< 440	< 402	< 398.581	74	< 380	NA	86	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	88	NA	120	200	< 402	370	120	98	NA	420	NA	< 880000	1000	NA	NA	500	NA	NA	NA	NA	NA	NA	550	360
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 380	NA	< 400	< 440	< 402	58.2	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	23
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 380	NA	< 400	< 440	NA	NA	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 380	NA	< 400	110	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	190	NA	NA	170	NA	NA	NA	NA	NA	NA	300	210
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	25	< 460
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	< 380	NA	< 400	< 440	NA	NA	NA	NA	NA	< 400	NA	NA	NA	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 380	NA	< 400	< 440	< 402	< 398.581	19	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 1900	NA	< 2000	< 2200	< 803	< 797.162	< 1900	< 1900	NA	< 2000	NA	< 4400000	< 2000	NA	NA	< 2000	NA	NA	NA	NA	NA	NA	< 2700	< 2300
Phenanthrene	85-01-8	ug/kg		300000000		48	NA	84	< 440	71.5	563	< 380	< 380	NA	150	NA	< 880000	190	NA	NA	95	NA	NA	NA	NA	NA	NA	320	200
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 380	NA	< 400	< 440	< 402	< 398.581	< 380	< 380	NA	< 400	NA	< 880000	< 400	NA	NA	< 400	NA	NA	NA	NA	NA	NA	< 550	< 460
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	130	NA	100	290	< 402	465	97	< 380	NA	320	NA	< 880000	740	NA	NA	400	NA	NA	NA	NA	NA	NA	1000	480
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	51400	66300	NA	NA	NA	16300	NA	NA	NA	26500	47600	NA	16900	NA	NA	NA	NA	NA	NA	NA	NA	NA	182000
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	< 2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	A12-5-03	A12-5-05	A12-5-05	A12-6-01	A12-6-02	A12-6-02	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	A13-1-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	0-2/B10-509-3(20	0-2/B10-509-3(20	0-2/B10-509-3(20	0-2/B10-509-7(2	B10-20-01	B10-20-01
						Sample Date	10/15/1999	10/15/1999	10/15/1999	10/14/1999	6/8/2000	6/8/2000	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/14/1999	10/15/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/3/2017	10/10/2017	10/10/2017	10/2/2017	10/15/1999	10/15/1999
						Sample Depths	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	2.0-2.5 ft	3.0-3.5 ft	4.5-5.0 ft	0.0-1.0 ft	0.0-1.0 ft
						Sample ID	A12-5-031.5N	A12-5-050.5N	A12-5-051N	A12-6-012N	A12-6-022FD	A12-6-022N	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	TP-R-B10-2/B10-509-3(01.5-02.0)	TP-R-B10-2/B10-509-3(02.0-02.5)	TP-R-B10-2/B10-509-3(03.0-03.5)	TP-R-B10-2/B10-509-7(04.5-05.0)	B10-20-011FD	B10-20-011N
						Parent ID					A12-6-022N		A12-7-031FD																B10-20-011N	
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	< 580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	< 1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02	B10-503-06	B10-503-07	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04
Sample Date						11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999	10/12/1999	8/11/2006	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999
Sample Depths						0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	11.5-12.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-5 ft	0.0-1.3 ft
Sample ID						B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N	B10-503-062N	B10-503-0712.0N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD
Parent ID							B10-2178-051N																					B11-2044-041.3N
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																							
Explosives and Energetics																												
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 230	1100	1200	NA	NA	NA	NA	< 220	< 230	< 217.4	NA	< 210	< 250	210	< 208.4	NA	< 643468	< 700869	< 250	< 210	< 220	NA	< 150	< 160
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 230	5200	3700	NA	NA	NA	NA	< 220	< 230	< 217.4	< 320	< 210	821	270	< 208.4	NA	< 643468	< 700869	< 250	< 210	< 220	NA	< 150	< 160
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 230	710	4600	NA	NA	NA	NA	< 220	< 230	< 217.4	< 320	< 210	< 250	1900	< 208.4	NA	**22600000**	**28900000**	< 250	< 210	< 220	NA	85	< 160
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 230	< 220	< 250	NA	NA	NA	NA	150	< 230	1351.7	< 320	< 210	< 250	2500	508.3	NA	< 643468	< 700869	< 250	300	< 220	NA	270	< 160
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 450	270	210	NA	NA	NA	NA	< 430	< 450	< 434.8	NA	< 420	671	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450	< 434.8	NA	< 420	276	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 230	210	800	NA	NA	NA	NA	150	< 230	1290	< 640	< 210	1830	1600	433.8	NA	< 643468	< 700869	< 250	150	< 220	NA	200	< 160
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 450	650	440	NA	NA	NA	NA	< 430	< 450	< 434.8	NA	< 420	2310	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 230	410	250	NA	NA	NA	NA	< 220	< 230	< 217.4	NA	< 210	244	< 240	< 208.4	NA	< 643468	< 700869	< 250	120	< 220	NA	< 150	< 160
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	90100	37600	109000	< 130000	116000	< 46	NA	45500	NA	NA	NA	NA	NA	NA	NA	126000	108000
Nitroglycerin	55-63-0	ug/kg		200000	46000	2000	4100	3300	NA	NA	NA	NA	< 6016.8	< 5386.8	< 5763.5	< 6400	< 5814.1	< 6610	< 4900	< 5705.3	NA	< 1400000	< 1300000	< 4500	< 4800	< 4900	NA	2800	< 4500
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450	< 434.8	< 800	< 420	< 500	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310
Pentaerythritol Tetranitrate	78-11-5	ug/kg				260000	1600	1300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450	< 434.8	< 320	< 420	< 500	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310
Tetryl	479-45-8	ug/kg		10000000	780000	< 450	< 430	< 500	NA	NA	NA	NA	< 430	< 450	< 434.8	NA	< 420	< 500	< 480	< 416.7	NA	< 1286935	< 1401738	< 500	< 420	< 430	NA	< 310	< 310
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				6.77	6.58	6.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.41	5.79	5.36	4.71	NA	4.96	NA	NA	NA
Grain Size																													
Clay	Clay	%				12.3	NA	NA	NA	21.4	14.8	NA	NA	NA	11.8	NA	13	NA	15.9	16.1	NA	NA	4.9	17.9	4.8	NA	13.3	NA	NA
Gravel	Gravel	%				37.6	NA	NA	NA	12	19.3	NA	NA	NA	28	NA	33.7	NA	19.5	20.6	NA	NA	31.1	21.6	30	NA	34.4	NA	NA
Sand	Sand	%				32.2	NA	NA	NA	37.3	43.9	NA	NA	NA	33.8	NA	33.4	NA	39.9	40.5	NA	NA	53	26	49.8	NA	33.9	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				17.9	NA	NA	NA	29.3	22	NA	NA	NA	26.4	NA	19.9	NA	24.7	22.8	NA	NA	11	34.5	15.4	NA	18.4	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	3.4	2.2	21.8	< 0.697	< 0.64	< 0.55	< 0.682	< 0.47	< 0.51	< 0.47	NA	< 0.51	< 0.496	< 0.44	< 0.5	NA	0.51	0.57	2	1.3	2.2	< 0.45	< 0.54	< 0.47
Arsenic	7440-38-2	mg/kg	19	19	19	14.6	**334**	**274**	4.7	4.5	3.6	3.49	4.3	2.3	4	NA	4.8	5.92	6.2	4	NA	6.1	5.4	**64.4**	12.9	**53.8**	3.5	**20**	7
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.57	0.33	< 30	0.642	0.77	0.69	0.314	0.84	0.54	0.4	NA	0.5	0.735	0.8	0.64	NA	0.76	0.45	0.51	0.21	0.22	0.44	0.68	0.69
Cadmium	7440-43-9	mg/kg	2	78	78	1.3	1	< 30	0.246	0.05	< 0.33	0.123	0.03	0.7	< 0.28	NA	< 0.31	0.739	< 0.26	< 0.3	NA	0.44	0.05	< 0.25	0.08	< 0.26	< 0.27	< 0.33	< 0.28
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	42	13.3	16.6	16.2	19.1	18.8	16.1	21.2	9.5	18.4	NA	17	17.9	20.4	18.8	NA	18.4	13	17.6	6.4	7.9	16.6	75.2	56
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	186	211	**48500**	18.6	18.8	20.6	14.7	15.7	12.2	18	NA	64.1	20.2	33.1	16.7	NA	22.1	37.9	46	12.7	17.8	13.6	19.9	16.4
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	**17200**	318	270	213	111	41.7	11.6	25.1	162	244	NA	250	21.7	**1160**	7.3	NA	**1080**	**658**	**16900**	**7320**	**33800**	26.6	63.8	39.4
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	2.3	0.15	0.13	0.097	0.05	0.04	0.034	0.03	0.03	0.11	NA	0.09	0.436	0.17	0.02	NA	0.07	0.06	0.96	0.24	1.2	0.05	0.04	0.03
Nickel	7440-02-0	mg/kg	48	23000	1600	25.8	10.7	71.4	8.5	11.3	12.7	7.86	11.5	6.7	6.5	NA	10.3	11.8	10.6	11.3	NA	10	7.5	7.8	3.8	2.8	5.9	7.8	7.7
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	0.85	1	15.8	1.23	0.57	< 0.55	1.07	0.41	< 0.51	1.1	NA	1.2	1.12	0.72	0.74	NA	0.85	0.64	4.6	1.2	13.8	0.74	0.24	0.11
Silver	7440-22-4	mg/kg	1	5700	390	0.87	< 0.22	< 30	< 0.348	< 0.38	< 0.33	< 0.341	< 0.28	< 0.31	< 0.28	NA	< 0.31	< 0.248	< 0.26	< 0.3	NA	< 0.28	0.08	0.67	0.57	1.5	< 0.27	< 0.33	< 0.28
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 0.97	< 0.82	< 100	< 1.16	< 1.3	< 1.1	< 1.14	< 0.93	< 1	< 0.93	NA	< 1	< 0.827	< 0.87	< 1	NA	< 0.98	< 0.82	3	< 1.2	1.3	0.53	< 1.1	< 0.94
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	1330	652	**27700**	35.4	41.8	37.7	27.5	80.4	366	79.4	NA	50.6	65.4	57.5	46.6	NA	281	76.1	41.8	48.3	20.2	30.9	129	68.8
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				88.1	87.3	79.4	81.2	67.8	75.1	85.4	83.1	88.4	80.7	NA	83.9	75.6	85.1	85.5	NA	88.3	87	69.4	77.4	75.9	82.1	81.2	76.2

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02	B10-503-06	B10-503-07	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04
Sample Date						11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999	10/12/1999	8/11/2006	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999
Sample Depths						0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	11.5-12.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft
Sample ID						B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N	B10-503-062N	B10-503-0712.0N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD
Parent ID							B10-2178-051N																					B11-2044-041.3N
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																							
PCBs																												
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																												
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																												
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	< 2100	< 2100	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	170	**12000**	**9700**	< 410	< 490	< 440	< 390	< 400	< 380	670	< 180	< 400	**6400**	480	< 390	NA	< 380	120	< 480	< 430	< 440	< 410	< 410	< 440
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	45	**1300**	**1000**	< 410	< 490	< 440	< 390	< 400	< 380	63	< 180	< 400	578	< 3900	< 390	NA	59	26	< 480	< 430	< 440	< 410	< 410	< 440
2-Chloronaphthalene	91-58-7	ug/kg				< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 760	< 770	< 840	< 820	< 980	< 890	< 779	< 800	< 760	< 820	NA	< 800	< 876	< 7800	< 780	NA	< 760	< 770	< 970	< 870	< 880	< 810	< 820	< 880
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	< 2100	NA	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	< 2100	NA	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Acenaphthylene	208-96-8	ug/kg		300000000		< 380	92	110	21.3	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	< 380	120	130	48.8	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	100	< 380	< 480	71	< 440	< 410	< 410	< 440
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 380	< 380	NA	NA	NA	< 410	< 410	< 440
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	58	570	530	261	69	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	120	< 380	100	410	190	< 410	< 410	< 440
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	73	390	410	214	59	< 440	< 390	< 400	< 380	< 410	< 180	23	< 438	< 3900	< 390	NA	< 380	< 380	390	360	150	< 410	< 410	< 440
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	250	1100	1200	285	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	160	< 380	320	350	190	< 410	< 410	< 440
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000	< 380	200	230	145	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	NA	NA	1300	300	120	< 410	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	100	380	410	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	160	< 440	< 410	< 410	< 440

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02	B10-503-06	B10-503-07	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04
Sample Date						11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999	10/12/1999	8/11/2006	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999
Sample Depths						0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	11.5-12.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft
Sample ID						B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N	B10-503-062N	B10-503-0712.0N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD
Parent ID							B10-2178-051N																					B11-2044-041.3N
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																							
SVOCs continued																												
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 380	58	< 420	< 410	< 490	< 440	< 390	< 400	28	< 410	< 360	< 400	68.3	< 3900	22	NA	< 380	< 380	< 480	< 430	< 440	24	200	< 440
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	120	810	800	240	68	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	130	< 380	220	310	130	< 410	< 410	< 440
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Dimethylphthalate	131-11-3	ug/kg				< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	500	320	51	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	120	< 380	< 480	< 430	< 440	< 410	93	< 440
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	120	1100	890	568	140	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	92	< 380	89	550	250	< 410	< 410	< 440
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 380	< 380	20	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 380	220	230	110	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	630	220	99	< 410	< 410	< 440
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 380	34	36	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	< 410	< 490	< 440	< 390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 410	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	< 180	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 1900	< 1900	< 2100	< 820	< 2500	< 2200	< 779	< 2000	< 1900	< 2100	NA	< 2000	< 876	< 20000	< 1900	NA	< 1900	< 1900	< 2400	< 2200	< 2200	< 2000	< 2100	< 2200
Phenanthrene	85-01-8	ug/kg		300000000		51	300	240	285	50	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	100	< 380	50	320	120	< 410	< 410	< 440
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 380	< 380	< 420	< 410	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	< 380	< 380	< 480	< 430	< 440	< 410	< 410	< 440
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	< 380	1100	890	498	< 490	< 440	< 390	< 400	< 380	< 410	NA	< 400	< 438	< 3900	< 390	NA	260	< 380	< 480	850	360	< 410	< 410	< 440
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																												
Total Organic Carbon	TOC	mg/kg				84200	NA	NA	NA	12500	7230	NA	NA	NA	17100	NA	32400	NA	34700	9540	NA	NA	7640	10100	88500	NA	23000	NA	NA
TPH																												
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																												
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B10-2178-03	B10-2178-05	B10-2178-05	B10-3-01	B10-3-03	B10-4-01	B10-4-02	B10-503-01	B10-503-02	B10-503-06	B10-503-07	B10-506-02	B10-506-04	B10-511-03	B10-656-02	B10-656-02	B10-7-02	B10-7-10	B11-1-08	B11-11-05	B11-1-11	B11-2-03	B11-2044-03	B11-2044-04
						Sample Date	11/19/1999	11/19/1999	11/19/1999	6/16/2000	10/15/1999	10/15/1999	6/16/2000	10/11/1999	10/11/1999	10/12/1999	8/11/2006	10/14/1999	7/21/2000	11/19/1999	10/12/1999	11/18/1999	11/18/1999	11/18/1999	11/10/1999	11/10/1999	11/10/1999	10/12/1999	11/9/1999	11/9/1999
						Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	11.5-12.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.3 ft
						Sample ID	B10-2178-031N	B10-2178-051FD B10-2178-051N	B10-2178-051N	B10-3-011N	B10-3-032N	B10-4-012N	B10-4-022N	B10-503-012N	B10-503-021N	B10-503-062N	B10-503-0712.0N	B10-506-021N	B10-506-042N	B10-511-032N	B10-656-022N	B10-656-021.5N	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N	B11-1-111N	B11-2-032N	B11-2044-030.5N	B11-2044-041.3FD B11-2044-041.3N
						Parent ID																							
						Notes																							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
VOCs continued																													
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B11-2044-04	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-663-06	B11-663-06	B11-663-06(2017
Sample Date						11/9/1999	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	6/8/2000	8/10/2006	10/6/2017
Sample Depths						0.0-1.3 ft	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-4.0 ft	8.0-8.5 ft	8.5-9.0 ft
Sample ID						B11-2044-041.3N	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-663-064N	B11-663-068.5N	B11-663-06(08.5-09.0)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 130	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA	< 240	NA	NA	NA	120	1180	NA	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 130	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA	< 240	NA	NA	NA	< 220	945	< 340	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 130	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	11000	NA	NA	120	NA	NA	NA	20000	**274000**	280	170
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA	< 240	NA	NA	NA	NA	NA	NA	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 130	< 130	160	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	3400	NA	NA	< 240	NA	NA	NA	< 220	3110	130	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 270	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA	< 480	NA	NA	NA	< 430	< 476	NA	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 270	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA	< 480	NA	NA	NA	< 430	< 476	NA	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 130	< 130	120	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4800**	NA	NA	< 240	NA	NA	NA	2100	3910	< 680	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 270	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA	< 480	NA	NA	NA	< 430	< 476	NA	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 130	< 130	< 140	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA	< 240	NA	NA	NA	< 220	184	NA	< 110
Nitrocellulose	9004-70-0	ug/kg				94300	116000	407000	150000	NA	NA	NA	NA	NA	NA	NA	NA	NA	84400	NA	NA	97100	NA	NA	NA	94500	64900	< 140000	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4800	< 4900	13000	< 4900	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5967.3	NA	NA	< 5224.7	NA	NA	NA	< 621.9	< 5940	< 6800	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 270	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA	< 480	NA	NA	NA	< 430	< 476	< 850	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 270	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA	< 480	NA	NA	NA	< 430	< 476	< 340	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 270	< 270	< 290	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 420	NA	NA	< 480	NA	NA	NA	< 430	< 476	NA	< 110
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				13.1	NA	NA	NA	5.3	NA	NA	16.9	17.1	NA	NA	NA	6.4	NA	NA	22.1	NA	10.9	15.9	NA	16.4	NA	NA	NA
Gravel	Gravel	%				23.4	NA	NA	NA	35.7	NA	NA	17.4	22.5	NA	NA	NA	33.8	NA	NA	39.1	NA	29.9	16.3	NA	19.2	NA	NA	NA
Sand	Sand	%				37	NA	NA	NA	47.7	NA	NA	45.9	32.7	NA	NA	NA	37.3	NA	NA	21.7	NA	39.5	32	NA	42.4	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				26.6	NA	NA	NA	11.2	NA	NA	19.8	27.7	NA	NA	NA	22.5	NA	NA	17.1	NA	19.6	35.8	NA	22.1	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 0.47	< 0.32	< 0.48	< 0.39	< 0.53	< 0.54	NA	NA	NA	NA	NA	NA	< 0.53	NA	< 0.633152	0.29	NA	< 2.3	< 0.52	NA	< 0.52	< 0.612104	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	5	3.7	10.4	3.4	6.1	4.5	NA	NA	NA	NA	NA	NA	4.3	NA	3	5.8	NA	7	5.1	NA	3.8	3.52	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.6	0.41	0.81	0.51	0.63	0.79	NA	NA	NA	NA	NA	NA	0.48	NA	0.527	0.47	NA	0.5	0.53	NA	0.24	0.254	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.28	< 0.19	1	0.29	0.04	< 0.32	NA	NA	NA	NA	NA	NA	0.15	NA	0.283	< 0.31	NA	13.1	< 0.31	NA	0.08	0.343	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	24	16.6	15.2	18.9	14	16.2	NA	NA	NA	NA	NA	NA	NA	17	NA	11.4	20.6	NA	12.8	32.7	NA	11.9	13	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	13.5	16.2	36	17.2	18.1	15.3	NA	NA	NA	NA	NA	NA	25.4	NA	10.3	35.5	NA	34.7	24.5	NA	21.4	99.1	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	27.3	74.5	489	37.5	30.6	24.5	NA	NA	NA	NA	NA	NA	90.3	NA	72.4	279	NA	858	450	NA	176	128	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.03	0.06	0.47	0.07	0.03	0.05	NA	NA	NA	NA	NA	NA	0.11	NA	0.143	3.1	NA	0.11	0.05	NA	0.08	0.036	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	6	5	9.1	7.5	7.6	6.7	NA	NA	NA	NA	NA	NA	8.3	NA	5.99	9.1	NA	10.5	8.3	NA	6.2	4.96	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	0.42	0.38	0.26	0.17	0.82	0.95	NA	NA	NA	NA	NA	NA	1.2	NA	0.717	0.72	NA	1.3	0.95	NA	0.64	0.754	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	< 0.28	< 0.19	< 0.29	< 0.24	< 0.32	< 0.32	NA	NA	NA	NA	NA	NA	< 0.32	NA	< 0.316576	< 0.31	NA	0.83	< 0.31	NA	0.13	0.111	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 0.93	< 0.65	< 0.97	< 0.78	< 1.1	< 1.1	NA	NA	NA	NA	NA	NA	< 1.1	NA	< 1.055253	< 1	NA	< 4.5	< 1	NA	< 1	< 1.020173	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	65	68.3	340	239	123	79.5	NA	NA	NA	NA	NA	NA	79.1	NA	37.5	55	NA	3990	54.5	NA	134	54.1	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.3	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.8
Percent Solids	SOLID	percent				88.6	88.7	83.2	93	89.1	86.4	83.4	NA	71.6	NA	58.9	NA	86.3	79.8	79	81.7	87	85.4	84.6	NA	80.4	83.1	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B11-2044-04	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-663-06	B11-663-06	11-663-06(2017
Sample Date						11/9/1999	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	6/8/2000	8/10/2006	10/6/2017
Sample Depths						0.0-1.3 ft	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-4.0 ft	8.0-8.5 ft	8.5-9.0 ft
Sample ID						B11-2044-041.3N	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-663-064N	B11-663-068.5N	B11-663-06(08.5-09.0)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	< 190	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 1900	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	< 843.64	< 2000	NA	< 1900	< 2000	NA	< 2100	< 802.536	< 2300	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 370	< 370	< 400	< 360	150	26	NA	NA	< 460	NA	< 560	NA	< 390	NA	347	130	NA	**1500**	< 390	NA	230	212	< 190	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 370	< 370	< 400	< 360	57	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	33.3	< 410	NA	< 390	< 390	NA	62	36.1	< 190	NA
2-Chloronaphthalene	91-58-7	ug/kg				< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	NA	< 410	NA	< 390	< 390	NA	< 420	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 421.82	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 750	< 750	< 800	< 720	< 750	< 780	NA	NA	< 930	NA	< 1100	NA	< 780	NA	< 843.64	< 810	NA	< 780	< 780	NA	< 830	< 802.536	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 1900	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	< 843.64	< 2000	NA	< 1900	< 2000	NA	< 2100	< 802.536	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 1900	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	NA	< 2000	NA	< 1900	< 2000	NA	< 2100	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 843.64	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	19	< 390	NA	39	< 401.268	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	64	< 390	NA	58	< 401.268	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	169	< 410	NA	< 390	< 390	NA	< 420	33.3	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				< 370	< 370	< 400	< 360	NA	NA	NA	NA	< 460	NA	< 560	NA	NA	NA	NA	NA	NA	NA	< 390	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 370	< 370	< 400	< 360	< 370	45	NA	NA	< 460	NA	< 560	NA	< 390	NA	619	< 410	NA	560	42	NA	540	< 401.268	< 190	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 370	< 370	< 400	< 360	< 370	40	NA	NA	< 460	NA	< 560	NA	< 390	NA	**1160**	< 410	NA	**520**	45	NA	**580**	< 401.268	< 190	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	786	< 410	NA	770	< 390	NA	870	< 401.268	< 190	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	< 370	< 390	NA	NA	NA	NA	NA	NA	< 390	NA	< 421.82	< 410	NA	150	NA	NA	400	< 401.268	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	NA	< 410	NA	270	< 390	NA	210	NA	< 190	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B11-2044-04	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-663-06	B11-663-06	11-663-06(2017
						Sample Date	11/9/1999	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	6/8/2000	8/10/2006	10/6/2017
						Sample Depths	0.0-1.3 ft	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-4.0 ft	8.0-8.5 ft	8.5-9.0 ft
						Sample ID	B11-2044-041.3N	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-663-064N	B11-663-068.5N	B11-663-06(08.5-09.0)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	18	40	310	35	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	33	NA	22	< 390	NA	22	< 401.268	< 380	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	< 190	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 370	< 370	< 400	< 360	< 370	36	NA	NA	< 460	NA	< 560	NA	< 390	NA	602	< 410	NA	< 390	59	NA	500	< 401.268	< 190	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	461	< 410	NA	< 390	< 390	NA	150	< 401.268	< 190	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	< 190	NA
Dimethylphthalate	131-11-3	ug/kg				< 370	< 370	44	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 370	92	180	100	< 370	< 390	NA	NA	63	NA	< 560	NA	< 390	NA	186	< 410	NA	< 390	< 390	NA	< 420	77	< 190	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	< 370	< 370	< 400	< 360	< 370	72	NA	NA	< 460	NA	< 560	NA	< 390	NA	98.7	< 410	NA	700	110	NA	630	< 401.268	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	NA	< 410	NA	< 390	< 390	NA	< 420	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	443	< 410	NA	160	< 390	NA	330	< 401.268	< 190	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	< 190	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 370	< 370	380	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	78	< 390	NA	< 420	< 401.268	< 190	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 1900	< 1900	< 2000	< 1800	< 1900	< 1900	NA	NA	< 2300	NA	< 2800	NA	< 1900	NA	< 843.64	< 2000	NA	< 1900	< 2000	NA	< 2100	< 802.536	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	75.5	< 410	NA	310	40	NA	120	24.9	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	< 421.82	< 410	NA	< 390	< 390	NA	< 420	< 401.268	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	< 370	< 370	< 400	< 360	< 370	< 390	NA	NA	< 460	NA	< 560	NA	< 390	NA	278	< 410	NA	< 390	110	NA	620	< 401.268	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				7310	NA	12000	NA	6850	NA	9040	NA	42500	NA	NA	NA	80400	NA	NA	24000	NA	54400	19600	NA	19700	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA	NA	NA	NA	NA	< 1223	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2269	NA	< 2361	NA	NA	NA	NA	NA	NA	NA	NA	< 2446	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA	NA	NA	NA	NA	< 1223	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA	NA	NA	NA	NA	< 1223	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA	NA	NA	NA	NA	< 1223	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B11-2044-04	B11-2044-05	B11-2044-06	B11-2044-08	B11-2044C-01	B11-2044C-05	B11-3-01	B11-3-01	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02	B11-513-05	B11-523-01	B11-523-03	B11-602C-07	B11-602C-08	B11-6-03	B11-6-03	B11-663-04	B11-663-06	B11-663-06	11-663-06(2017
						Sample Date	11/9/1999	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999	11/18/1999	11/30/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999	10/14/1999	6/8/2000	10/12/1999	10/14/1999	10/14/1999	11/9/1999	11/9/1999	10/15/1999	6/8/2000	8/10/2006	10/6/2017
						Sample Depths	0.0-1.3 ft	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-1.0 ft	0.0-4.0 ft	8.0-8.5 ft	8.5-9.0 ft
						Sample ID	B11-2044-041.3N	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-2044C-012N	B11-2044C-052N	B11-3-011.5N	B11-3-011N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N	B11-513-051N	B11-523-012N	B11-523-032N	B11-602C-071N	B11-602C-081N	B11-6-031N	B11-6-030.5N	B11-663-041N	B11-663-064N	B11-663-068.5N	B11-663-06(08.5-09.0)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 567	NA	< 590	NA	NA	NA	NA	NA	NA	< 612	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1134	NA	< 1180	NA	NA	NA	NA	NA	NA	< 1223	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05	B13-682-03	B13-682-03(2017	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	
Sample Date						11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999	10/8/1999	11/8/2017	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	
Sample Depths						0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.8 ft	5.0-5.5 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	
Sample ID						B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N	B13-682-030.8N	B13-682-03(05.0-05.5)	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	B13-724-052N
Parent ID																						B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N	
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	< 230	< 192.3	< 227.2	< 250	< 230	< 250	< 250	< 230	< 230	< 120	< 210	< 250	NA	NA	36500	32900	NA	NA	NA	NA	< 240	< 250	
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	870	< 192.3	< 227.2	< 250	< 230	< 250	< 250	< 230	< 230	< 120	3900	1000	NA	NA	**9850**	**9110**	NA	NA	NA	NA	< 240	< 250	
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	NA	NA	1600	287.5	< 227.2	< 250	< 230	1700	< 250	< 230	490	550	570	9600	NA	NA	**41650000**	**39568000**	NA	NA	NA	NA	96	190	
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	NA	NA	**18000**	3760.8	< 227.2	< 250	< 230	3100	< 250	< 230	< 230	< 120	< 210	3200	NA	NA	< 238	< 250	NA	NA	NA	NA	< 240	< 250	
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	< 450	< 120	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	< 450	< 120	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	NA	NA	**8500**	1925.4	< 227.2	< 250	< 230	2600	< 250	< 230	< 230	< 120	< 210	< 250	NA	NA	< 238	< 250	NA	NA	NA	NA	< 240	< 250	
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	< 450	< 120	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	< 230	< 192.3	< 227.2	< 250	< 230	< 250	< 250	< 230	< 230	< 120	< 210	< 250	NA	NA	< 238	< 250	NA	NA	NA	NA	< 240	< 250	
Nitrocellulose	9004-70-0	ug/kg				NA	NA	124000	141000	< 44.7	NA	NA	1140000	NA	NA	121000	NA	258000	453000	NA	NA	1410000	1340000	NA	NA	NA	NA	< 41000	126000	
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 6973.5	< 6822.4	< 5967.3	< 5527.06	< 5000	2298.1	< 4700	< 4500	< 5655.5	< 120	< 7739	< 6709.8	NA	NA	**410000000**	**476000000**	NA	NA	NA	NA	< 5530.7	< 5328.8	
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	< 450	< 120	< 420	< 500	NA	NA	551	701	NA	NA	NA	NA	< 480	< 500	
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	NA	NA	< 450	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	< 450	< 120	< 420	< 500	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	870	< 384.6	< 454.5	< 500	< 450	< 500	< 500	< 450	< 450	< 120	< 420	1600	NA	NA	< 476	< 500	NA	NA	NA	NA	< 480	< 500	
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	5.68	4.97	NA	NA	NA	NA	5.62	5.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				10.9	NA	23.5	NA	20.7	NA	19.2	15.7	0.2	NA	NA	NA	NA	5.3	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Gravel	Gravel	%				23.9	NA	33.9	NA	25.1	NA	25.6	22.7	40.1	NA	NA	NA	NA	36.5	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.6
Sand	Sand	%				35.2	NA	20.1	NA	27.3	NA	38.9	35.9	57.3	NA	NA	NA	NA	50.1	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	41
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				30	NA	22.5	NA	27	NA	16.4	25.7	2.4	NA	NA	NA	NA	8.1	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.4	
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	0.23	< 0.478	< 5.7	NA	NA	< 0.588365	< 0.5	< 0.64	< 0.38	< 0.5	< 0.53	NA	< 0.69	< 0.38	< 0.44	1.5	< 0.493	< 0.671	NA	NA	NA	NA	< 0.48	< 0.54	
Arsenic	7440-38-2	mg/kg	19	19	19	4.8	5.45	**28.3**	NA	NA	3.01	3.8	5.4	1.7	17	5.2	NA	17	2.7	5	8.8	3.83	4.31	NA	NA	NA	NA	5.3	5.3	
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.68	0.536	0.46	NA	NA	0.574	0.75	0.8	0.52	0.55	0.63	NA	0.88	0.64	0.76	0.78	0.697	0.761	NA	NA	NA	NA	0.79	0.82	
Cadmium	7440-43-9	mg/kg	2	78	78	0.07	2	1.6	NA	NA	< 0.294182	0.23	0.11	< 0.23	0.49	0.99	NA	< 0.41	< 0.23	< 0.26	2.5	1.13	1.36	NA	NA	NA	NA	< 0.29	< 0.32	
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	41.1	16.4	21.6	NA	NA	16.8	14.7	15	9.5	17	20.8	NA	NA	20.4	13.7	22	19.7	13	14.1	NA	NA	NA	NA	18.8	19.1	
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	13.5	21.2	644	NA	NA	14.6	14.3	23.5	12.7	19.3	33.6	NA	43.1	122	10.6	34.2	17.9	31.3	NA	NA	NA	NA	15.9	17.4	
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	103	212	**1540**	NA	NA	13.5	8.5	158	3.6	47.3	156	NA	82.5	74.5	13.7	355	43.9	67	NA	NA	NA	NA	24.4	21.4	
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.14	0.111	0.08	NA	NA	0.076	0.03	0.06	< 0.03	0.09	3.8	NA	0.49	0.02	0.04	0.14	0.158	0.21	NA	NA	NA	NA	0.05	0.06	
Nickel	7440-02-0	mg/kg	48	23000	1600	18.2	9.47	50.2	NA	NA	9.43	7	10.2	6.7	10.1	11.7	NA	15.5	7.5	9.9	12.2	7.11	7.97	NA	NA	NA	NA	9.2	9.1	
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	1	1.1	6.3	NA	NA	0.334	0.95	0.5	< 0.38	1.2	1.1	NA	1.7	0.53	0.44	1.2	1.1	1.07	NA	NA	NA	NA	1.1	1.5	
Silver	7440-22-4	mg/kg	1	5700	390	< 0.3	< 0.239	1.4	NA	NA	< 0.294182	< 0.3	< 0.38	< 0.23	< 0.3	< 0.32	NA	< 0.41	< 0.23	< 0.26	< 0.39	< 0.246	< 0.335	NA	NA	NA	NA	< 0.29	< 0.32	
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 0.9	< 0.797	< 11.4	NA	NA	< 0.980608	< 1	< 1.3	< 0.75	< 0.99	< 1.1	NA	< 1.4	0.5	< 0.87	< 1.3	< 0.821	< 1.12	NA	NA	NA	NA	< 0.95	< 1.1	
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	70.5	929	2720	NA	NA	45.2	48.4	77.1	32.3	75.5	983	NA	127	80.4	58.8	768	342	136	NA	NA	NA	NA	98.5	93.5	
Moisture																														
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				73.4	81.5	71.7	71.5	79.8	82.24	85	69	95	86.2	84.2	NA	60.1	72.7	81.1	66.9	82.9	81.3	NA	NA	NA	NA	86.1	85.3	

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B12-262A-01	B12-262A-05	B13-682-03	B13-682-03(2017	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05	
Sample Date						11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999	10/8/1999	11/8/2017	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999	
Sample Depths						0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.8 ft	5.0-5.5 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	
Sample ID						B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N	B13-682-030.8N	B13-682-03(05.0-05.5)	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD B13-724-012N	B13-724-012N	B13-724-010.5FD B13-724-010.5N	B13-724-010.5N	B13-724-050.5FD B13-724-050.5N	B13-724-050.5N	B13-724-052FD B13-724-052N	B13-724-052N	B13-724-052N
Parent ID																														
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2300	< 818	< 2300	< 2300	< 2100	< 810.634	< 2000	< 2400	< 1800	< 1900	< 2000	NA	< 2800	< 2300	< 2100	< 2500	< 80200	16800	NA	NA	NA	NA	< 1900	< 2000
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 460	< 409	**1700**	98	< 420	< 405	< 390	54	< 350	390	150	NA	**800**	**940**	< 410	< 500	**196000**	**278000**	NA	NA	NA	NA	39	< 390
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 460	< 409	**1600**	95	< 420	< 405	< 390	22	< 350	< 390	130	NA	200	63	< 410	< 500	**41000**	**64900**	NA	NA	NA	NA	21	< 390
2-Chloronaphthalene	91-58-7	ug/kg				< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 460	NA	< 460	< 460	< 420	NA	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	< 409	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 910	< 818	< 920	< 920	< 830	< 810.634	< 780	< 970	< 700	< 780	< 790	NA	< 1100	< 910	< 810	< 990	< 80200	< 8200	NA	NA	NA	NA	< 780	< 780
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 2300	< 818	< 2300	< 2300	< 2100	< 810.634	< 2000	< 2400	< 1800	< 1900	< 2000	NA	< 2800	< 2300	< 2100	< 2500	< 80200	< 8200	NA	NA	NA	NA	< 1900	< 2000
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 2300	NA	< 2300	< 2300	< 2100	NA	< 2000	< 2400	< 1800	< 1900	< 2000	NA	< 2800	< 2300	< 2100	< 2500	< 80200	< 8200	NA	NA	NA	NA	< 1900	< 2000
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	< 818	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Acenaphthylene	208-96-8	ug/kg		300000000		< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	19	NA	< 560	< 460	< 410	70	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	65	< 409	170	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	28	NA	< 560	< 460	< 410	71	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	420	178	1600	40	< 420	< 405.317	< 390	< 480	< 350	62	140	NA	< 560	< 460	< 410	99	< 40100	< 4100	NA	NA	NA	NA	29	< 390
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	320	154	**1500**	77	< 420	< 405.317	< 390	< 480	< 350	34	150	NA	57	< 460	< 410	110	< 40100	< 4100	NA	NA	NA	NA	25	< 390
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	430	152	2600	130	< 420	< 405.317	< 390	< 480	< 350	< 390	180	NA	< 560	< 460	< 410	520	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000	180	101	630	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	320	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 460	< 409	760	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	140	NA	< 560	< 460	< 410	88	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05	B13-682-03	B13-682-03(2017	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05
Sample Date						11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999	10/8/1999	11/8/2017	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999
Sample Depths						0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.8 ft	5.0-5.5 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft
Sample ID						B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N	B13-682-030.8N	B13-682-03(05.0-05.5)	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD B13-724-012N	B13-724-012N	B13-724-010.5FD B13-724-010.5N	B13-724-010.5N	B13-724-050.5FD B13-724-050.5N	B13-724-050.5N	B13-724-052FD B13-724-052N	B13-724-052N
Parent ID																												
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																							
SVOCs continued																												
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 460	< 409	20	23	23	< 405.317	< 390	< 480	< 350	40	34	NA	56	< 460	29	< 500	< 40100	1080	NA	NA	NA	NA	19	< 390
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	290	124	1500	83	< 420	< 405.317	< 390	< 480	< 350	100	140	NA	52	< 460	< 410	340	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 460	< 409	230	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	46	< 390	< 400	NA	< 560	< 460	45	130	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Dimethylphthalate	131-11-3	ug/kg				< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 460	< 409	< 460	< 460	< 420	75.39	< 390	< 480	48	59	< 400	NA	< 560	< 460	47	120	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	760	257	2600	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	260	NA	< 560	< 460	< 410	330	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 460	NA	< 460	< 460	< 420	NA	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	180	96.1	640	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	290	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	< 460	< 409	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 410	< 500	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 2300	< 818	< 2300	< 2300	< 2100	< 810.634	< 2000	< 2400	< 1800	< 1900	< 2000	NA	< 2800	< 2300	< 2100	< 2500	< 80200	< 8200	NA	NA	NA	NA	< 1900	< 2000
Phenanthrene	85-01-8	ug/kg		300000000		270	75.3	380	35	< 420	< 405.317	< 390	< 480	< 350	48	98	NA	< 560	< 460	< 410	90	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 460	< 409	< 460	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	< 400	NA	< 560	< 460	< 410	< 500	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	650	286	2400	< 460	< 420	< 405.317	< 390	< 480	< 350	< 390	260	NA	< 560	< 460	< 410	300	< 40100	< 4100	NA	NA	NA	NA	< 390	< 390
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																												
Total Organic Carbon	TOC	mg/kg				25600	NA	76000	NA	63600	NA	11400	70000	861	NA	NA	NA	NA	43800	33400	NA	NA	NA	NA	NA	NA	NA	NA	16700
TPH																												
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																												
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 620	< 620	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	< 1200	< 1200	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2160	< 2140	< 2500	< 2500	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5390	< 5340	< 620	< 620	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	< 1200	< 1200	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	< 1200	< 1200	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1080	< 1070	220	420	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B11-9-02	B11-9-03	B12-237-01	B12-3-01	B12-3-02	B12-422-04	B12-422-06	B12-450-03	B13-262A-01	B13-262A-05	B13-682-03	13-682-03(2017	B13-682-04	B13-682-06	B13-7-01	B13-7-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01	B13-724-05	B13-724-05	B13-724-05	B13-724-05
						Sample Date	11/5/1999	6/30/2000	10/14/1999	10/13/1999	10/13/1999	6/22/2000	11/3/1999	10/15/1999	11/2/1999	11/2/1999	10/8/1999	11/8/2017	10/8/1999	10/8/1999	11/2/1999	11/2/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	10/8/1999
						Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.8 ft	5.0-5.5 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft
						Sample ID	B11-9-022N	B11-9-031N	B12-237-011.5N	B12-3-010.25N	B12-3-022N	B12-422-042N	B12-422-062N	B12-450-032N	B13-262A-012N	B13-262A-052N	B13-682-030.8N	B13-682-03(05.0-05.5)	B13-682-041.3N	B13-682-061N	B13-7-012N	B13-7-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N
						Parent ID																	B13-724-012N		B13-724-010.5N		B13-724-050.5N		B13-724-052N	
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2160	< 2140	< 520	< 620	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	NA	< 620	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 539	< 534	< 620	< 620	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1200	< 1200	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B13-757-04	B13-757-04	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05
Sample Date						10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999
Sample Depths						0.0-0.2 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft
Sample ID						B13-757-040.2N	B13-757-042FD	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N
Parent ID							B13-757-040.2N																						
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 210	< 200	< 230	< 227	NA	NA	170	NA	NA	NA	< 140	< 90.9	< 250	NA	NA	< 200	< 210	NA	NA	< 240	NA	< 210	< 150	< 150
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	1500	1700	< 230	< 227	NA	NA	< 250	NA	NA	NA	< 140	< 90.9	< 250	NA	NA	< 200	< 210	NA	NA	< 240	NA	240	< 150	< 150
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	1600	720	< 230	1450	NA	NA	12000	NA	NA	NA	680	< 90.9	2290	NA	NA	< 200	< 210	NA	NA	< 240	NA	< 210	< 150	< 150
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	< 250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 210	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	1500	860	< 230	217	NA	NA	**8500**	NA	NA	NA	150	< 90.9	< 250	NA	NA	< 200	< 210	NA	NA	< 240	NA	180	< 150	< 150
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 420	< 400	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420	NA	NA	< 480	NA	130	< 300	< 310
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 420	< 400	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420	NA	NA	< 480	NA	< 420	< 300	< 310
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 210	< 200	< 230	125	NA	NA	**6700**	NA	NA	NA	180	< 90.9	< 250	NA	NA	< 200	< 210	NA	NA	< 220	NA	170	< 150	< 150
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 420	< 400	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420	NA	NA	< 480	NA	< 420	< 300	< 310
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 210	< 200	< 230	< 227	NA	NA	< 250	NA	NA	NA	130	< 90.9	< 250	NA	NA	< 200	< 210	NA	NA	< 240	NA	570	< 150	< 150
Nitrocellulose	9004-70-0	ug/kg				140000	111000	80500	62700	NA	NA	NA	NA	NA	NA	NA	< 47.6	82300	NA	NA	48400	124000	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6030.5	< 5624.3	< 5016.3	21700	NA	NA	< 4900	NA	NA	NA	< 5400	< 6680	< 5648.084	NA	NA	< 7177.7	< 5276.5	NA	NA	< 5000	NA	< 4700	< 4700	< 4900
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 420	< 400	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420	NA	NA	< 480	NA	< 420	< 300	< 310
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	3800	NA	NA	NA	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 420	< 400	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420	NA	NA	< 480	NA	< 420	< 300	< 310
Tetryl	479-45-8	ug/kg		10000000	780000	150	< 400	< 450	< 455	NA	NA	< 500	NA	NA	NA	< 290	< 182	< 500	NA	NA	< 400	< 420	NA	NA	< 480	NA	< 420	< 300	< 310
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	5.73	NA	NA	NA	NA	NA	5.66	6.92	NA	4.66	5.43	NA	NA	NA	4.91	4.31
Grain Size																													
Clay	Clay	%				2.5	NA	6	NA	2.8	9.9	NA	10.6	6.6	NA	9.1	NA	NA	NA	12.9	13.4	7.2	1.2	NA	NA	12.2	NA	NA	7.8
Gravel	Gravel	%				60.4	NA	24.1	NA	35.8	31.8	NA	32.7	32.4	NA	10	NA	NA	NA	28.4	25.6	27.7	40.7	NA	NA	26	NA	NA	24.3
Sand	Sand	%				31.3	NA	51.4	NA	33.6	36.5	NA	42.7	29.4	NA	61.7	NA	NA	NA	31.3	26.5	50.4	53.5	NA	NA	39.6	NA	NA	36.5
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	84.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	54.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	75.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	48.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	88.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	66.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				5.8	NA	18.5	NA	27.8	21.8	NA	13.9	31.6	NA	19.2	NA	NA	NA	27.5	34.5	14.7	4.6	NA	NA	22.2	NA	NA	31.4
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 0.4	< 0.45	< 0.48	< 0.584	14.5	NA	NA	< 0.49	< 0.49	NA	0.29	0.91	< 0.684288	< 0.607	0.21	< 0.47	1	< 0.5	1.6	1.4	0.3	NA	< 0.48	< 0.49
Arsenic	7440-38-2	mg/kg	19	19	19	8.2	5.1	3.8	4.16	**24.1**	NA	NA	**207**	**274**	NA	7.8	5.16	6.29	4.01	4.2	5.4	6.9	**69.4**	**38.6**	**20.2**	7.3	NA	9.4	**56.8**
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.74	0.48	0.61	0.652	0.88	NA	NA	0.37	0.5	NA	0.26	0.791	0.685	0.933	0.92	0.85	0.3	0.38	0.49	0.14	0.27	NA	0.5	0.42
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.24	< 0.27	0.06	0.702	0.59	NA	NA	< 0.3	< 0.29	NA	0.13	0.204	0.3	0.632	< 0.32	< 0.28	< 0.28	< 0.3	< 0.26	0.11	< 0.35	NA	< 0.29	< 0.29
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	11	12.7	13.7	16.2	60.7	NA	NA	76	44	NA	19.4	10.3	16.2	14.4	13.6	20.6	16.7	7.6	13.4	13.2	10.5	NA	16.4	16.2
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	14.6	14.9	12	57.4	171	NA	NA	28.5	56	NA	39.7	12.7	22.2	10.4	10.2	18.8	25	14.8	26.2	16.9	13.7	NA	18.6	20.7
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	69.2	110	21.7	75.1	**2190**	NA	NA	377	**603**	NA	**971**	96.8	107	34.4	29.6	**1550**	**3070**	**2090**	**10900**	**2470**	319	NA	126	176
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.03	0.03	0.04	0.084	0.72	NA	NA	0.31	0.12	NA	0.32	0.1	0.097	0.047	0.04	0.07	0.26	0.21	0.34	0.61	0.22	NA	0.12	0.05
Nickel	7440-02-0	mg/kg	48	23000	1600	9.1	8.8	7.9	9.94	25.9	NA	NA	8.9	11.1	NA	5.8	7.75	10.4	8.28	8.4	11	8.1	3.3	5.7	3.1	3.3	NA	7.9	5.9
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	1.2	0.8	0.78	1.08	3	NA	NA	0.85	0.9	NA	< 0.45	0.487	1.37	1.04	0.75	1.1	0.73	3.8	3	5	1	NA	1.8	17.3
Silver	7440-22-4	mg/kg	1	5700	390	< 0.24	< 0.27	< 0.29	< 0.292	1.4	NA	NA	< 0.3	< 0.29	NA	0.1	< 0.386	< 0.342144	< 0.303	< 0.32	< 0.28	0.2	0.25	0.23	0.47	0.13	NA	< 0.29	< 0.29
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 0.8	< 0.89	< 0.96	< 0.973	< 12.8	NA	NA	< 0.99	< 0.98	NA	< 0.9	< 1.29	< 1.14048	< 1.01	0.58	< 0.95	< 0.93	< 0.99	< 0.86	< 1.1	< 1.2	NA	< 0.96	< 0.98
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	62.1	72.1	153	118	258	NA	NA	101	183	NA	69.2	54.7	59.9	53.8	54.4	83	159	22.7	215	32.6	26.5	NA	65	37.7
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				73.7	88.9	88.6	82.3	70	83.5	NA	84.3	83.3	NA	86.4	74.8	84.32	83.8	85.2	64.8	82.4	86.3	86.3	75	82	85.6	85	81.7

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B13-757-04	B13-757-04	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05
Sample Date						10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999
Sample Depths						0.0-0.2 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft
Sample ID						B13-757-040.2N	B13-757-042FD	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N
Parent ID							B13-757-040.2N																						
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	< 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2300	< 1900	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	< 789.942	< 796	< 2000	< 2600	< 2000	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	510	**830**	< 370	< 403	< 480	NA	NA	240	< 4000	NA	68	< 446	118	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	360	NA	< 400	< 410
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	23	36	< 370	< 403	< 480	NA	NA	64	< 4000	NA	< 390	< 446	< 395	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	60	NA	< 400	< 410
2-Chloronaphthalene	91-58-7	ug/kg				< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	NA	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 900	< 750	< 750	< 805	< 950	NA	NA	< 790	< 8000	NA	< 780	< 891	< 789.942	< 796	< 780	< 1000	< 810	< 780	< 3900	< 930	< 810	NA	< 800	< 810
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 2300	< 1900	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	< 789.942	< 796	< 2000	< 2600	< 2000	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 2300	< 1900	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	NA	< 796	< 2000	< 2600	< 2000	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 450	< 370	< 370	< 403	90	NA	NA	33	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	42	< 390	4000	< 460	< 410	NA	< 400	< 410
Acenaphthylene	208-96-8	ug/kg		300000000		23	16	< 370	< 403	280	NA	NA	230	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	99	< 460	< 410	NA	< 400	< 410
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	51	< 370	< 370	< 403	810	NA	NA	360	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	120	< 390	7200	< 460	< 410	NA	< 400	< 410
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4300	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	180	95	< 370	75.7	4100	NA	NA	1900	< 4000	NA	82	135	212	< 398	< 390	< 510	390	94	**9400**	110	92	NA	110	< 410
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	170	110	< 370	124	**3700**	NA	NA	**1100**	< 4000	NA	99	130	188	< 398	< 390	< 510	360	99	**8200**	**2100**	80	NA	95	< 410
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	250	170	< 370	329	3900	NA	NA	2300	< 4000	NA	190	143	270	< 398	< 390	< 510	580	120	**9700**	300	150	NA	100	< 410
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	< 450	< 370	< 370	138	2000	NA	NA	490	< 4000	NA	< 390	< 446	92.03	< 398	< 390	< 510	140	NA	NA	890	< 410	NA	< 400	< 410
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 450	66	< 370	< 403	2300	NA	NA	920	< 4000	NA	68	< 446	90.05	< 398	< 390	< 510	160	< 390	3600	190	< 410	NA	< 400	< 410

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						B13-757-04	B13-757-04	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05
Sample Date						10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999
Sample Depths						0.0-0.2 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft
Sample ID						B13-757-040.2N	B13-757-042FD	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N
Parent ID							B13-757-040.2N																						
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 450	< 370	< 370	80.9	< 480	NA	NA	170	< 4000	NA	86	25.9	26.46	39.4	< 390	26	24	< 390	< 1900	< 460	63	NA	< 400	< 410
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	200	140	< 370	233	3800	NA	NA	1900	< 4000	NA	220	139	204	< 398	< 390	< 510	400	110	8700	210	110	NA	96	< 410
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 450	< 370	< 370	71.3	**540**	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	**1200**	**550**	< 410	NA	< 400	< 410
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Dimethylphthalate	131-11-3	ug/kg				< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 450	< 370	< 370	< 403	< 480	NA	NA	46	< 4000	NA	62	< 446	< 394.971	< 398	< 390	< 510	< 410	34	< 1900	< 460	< 410	NA	< 400	< 410
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	< 450	280	< 370	128	7500	NA	NA	2400	< 4000	NA	260	266	497	< 398	< 390	< 510	970	170	18000	160	130	NA	170	< 410
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	510	< 370	< 370	< 403	210	NA	NA	62	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	43	< 390	3100	< 460	< 410	NA	< 400	< 410
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	NA	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 450	< 370	< 370	107	1700	NA	NA	520	< 4000	NA	< 390	69.5	94	< 398	< 390	< 510	130	< 390	4100	< 440	< 410	NA	< 400	< 410
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 450	< 370	< 370	< 403	< 480	NA	NA	6200	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 450	< 370	< 370	< 403	86	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	2700	< 460	< 410	NA	< 400	< 410
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	< 480	NA	NA	< 400	< 4000	NA	NA	NA	NA	< 398	< 390	NA	NA	< 390	< 1900	NA	85	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 450	< 370	< 370	< 403	< 480	NA	NA	100	< 4000	NA	< 390	< 446	< 394.971	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 2300	< 1900	< 1900	< 805	< 2400	NA	NA	< 2000	< 20000	NA	< 1900	< 891	< 789.942	< 796	< 2000	< 2600	< 2000	< 1900	< 9700	< 2300	< 2000	NA	< 2000	< 2000
Phenanthrene	85-01-8	ug/kg		3000000000		240	170	< 370	< 403	3100	NA	NA	880	< 4000	NA	350	158	140	< 398	< 390	< 510	690	100	18000	120	72	NA	86	< 410
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 450	< 370	< 370	< 403	< 480	NA	NA	< 400	< 4000	NA	< 390	< 446	24.88	< 398	< 390	< 510	< 410	< 390	< 1900	< 460	< 410	NA	< 400	< 410
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	370	220	< 370	141	7800	NA	NA	3400	< 4000	NA	450	263	245	< 398	< 390	< 510	790	170	18000	< 460	120	NA	160	< 410
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				22500	NA	21900	NA	56000	8780	NA	35500	20000	NA	17100	NA	40200	NA	50200	22800	63900	52800	NA	8790	16900	NA	NA	33100
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2286	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B13-757-04	B13-757-04	B13-8-04	B13-8-05	B9-2-05	C10-1-01	C10-2176-01	C10-2176-02	C10-2179-03	C10-3-02	C10-3-02	C10-432-01	C10-432-02	C10-438-01	C10-438-05	C10-440-02	C10-466-02	C11-10-01	C11-1-17	C11-12-02	C11-27-02	C11-27-03	C11-30-01	C11-30-05
						Sample Date	10/8/1999	10/8/1999	10/8/1999	7/21/2000	10/15/1999	11/18/1999	11/19/1999	11/19/1999	11/19/1999	11/22/1999	11/22/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	10/8/1999	10/8/1999	11/9/1999	11/18/1999	11/10/1999	11/12/1999	11/12/1999	11/5/1999	11/5/1999
						Sample Depths	0.0-0.2 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft
						Sample ID	B13-757-040.2N	B13-757-042FD	B13-8-042N	B13-8-052N	B9-2-052N	C10-1-011N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N	C10-3-020.5N	C10-3-021N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	C10-440-022N	C10-466-021N	C11-10-012N	C11-1-171N	C11-12-021N	C11-27-021N	C11-27-030.5N	C11-30-011N	C11-30-051N
						Parent ID		B13-757-040.2N																						
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-275-02	C12-3-03
						Sample Date	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000	11/5/1999	11/12/1999	10/23/2017	10/23/2017	10/23/2017	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/20/1999	10/19/1999
						Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
						Sample ID	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-7-02(03.0-03.5)	C11-7-02(05.0-05.5)	C11-7-02(06.0-06.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022N	C12-275-022N FD	C12-275-022N	C12-3-032N
						Parent ID																					C12-275-022N		
						Notes																							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 220	< 240	< 230	< 240	NA	< 190	NA	NA	NA	1300	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 220	< 200	< 238.1	< 230	< 220	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 220	510	< 230	< 240	NA	< 190	NA	NA	NA	< 2500	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 220	< 200	< 238.1	< 230	< 220	NA
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 220	< 240	< 230	< 240	NA	< 190	NA	NA	NA	**170000**	2800	2200	380	120	NA	NA	NA	NA	< 220	< 200	162	< 230	760	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	220	240	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	< 240	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 120	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 220	< 240	< 230	< 240	NA	< 190	NA	NA	NA	1400	390	380	< 110	< 110	NA	NA	NA	NA	< 220	< 200	328	< 230	560	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 430	< 480	< 450	< 480	NA	< 380	NA	NA	NA	< 5000	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 430	< 480	< 450	< 480	NA	< 380	NA	NA	NA	< 5000	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 220	< 240	< 230	< 240	NA	< 190	NA	NA	NA	< 2500	1000	1400	< 110	< 110	NA	NA	NA	NA	< 220	< 200	104	< 230	< 180	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 430	< 480	< 450	< 480	NA	< 380	NA	NA	NA	< 5000	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 120	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 220	< 240	< 230	< 240	NA	< 190	NA	NA	NA	< 2500	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 220	< 200	< 238.1	< 230	< 220	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4900	< 4500	< 4800	< 4900	NA	< 4900	NA	NA	NA	< 4500	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 4545.5	< 4878	< 6000.798	< 4444.4	< 4651.2	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 430	< 480	< 450	< 480	NA	< 380	NA	NA	NA	< 5000	< 110	< 120	< 110	< 110 J-	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 120 J-	< 110 J-	< 110 J-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 430	< 480	< 450	< 480	NA	< 380	NA	NA	NA	< 5000	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA
Tetryl	479-45-8	ug/kg		10000000	780000	< 430	< 480	< 450	< 480	NA	< 380	NA	NA	NA	< 5000	< 110	< 120	< 110	< 110	NA	NA	NA	NA	< 430	< 400	< 476.2	< 450	< 430	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	5.98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				7.91	NA	5.99	5.85	7.68	5.84	5.11	NA	5.89	7.01	NA	NA	NA	NA	4.01	NA	5.51	5	5.96	7.59	NA	NA	NA	6.57
Grain Size																													
Clay	Clay	%				4.7	NA	NA	NA	7.6	NA	1.7	NA	2.2	6.1	NA	NA	NA	NA	8.7	7.3	8	NA	11.9	NA	NA	NA	18.8	12.5
Gravel	Gravel	%				37	NA	NA	NA	41.2	NA	47.7	NA	34.5	27.9	NA	NA	NA	NA	27.6	18.7	22.3	NA	19.2	NA	NA	NA	7.5	12.8
Sand	Sand	%				43.8	NA	NA	NA	34.8	NA	42	NA	46	50.1	NA	NA	NA	NA	30.6	49.6	58.8	NA	36.6	NA	NA	NA	42.2	48.6
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				14.5	NA	NA	NA	16.5	NA	8.6	NA	17.3	15.9	NA	NA	NA	NA	33.1	24.4	10.9	NA	32.3	NA	NA	NA	31.4	26.2
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 0.52	NA	1.8	0.55	1.8	0.58	< 0.47	< 0.697	0.85	< 0.45	NA	NA	NA	NA	3.2	27	< 0.43	2.3	< 0.46	< 0.43	< 0.488807	< 0.53	< 0.57	< 28.8
Arsenic	7440-38-2	mg/kg	19	19	19	**104**	NA	11.5	11.9	11.8	10.8	2.9	7.96	8.8	6.9	NA	NA	NA	NA	**61.4**	**115**	1.8	8.9	3.5	4	3.51	4.5	4	< 28.8
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	1.7	NA	0.49	0.21	0.32	0.28	0.2	0.104	0.24	0.26	NA	NA	NA	NA	0.12	0.45	0.6	0.65	0.58	0.58	0.617	0.85	0.73	< 17.3
Cadmium	7440-43-9	mg/kg	2	78	78	1.4	NA	0.43	0.09	0.27	0.13	0.43	0.377	0.2	< 0.27	NA	NA	NA	NA	< 0.32	0.1	< 0.26	< 0.3	0.04	0.11	0.318	1.7	1.8	2.2
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	17.5	NA	23.1	14.5	16.1	6.9	6.8	9.23	16.1	8	NA	NA	NA	NA	4.4	14.7	8.9	13.8	17.6	12.6	13.3	14.7	19.9	13.3
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	38.9	NA	109	17.4	52.1	17.1	12.2	11.8	39.2	9.3	NA	NA	NA	NA	30.3	88.6	12.2	79.2	1930	19.3	23.2	17	16.6	130
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	159	NA	**662**	**492**	**2070**	380	53.9	52	379	57.2	NA	NA	NA	NA	**4930**	**11800**	10.4	43.9	50.1	**3770**	61.2	70.5	42.8	**93300**
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.26	NA	0.99	0.47	0.24	0.21	0.03	0.323	0.17	0.03	NA	NA	NA	NA	1.5	10.3	< 0.03	0.08	0.13	0.09	0.091	0.06	0.03	2.1
Nickel	7440-02-0	mg/kg	48	23000	1600	13.6	NA	31.2	4.1	36.7	6.9	8.4	9.68	11.9	2.1	NA	NA	NA	NA	2.6	6.3	7.3	12.5	7.7	15.7	7.51	6.3	8.1	11.3
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	9.5	NA	2.4	1.2	1.4	1.1	0.64	0.767	1.7	< 0.45	NA	NA	NA	NA	9.2	5.9	< 0.43	< 0.5	0.16	0.48	0.626	0.96	< 0.57	< 28.8
Silver	7440-22-4	mg/kg	1	5700	390	0.23	NA	0.6	0.12	0.46	0.28	< 0.28	< 0.349	< 0.33	< 0.27	NA	NA	NA	NA	0.7	1.6	< 0.26	< 0.3	< 0.27	0.1	< 0.244403	< 0.32	< 0.34	< 17.3
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			3.4	NA	< 1.2	< 1.1	< 1.1	< 1.2	< 0.94	< 1.16	< 1.1	< 0.91	NA	NA	NA	NA	< 1.1	< 0.97	< 0.87	< 1	< 0.92	< 0.85	< 0.814678	< 1.1	< 1.1	< 57.7
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	443	NA	235	67.8	142	42.9	123	101	117	24	NA	NA	NA	NA	13.8	266	47.8	106	43.4	144	384	282	444	2880
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.9	85.4	89	95.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				80.5	88	71.1	78.5	75.8	86.4	86.2	85.3	82.2	88.8	NA	NA	NA	NA	79.9	75.9	90	79.6	74.3	78.4	81.29	80.5	75.9	77.4

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-275-02	C12-3-03
Sample Date						11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000	11/5/1999	11/12/1999	10/23/2017	10/23/2017	10/23/2017	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/20/1999	10/19/1999
Sample Depths						0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
Sample ID						C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-7-02(03.0-03.5)	C11-7-02(05.0-05.5)	C11-7-02(06.0-06.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022N	C12-275-022FD	C12-275-022N	C12-3-032N
Parent ID																														
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	< 782	< 2000	< 1900	NA	NA	NA	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	< 820.108	< 2100	< 2200	< 2200
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 420	NA	< 490	62	< 440	84	< 390	< 391	< 410	230	NA	NA	NA	NA	< 420	**5100**	< 370	< 420	< 450	60	56.59	53	< 440	< 430
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 420	NA	< 490	24	< 440	73	< 390	< 391	< 410	97	NA	NA	NA	NA	< 420	**720**	< 370	< 420	< 450	< 430	< 410	< 420	< 440	< 430
2-Chloronaphthalene	91-58-7	ug/kg				< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 420	NA	< 490	< 430	< 440	< 390	< 390	NA	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	NA	< 420	< 440	< 430
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	< 391	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 830	NA	< 980	< 850	< 880	< 780	< 780	< 782	< 810	< 750	NA	NA	NA	NA	< 830	< 880	< 750	< 840	< 900	< 860	< 820.108	< 840	< 880	< 860
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	< 782	< 2000	< 1900	NA	NA	NA	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	< 820.108	< 2100	< 2200	< 2200
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	NA	< 2000	< 1900	NA	NA	NA	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	NA	< 2100	< 2200	< 2200
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	< 782	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	180	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	33
Acenaphthylene	208-96-8	ug/kg		300000000		< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	22	300	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	< 420	NA	< 490	< 430	< 440	28	< 390	< 391	< 410	< 370	NA	NA	NA	NA	66	720	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	91
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	880	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	85	NA	< 490	120	< 440	180	< 390	< 391	< 410	< 370	NA	NA	NA	NA	640	3200	< 370	< 420	53	120	< 410.054	< 420	< 440	440
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	47	NA	56	130	43	170	< 390	< 391	< 410	< 370	NA	NA	NA	NA	**670**	**3200**	< 370	< 420	55	120	< 410.054	< 420	< 440	380
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	89	NA	< 490	300	< 440	210	< 390	< 391	< 410	< 370	NA	NA	NA	NA	810	3900	< 370	< 420	110	230	< 410.054	< 420	< 440	530
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	< 420	NA	< 490	140	< 440	200	< 390	< 391	< 410	< 370	NA	NA	NA	NA	NA	NA	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	170
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 420	NA	< 490	72	< 440	110	< 390	< 391	< 410	< 370	NA	NA	NA	NA	260	1200	< 370	< 420	< 450	100	< 410.054	< 420	< 440	240

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-3-03
Sample Date						11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000	11/5/1999	11/12/1999	10/23/2017	10/23/2017	10/23/2017	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/19/1999
Sample Depths						0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
Sample ID						C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-7-02(03.0-03.5)	C11-7-02(05.0-05.5)	C11-7-02(06.0-06.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022N	C12-275-022FD C12-275-022N	C12-3-032N
Parent ID																											
Notes																											
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																						
SVOCs continued																											
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	57	NA	36	27	30	35	< 390	< 391	210	52	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	78	NA	60	280	44	290	< 390	< 391	< 410	< 370	NA	NA	NA	NA	710	2800	< 370	< 420	81	190	< 410.054	< 420	< 440	420
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 420	NA	< 490	< 430	< 440	140	< 390	< 391	< 410	< 370	NA	NA	NA	NA	400	**560**	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Dimethylphthalate	131-11-3	ug/kg				< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	85	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	74	NA	< 490	100	< 440	310	< 390	< 391	< 410	< 370	NA	NA	NA	NA	720	8500	< 370	< 420	< 450	130	< 410.054	< 420	< 440	1000
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	190	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	52
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 420	NA	< 490	< 430	< 440	< 390	< 390	NA	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	NA	< 420	< 440	< 430
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 420	NA	< 490	120	< 440	160	< 390	< 391	< 410	< 370	NA	NA	NA	NA	530	1900	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	170
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 420	NA	< 490	< 430	< 440	52	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	83	< 370	< 420	< 450	41	< 410.054	< 420	< 440	< 430
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	< 440	NA	< 390	< 391	< 410	NA	NA	NA	NA	NA	< 420	5500	< 370	< 420	NA	NA	NA	NA	NA	< 430
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 2100	NA	< 2500	< 2100	< 2200	< 1900	< 1900	< 782	< 2000	< 1900	NA	NA	NA	NA	< 2100	< 2200	< 1900	< 2100	< 2300	< 2100	< 820.108	< 2100	< 2200	< 2200
Phenanthrene	85-01-8	ug/kg		300000000		32	NA	< 490	41	< 440	310	< 390	< 391	< 410	< 370	NA	NA	NA	NA	350	4800	< 370	< 420	< 450	56	< 410.054	< 420	< 440	740
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 420	NA	< 490	< 430	< 440	< 390	< 390	< 391	< 410	< 370	NA	NA	NA	NA	< 420	< 440	< 370	< 420	< 450	< 430	< 410.054	< 420	< 440	< 430
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	< 420	NA	< 490	130	< 440	370	< 390	< 391	< 410	< 370	NA	NA	NA	NA	760	5800	< 370	< 420	< 450	370	< 410.054	< 420	< 440	830
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																											
Total Organic Carbon	TOC	mg/kg				74300	NA	NA	NA	44700	NA	99800	NA	108000	2180	NA	NA	NA	NA	44600	42800	7430	NA	7960	NA	NA	NA	3340	42400
TPH																											
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																											
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	C11-30-06	C11-4-02	C11-4-09	C11-4-13	C11-4-19	C11-4-20	C11-4A-01	C11-4A-02	C11-4B-01	C11-7-02	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-7-02(2017)	C11-8-05	C11-9-04	C12-1-03	C12-1-04	C12-274-01	C12-274-05	C12-275-01	C12-275-02	C12-275-02	C12-275-02	C12-3-03
						Sample Date	11/12/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/11/1999	11/5/1999	6/30/2000	11/5/1999	11/12/1999	10/23/2017	10/23/2017	10/23/2017	10/23/2017	11/9/1999	11/18/1999	10/19/1999	10/19/1999	10/21/1999	10/21/1999	6/22/2000	10/20/1999	10/20/1999	10/20/1999	10/19/1999
						Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
						Sample ID	C11-30-061N	C11-4-021N	C11-4-091.5N	C11-4-131N	C11-4-192N	C11-4-201N	C11-4A-012N	C11-4A-022N	C11-4B-012N	C11-7-021N	C11-7-02(01.0-01.5)	C11-7-02(03.0-03.5)	C11-7-02(05.0-05.5)	C11-7-02(06.0-06.5)	C11-8-052N	C11-9-040.5N	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N	C12-275-012N	C12-275-022N	C12-275-022N	C12-275-022N	C12-3-032N
						Parent ID																						C12-275-022N	
						Notes																							
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
VOCs continued																													
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						C12-4-01	C12-418-01	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11
Sample Date						10/19/1999	9/27/2000	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000
Sample Depths						0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
Sample ID						C12-4-012N	C12-418-012N	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N
Parent ID																		C13-2-012N											
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	< 100	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 100	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	NA	< 100	< 192.3	NA	NA	NA	NA	NA	NA	130000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	NA	< 100	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	< 200	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 480	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	< 200	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 480	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	NA	< 100	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	< 200	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 480	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	< 100	< 192.3	NA	NA	NA	NA	NA	NA	< 4200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	150000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3170000	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 5700	< 5294.479	NA	NA	NA	NA	NA	NA	< 5000	< 442.204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12000	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	NA	< 200	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 480	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	NA	< 200	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 480	NA
Tetryl	479-45-8	ug/kg		10000000	780000	NA	< 200	< 384.6	NA	NA	NA	NA	NA	NA	< 8300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 480	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				5.42	NA	NA	5.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				10.3	NA	NA	17.2	NA	9.8	10.9	NA	NA	NA	NA	11.9	NA	14.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				16.5	NA	NA	15.4	NA	20.1	23.6	NA	NA	NA	NA	29.9	NA	21.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				59.8	NA	NA	47.1	NA	52.5	34.9	NA	NA	NA	NA	37.1	NA	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	96.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	84.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	37.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	69.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	31.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	92.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	54.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	43.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				13.4	NA	NA	20.3	NA	17.6	30.6	NA	NA	NA	NA	21	NA	28.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 0.52	< 0.704	< 0.650459	< 23.6	< 0.615905	< 0.52	< 0.46	< 0.51	< 0.5	< 0.43	< 0.737007	< 0.52	< 0.51	< 0.44	< 0.6	< 0.41	< 0.6	< 0.6	< 0.6	< 0.7	< 0.6	< 0.51	< 0.51	< 0.6
Arsenic	7440-38-2	mg/kg	19	19	19	2.4	5.63	5.1	< 23.6	4.68	3.3	4.9	5.1	5	4.8	4.39	3.3	4	4.1	3.7	4.1	4.7	4.7	3.1	4.4	4.3	3.8	3.7	4.3
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.45	0.79	0.614	0.86	0.513	0.62	0.68	0.84	0.81	0.86	0.571	0.74	0.83	0.79	0.89	0.89	0.8	0.81	0.59	0.79	0.63	0.78	0.81	0.89
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.31	0.155	0.293	1.9	< 0.307953	< 0.31	1	0.56	1	0.56	0.902	< 0.31	0.38	0.4	0.7	0.44	0.91	0.9	0.58	0.77	0.71	0.47	0.5	0.91
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	11.8	24.5	14.1	32	12.1	13.7	19	22	17.6	15.8	16.9	15.6	17.7	19.1	14	14.9	20	19.3	14.7	19.6	16.3	15	16.1	23.7
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	10.3	16.6	12.1	47000	16.4	10.9	438	54.3	13.3	13.2	16.1	12	17.1	19.7	9.9	11.6	17.2	18.2	10.9	11.5	10.8	14.7	18	18.7
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	1360	56.1	17.3	1630	20.7	11.5	51.7	13.6	24	21.4	23	9.3	144	159	12.1	24.4	14.8	10.1	8.9	12.4	8.1	13	28.2	11.2
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.08	0.046	0.032	0.04	0.113	0.06	0.03	0.04	0.06	0.08	0.107	0.04	0.29	0.28	< 0	0.04	< 0	< 0	< 0	< 0	< 0	< 0	0.04	< 0
Nickel	7440-02-0	mg/kg	48	23000	1600	5.4	7.73	7.83	205	6.06	7.4	9.7	9.5	8	7.7	8.13	8.1	8.4	8.9	7.2	7.1	7.5	9.3	7.2	8.6	6.2	7	7.7	11.7
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 0.52	< 0.586	1.42	7	< 0.513254	< 0.52	0.7	0.88	0.52	0.82	1.19	1	0.63	0.46	1	0.69	1.4	1.2	0.85	1.3	1.1	0.48	< 0.51	1.2
Silver	7440-22-4	mg/kg	1	5700	390	< 0.31	< 0.352	< 0.32523	6.3	< 0.307953	< 0.31	< 0.28	< 0.3	< 0.3	< 0.26	< 0.368503	< 0.31	< 0.31	< 0.26	< 0.3	< 0.25	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.31	< 0.3
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 1	< 1.17	< 1.084099	< 47.2	< 1.026509	< 1	< 0.93	< 1	< 1	< 0.85	< 1.228344	< 1	< 1	< 0.88	< 1	< 0.83	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	109	139	54.7	3000	49.5	48.6	960	189	196	59.7	62.9	48.5	204	196	54.1	54.7	72.3	64.2	40.7	61.3	39.8	54.4	78.3	64
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				86.4	83.6	87.86	84.7	86.98	84.2	86.2	84.2	81.8	82.1	75.4	85	82.6	85.3	82.1	66	83.7	83.3	82	79.9	82.5	84.5	84.5	83.2

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						C12-4-01	C12-418-01	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11
Sample Date						10/19/1999	9/27/2000	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000
Sample Depths						0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
Sample ID						C12-4-012N	C12-418-012N	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N
Parent ID																		C13-2-012N											
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 1900	< 792	< 758.11	< 2000	< 766.458	< 2000	< 1900	< 2000	< 2000	NA	< 884.408	< 2000	< 2000	< 2000	< 81	< 2500	< 79	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 390	< 396	94.38	< 390	< 383	< 400	< 390	< 400	< 410	NA	< 442	< 390	< 400	< 390	< 410	< 510	< 400	< 400	< 410	< 420	< 410	< 400	< 4000	< 400
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 390	< 396	< 379	< 390	< 383	< 400	< 390	< 400	< 410	NA	< 442	< 390	< 400	< 390	< 410	< 510	< 400	< 400	< 410	< 420	< 410	< 400	< 4000	< 400
2-Chloronaphthalene	91-58-7	ug/kg				< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 390	< 396	NA	< 390	NA	< 400	< 390	< 400	< 410	NA	NA	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	< 383.229	NA	NA	NA	NA	NA	< 442.204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 780	< 792	< 758.11	< 790	< 766.458	< 800	< 770	< 790	< 810	NA	< 884.408	< 780	< 800	< 780	< 81	< 1000	< 79	< 80	< 81	< 83	< 81	< 790	< 7900	< 80
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 1900	< 792	< 758.11	< 2000	< 766.458	< 2000	< 1900	< 2000	< 2000	NA	< 884.408	< 2000	< 2000	< 2000	< 81	< 2500	< 79	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 1900	< 792	NA	< 2000	NA	< 2000	< 1900	< 2000	< 2000	NA	NA	< 2000	< 2000	< 2000	< 81	< 2500	< 79	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	< 766.458	NA	NA	NA	NA	NA	< 884.408	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Acenaphthylene	208-96-8	ug/kg		300000000		< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	27	35	28	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	ug/kg	13000	17000	5000	< 390	< 396	< 379.055	< 390	262	< 400	< 390	< 400	< 410	NA	133	130	110	110	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 390	< 396	< 379.055	< 390	243	< 400	< 390	< 400	< 410	NA	136	98	120	130	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Benzo(b)fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 390	< 396	< 379.055	< 390	626	< 400	< 390	< 400	< 410	NA	172	140	140	130	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	< 390	< 396	< 379.055	< 390	121	< 400	< 390	< 400	< 410	NA	99.5	87	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 390	< 396	< 379.055	< 390	169	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	47	46	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	C12-4-01	C12-418-01	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11
						Sample Date	10/19/1999	9/27/2000	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000
						Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
						Sample ID	C12-4-012N	C12-418-012N	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N
						Parent ID													C13-2-012N										
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 390	25.8	< 379.055	< 390	< 383.229	< 400	150	30	< 410	NA	26.1	< 390	35	44	< 41	26	< 40	< 40	< 41	20	< 41	< 400	< 4000	< 40
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 390	< 396	< 379.055	< 390	506	< 400	< 390	< 400	< 410	NA	129	83	99	78	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	37	NA	< 442.204	< 390	< 400	41	< 41	< 510	< 40	51	48	< 42	55	< 400	1100	< 40
Dimethylphthalate	131-11-3	ug/kg				< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	45	57	85	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	130	< 400	370	81
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	< 390	< 396	< 379.055	< 390	399	< 400	< 390	< 400	< 410	NA	370	190	220	170	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 390	< 396	NA	< 390	NA	< 400	< 390	< 400	< 410	NA	NA	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 390	< 396	< 379.055	< 390	117	< 400	< 390	< 400	< 410	NA	85.8	< 390	< 400	75	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	< 390	NA	NA	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	NA	< 40
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	NA	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	910	< 40
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 1900	< 792	< 758.11	< 2000	< 766.458	< 2000	< 1900	< 2000	< 2000	NA	< 884.408	< 2000	< 2000	< 2000	< 81	< 2500	< 79	< 80	< 81	< 83	< 81	< 2000	< 20000	< 80
Phenanthrene	85-01-8	ug/kg		3000000000		< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	99.9	54	140	99	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 390	< 396	< 379.055	< 390	< 383.229	< 400	< 390	< 400	< 410	NA	< 442.204	< 390	< 400	< 390	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	< 390	< 396	< 379.055	< 390	427	< 400	< 390	< 400	< 410	NA	207	220	230	180	< 41	< 510	< 40	< 40	< 41	< 42	< 41	< 400	< 4000	< 40
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				13900	NA	9760	7000	NA	10600	5390	NA	NA	NA	NA	16300	NA	23700	18300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	C12-4-01	C12-418-01	C12-418-04	C12-5-02	C12-8229-01	C12-8229-03	C13-1-01	C13-1-08	C13-1-11	C13-1-17	C13-133-03	C13-133-05	C13-2-01	C13-2-01	C13-2-02	C13-2-03	C13-2-04	C13-2-05	C13-2-06	C13-2-07	C13-2-08	C13-2-09	C13-2-10	C13-2-11
						Sample Date	10/19/1999	9/27/2000	7/12/2000	10/20/1999	6/22/2000	10/20/1999	11/2/1999	11/2/1999	11/2/1999	11/2/1999	7/6/2000	11/4/1999	10/29/1999	10/29/1999	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	10/29/1999	10/29/1999	4/18/2000
						Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
						Sample ID	C12-4-012N	C12-418-012N	C12-418-041.5N	C12-5-022N	C12-8229-012N	C12-8229-032N	C13-1-012N	C13-1-082N	C13-1-112N	C13-1-172N	C13-133-032N	C13-133-052N	C13-2-012FD	C13-2-012N	C13-2-022N	C13-2-032N	C13-2-042N	C13-2-052N	C13-2-062N	C13-2-072N	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-112N
						Parent ID													C13-2-012N											
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A11-02	SB-R-A12-01
Sample Date						4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	8/10/2006	5/25/2006	5/25/2006	5/24/2006
Sample Depths						0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft
Sample ID						C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-015.0N	SB-R-A11-021.0N	SB-R-A11-023.0N	SB-R-A12-011.0N
Parent ID																		C13-742-012N						SB-R-A11-011.0N				
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	< 220	NA	NA	NA	NA	NA	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 220	NA	NA	NA	NA	NA	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 310	< 350	< 350	< 330
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	NA	NA	< 220	NA	NA	NA	NA	NA	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 310	< 350	< 350	< 330
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 240	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	NA	NA	< 220	NA	NA	NA	NA	NA	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 310	< 350	< 350	< 330
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	< 430	NA	NA	NA	NA	NA	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	< 430	NA	NA	NA	NA	NA	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	NA	NA	< 220	NA	NA	NA	NA	NA	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	< 320	< 310	< 620	< 350	< 350	< 330
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	< 430	NA	NA	NA	NA	NA	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	< 220	NA	NA	NA	NA	NA	NA	< 220	< 240	< 250	< 220	< 230	< 200	< 240	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	1100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	230000	NA	NA	< 130000	< 120000	< 120000	< 140000	< 140000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	15000	NA	NA	NA	NA	NA	NA	< 4878	< 4651.2	< 4900	< 4800	< 5000	< 5000	< 7905.1	NA	NA	< 6300	< 6300	< 6200	< 6900	< 7100	< 6600
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	NA	NA	< 430	NA	NA	NA	NA	NA	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	< 790	< 780	< 770	< 860	< 880	< 830
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	NA	NA	< 430	NA	NA	NA	NA	NA	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	< 320	< 310	< 310	< 350	< 350	< 330
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	< 430	NA	NA	NA	NA	NA	NA	< 430	< 480	< 500	< 430	< 450	< 400	< 480	NA	NA	NA	NA	NA	NA	NA	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	6.88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	2	0.2	12	NA	21.4	NA	NA	NA	4.9	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	61.8	41.7	29.9	NA	18.8	NA	NA	NA	31.1	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	32.7	55.8	35.7	NA	37.1	NA	NA	NA	40.6	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4	2.3	22.4	NA	22.7	NA	NA	NA	23.4	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 0.6	< 0.7	< 0.52	< 0.6	< 0.6	< 0.7	< 0.7	< 0.6	< 0.7	< 0.42	< 0.49	< 0.36	< 0.47	< 0.46	< 0.5	NA	1.3	NA	< 2.07	< 2.09	< 2.02	< 2.26	< 2.29	< 2.19
Arsenic	7440-38-2	mg/kg	19	19	19	4.2	3.5	4.5	4.5	3.6	4.5	2.9	3.9	4.3	22.7	2	3.8	4.3	4.3	3.8	NA	14.9	NA	< 2.07	< 2.09	< 2.02	2.73	2.38	1.74
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.81	0.79	0.75	0.71	0.7	0.81	0.76	0.68	0.73	0.39	0.77	0.69	0.81	0.8	0.78	NA	0.23	NA	< 0.518	< 0.522	< 0.506	0.681	0.989	0.203
Cadmium	7440-43-9	mg/kg	2	78	78	0.81	0.79	0.29	0.74	0.75	0.84	0.69	0.7	0.56	< 0.25	< 0.29	< 0.21	0.42	0.38	0.39	NA	0.41	NA	< 0.518	< 0.522	< 0.506	< 0.564	< 2.86	< 0.548
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	3100	17.3	15.8	14.6	16.8	17.5	20.8	16	16.4	17.3	31.8	13.5	14.9	15.3	17.2	17.5	NA	17.3	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	16.5	12.4	18.1	14.1	11.5	14.3	14.3	12.5	11.1	24.8	24.6	11.2	11.2	10.7	11.7	NA	31.3	NA	3.31	3.2	1.64	11.7	20.2	7.45
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	23.8	11	29.5	23.7	14.1	13.2	13.7	126	11.3	51.9	13.2	14.5	16.1	11.2	18.2	NA	10200	NA	28.9	26.7	2.25	4.45	4.67	1.9
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	< 0	< 0	0.07	< 0	< 0	< 0	< 0	< 0	< 0	0.08	0.03	0.07	0.05	0.05	0.04	NA	1.1	NA	< 0.101	< 0.102	< 0.102	< 0.112	0.0753	< 0.103
Nickel	7440-02-0	mg/kg	48	23000	1600	9.8	6.3	7.9	9.8	8.7	9.4	7.8	6.6	7.9	4.8	10.5	7.3	7.9	8.6	8.9	NA	7.2	NA	1.14	1.09	0.754	9.51	12.7	3.42
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	0.86	0.73	0.72	0.84	0.84	1	0.79	1.1	0.95	0.36	0.46	0.97	0.62	0.77	0.66	NA	2.8	NA	< 2.07	< 2.09	< 2.02	< 2.26	< 2.29	< 2.19
Silver	7440-22-4	mg/kg	1	5700	390	< 0.3	< 0.3	< 0.31	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.25	< 0.29	< 0.21	< 0.28	< 0.27	< 0.3	NA	0.32	NA	< 0.518	< 0.522	< 0.506	< 0.564	0.276	< 0.548
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.84	< 0.97	< 0.71	< 0.93	< 0.91	< 0.99	NA	< 1.5	NA	< 2.07	< 2.09	< 2.02	< 2.26	< 2.29	< 2.19
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	83.3	48.3	73.3	69.6	48.6	63.7	67.7	50.8	56.1	132	77.9	54.8	53.6	51.1	54.3	NA	112	NA	3.77	3.22	4.54	34.4	36.4	12
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4	4.3	3.1	13.1	15.1	9.6
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				81	80	82.5	81.7	84.4	82.3	83.3	84.8	82.9	95.7	94.1	74.5	82.5	83	84.7	57.5	NA	60.8	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A11-02	SB-R-A12-01
					Sample Date	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	8/10/2006	5/25/2006	5/25/2006	5/24/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft
					Sample ID	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-015.0N	SB-R-A11-021.0N	SB-R-A11-023.0N	SB-R-A12-011.0N
					Parent ID										C13-742-012N								SB-R-A11-011.0N						
					Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	< 18	< 18	< 20	< 20	< 19
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	< 2100	< 2100	< 2100	< 2300	< 2400	< 2200
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 410	< 420	< 4100	< 410	< 400	< 410	< 410	< 390	< 400	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 410	< 420	< 4100	< 410	< 400	< 410	< 410	< 390	< 400	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
2-Chloronaphthalene	91-58-7	ug/kg				< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 82	< 83	< 8100	< 81	< 79	< 81	< 81	< 78	< 80	< 690	< 710	< 900	< 820	< 800	< 780	NA	< 1100	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	30	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	50	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	68	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 41	< 42	< 4100	59	< 40	< 41	< 41	38	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	300	NA	< 180	< 170	< 170	< 190	< 200	< 180
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 41	< 42	< 4100	61	< 40	< 41	< 41	31	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	280	NA	< 180	< 170	< 170	< 190	< 200	< 180
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	390	NA	< 180	< 170	< 170	< 190	< 200	< 180
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	330	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	100	NA	< 180	< 170	< 170	< 190	< 200	< 180

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A11-02	SB-R-A12-01
Sample Date						4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	8/10/2006	5/25/2006	5/25/2006	5/24/2006
Sample Depths						0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft
Sample ID						C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-015.0N	SB-R-A11-021.0N	SB-R-A11-023.0N	SB-R-A12-011.0N
Parent ID																		C13-742-012N						SB-R-A11-011.0N				
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 41	< 42	< 4100	43	< 40	< 41	24	< 39	< 40	41	< 350	< 450	26	26	38	NA	90	NA	< 350	< 350	< 340	< 380	< 390	< 370
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 41	< 42	< 4100	41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	310	NA	< 180	< 170	< 170	< 190	< 200	< 180
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	120	< 42	480	110	< 40	< 41	110	< 39	120	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
Dimethylphthalate	131-11-3	ug/kg				< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	150	100	< 4100	160	< 40	< 41	78	< 39	< 40	110	110	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	< 41	< 42	< 4100	80	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	570	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	35	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	210	NA	< 180	< 170	< 170	< 190	< 200	< 180
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	< 41	< 42	NA	< 41	< 40	< 41	< 41	< 39	< 40	NA	NA	NA	NA	NA	NA	NA	< 550	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	220	< 42	890	100	< 40	< 41	210	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	< 180	< 170	< 170	< 190	< 200	< 180
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 82	< 83	< 20000	< 81	< 79	< 81	< 81	< 78	< 80	< 1700	< 1800	< 2300	< 2000	< 2000	< 2000	NA	< 2700	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		3000000000		< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	410	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	< 550	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	< 41	< 42	< 4100	< 41	< 40	< 41	< 41	< 39	< 40	< 350	< 350	< 450	< 410	< 400	< 390	NA	640	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	13700	1190	9950	NA	15600	NA	NA	NA	60100	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2600	< 2600	< 2800	< 3100	< 3100	< 2700
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 690	< 780	< 780	< 680
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 690	< 780	< 780	< 680
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	C13-2-12	C13-2-13	C13-2-14	C13-2-15	C13-2-16	C13-2-17	C13-2-18	C13-2-19	C13-2-20	C13-262B-01	C13-262B-05	C13-3-02	C13-742-01	C13-742-01	C13-742-05	C8-1-01	C8-1-01	C8-1-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-01	SB-R-A11-02	SB-R-A11-02	SB-R-A12-01
						Sample Date	4/18/2000	4/18/2000	10/29/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	11/1/1999	11/1/1999	11/4/1999	10/29/1999	10/29/1999	10/29/1999	10/8/1999	11/18/1999	11/18/1999	5/23/2006	5/23/2006	8/10/2006	5/25/2006	5/25/2006	5/24/2006
						Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft
						Sample ID	C13-2-122N	C13-2-132N	C13-2-142N	C13-2-151.5N	C13-2-162N	C13-2-172N	C13-2-182N	C13-2-191N	C13-2-202N	C13-262B-012N	C13-262B-052N	C13-3-022N	C13-742-012FD	C13-742-012N	C13-742-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-A11-011.0FD	SB-R-A11-011.0N	SB-R-A11-015.0N	SB-R-A11-021.0N	SB-R-A11-023.0N	SB-R-A12-011.0N
						Parent ID													C13-742-012N						SB-R-A11-011.0N				
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 690	< 780	< 780	< 680
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 650	< 660	< 690	< 780	< 780	< 680
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-A12-01	SB-R-A12-02	SB-R-A12-02	SB-R-A12-02	SB-R-A12-03	SB-R-A12-03	SB-R-A12-04	SB-R-A12-04	SB-R-A13-01	SB-R-A13-01	SB-R-A13-02	SB-R-A13-02	SB-R-A13-03	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-02	SB-R-B10-03	SB-R-B10-03
Sample Date						5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/25/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	6/13/2006
Sample Depths						4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	4.5-5.0 ft	1.0-1.5 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	4.0-4.5 ft
Sample ID						SB-R-A12-014.5N	SB-R-A12-021.0FD	SB-R-A12-021.0N	SB-R-A12-024.5N	SB-R-A12-031.0N	SB-R-A12-035.0N	SB-R-A12-041.0N	SB-R-A12-045.0N	SB-R-A13-011.5N	SB-R-A13-014.5N	SB-R-A13-021.0N	SB-R-A13-022.5N	SB-R-A13-031.0N	SB-R-A13-034.5N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-011.0N	SB-R-B10-015.0N	SB-R-B10-021.0N	SB-R-B10-025.5N	SB-R-B10-031.0N	SB-R-B10-034.5N
Parent ID							SB-R-A12-021.0N																SB-R-B10-011.0N							
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 330	< 330	< 320	< 320	< 310	< 340	< 330	< 350	< 330	< 360	< 350	< 350	< 330	< 340	< 340	< 330	< 350	< 350	< 330	< 380	< 340	< 360	< 330
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 330	< 330	< 330	< 320	< 320	< 310	< 340	< 330	< 350	< 330	< 360	< 350	< 350	< 330	< 340	< 340	< 330	< 350	< 350	< 330	740	< 340	< 360	< 330
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 330	< 330	< 330	< 320	< 320	< 310	< 340	< 330	< 350	< 330	< 360	< 350	< 350	< 330	< 340	< 340	< 330	< 350	< 350	< 330	630	< 340	< 360	< 330
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 330	< 330	< 330	< 320	< 320	< 310	< 340	< 330	< 350	< 330	< 360	< 350	< 350	< 330	< 340	< 340	< 330	< 350	< 350	< 330	640	< 340	< 360	< 330
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 130000	< 130000	< 130000	< 130000	< 130000	< 130000	< 140000	< 130000	< 140000	< 130000	< 140000	< 140000	< 140000	< 130000	< 130000	< 130000	< 130000	< 140000	< 140000	< 130000	< 150000	< 140000	< 140000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6500	< 6600	< 6600	< 6400	< 6400	< 6300	< 6800	< 6500	< 7000	< 6500	< 7300	< 6900	< 6900	< 6700	< 6700	< 6700	< 6600	< 7100	< 7000	< 6600	< 7500	< 6800	< 7200	< 6700
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 820	< 830	< 830	< 800	< 800	< 780	< 850	< 820	< 880	< 810	< 910	< 860	< 860	< 830	< 840	< 840	< 820	< 880	< 880	< 820	< 940	< 860	< 890	< 840
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 330	< 330	< 330	< 320	< 320	< 310	< 340	< 330	< 350	< 330	< 360	< 350	< 350	< 330	< 340	< 340	< 330	< 350	< 350	< 330	< 380	< 340	< 360	< 330
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	1.11	< 2.12	< 2.12	< 2.13	< 2.1	< 2.04	0.935	< 2.14	< 2.28	1.05	< 2.33	1.06	< 2.22	< 2.13	1.01	1.06	< 2.17	< 2.29	< 2.32	< 2.17	< 2.48	< 2.21	1.16	< 2.23
Arsenic	7440-38-2	mg/kg	19	19	19	1.51	3.32	2.98	2.25	2.25	4.66	2.63	2.84	3.18	2.43	3.24	4.17	4.22	1.13	2.69	3.25	1.13	3.39	3.98	< 2.17	3.89	2.78	3.27	3.03
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.125	0.22	0.218	0.175	0.197	0.121	0.194	0.195	0.857	0.461	0.613	0.611	0.443	0.192	0.378	0.423	0.198	0.967	0.902	0.368	0.688	0.671	0.8	0.619
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.54	< 0.531	< 0.53	< 0.531	< 0.524	< 0.511	< 0.557	< 0.534	< 2.85	< 2.61	< 0.581	< 2.88	< 2.77	< 2.67	< 0.534	< 2.72	< 0.543	< 2.86	< 2.9	< 0.543	< 0.621	< 2.77	< 2.87	< 0.557
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	4.95	7.47	8.09	6.04	9.34	17.7	5.98	7.85	10.2	12.5	6.51	11	21.4	8.4	9.96	11.1	2.92	19.9	16.3	10.6	22.4	15.2	16.3	14.5
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	1.82	3.74	3.36	1.91	5.74	< 2.04	22	1.76	8.81	2.27	5.82	5.17	3.51	1.74	4.75	4.34	1.96	9.99	8.05	1.89	234	4.83	5.93	4.26
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	< 0.106	< 0.106	< 0.106	< 0.105	< 0.105	< 0.104	0.0473	< 0.106	0.0263	< 0.105	0.0203	0.029	0.0148	< 0.106	0.0192	0.0152	< 0.107	0.0343	0.0352	< 0.106	0.0963	0.0178	0.0319	0.0186
Nickel	7440-02-0	mg/kg	48	23000	1600	1.65	3.85	4.18	2.51	3.23	< 1.02	3	2.37	8.5	6.66	8.32	8.62	9.73	3.05	7.19	17.4	2.53	13.4	13.3	5.76	14.3	9.99	11.2	7.31
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.16	< 2.12	< 2.12	< 2.13	< 2.1	< 2.04	< 2.23	< 2.14	< 2.28	< 2.09	< 2.33	< 2.3	< 2.22	< 2.13	< 2.14	< 2.18	< 2.17	< 2.29	< 2.32	< 2.17	< 2.48	< 2.21	< 2.29	< 2.23
Silver	7440-22-4	mg/kg	1	5700	390	< 0.54	< 0.531	< 0.53	< 0.531	< 0.524	< 0.511	< 0.557	< 0.534	< 0.569	< 0.522	< 0.581	< 0.575	< 0.554	< 0.533	< 0.534	< 0.544	< 0.543	0.289	< 0.58	< 0.543	< 0.621	0.229	< 0.574	< 0.557
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			1.31	< 2.12	1.66	< 2.13	< 2.1	< 2.04	< 2.23	< 2.14	< 2.28	< 2.09	< 2.33	< 2.3	1.61	< 2.13	1.45	1.29	1.67	< 2.29	< 2.32	< 2.17	< 2.48	< 2.21	< 2.29	< 2.23
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	4.75	13.7	14.5	7.32	16.3	8.43	14.7	7.74	50.1	35.8	37.7	26.2	30.6	9.78	25.7	32.2	7.51	39.7	39.9	22.4	82.2	67.4	35.4	18.3
Moisture																															
Percent Moisture	MOIST	%				8.3	9.5	9.3	5.9	6.5	4	12	8.2	14.7	7.9	17.3	13.1	13.2	9.8	10.9	10.8	8.8	15.2	14.7	8.8	20.3	12.3	16.2	10.2
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-A12-01	SB-R-A12-02	SB-R-A12-02	SB-R-A12-02	SB-R-A12-03	SB-R-A12-03	SB-R-A12-04	SB-R-A12-04	SB-R-A13-01	SB-R-A13-01	SB-R-A13-02	SB-R-A13-02	SB-R-A13-03	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-02	SB-R-B10-03	SB-R-B10-03
Sample Date						5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/25/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	6/13/2006
Sample Depths						4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	4.5-5.0 ft	1.0-1.5 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	4.0-4.5 ft
Sample ID						SB-R-A12-014.5N	SB-R-A12-021.0FD	SB-R-A12-021.0N	SB-R-A12-024.5N	SB-R-A12-031.0N	SB-R-A12-035.0N	SB-R-A12-041.0N	SB-R-A12-045.0N	SB-R-A13-011.5N	SB-R-A13-014.5N	SB-R-A13-021.0N	SB-R-A13-022.5N	SB-R-A13-031.0N	SB-R-A13-034.5N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-011.0N	SB-R-B10-015.0N	SB-R-B10-021.0N	SB-R-B10-025.5N	SB-R-B10-031.0N	SB-R-B10-034.5N
Parent ID							SB-R-A12-021.0N																SB-R-B10-011.0N						
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 19	< 19	< 19	< 18	< 18	< 18	< 19	< 19	< 20	< 18	< 21	< 20	< 20	< 19	< 19	< 19	< 19	< 20	< 20	< 19	< 21	< 19	< 20	< 19
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	< 210	< 190	< 200	< 190
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2200	< 2200	< 2200	< 2100	< 2100	< 2100	< 2300	< 2200	< 2300	< 2200	< 2400	< 2300	< 2300	< 2200	< 2200	< 2200	< 2200	< 2400	< 2300	< 2200	< 2500	< 2300	< 2400	< 2200
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	520	< 190	< 200	< 190
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	140	< 190	< 200	< 190
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	260	< 190	< 200	< 190
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	210	< 190	< 200	< 190
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 180	< 180	< 180	< 180	< 180	< 170	49	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	410	< 190	< 200	< 190
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	140	< 190	< 200	< 190

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-A12-01	SB-R-A12-02	SB-R-A12-02	SB-R-A12-02	SB-R-A12-03	SB-R-A12-03	SB-R-A12-04	SB-R-A12-04	SB-R-A13-01	SB-R-A13-01	SB-R-A13-02	SB-R-A13-02	SB-R-A13-03	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-02	SB-R-B10-03	SB-R-B10-03
Sample Date						5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/25/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	6/13/2006
Sample Depths						4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	4.5-5.0 ft	1.0-1.5 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	4.0-4.5 ft
Sample ID						SB-R-A12-014.5N	SB-R-A12-021.0FD	SB-R-A12-021.0N	SB-R-A12-024.5N	SB-R-A12-031.0N	SB-R-A12-035.0N	SB-R-A12-041.0N	SB-R-A12-045.0N	SB-R-A13-011.5N	SB-R-A13-014.5N	SB-R-A13-021.0N	SB-R-A13-022.5N	SB-R-A13-031.0N	SB-R-A13-034.5N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-A13-045.5N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-015.0N	SB-R-B10-021.0N	SB-R-B10-025.5N	SB-R-B10-031.0N	SB-R-B10-034.5N
Parent ID							SB-R-A12-021.0N													SB-R-A13-041.0N			SB-R-B10-011.0N						
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 360	< 370	< 370	< 350	< 360	< 350	< 380	< 360	< 390	< 360	< 400	< 380	< 380	< 370	< 370	< 370	< 370	< 390	< 390	< 370	< 420	< 380	< 400	< 370
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	< 210	< 190	< 200	< 190
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	270	< 190	< 200	< 190
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	45	< 190	< 200	< 190
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	< 210	< 190	< 200	< 190
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	< 210	< 190	< 200	< 190
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	150	< 190	< 200	< 190
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	< 210	< 190	< 200	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 180	< 180	< 180	< 180	< 180	< 170	< 190	< 180	< 200	< 180	< 200	< 190	< 190	< 180	< 190	< 190	< 180	< 200	< 200	< 180	< 210	< 190	< 200	< 190
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 2800	< 2800	< 2800	< 2800	< 2700	< 2700	< 2800	< 2800	< 2900	< 2700	< 3200	< 2900	< 3000	< 2800	< 3000	< 3000	< 2800	< 3000	< 3000	< 2800	< 3300	< 3000	< 3100	< 2800
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 690	< 690	< 710	< 690	< 660	< 670	< 700	< 700	< 740	< 680	< 800	< 740	< 750	< 710	< 740	< 760	< 710	< 750	< 760	< 710	< 810	< 760	< 770	< 690
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 690	< 690	< 710	< 690	< 660	< 670	< 700	< 700	< 740	< 680	< 800	< 740	< 750	< 710	< 740	< 760	< 710	< 750	< 760	< 710	< 810	< 760	< 770	< 690
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-A12-01	SB-R-A12-02	SB-R-A12-02	SB-R-A12-02	SB-R-A12-03	SB-R-A12-03	SB-R-A12-04	SB-R-A12-04	SB-R-A13-01	SB-R-A13-01	SB-R-A13-02	SB-R-A13-02	SB-R-A13-03	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	SB-R-A13-04	SB-R-B10-01	SB-R-B10-01	SB-R-B10-01	SB-R-B10-02	SB-R-B10-02	SB-R-B10-03	SB-R-B10-03
						Sample Date	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/25/2006	5/24/2006	5/24/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	6/13/2006	6/13/2006
						Sample Depths	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	4.5-5.0 ft	1.0-1.5 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft	4.0-4.5 ft
						Sample ID	SB-R-A12-014.5N	SB-R-A12-021.0FD	SB-R-A12-021.0N	SB-R-A12-024.5N	SB-R-A12-031.0N	SB-R-A12-035.0N	SB-R-A12-041.0N	SB-R-A12-045.0N	SB-R-A13-011.5N	SB-R-A13-014.5N	SB-R-A13-021.0N	SB-R-A13-022.5N	SB-R-A13-031.0N	SB-R-A13-034.5N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-A13-041.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-011.0N	SB-R-B10-015.0N	SB-R-B10-021.0N	SB-R-B10-025.5N	SB-R-B10-031.0N	SB-R-B10-034.5N
						Parent ID		SB-R-A12-021.0N																						
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	< 690	< 690	< 710	< 690	< 660	< 670	< 700	< 700	< 740	< 680	< 800	< 740	< 750	< 710	< 740	< 760	< 710	< 750	< 760	< 710	< 810	< 760	< 770	< 690
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 690	< 690	< 710	< 690	< 660	< 670	< 700	< 700	< 740	< 680	< 800	< 740	< 750	< 710	< 740	< 760	< 710	< 750	< 760	< 710	< 810	< 760	< 770	< 690
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-B11-01	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02	SB-R-B11-02	SB-R-B11-03	SB-R-B11-03	SB-R-B11-04	SB-R-B11-04	SB-R-B11-04	SB-R-B12-01	SB-R-B12-01	SB-R-B12-02	SB-R-B12-02	SB-R-B12-03	SB-R-B12-03	SB-R-B12-04	SB-R-B12-04	SB-R-B13-01	SB-R-B13-01	SB-R-B13-01	SB-R-B13-02	SB-R-B13-02	SB-R-B13-03	SB-R-B13-03
Sample Date						5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/31/2006	5/31/2006	5/31/2006	5/23/2006	5/23/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/19/2006	5/19/2006
Sample Depths						0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.0-6.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	3.5-4.0 ft	0.5-1.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	1.2-1.7 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft
Sample ID						SB-R-B11-011.0N	SB-R-B11-014.5N	SB-R-B11-021.0FD	SB-R-B11-021.0N	SB-R-B11-026.5N	SB-R-B11-031.0N	SB-R-B11-035.0N	SB-R-B11-041.0N	SB-R-B11-044.0N	SB-R-B12-011.0N	SB-R-B12-014.5N	SB-R-B12-021.0N	SB-R-B12-023.0N	SB-R-B12-031.0N	SB-R-B12-033.0N	SB-R-B12-041.0N	SB-R-B12-044.5N	SB-R-B13-011.0N	SB-R-B13-012.5FD	SB-R-B13-012.5N	SB-R-B13-012.5N	SB-R-B13-021.67N	SB-R-B13-024.5N	SB-R-B13-031.0N	SB-R-B13-032.5FD
Parent ID								SB-R-B11-021.0N																						SB-R-B13-032.5N
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	220	< 330	< 340	< 350	< 350	< 390	< 330	< 350	< 350	< 320	< 330	< 350	< 340	< 350	< 340	< 350	< 340	< 360	< 330	< 340	< 340	< 340	< 350	< 340
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 350	< 330	1100	570	< 350	< 390	< 330	< 350	< 350	< 320	< 330	< 350	< 340	< 350	< 340	< 350	< 340	< 360	< 330	< 340	< 340	< 340	< 350	< 340
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 350	< 330	1800	420	< 350	< 390	< 330	< 350	< 350	< 320	< 330	< 350	< 340	< 350	< 340	< 350	< 340	< 360	< 330	< 340	< 340	< 340	< 350	< 340
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 350	< 330	1100	450	< 350	< 390	< 330	130	< 350	< 320	< 330	< 350	< 340	< 350	< 340	< 350	< 340	< 360	< 330	< 340	< 340	< 340	< 350	< 340
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 140000	< 130000	< 140000	< 140000	< 140000	< 150000	< 130000	< 140000	< 140000	< 130000	< 130000	< 140000	< 130000	< 140000	< 130000	< 140000	< 140000	< 140000	< 130000	< 130000	< 140000	< 140000	< 140000	< 140000	< 140000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 6700	< 6900	< 6900	< 7000	< 7700	< 6500	< 7000	< 7000	< 6400	< 6500	< 6900	< 6700	< 7000	< 6800	< 7000	< 6800	< 7200	< 6700	< 6700	< 6800	< 6900	< 6900	< 6800
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 870	< 830	< 860	< 860	< 880	< 960	< 820	< 880	< 870	< 800	< 810	< 870	< 840	< 880	< 850	< 880	< 860	< 900	< 830	< 840	< 850	< 860	< 870	< 850
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 350	< 330	< 340	< 350	< 350	< 390	< 330	< 350	< 350	< 320	< 330	< 350	< 340	< 350	< 340	< 350	< 340	< 360	< 330	< 340	< 340	< 340	< 350	< 340
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 2.22	< 2.15	< 2.23	< 2.28	2.5	< 2.55	< 2.11	< 2.3	1.33	1.54	< 2.09	< 2.29	1.05	< 2.34	1.09	1.07	< 2.24	< 2.33	< 2.18	< 2.17	< 2.19	< 2.3	1.08	< 2.24
Arsenic	7440-38-2	mg/kg	19	19	19	3.09	1.5	3.06	3.15	2.83	4.36	1.87	4.41	3.71	1.87	1.61	1.74	3.02	3	2.88	4.25	2.28	3.21	2.04	2.61	3.46	3.13	3.75	2.44
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.318	0.21	0.455	0.407	1.2	0.69	0.132	0.593	0.748	0.484	0.369	0.169	0.671	0.247	0.279	0.384	0.416	0.729	0.651	0.684	0.51	0.424	0.759	0.703
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.554	< 0.538	< 0.557	< 0.57	< 2.9	< 0.636	< 0.528	< 0.575	< 2.79	< 0.511	< 0.522	< 0.572	< 2.78	< 0.586	< 0.559	< 0.579	< 0.56	< 2.92	< 2.73	< 2.71	< 2.74	< 0.574	< 2.83	< 2.8
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	8.01	8.44	16	15.2	31.4	11	7.4	10.3	18.5	14.6	10.7	3.71	12.8	7.27	12.8	15.3	10	10.3	12.3	13.5	12	13.9	15.2	14.5
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	242	4.86	183	173	4.55	35.7	1.16	61	5.91	4.37	1.68	2.61	2.85	3.55	2.28	19.7	3.56	8.86	3.47	3.9	74.2	14.6	12	6
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.036	0.0125	0.05	0.0523	< 0.112	0.0724	< 0.105	0.0544	0.0306	< 0.104	< 0.105	0.0174	< 0.109	< 0.114	< 0.108	0.0384	< 0.106	0.0453	0.0258	0.0156	0.064	0.024	0.0404	0.0123
Nickel	7440-02-0	mg/kg	48	23000	1600	5.22	2.89	6.89	7.04	15	9.44	1.96	6.43	14.4	8.09	3.62	2.56	8.36	3.94	3.92	5.12	4.75	9.59	9.14	8.11	6.96	7.52	9.28	8.09
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.22	< 2.15	< 2.23	< 2.28	< 2.32	1.29	< 2.11	< 2.3	< 2.23	< 2.05	< 2.09	< 2.29	< 2.22	< 2.34	< 2.24	< 2.32	< 2.24	< 2.33	< 2.18	< 2.17	< 2.19	< 2.3	< 2.27	< 2.24
Silver	7440-22-4	mg/kg	1	5700	390	< 0.554	< 0.538	< 0.557	0.236	< 0.579	0.239	< 0.528	< 0.575	< 0.558	< 0.511	< 0.522	< 0.572	< 0.556	< 0.586	< 0.559	< 0.579	< 0.56	< 0.583	< 0.545	< 0.543	< 0.548	< 0.574	< 0.567	< 0.561
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 2.22	< 2.15	< 2.23	< 2.28	< 2.32	< 2.55	< 2.11	< 2.3	< 2.23	1.79	< 2.09	< 2.29	< 2.22	< 2.34	1.09	< 2.32	< 2.24	< 2.33	< 2.18	< 2.17	< 2.19	< 2.3	< 2.27	< 2.24
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	23.9	10.1	38.7	38	74.5	46.5	5.99	43.6	32.7	31.2	37.1	9.57	30	15.6	11.4	24.1	21.7	51.4	35.5	40.4	38	35.5	58.3	43.8
Moisture																															
Percent Moisture	MOIST	%				14.1	9.8	12.8	13.2	14.5	22.2	8	14.7	13.8	6	7.9	13.5	11	14.7	11.5	14.5	12.4	16.8	10.1	10.6	12.2	12.9	13.5	11.7	
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-B11-01	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02	SB-R-B11-02	SB-R-B11-03	SB-R-B11-03	SB-R-B11-04	SB-R-B11-04	SB-R-B12-01	SB-R-B12-01	SB-R-B12-02	SB-R-B12-02	SB-R-B12-03	SB-R-B12-03	SB-R-B12-04	SB-R-B12-04	SB-R-B13-01	SB-R-B13-01	SB-R-B13-01	SB-R-B13-02	SB-R-B13-02	SB-R-B13-03	SB-R-B13-03
Sample Date						5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/31/2006	5/31/2006	5/23/2006	5/23/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/19/2006	5/19/2006
Sample Depths						0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.0-6.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	3.5-4.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	1.2-1.7 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft
Sample ID						SB-R-B11-011.0N	SB-R-B11-014.5N	SB-R-B11-021.0FD	SB-R-B11-021.0N	SB-R-B11-026.5N	SB-R-B11-031.0N	SB-R-B11-035.0N	SB-R-B11-041.0N	SB-R-B11-044.0N	SB-R-B12-011.0N	SB-R-B12-014.5N	SB-R-B12-021.0N	SB-R-B12-023.0N	SB-R-B12-031.0N	SB-R-B12-033.0N	SB-R-B12-041.0N	SB-R-B12-044.5N	SB-R-B13-011.0N	SB-R-B13-012.5FD	SB-R-B13-012.5N	SB-R-B13-012.5N	SB-R-B13-021.67N	SB-R-B13-024.5N	SB-R-B13-031.0N	SB-R-B13-032.5FD
Parent ID								SB-R-B11-021.0N																SB-R-B13-012.5N						SB-R-B13-032.5N
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 20	< 19	< 19	< 20	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 20	< 19	< 19	< 20	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 20	< 19	< 19	< 20	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 20	< 19	< 19	< 20	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 20	< 19	< 19	< 20	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 20	< 19	39	33	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 20	< 19	53	27	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 20	< 19	92	60	< 20	< 22	< 18	< 20	< 20	< 18	< 18	< 20	< 19	< 20	< 19	< 20	< 19	< 20	< 19	< 19	< 19	< 20	< 20	< 19
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2300	< 2200	< 2300	< 2300	< 2300	< 2600	< 2200	< 2300	< 2300	< 2100	< 2200	< 2300	< 2200	< 2300	< 2300	< 2300	< 2300	< 2400	< 2200	< 2200	< 2300	< 2300	< 2300	< 2300
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	**1900**	< 180	480	**4200**	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	130	< 180	55	690	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 190	< 180	< 190	44	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 180	< 190	41	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	41	< 190
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 190	< 180	82	89	< 190	48	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	53	< 190
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-B11-01	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02	SB-R-B11-02	SB-R-B11-03	SB-R-B11-03	SB-R-B11-04	SB-R-B11-04	SB-R-B12-01	SB-R-B12-01	SB-R-B12-02	SB-R-B12-02	SB-R-B12-03	SB-R-B12-03	SB-R-B12-04	SB-R-B12-04	SB-R-B13-01	SB-R-B13-01	SB-R-B13-01	SB-R-B13-02	SB-R-B13-02	SB-R-B13-03	SB-R-B13-03
Sample Date						5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/31/2006	5/31/2006	5/23/2006	5/23/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/19/2006	5/19/2006
Sample Depths						0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.0-6.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	3.5-4.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	1.2-1.7 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft
Sample ID						SB-R-B11-011.0N	SB-R-B11-014.5N	SB-R-B11-021.0FD	SB-R-B11-021.0N	SB-R-B11-026.5N	SB-R-B11-031.0N	SB-R-B11-035.0N	SB-R-B11-041.0N	SB-R-B11-044.0N	SB-R-B12-011.0N	SB-R-B12-014.5N	SB-R-B12-021.0N	SB-R-B12-023.0N	SB-R-B12-031.0N	SB-R-B12-033.0N	SB-R-B12-041.0N	SB-R-B12-044.5N	SB-R-B13-011.0N	SB-R-B13-012.5FD	SB-R-B13-012.5N	SB-R-B13-021.67N	SB-R-B13-024.5N	SB-R-B13-031.0N	SB-R-B13-032.5FD
Parent ID								SB-R-B11-021.0N																					SB-R-B13-032.5N
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 390	< 370	< 380	< 380	< 390	< 430	< 360	< 390	< 390	< 350	< 360	< 390	< 370	< 390	< 380	< 390	< 380	< 400	< 370	< 370	< 380	< 380	< 390	< 380
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 190	< 180	54	50	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 190	< 180	< 190	< 190	< 190	< 210	< 180	< 200	< 190	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 190	< 200	< 190	< 190	< 190	< 190	< 190	< 190
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 3100	< 2800	< 2800	< 2900	< 3000	< 3300	< 2800	< 3000	< 3000	< 2800	< 2800	< 2900	< 2800	< 3000	< 2800	< 2900	< 3100	< 3000	< 3000	< 3000	< 2700	< 2900	< 3000	< 2800
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 770	< 690	< 710	< 730	< 750	< 830	< 690	< 740	< 750	< 690	< 710	< 720	< 700	< 750	< 710	< 730	< 770	< 740	< 740	< 750	< 680	< 730	< 750	< 700
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 770	< 690	< 710	< 730	< 750	< 830	< 690	< 740	< 750	< 690	< 710	< 720	< 700	< 750	< 710	< 730	< 770	< 740	< 740	< 750	< 680	< 730	< 750	< 700
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-B11-01	SB-R-B11-01	SB-R-B11-02	SB-R-B11-02	SB-R-B11-02	SB-R-B11-03	SB-R-B11-03	SB-R-B11-04	SB-R-B11-04	SB-R-B12-01	SB-R-B12-01	SB-R-B12-02	SB-R-B12-02	SB-R-B12-03	SB-R-B12-03	SB-R-B12-04	SB-R-B12-04	SB-R-B13-01	SB-R-B13-01	SB-R-B13-01	SB-R-B13-02	SB-R-B13-02	SB-R-B13-03	SB-R-B13-03
						Sample Date	5/23/2006	5/23/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/31/2006	5/31/2006	5/23/2006	5/23/2006	5/23/2006	5/23/2006	5/23/2006	5/23/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/19/2006	5/19/2006
						Sample Depths	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.0-6.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	3.5-4.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	1.2-1.7 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft
						Sample ID	SB-R-B11-011.0N	SB-R-B11-014.5N	SB-R-B11-021.0FD	SB-R-B11-021.0N	SB-R-B11-026.5N	SB-R-B11-031.0N	SB-R-B11-035.0N	SB-R-B11-041.0N	SB-R-B11-044.0N	SB-R-B12-011.0N	SB-R-B12-014.5N	SB-R-B12-021.0N	SB-R-B12-023.0N	SB-R-B12-031.0N	SB-R-B12-033.0N	SB-R-B12-041.0N	SB-R-B12-044.5N	SB-R-B13-011.0N	SB-R-B13-012.5FD	SB-R-B13-012.5N	SB-R-B13-021.67N	SB-R-B13-024.5N	SB-R-B13-031.0N	SB-R-B13-032.5FD
						Parent ID			SB-R-B11-021.0N																SB-R-B13-012.5N					SB-R-B13-032.5F
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	< 770	< 690	< 710	< 730	< 750	< 830	< 690	< 740	< 750	< 690	< 710	< 720	< 700	< 750	< 710	< 730	< 770	< 740	< 740	< 740	< 750	< 680	< 730	< 750	< 700
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 770	< 690	< 710	< 730	< 750	< 830	< 690	< 740	< 750	< 690	< 710	< 720	< 700	< 750	< 710	< 730	< 770	< 740	< 740	< 740	< 750	< 680	< 730	< 750	< 700
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-B13-03	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B14-01	SB-R-B14-01	SB-R-C10-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-03	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C11-01	SB-R-C11-01	SB-R-C11-01	SB-R-C11-03	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02
Sample Date						5/19/2006	5/23/2006	5/23/2006	8/10/2006	8/10/2006	5/18/2006	5/18/2006	5/25/2006	5/25/2006	6/7/2006	6/7/2006	6/12/2006	6/12/2006	6/12/2006	8/17/2006	5/31/2006	5/31/2006	5/31/2006	6/1/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006
Sample Depths						2.0-2.5 ft	0.5-1.0 ft	2.5-3.0 ft	6.5-7.0 ft	6.5-7.0 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.3-2.8 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft
Sample ID						SB-R-B13-032.5N	SB-R-B13-041.0N	SB-R-B13-043.0N	SB-R-B13-047.0FD	SB-R-B13-047.0N	SB-R-B14-011.33N	SB-R-B14-014.5N	SB-R-C10-011.0N	SB-R-C10-015.0N	SB-R-C10-031.0N	SB-R-C10-032.83N	SB-R-C10-041.0N	SB-R-C10-042.5FD	SB-R-C10-042.5N	SB-R-C10-046.5N	SB-R-C11-011.0FD	SB-R-C11-011.0N	SB-R-C11-017.0N	SB-R-C11-031.0N	SB-R-C11-035.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-015.0N	SB-R-C12-021.0N
Parent ID									SB-R-B13-047.0N									SB-R-C10-042.5N			SB-R-C11-011.0N					SB-R-C12-011.0N			
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	< 370	< 330	NA	NA	< 360	< 320	< 330	< 340	< 360	< 340	< 360	< 350	< 350	NA	< 390	< 360	< 330	< 350	< 350	< 330	< 330	< 330	< 320
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 340	< 370	20000	NA	NA	< 360	< 320	< 330	< 340	< 360	< 340	< 360	< 350	< 350	NA	< 390	< 360	< 330	< 350	< 350	< 330	< 330	< 330	< 320
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 340	< 370	< 330	NA	NA	< 360	< 320	< 330	< 340	< 360	< 340	< 360	< 350	< 350	NA	< 390	< 360	< 330	< 350	< 350	< 330	< 330	< 330	< 320
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 340	< 370	< 330	NA	NA	< 360	< 320	< 330	< 340	< 360	< 340	< 360	< 350	< 350	NA	< 390	< 360	< 330	< 350	< 350	< 330	< 330	< 330	< 320
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 130000	< 150000	< 130000	NA	NA	< 140000	< 130000	< 130000	< 130000	< 140000	< 130000	< 140000	< 140000	< 140000	NA	< 150000	< 150000	< 130000	< 140000	< 140000	< 130000	< 130000	< 130000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 7500	< 6700	NA	NA	< 7200	< 6500	< 6700	< 6700	< 7200	< 6700	< 7100	< 7000	< 7000	NA	< 7700	< 7300	< 6700	< 6900	< 7100	< 6600	< 6500	< 6700	< 6400
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 840	< 930	< 840	NA	NA	< 910	< 810	< 840	< 840	< 900	< 840	< 890	< 870	< 870	NA	< 960	< 910	< 840	< 870	< 880	< 820	< 820	< 830	< 800
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 340	< 370	< 330	NA	NA	< 360	< 320	< 330	< 340	< 360	< 340	< 360	< 350	< 350	NA	< 390	< 360	< 330	< 350	< 350	< 330	< 330	< 330	< 320
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 2.16	1.26	1.52	NA	NA	1.45	< 2.09	< 2.17	< 2.25	< 2.37	0.998	< 2.28	< 2.26	< 2.29	1.51	< 2.57	< 2.35	1.65	1.18	< 2.35	1.4	1.22	1.01	1.09
Arsenic	7440-38-2	mg/kg	19	19	19	4.86	**23.1**	4.28	NA	NA	4.52	1.39	2.86	2.45	3.15	2.78	3.2	2.18	2.02	2.41	**26.3**	**22.6**	2.14	6.27	3.12	4.65	2.83	1.88	3.71
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.716	0.648	0.62	NA	NA	0.803	0.59	0.569	0.791	0.521	0.492	0.93	1.42	1.45	0.75	0.349	0.361	0.641	0.749	0.686	0.68	0.626	0.571	0.472
Cadmium	7440-43-9	mg/kg	2	78	78	0.393	< 0.616	< 2.71	NA	NA	< 3.02	< 2.62	< 0.542	< 0.562	< 0.592	< 2.69	< 2.85	< 2.83	< 2.87	< 2.72	< 3.21	< 2.94	< 13.5	< 0.571	< 2.94	< 2.64	< 2.67	< 0.55	< 0.513
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	14.6	28.5	19.9	NA	NA	13.1	13.5	14.5	14.6	7.08	14.6	16.5	27.9	28.8	16.9	18.3	14.8	17.5	18.4	15.7	16.8	14.7	12.1	14.3
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	6.18	38.4	7.64	NA	NA	8.53	1.53	26.7	2.91	9.25	3.62	6.4	5.17	5.36	2.58	110	102	3.54	**473**	6.81	6.12	5.48	1.74	16.1
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.0222	0.123	0.0147	NA	NA	0.0363	0.0041	0.0208	< 0.106	0.0391	0.0362	0.029	0.0293	0.0233	0.0157	0.119	0.098	0.015	0.137	0.0169	0.0228	0.0273	< 0.105	< 0.104
Nickel	7440-02-0	mg/kg	48	23000	1600	8.86	11.4	12.7	NA	NA	9.32	6.29	9.66	8.44	5.77	8.51	12.4	17.9	19.1	8.96	7.41	7.05	9.72	8.23	10.8	8.06	7.6	4.68	6.48
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.16	< 2.46	< 2.17	NA	NA	< 2.42	< 2.09	< 2.17	< 2.25	< 2.37	< 2.16	< 2.28	1.34	1.82	< 2.18	2.02	1.73	< 2.16	1.57	< 2.35	< 2.11	< 2.13	< 2.2	< 2.05
Silver	7440-22-4	mg/kg	1	5700	390	< 0.539	< 0.616	< 0.542	NA	NA	< 0.604	< 0.523	< 0.542	0.32	< 0.592	< 0.539	< 0.57	0.467	0.504	< 0.544	< 0.642	< 0.588	< 0.541	< 0.571	0.266	< 0.528	< 0.533	< 0.55	< 0.513
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 2.16	< 2.46	1.25	NA	NA	< 2.42	< 2.09	1.67	< 2.25	< 2.37	< 2.16	1.66	2.14	2.01	2.32	< 2.57	1.63	< 2.16	< 2.28	< 2.35	< 2.11	< 2.13	< 2.2	< 2.05
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	49.5	24.1	66.2	NA	NA	53.4	40.8	38.7	31.6	27	28	40.4	47.1	45.9	26.5	48.3	44.5	49.7	40.1	35	37.1	39.2	36.1	82.6
Moisture																													
Percent Moisture	MOIST	%				10.8	19.6	10.4	4.3	5	17.2	7.2	10.4	11	16.4	10.8	15.7	14.1	13.7	9.9	22.1	17.4	10.2	13.3	15	8.9	8.1	10	6.2
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-B13-03	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B14-01	SB-R-B14-01	SB-R-C10-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-03	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C11-01	SB-R-C11-01	SB-R-C11-01	SB-R-C11-03	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02
Sample Date						5/19/2006	5/23/2006	5/23/2006	8/10/2006	8/10/2006	5/18/2006	5/18/2006	5/25/2006	5/25/2006	6/7/2006	6/7/2006	6/12/2006	6/12/2006	6/12/2006	8/17/2006	5/31/2006	5/31/2006	5/31/2006	6/1/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006
Sample Depths						2.0-2.5 ft	0.5-1.0 ft	2.5-3.0 ft	6.5-7.0 ft	6.5-7.0 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.3-2.8 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft
Sample ID						SB-R-B13-032.5N	SB-R-B13-041.0N	SB-R-B13-043.0N	SB-R-B13-047.0FD	SB-R-B13-047.0N	SB-R-B14-011.33N	SB-R-B14-014.5N	SB-R-C10-011.0N	SB-R-C10-015.0N	SB-R-C10-031.0N	SB-R-C10-032.83N	SB-R-C10-041.0N	SB-R-C10-042.5FD	SB-R-C10-042.5N	SB-R-C10-046.5N	SB-R-C11-011.0FD	SB-R-C11-011.0N	SB-R-C11-017.0N	SB-R-C11-031.0N	SB-R-C11-035.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-015.0N	SB-R-C12-021.0N
Parent ID									SB-R-B13-047.0N									SB-R-C10-042.5N			SB-R-C11-011.0N					SB-R-C12-011.0N			
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 19	< 21	< 19	NA	NA	< 21	< 18	< 19	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	< 18
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 19	< 21	< 19	NA	NA	< 21	< 18	< 19	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	< 18
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 19	< 21	< 19	NA	NA	< 21	< 18	< 19	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	< 18
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 19	< 21	< 19	NA	NA	< 21	< 18	< 19	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	< 18
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 19	< 21	< 19	NA	NA	< 21	< 18	< 19	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	< 18
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 19	4.5	< 19	NA	NA	7.2	< 18	< 19	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	< 18
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 19	4.9	< 19	NA	NA	< 21	< 18	4.3	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	42
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 19	9.4	< 19	NA	NA	7.2	< 18	4.3	< 19	< 20	< 19	< 20	< 20	< 20	NA	< 22	< 21	< 19	< 20	< 20	< 19	< 18	< 19	42
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 190	< 210	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	< 180
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2200	< 2500	< 2200	< 2100	< 2100	< 2400	< 2200	< 2200	< 2200	< 2400	< 2200	< 2400	< 2300	< 2300	NA	< 2600	< 2400	< 2200	< 2300	< 2400	< 2200	< 2200	< 2200	< 2100
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 190	430	280	**7200**	**6900**	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	160
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 190	330	**990**	**4200**	**4000**	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	120
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 190	170	44	< 170	< 180	< 200	< 180	45	< 190	< 200	< 190	< 200	< 190	< 190	NA	580	350	< 190	1000	< 200	< 180	< 180	< 190	< 180
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	190	< 190	< 170	< 180	< 200	< 180	47	< 190	< 200	< 190	< 200	< 190	< 190	NA	**590**	390	< 190	**970**	< 200	< 180	< 180	< 190	< 180
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 190	320	55	< 170	< 180	< 200	< 180	72	< 190	< 200	< 190	< 200	< 190	< 190	NA	870	690	< 190	1400	< 200	< 180	< 180	< 190	< 180
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 190	99	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	340	190	< 190	520	< 200	< 180	< 180	< 190	< 180

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-B13-03	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B14-01	SB-R-B14-01	SB-R-C10-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-03	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C11-01	SB-R-C11-01	SB-R-C11-01	SB-R-C11-03	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02
Sample Date						5/19/2006	5/23/2006	5/23/2006	8/10/2006	8/10/2006	5/18/2006	5/18/2006	5/25/2006	5/25/2006	6/7/2006	6/7/2006	6/12/2006	6/12/2006	6/12/2006	8/17/2006	5/31/2006	5/31/2006	5/31/2006	6/1/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006
Sample Depths						2.0-2.5 ft	0.5-1.0 ft	2.5-3.0 ft	6.5-7.0 ft	6.5-7.0 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.3-2.8 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft
Sample ID						SB-R-B13-032.5N	SB-R-B13-041.0N	SB-R-B13-043.0N	SB-R-B13-047.0FD	SB-R-B13-047.0N	SB-R-B14-011.33N	SB-R-B14-014.5N	SB-R-C10-011.0N	SB-R-C10-015.0N	SB-R-C10-031.0N	SB-R-C10-032.83N	SB-R-C10-041.0N	SB-R-C10-042.5FD	SB-R-C10-042.5N	SB-R-C10-046.5N	SB-R-C11-011.0FD	SB-R-C11-011.0N	SB-R-C11-017.0N	SB-R-C11-031.0N	SB-R-C11-035.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-015.0N	SB-R-C12-021.0N
Parent ID									SB-R-B13-047.0N									SB-R-C10-042.5N			SB-R-C11-011.0N					SB-R-C12-011.0N			
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 370	< 410	< 370	< 350	< 350	< 400	< 360	< 370	< 370	< 400	< 370	< 400	< 390	< 390	NA	< 430	< 400	< 370	< 380	< 390	< 370	< 360	< 370	73
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 190	< 210	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	< 180
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 190	280	51	< 170	< 180	< 200	< 180	47	< 190	< 200	< 190	< 200	< 190	< 190	NA	660	400	< 190	970	< 200	< 180	< 180	< 190	< 180
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 190	100	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	46	89	< 190	150	< 200	< 180	< 180	< 190	< 180
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 190	< 210	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	< 180
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 190	< 210	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	< 180
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 190	130	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	380	230	< 190	590	< 200	< 180	< 180	< 190	< 180
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 190	< 210	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 190	< 210	< 190	< 170	< 180	< 200	< 180	< 190	< 190	< 200	< 190	< 200	< 190	< 190	NA	< 210	< 200	< 190	< 190	< 200	< 180	< 180	< 190	< 180
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 2900	< 3600	< 2800	NA	NA	< 3100	< 2800	< 2800	< 2900	< 4800	< 3000	< 2900	< 2900	< 2800	NA	< 3200	< 3200	< 2900	< 3000	< 2900	< 2800	< 2700	< 2700	< 2700
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 730	< 900	< 700	NA	NA	< 770	< 700	< 710	< 730	< 1200	< 740	< 730	< 740	< 710	NA	< 800	< 800	< 730	< 740	< 730	< 700	< 680	< 680	< 660
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 730	< 900	< 700	NA	NA	< 770	< 700	< 710	< 730	< 1200	< 740	< 730	< 740	< 710	NA	< 800	< 800	< 730	< 740	< 730	< 700	< 680	< 680	< 660
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-B13-03	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B13-04	SB-R-B14-01	SB-R-B14-01	SB-R-C10-01	SB-R-C10-01	SB-R-C10-03	SB-R-C10-03	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SB-R-C11-01	SB-R-C11-01	SB-R-C11-01	SB-R-C11-03	SB-R-C11-03	SB-R-C12-01	SB-R-C12-01	SB-R-C12-01	SB-R-C12-02
						Sample Date	5/19/2006	5/23/2006	5/23/2006	8/10/2006	8/10/2006	5/18/2006	5/18/2006	5/25/2006	5/25/2006	6/7/2006	6/7/2006	6/12/2006	6/12/2006	6/12/2006	6/12/2006	8/17/2006	5/31/2006	5/31/2006	5/31/2006	6/1/2006	6/1/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006
						Sample Depths	2.0-2.5 ft	0.5-1.0 ft	2.5-3.0 ft	6.5-7.0 ft	6.5-7.0 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.3-2.8 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft
						Sample ID	SB-R-B13-032.5N	SB-R-B13-041.0N	SB-R-B13-043.0N	SB-R-B13-047.0FD	SB-R-B13-047.0N	SB-R-B14-011.33N	SB-R-B14-014.5N	SB-R-C10-011.0N	SB-R-C10-015.0N	SB-R-C10-031.0N	SB-R-C10-032.83N	SB-R-C10-041.0N	SB-R-C10-042.5FD	SB-R-C10-042.5N	SB-R-C10-046.5N	SB-R-C11-011.0FD	SB-R-C11-011.0N	SB-R-C11-017.0N	SB-R-C11-031.0N	SB-R-C11-035.0N	SB-R-C12-011.0FD	SB-R-C12-011.0N	SB-R-C12-015.0N	SB-R-C12-021.0N
						Parent ID				SB-R-B13-047.0N									SB-R-C10-042.5N			SB-R-C11-011.0N					SB-R-C12-011.0N			
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	680	< 900	< 700	NA	NA	< 770	< 700	< 710	< 730	< 1200	< 740	< 730	< 740	< 710	NA	< 800	< 800	< 730	< 740	< 730	< 700	< 680	< 680	< 660
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 730	< 900	< 700	NA	NA	< 770	< 700	< 710	< 730	< 1200	< 740	< 730	< 740	< 710	NA	< 800	< 800	< 730	< 740	< 730	< 700	< 680	< 680	< 660
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-C12-02	SB-R-C12-04	SB-R-C12-04	SB-R-C13-01	SB-R-C13-01	SB-R-C13-01	SB-R-C13-02	SB-R-C13-02	SB-R-C13-04	SB-R-C13-04	SB-R-C14-01	SB-R-C14-01	SB-R-C14-02	SB-R-C14-02	SB-R-C9-01	SB-R-C9-01	SB-R-C9-01	SB-R-C9-02	SB-R-C9-02	SB-R-C9-03	SB-R-C9-03	SB-R-C9-04	SB-R-C9-04	SB-R-D14-01
Sample Date						5/31/2006	6/6/2006	6/6/2006	5/18/2006	5/18/2006	8/9/2006	5/19/2006	5/19/2006	6/2/2006	6/2/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	8/8/2006	5/16/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006	5/25/2006	8/8/2006
Sample Depths						5.5-6.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.8-1.3 ft	4.3-4.8 ft	8.3-8.8 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	3.0-3.5 ft	1.5-2.0 ft
Sample ID						SB-R-C12-026.0N	SB-R-C12-041.0N	SB-R-C12-044.5N	SB-R-C13-011.33N	SB-R-C13-014.75N	SB-R-C13-018.75N	SB-R-C13-021.0N	SB-R-C13-023.0N	SB-R-C13-041.0N	SB-R-C13-045.0N	SB-R-C14-011.0N	SB-R-C14-012.5N	SB-R-C14-021.25N	SB-R-C14-024.5N	SB-R-C9-011.0N	SB-R-C9-012.5N	SB-R-C9-016.5N	SB-R-C9-021.0N	SB-R-C9-023.0N	SB-R-C9-031.0N	SB-R-C9-032.5N	SB-R-C9-041.0N	SB-R-C9-043.5N	SB-R-D14-012.0N
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 350	< 350	< 340	< 470	NA	< 380	< 320	< 340	< 330	< 330	< 320	< 360	< 320	< 360	< 330	NA	< 370	< 360	< 350	< 350	< 350	< 350	< 370
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 330	< 350	< 350	< 340	< 470	NA	< 380	< 320	< 340	< 330	< 330	< 320	< 360	< 320	< 360	< 330	NA	< 370	< 360	< 350	< 350	< 350	< 350	**130000**
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 330	< 350	< 350	< 340	< 470	NA	< 380	< 320	< 340	< 330	< 330	< 320	< 360	< 320	< 360	< 330	NA	< 370	< 360	< 350	< 350	< 350	< 350	**5200**
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 330	< 350	< 350	< 340	< 470	NA	< 380	< 320	< 340	< 330	< 330	< 320	< 360	< 320	< 360	< 330	NA	< 370	< 360	< 350	< 350	< 350	< 350	**4800**
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 130000	< 140000	< 140000	110000	< 190000	NA	< 150000	< 130000	< 140000	< 130000	< 130000	< 130000	< 140000	< 130000	< 140000	< 130000	NA	< 150000	< 140000	< 140000	< 140000	< 140000	< 140000	< 150000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 6900	< 6900	< 6700	< 9500	NA	< 7600	< 6400	< 6800	< 6500	< 6700	< 6400	< 7200	< 6400	< 7200	< 6700	NA	< 7400	< 7200	< 7100	< 7000	< 6900	< 6900	< 7500
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 840	< 860	< 860	< 840	< 1200	NA	< 950	< 800	< 860	< 820	< 840	< 800	< 890	< 800	< 910	< 840	NA	< 920	< 900	< 890	< 880	< 870	< 870	< 930
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 330	< 350	< 350	< 340	< 470	NA	< 380	< 320	< 340	< 330	< 330	< 320	< 360	< 320	< 360	< 330	NA	< 370	< 360	< 350	< 350	< 350	< 350	< 370
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 2.23	1.88	< 2.3	1.02	< 3.07	< 2.25	< 2.47	0.991	1.56	< 2.13	1.54	1.08	1.11	< 2.12	< 2.35	< 2.23	< 2.13	< 2.44	< 2.36	< 2.31	< 2.25	< 2.31	< 2.31	1.31
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.23	**133**	2.04	2.62	3.8	1.85	3.52	1.47	4.19	3.2	2.66	1.72	3.68	1.53	5.3	**25.3**	8.72	2.84	4.08	2.86	3.14	3.64	2.41	3.64
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.499	0.542	0.392	0.631	0.975	0.494	0.81	0.442	0.704	0.397	0.654	0.645	0.698	0.521	0.359	0.484	0.43	0.585	0.944	0.857	1	0.724	0.405	0.681
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.557	< 2.85	< 0.576	< 0.542	< 3.84	< 2.81	0.643	< 2.61	< 2.77	< 0.533	< 2.79	< 2.6	< 2.87	< 0.531	0.515	0.862	< 2.66	1.07	1.19	0.891	0.98	< 2.89	< 0.579	< 3.08
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	10.4	15.5	9.05	12.7	15.6	17.3	9.5	10	13.9	12.6	14.2	15.2	10.9	12.6	7.7	16.3	12.6	18.4	20.7	16	21	12.5	5.24	59.9
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	1.85	15.5	1.64	9.43	6.61	2.2	17.7	2.21	6.06	2.02	4.87	2.91	6.15	2.61	4.52	6.72	3.13	6.27	7.01	6.51	6.43	5.52	3.6	59.4
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	< 0.107	0.0459	< 0.115	0.0213	< 0.155	< 0.114	0.0319	< 0.0994	0.0315	< 0.107	0.0175	0.005	0.026	0.0074	0.0176	< 0.107	< 0.102	0.0079	0.0097	0.0229	0.0252	0.0205	0.0125	0.0499
Nickel	7440-02-0	mg/kg	48	23000	1600	7.09	8.71	5.48	8.14	10.3	5.89	7.03	5.99	8	5.98	11.7	8.42	9.12	7.44	4.93	7.42	4.88	15.3	16.6	14.1	17.2	10.9	4.87	8.59
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.23	< 2.28	< 2.3	< 2.17	< 3.07	< 2.25	< 2.47	< 2.09	< 2.21	< 2.13	< 2.23	< 2.08	< 2.29	< 2.12	< 2.35	< 2.23	< 2.13	< 2.44	1.24	< 2.31	< 2.25	< 2.31	< 2.31	< 2.46
Silver	7440-22-4	mg/kg	1	5700	390	< 0.557	< 0.57	< 0.576	< 0.542	< 0.768	< 0.562	< 0.618	< 0.521	< 0.554	< 0.533	< 0.557	< 0.521	< 0.573	< 0.531	< 0.586	< 0.558	< 0.532	0.293	0.272	0.293	0.293	0.249	< 0.579	< 0.616
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 2.23	< 2.28	1.58	< 2.17	2.2	< 2.25	< 2.47	< 2.09	< 2.21	< 2.13	< 2.23	< 2.08	< 2.29	< 2.12	< 2.35	< 2.23	< 2.13	< 2.44	< 2.36	< 2.31	1.15	< 2.31	< 2.31	< 2.46
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	41.4	42.7	31.9	51.6	52.1	64.1	53	32.7	46.9	38	50.5	32.8	42	28.4	28.8	22.6	10.8	39	36.7	48.5	39.1	29.1	19.9	76.1
Moisture																													
Percent Moisture	MOIST	%				10.2	13.2	13.2	10.5	36.8	13.7	20.7	6	12.3	8	10.3	5.9	16.1	6.7	17.2	10.4	7.9	18.8	16.8	15.3	14.4	13.4	13.6	19.6
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-C12-02	SB-R-C12-04	SB-R-C12-04	SB-R-C13-01	SB-R-C13-01	SB-R-C13-01	SB-R-C13-02	SB-R-C13-02	SB-R-C13-04	SB-R-C13-04	SB-R-C14-01	SB-R-C14-01	SB-R-C14-02	SB-R-C14-02	SB-R-C9-01	SB-R-C9-01	SB-R-C9-01	SB-R-C9-02	SB-R-C9-02	SB-R-C9-03	SB-R-C9-03	SB-R-C9-04	SB-R-C9-04	SB-R-D14-01
Sample Date						5/31/2006	6/6/2006	6/6/2006	5/18/2006	5/18/2006	8/9/2006	5/19/2006	5/19/2006	6/2/2006	6/2/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	8/8/2006	5/16/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006	5/25/2006	8/8/2006
Sample Depths						5.5-6.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.8-1.3 ft	4.3-4.8 ft	8.3-8.8 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	3.0-3.5 ft	1.5-2.0 ft
Sample ID						SB-R-C12-026.0N	SB-R-C12-041.0N	SB-R-C12-044.5N	SB-R-C13-011.33N	SB-R-C13-014.75N	SB-R-C13-018.75N	SB-R-C13-021.0N	SB-R-C13-023.0N	SB-R-C13-041.0N	SB-R-C13-045.0N	SB-R-C14-011.0N	SB-R-C14-012.5N	SB-R-C14-021.25N	SB-R-C14-024.5N	SB-R-C9-011.0N	SB-R-C9-012.5N	SB-R-C9-016.5N	SB-R-C9-021.0N	SB-R-C9-023.0N	SB-R-C9-031.0N	SB-R-C9-032.5N	SB-R-C9-041.0N	SB-R-C9-043.5N	SB-R-D14-012.0N
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 19	< 20	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 19	< 20	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 19	< 20	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 19	< 20	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 19	< 20	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 19	< 20	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 19	6.9	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 19	6.9	< 20	< 19	< 27	NA	< 21	< 18	< 19	< 18	< 19	< 18	< 20	< 18	< 21	< 19	NA	< 21	< 20	< 20	< 20	< 20	< 20	< 21
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 190	< 190	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	< 210
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2200	< 2300	< 2300	< 2200	< 3200	NA	< 2500	< 2100	< 2300	< 2200	< 2200	< 2100	< 2400	< 2100	< 2400	< 2200	NA	< 2500	< 2400	< 2400	< 2300	< 2300	< 2300	< 2500
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 190	220	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	**1400**
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 190	< 190	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	130
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 190	< 190	63	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	230
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	61	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	240
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 190	85	80	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	290
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 190	< 190	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	170

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-C12-02	SB-R-C12-04	SB-R-C12-04	SB-R-C13-01	SB-R-C13-01	SB-R-C13-01	SB-R-C13-02	SB-R-C13-02	SB-R-C13-04	SB-R-C13-04	SB-R-C14-01	SB-R-C14-01	SB-R-C14-02	SB-R-C14-02	SB-R-C9-01	SB-R-C9-01	SB-R-C9-01	SB-R-C9-02	SB-R-C9-02	SB-R-C9-03	SB-R-C9-03	SB-R-C9-04	SB-R-C9-04	SB-R-D14-01
Sample Date						5/31/2006	6/6/2006	6/6/2006	5/18/2006	5/18/2006	8/9/2006	5/19/2006	5/19/2006	6/2/2006	6/2/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	8/8/2006	5/16/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006	5/25/2006	8/8/2006
Sample Depths						5.5-6.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.8-1.3 ft	4.3-4.8 ft	8.3-8.8 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	3.0-3.5 ft	1.5-2.0 ft
Sample ID						SB-R-C12-026.0N	SB-R-C12-041.0N	SB-R-C12-044.5N	SB-R-C13-011.33N	SB-R-C13-014.75N	SB-R-C13-018.75N	SB-R-C13-021.0N	SB-R-C13-023.0N	SB-R-C13-041.0N	SB-R-C13-045.0N	SB-R-C14-011.0N	SB-R-C14-012.5N	SB-R-C14-021.25N	SB-R-C14-024.5N	SB-R-C9-011.0N	SB-R-C9-012.5N	SB-R-C9-016.5N	SB-R-C9-021.0N	SB-R-C9-023.0N	SB-R-C9-031.0N	SB-R-C9-032.5N	SB-R-C9-041.0N	SB-R-C9-043.5N	SB-R-D14-012.0N
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 370	< 380	< 380	< 370	< 530	NA	< 420	< 350	< 380	< 360	< 370	< 350	< 400	< 360	< 400	< 370	NA	< 410	< 400	< 390	< 390	< 380	< 390	< 410
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 190	< 190	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	< 210
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 190	70	72	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	260
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 190	< 190	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	< 210
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 190	< 190	< 190	170	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	< 210
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 190	< 190	< 190	77	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	< 210
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 190	< 190	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	210
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 190	< 190	< 190	< 190	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	< 210
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 190	< 190	< 190	100	< 260	NA	< 210	< 180	< 190	< 180	< 190	< 180	< 200	< 180	< 200	< 190	NA	< 210	< 200	< 200	< 190	< 190	< 190	< 210
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 2900	< 2600	< 2900	< 2900	< 4000	NA	< 3300	< 2600	< 2900	< 2700	< 2900	< 2600	< 3100	< 2700	< 3000	< 2900	NA	< 3100	< 3000	< 3100	< 2900	< 3000	< 3100	< 3100
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 720	< 660	< 710	< 710	< 990	NA	< 830	< 650	< 720	< 680	< 720	< 660	< 770	< 680	< 750	< 730	NA	< 780	< 750	< 780	< 730	< 750	< 770	< 790
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 720	< 660	< 710	< 710	< 990	NA	< 830	< 650	< 720	< 680	< 720	< 660	< 770	< 680	< 750	< 730	NA	< 780	< 750	< 780	< 730	< 750	< 770	< 790
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-C12-02	SB-R-C12-04	SB-R-C12-04	SB-R-C13-01	SB-R-C13-01	SB-R-C13-01	SB-R-C13-02	SB-R-C13-02	SB-R-C13-04	SB-R-C13-04	SB-R-C14-01	SB-R-C14-01	SB-R-C14-02	SB-R-C14-02	SB-R-C9-01	SB-R-C9-01	SB-R-C9-01	SB-R-C9-02	SB-R-C9-02	SB-R-C9-03	SB-R-C9-03	SB-R-C9-04	SB-R-C9-04	SB-R-D14-01
						Sample Date	5/31/2006	6/6/2006	6/6/2006	5/18/2006	5/18/2006	8/9/2006	5/19/2006	5/19/2006	6/2/2006	6/2/2006	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/16/2006	5/16/2006	8/8/2006	5/16/2006	5/16/2006	5/16/2006	5/16/2006	5/16/2006	5/25/2006	5/25/2006	8/8/2006
						Sample Depths	5.5-6.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.8-1.3 ft	4.3-4.8 ft	8.3-8.8 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.8-1.3 ft	4.0-4.5 ft	0.5-1.0 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	3.0-3.5 ft	1.5-2.0 ft
						Sample ID	SB-R-C12-026.0N	SB-R-C12-041.0N	SB-R-C12-044.5N	SB-R-C13-011.33N	SB-R-C13-014.75N	SB-R-C13-018.75N	SB-R-C13-021.0N	SB-R-C13-023.0N	SB-R-C13-041.0N	SB-R-C13-045.0N	SB-R-C14-011.0N	SB-R-C14-012.5N	SB-R-C14-021.25N	SB-R-C14-024.5N	SB-R-C9-011.0N	SB-R-C9-012.5N	SB-R-C9-016.5N	SB-R-C9-021.0N	SB-R-C9-023.0N	SB-R-C9-031.0N	SB-R-C9-032.5N	SB-R-C9-041.0N	SB-R-C9-043.5N	SB-R-D14-012.0N
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	< 720	< 660	< 710	< 710	< 990	NA	< 830	< 650	< 720	< 680	< 720	< 660	< 770	< 680	< 750	< 730	NA	< 780	< 750	< 780	< 730	< 750	< 770	< 770	< 790
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 720	< 660	< 710	< 710	< 990	NA	< 830	< 650	< 720	< 680	< 720	< 660	< 770	< 680	< 750	< 730	NA	< 780	< 750	< 780	< 730	< 750	< 770	< 770	< 790
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-1	SO-R2-B-9-2	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-B-9-3	SO-R2-C-12-1	SO-R2-C-12-1	SO-R2-C-8-2	SO-R2-C-8-2
Sample Date						8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/11/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013
Sample Depths						4.5-5.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	0.2-0.7 ft	9.5-10.0 ft	0.2-0.7 ft	9.4-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	9.5-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	9.4-9.9 ft
Sample ID						SB-R-D14-015.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C10-2-012.5N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-A-11-1D_20131114	SO-R2-B-12-1_20131114	SO-R2-B-12-1D_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-2D_20131114	SO-R2-B-9-3_20131111	SO-R2-B-9-3D_20131111	SO-R2-C-12-1_20131114	SO-R2-C-12-1D_20131114	SO-R2-C-8-2_20131114	SO-R2-C-8-2D_20131114
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 370	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 370	NA	660	NA	**91000**	**21000000**	NA	NA	540	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 370	NA	330	NA	< 11000	< 1000000	NA	NA	280	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 750	NA	450	NA	< 11000	< 1000000	NA	NA	300	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
Nitrocellulose	9004-70-0	ug/kg				< 150000	NA	< 72000	NA	134000	8000000	NA	NA	< 66000	< 60000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7500	NA	< 2400	NA	< 230000	< 20000000	NA	NA	< 2200	< 2000	< 6900	< 6400	< 7100	< 6200	< 6700	< 6900	< 7400	< 7000	< 6800	< 6200	< 7300	< 6400	< 7200	< 6900
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 940	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 860	< 800	< 890	< 780	< 840	< 870	< 930	< 870	< 850	< 770	< 910	< 800	< 900	< 860
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	< 2400	NA	< 230000	< 20000000	NA	NA	< 2200	< 2000	< 6900	< 6400	< 7100	< 6200	< 6700	< 6900	< 7400	< 7000	< 6800	< 6200	< 7300	< 6400	< 7200	< 6900
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 370	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	370	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	< 120	NA	< 11000	< 1000000	NA	NA	< 110	< 99	< 340	< 320	< 360	< 310	< 330	< 350	< 370	< 350	< 340	< 310	< 360	< 320	< 360	< 340
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	5.4	NA	2.5	4.9	NA	NA	5.7	4.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	48.3	NA	27.3	43.9	NA	NA	41.2	33.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	1.6	NA	1.1	1.8	NA	NA	1.8	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	26.4	NA	12.7	25.8	NA	NA	23	17.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	91.4	NA	69	75.4	NA	NA	75.7	68.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	12.4	NA	5.6	12.2	NA	NA	11.8	8.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	100	NA	94.1	96.5	NA	NA	92.8	87.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	100	NA	100	100	NA	NA	100	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	100	NA	100	100	NA	NA	100	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	86.7	NA	59.5	67.9	NA	NA	69.1	61.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	76.7	NA	46.9	60.1	NA	NA	62.3	53.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	46400	2530	22700	4690	28400	34500	17600	33600	21500	1920	18300	9580	18900	20200
Antimony	7440-36-0	mg/kg	6	450	31	< 2.42	NA	< 0.76	NA	1	0.94	NA	NA	< 0.71	< 0.91	< 2.25	< 2.12	< 2.3	< 2.07	< 2.23	< 2.29	< 2.47	< 2.26	< 2.22	< 2.06	< 2.39	< 2.11	< 2.4	< 2.24
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.42	NA	5.7	NA	4.3	4.9	NA	NA	3.8	2.7	5.98	< 2.12	7.58	1.27	6.29	5.27	7.31	5.28	5.6	1.41	6.6	3.39	5.68	4.92
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	105	7.87	71.3	14.8	68.8	135	94.1	125	69	7.02	63.9	31.3	59.5	58.2
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.445	NA	0.65	NA	0.89	0.21	NA	NA	0.56	0.52	1.85	< 0.531	0.801	0.424	0.833	1.38	1.04	1.59	1.01	0.121	0.709	0.754	0.812	0.839
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.606	NA	< 0.064	NA	< 0.063	< 0.055	NA	NA	< 0.06	< 0.077	< 0.563	< 0.531	< 0.575	< 0.519	< 2.79	< 0.572	0.326	< 0.565	< 0.554	< 0.515	< 0.599	< 0.527	< 0.6	< 0.561
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	193	38	279	1600	517	684	3320	730	411	28.2	795	1870	583	632
Chromium	7440-47-3	mg/kg		120000	NA	NA	NA	21.9	NA	19.5	7.3	NA	NA	17.9	14.6	32	2.58	21.5	7.01	29.8	19.6	21.2	17.5	18.1	5.7	17	13.9	17.2	20.4
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.9	0.151	5.41	3.45	8.58	11.4	8.07	13.4	5.81	0.411	4.43	7.34	6.2	8.31
Copper	7440-50-8	mg/kg	11000	45000	3100	10.5	NA	21.7	NA	17.5	9.3	NA	NA	18.9	18.1	45	1.25	11.5	11.1	31.8	24	25.7	27.9	14.6	5.41	12.5	16.7	14.1	15.2
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42900	812	25700	13400	37900	36700	25400	40600	25400	4250	32600	31900	26500	29400
Lead	7439-92-1	mg/kg	90	800	400	1.48	NA	44.4	NA	12.4	**3260**	NA	NA	57	68.8	5.48	0.868	11.7	2.26	8.98	5.53	62.9	5.4	25.3	1.6	19.1	4.63	15.7	6.34
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4050	49.7	2120	1610	3310	2160	3430	1880	1820	58.5	1640	2500	1770	2160
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	541	2.31	412	127	178	542	633	705	366	7.51	301	485	179	433
Mercury	7439-97-6	mg/kg	0.32	65	23	< 0.123	NA	0.03	NA	0.052	0.13	NA	NA	0.01	0.029	0.034	< 0.104	0.0264	< 0.102	0.0545	0.0615	0.0723	0.0204	0.0227	< 0.0958	0.0399	0.0115	0.0285	0.0124
Nickel	7440-02-0	mg/kg	48	23000	1600	5.37	NA	11.8	NA	10.1	3	NA	NA	10.2	8.8	19	0.658	11.3	5.38	19.3	14.2	15.5	14.6	10.3	0.796	7.02	12.7	11.8	13.3
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	839	218	704	471	831	982	557	772	470	446	544	779	493	763
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.42	NA	2.1	NA	< 0.55	< 0.48	NA	NA	1.1	< 0.67	1.14	< 2.12	1.37	< 2.07	1.43	1.11	1.12	1.55	< 2.22	< 2.06	1.24	< 2.11	1.24	1.08
Silver	7440-22-4	mg/kg	1	5700	390	< 0.606	NA	< 0.16	NA	0.19	0.61	NA	NA	< 0.15	< 0.2	< 0.563	< 0.531	< 0.575	< 0.519	< 0.557	< 0.572	< 0.618	< 0.565	0.455	< 0.515	< 0.599	< 0.527	< 0.6	< 0.561
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.6	< 106	30.3	99.8	143	145	133	150	40.1	< 103	48.4	180	45	94.4
Thallium	7440-28-0	mg/kg	3			< 2.42	NA	2	NA	< 0.97	< 0.85	NA	NA	< 0.93	< 1.2	0.805	< 3.18	< 3.45	< 3.11	0.761	0.796	< 3.71	0.618	< 3.32	< 3.09	< 3.59	< 3.16	< 3.6	< 3.37
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58.3	1.81	43.1	14.8	54.1	53.3	42.6	49.3	36.6	7.02	40	36.1	34.8	37.4
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	37.9	NA	62.6	NA	92	21.9	NA	NA	33.3	80.5	49.5	1.24	56.5	27	55.6	52.9	137	50.6	46.5	2.45	48.1	47.9	54.4	40.1
Moisture																													
Percent Moisture	MOIST	%				19.9	NA	16.7	NA	12.9	NA	NA	NA	9.07	28.7	12.9	5.8	15.6	3.6	10.3	13.5	19.1	14.1	11.5	3	17.3	6	16.6	12.6
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-1	SO-R2-B-9-2	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-B-9-3	SO-R2-C-12-1	SO-R2-C-12-1	SO-R2-C-8-2	SO-R2-C-8-2
Sample Date						8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/11/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013
Sample Depths						4.5-5.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	0.2-0.7 ft	9.5-10.0 ft	0.2-0.7 ft	9.4-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	9.5-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	9.4-9.9 ft
Sample ID						SB-R-D14-015.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C10-2-012.5N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-A-11-1D_20131114	SO-R2-B-12-1_20131114	SO-R2-B-12-1D_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-2D_20131114	SO-R2-B-9-3_20131111	SO-R2-B-9-3D_20131111	SO-R2-C-12-1_20131114	SO-R2-C-12-1D_20131114	SO-R2-C-8-2_20131114	SO-R2-C-8-2D_20131114
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2500	NA	< 800	NA	< 770	< 6700	NA	NA	< 740	< 670	< 1100	< 1100	< 1200	< 1000	< 1100	< 1200	< 12000	< 1100	< 1100	< 1000	< 1200	< 1100	< 1200	< 1100
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 210	NA	160	NA	**1000**	**27000**	NA	NA	100	< 67	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 210	NA	< 40	NA	**1700**	**29000**	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 400	< 38	< 37	< 34	< 40	< 35	< 39	< 38
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 19	< 18	< 20	< 17	< 19	< 20	< 210	< 20	< 19	< 17	< 20	< 18	5	< 19
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2-Nitrophenol	88-75-5	ug/kg				NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 380	< 350	< 390	< 340	< 370	< 380	< 4100	< 380	< 380	< 340	< 400	< 350	< 400	< 380
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	< 200	NA	260	< 1700	NA	NA	< 190	< 170	< 570	< 530	< 590	< 510	< 560	< 580	< 6100	< 570	< 560	< 510	< 600	< 530	< 600	< 570
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
4-Nitrophenol	100-02-7	ug/kg				NA	NA	< 200	NA	< 200	< 1700	NA	NA	< 190	< 170	< 570	< 530	< 590	< 510	< 560	< 580	< 6100	< 570	< 560	< 510	< 600	< 530	< 600	< 570
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 19	< 18	< 20	< 17	< 19	< 20	43	< 20	< 19	< 17	< 20	< 18	5	< 19
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 19	< 18	< 20	< 17	< 19	< 20	110	< 20	< 19	< 17	< 20	< 18	30	< 19
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 19	< 18	< 20	< 17	< 19	< 20	110	< 20	< 19	< 17	< 20	< 18	24	< 19
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	410	< 170	< 200	< 180	< 200	< 190
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	< 800	NA	< 770	< 6700	NA	NA	< 740	< 670	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	120	< 19	< 18	< 20	< 17	4	< 20	310	< 20	9	5	< 20	< 18	58	< 19
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	150	< 19	< 18	< 20	< 17	6	< 20	370	< 20	14	4	< 20	< 18	72	< 19
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	210	< 19	< 18	< 20	< 17	7	< 20	520	< 20	19	5	< 20	< 18	110	< 19
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	110	< 19	< 18	< 20	< 17	4	< 20	250	< 20	9	< 17	< 20	< 18	58	< 19
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	76	< 19	< 18	< 20	< 17	4	< 20	280	< 20	8	5	< 20	< 18	52	< 19

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-1	SO-R2-B-9-2	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-B-9-3	SO-R2-C-12-1	SO-R2-C-12-1	SO-R2-C-8-2	SO-R2-C-8-2
Sample Date						8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/11/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013
Sample Depths						4.5-5.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	0.2-0.7 ft	9.5-10.0 ft	0.2-0.7 ft	9.4-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	9.5-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	9.4-9.9 ft
Sample ID						SB-R-D14-015.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C10-2-012.5N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-A-11-1D_20131114	SO-R2-B-12-1_20131114	SO-R2-B-12-1D_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-2D_20131114	SO-R2-B-9-3_20131111	SO-R2-B-9-3D_20131111	SO-R2-C-12-1_20131114	SO-R2-C-12-1D_20131114	SO-R2-C-8-2_20131114	SO-R2-C-8-2D_20131114
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 420	NA	120	NA	< 77	< 670	NA	NA	< 74	320	< 190	< 180	< 200	< 170	< 190	< 200	< 2100	< 200	< 190	< 170	< 200	< 180	< 200	< 190
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 210	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	170	< 19	< 18	< 20	< 17	6	< 20	430	< 20	15	4	5	< 18	91	< 19
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 19	< 18	< 20	< 17	< 19	< 20	< 210	< 20	< 19	< 17	< 20	< 18	11	< 19
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 210	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Dimethylphthalate	131-11-3	ug/kg				NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 210	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	< 40	NA	< 38	420	NA	NA	< 36	240	< 19	< 18	< 20	< 17	11	< 20	850	< 20	19	< 17	< 20	< 18	140	< 19
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 19	< 18	< 20	< 17	< 19	< 20	50	< 20	< 19	< 17	< 20	< 18	7	< 19
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 19	< 18	< 20	< 17	< 19	< 20	< 210	< 20	< 19	< 17	< 20	< 18	< 20	< 19
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	< 200	NA	< 200	< 1700	NA	NA	< 190	< 170	< 570	< 530	< 590	< 510	< 560	< 580	< 6100	< 570	< 560	< 510	< 600	< 530	< 600	< 570
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 190	< 180	< 200	< 170	< 190	< 190	< 2000	< 190	< 190	< 170	< 200	< 180	< 200	< 190
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	110	< 19	< 18	< 20	< 17	4	< 20	210	< 20	11	< 17	< 20	< 18	51	< 19
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 19	< 18	< 20	< 17	< 19	< 20	44	< 20	< 19	< 17	< 20	< 18	11	< 19
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	< 200	NA	< 77	< 670	NA	NA	< 190	< 67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 210	NA	< 40	NA	< 38	< 330	NA	NA	< 36	< 33	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	< 200	NA	< 200	< 1700	NA	NA	< 190	< 170	< 190	< 180	< 200	< 170	< 190	< 200	< 2100	< 200	< 190	< 170	< 200	< 180	< 200	< 190
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	< 40	NA	< 38	530	NA	NA	< 36	140	< 19	< 18	< 20	< 17	10	< 20	560	< 20	15	< 17	< 20	< 18	90	< 19
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	< 80	NA	< 77	< 670	NA	NA	< 74	< 67	< 38	< 35	< 39	< 34	< 37	< 38	< 410	< 38	< 38	< 34	< 40	< 35	< 40	< 38
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	< 40	NA	< 38	< 330	NA	NA	< 36	280	< 19	< 18	4	< 17	12	< 20	820	< 20	20	< 17	< 20	< 18	150	< 19
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	870	440	12000	1200	9300	3800	51000	1200	28000	1100	5700	1200	11000	1100
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	710	440	1100	460	1500	580	9300	530	9000	920	730	600	1800	530
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	490	NA	330	200	2100	NA	880	NA	240	NA	470	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	460	NA	320	180	2000	NA	850	NA	240	NA	410	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420	NA	320	NA	1800	NA	790	NA	220	NA	400	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420	NA	280	NA	1700	NA	720	NA	200	NA	380	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410	NA	230	NA	NA	NA	640	NA	200	NA	350	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	360	NA	220	NA	NA	NA	630	NA	170	NA	300	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	350	NA	200	NA	NA	NA	590	NA	170	NA	280	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	350	NA	200	NA	NA	NA	560	NA	NA	NA	270	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	NA	180	NA	NA	NA	560	NA	NA	NA	270	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	310	NA	170	NA	NA	NA	500	NA	NA	NA	270	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	160	NA	1000	370	1400	580	9200	490	2400	190	720	180	1700	380
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	280	NA	160	NA	NA	NA	370	NA	NA	NA	260	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	950	250	1000	400	6400	180	2300	NA	560	170	780	220
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	800	150	570	340	3400	NA	1400	NA	490	160	670	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	800	NA	560	340	3300	NA	1300	NA	400	140	610	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	790	NA	530	330	3100	NA	1200	NA	380	NA	600	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	750	NA	420	310	3000	NA	1200	NA	340	NA	540	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	600	NA	350	300	2900	NA	1200	NA	330	NA	500	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	560	NA	340	210	2600	NA	1000	NA	280	NA	480	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	10400	NA	7900	22900	NA	NA	810	17200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	< 12000	NA	< 11000	NA	NA	< 10000	< 11000	NA	< 10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	< 12000	NA	< 11000	NA	NA	< 10000	< 11000	NA	< 10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	< 12000	NA	< 11000	NA	NA	< 10000	< 11000	NA	< 10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	< 12000	NA	< 11000	NA	NA	< 10000	< 11000	NA	< 10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	< 12000	NA	< 11000	NA	NA	< 10000	< 11000	NA	< 10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	< 12000	NA	< 11000	NA	NA	< 10000	< 11000	NA	< 10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 11	< 11	< 12	< 10	< 11	< 10	< 13	< 11	< 12	< 11	< 11	< 11
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 11	< 11	< 12	< 10	< 11	< 10	< 13	< 11	10	< 11	< 11	< 11
2-Chloroethylvinylether	110-75-8	ug/kg				NA	< 290	NA	< 280	NA	NA	< 240	< 270	NA	< 270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 11	< 11	< 12	< 10	< 11	< 10	< 13	< 11	< 12	< 11	< 11	< 11
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 11	< 11	< 11	< 12	< 10	< 11	< 10	< 13	< 11	< 12	< 11	< 11	< 11
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	< 21	48	< 22	130	21	66	18	28	< 21	110	29	19	15
Acrolein	107-02-8	ug/kg	500	1000	500	NA	< 2900	NA	< 2800	NA	NA	< 2400	< 2700	NA	< 2700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 3100	< 590	NA	< 570	NA	NA	< 480	< 540	NA	< 540	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 770	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 270	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	< 290	NA	< 280	NA	NA	< 240	< 270	NA	< 270	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 770	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	< 290	NA	< 280	NA	NA	< 240	< 270	NA	< 270	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Chloroform	67-66-3	ug/kg	400	2000	600	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Chloromethane	74-87-3	ug/kg		12000	4000	NA	< 290	NA	< 280	NA	NA	< 240	< 270	NA	< 270	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-D14-01	SD-B13-1-01	SD-B13-1-01	SD-B13-2-01	SD-B13-2-01	SD-B13-3-01	SD-B13-3-01	SD-C10-2-01	SD-C10-2-01	SD-C9-1-01	SO-R2-A-11-1	SO-R2-A-11-1	SO-R2-B-12-1	SO-R2-B-12-1	SO-R2-B-8-1	SO-R2-B-9-1	SO-R2-B-9-2	SO-R2-B-9-2	SO-R2-B-9-3	SO-R2-B-9-3	SO-R2-C-12-1	SO-R2-C-12-1	SO-R2-C-8-2	SO-R2-C-8-2
						Sample Date	8/8/2006	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/2/2001	5/2/2001	4/25/2001	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/11/2013	11/11/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013
						Sample Depths	4.5-5.0 ft	0.5-1.0 ft	1.0-1.5 ft	0.5-1.0 ft	1.5-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	0.2-0.7 ft	9.5-10.0 ft	0.2-0.7 ft	9.4-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	9.5-10.0 ft	0.3-0.8 ft	9.5-10.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	9.4-9.9 ft
						Sample ID	SB-R-D14-015.0N	SD-B13-1-011N	SD-B13-1-011.5N	SD-B13-2-011N	SD-B13-2-012N	SD-B13-3-010.5N	SD-B13-3-011N	SD-C10-2-011N	SD-C10-2-012.5N	SD-C9-1-011N	SO-R2-A-11-1_20131114	SO-R2-A-11-1D_20131114	SO-R2-B-12-1_20131114	SO-R2-B-12-1D_20131114	SO-R2-B-8-1_20131114	SO-R2-B-9-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-2D_20131114	SO-R2-B-9-3_20131111	SO-R2-B-9-3D_20131111	SO-R2-C-12-1_20131114	SO-R2-C-12-1D_20131114	SO-R2-C-8-2_20131114	SO-R2-C-8-2D_20131114
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	3	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	< 770	< 290	NA	< 280	NA	NA	< 240	< 270	NA	< 270	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 770	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< -1	< -1	< -1	< -1	220	6	6	< -1	11	< -1	24	< -1	< -1	< -1
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	< 290	NA	< 280	NA	NA	< 240	< 270	NA	< 270	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	75	6	6	NA	11	NA	24	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	< 150	NA	< 140	NA	NA	< 120	< 140	NA	< 130	< 6	< 5	< 6	< 6	< 6	< 5	< 5	< 5	< 6	< 5	< 6	< 5	< 5	< 5

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-2	TP-R-A11-2-2	TP-R-A11-4-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-4-2	P-R-A11-4-2(201	TP-R-A11-504-1	TP-R-A11-504-1	R-A11-504-1(20	R-A11-504-1(20	R-A11-504-1(20	R-A11-504-1(20	TP-R-A11-504-2	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-5-2
Sample Date						8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	10/5/2017	8/8/2006	8/8/2006	10/4/2017	10/10/2017	10/10/2017	10/17/2017	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006
Sample Depths						1.5-2.0 ft	1.5-2.0 ft	6.5-7.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	8.5-9.0 ft	1.5-2.0 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	12.0-12.5 ft	1.5-2.0 ft	10.0-10.5 ft	1.5-2.0 ft	6.0-6.5 ft	1.5-2.0 ft	5.0-5.5 ft	1.5-2.0 ft	7.5-8.0 ft
Sample ID						TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-2-17.0N	TP-R-A11-2-22.5N	TP-R-A11-2-27.5N	TP-R-A11-4-12.0N	TP-R-A11-4-18.5N	TP-R-A11-4-22.0N	TP-R-A11-4-28.5N	TP-R-A11-4-2(08.5-09.0)	TP-R-A11-504-12.0N	TP-R-A11-504-17.5N	TP-R-A11-504-1(08.5-09.0)	TP-R-A11-504-1(10.5-11.0)	TP-R-A11-504-1(11.5-12.0)	TP-R-A11-504-1(12.0-12.5)	TP-R-A11-504-22.0N	TP-R-A11-504-210.5N	TP-R-A11-504-32.0N	TP-R-A11-504-36.5N	TP-R-A11-5-12.0N	TP-R-A11-5-15.5N	TP-R-A11-5-22.0N	TP-R-A11-5-28.0N
Parent ID						P-R-A11-2-12.0N																						
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																							
Explosives and Energetics																												
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA	NA	NA	NA	1300	< 330	< 110	720	< 370	< 110	< 110	< 110	< 110	< 350	1400	< 360	< 310	< 330	< 320	520	< 320
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	NA	NA	NA	NA	NA	NA	NA	**5800000**	**64000**	< 110	910	< 370	420	5700	300	110	490	**130000**	460	< 310	7100	1000	**1400000**	**23000**
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	210	**1300**	< 110	260	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	NA	NA	NA	NA	NA	NA	NA	**20000**	520	< 110	880	< 370	160	160	< 110	< 110	1200	1400	520	< 310	2300	110	1900	340
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	NA	NA	NA	NA	NA	NA	NA	**29000**	850	< 110	940	< 730	200	230	< 110	< 110	1600	**6600**	950	< 630	3000	< 650	1700	280
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	2500000	< 130000	NA	< 130000	< 150000	NA	NA	NA	NA	< 140000	< 160000	< 140000	< 120000	< 130000	< 130000	2000000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA	NA	NA	NA	< 6700	< 6500	< 110	7300	< 7300	< 110	< 110	< 110	< 110	< 6900	9100	12000	< 6300	< 6500	< 6500	< 6600	< 6400
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	NA	NA	NA	NA	NA	NA	NA	< 830	< 820	< 110	< 850	< 920	< 110 J+	< 110	< 110	< 110	< 860	< 1000	< 900	< 780	< 820	< 810	< 820	< 800
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	NA	NA	NA	NA	NA	NA	NA	< 330	< 330	< 110	< 340	< 370	< 110	< 110	< 110	< 110	< 350	1100	< 360	< 310	< 330	< 320	< 330	< 320
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	NA	NA	< 110	< 110	< 110	< 110	NA	NA	NA	NA	NA	NA	NA	NA
Field																												
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																												
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																												
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																												
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 2.09	1.9	< 2.22	< 2.15	< 2.11	< 2.28	< 2.11	< 2.13	< 2.07	NA	1.74	1.97	NA	NA	NA	NA	< 2.23	1.31	< 2.32	< 2.09	1.16	< 2.16	< 2.13	1.09
Arsenic	7440-38-2	mg/kg	19	19	19	2.23	3.4	1.55	1.63	1.85	2.17	< 2.11	2.29	1.77	NA	5.62	3.53	NA	NA	NA	NA	3.14	2.95	3.98	< 2.09	1.8	< 2.16	< 2.13	< 2.13
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.292	0.233	0.133	0.144	0.183	0.598	< 0.527	0.352	0.126	NA	0.328	0.606	NA	NA	NA	NA	0.18	0.193	0.636	< 0.521	0.703	< 0.54	0.0736	< 0.534
Cadmium	7440-43-9	mg/kg	2	78	78	0.411	0.328	0.189	0.324	0.182	0.541	0.11	0.49	0.251	NA	< 0.543	< 0.6	NA	NA	NA	NA	< 0.559	< 0.669	< 0.58	< 0.521	0.585	0.203	0.214	< 0.534
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	12.3	17.3	11.4	10.2	14.4	14.1	4.32	13.2	8.85	NA	12.2	18.2	NA	NA	NA	NA	13.1	2.6	15.2	3.55	13.7	7.31	3.09	0.874
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	16.5	15.4	1.68	184	34.8	6.68	4.74	**3790**	104	NA	**1350**	7.55	NA	NA	NA	NA	88.1	76.1	**587**	3.28	**411**	7.02	77.9	2.9
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.0688	0.0773	< 0.111	0.0168	< 0.106	0.0159	< 0.0996	0.046	< 0.107	NA	0.177	0.0166	NA	NA	NA	NA	0.0459	< 0.132	0.0537	< 0.102	0.0313	< 0.101	< 0.106	< 0.106
Nickel	7440-02-0	mg/kg	48	23000	1600	5.21	4.19	1.44	2.64	2.68	10.4	< 1.05	4.85	1.19	NA	8.72	9.44	NA	NA	NA	NA	3.14	2.04	10.3	0.813	8.92	0.83	0.971	< 1.07
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	1.49	< 2.24	1.51	< 2.15	< 2.11	< 2.28	< 2.11	< 2.13	< 2.07	NA	1.24	< 2.4	NA	NA	NA	NA	< 2.23	< 2.68	< 2.32	< 2.09	1.72	< 2.16	< 2.13	< 2.13
Silver	7440-22-4	mg/kg	1	5700	390	0.185	< 0.559	< 0.555	0.189	< 0.527	< 0.571	< 0.527	0.559	< 0.518	NA	0.238	0.226	NA	NA	NA	NA	< 0.559	< 0.669	0.267	< 0.521	0.271	< 0.54	< 0.533	< 0.534
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 10.5	< 11.2	< 2.22	< 2.15	< 2.11	< 11.4	< 10.5	< 10.7	< 10.4	NA	< 2.17	< 2.4	NA	NA	NA	NA	< 2.23	< 2.68	< 2.32	< 2.09	< 10.8	< 2.16	< 2.13	< 10.7
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	24.5	20.6	5.76	12.7	9.86	35.7	2.26	46.3	5.93	NA	42.8	27.6	NA	NA	NA	NA	17.9	18.4	66.7	3.87	123	4.66	7.62	2.17
Moisture																												
Percent Moisture	MOIST	%				8.9	11.5	9.9	8.8	8.7	12.4	7	9.8	8.1	NA	11.5	18.3	NA	NA	NA	NA	13.1	26.7	16.3	4.1	8	7.4	9	6.3
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	92.3	NA	NA	88.7	92.4	88.9	93.7	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-2	TP-R-A11-2-2	TP-R-A11-4-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-4-2	TP-R-A11-4-2(201	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-2	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-5-2
Sample Date						8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	10/5/2017	8/8/2006	8/8/2006	10/4/2017	10/10/2017	10/10/2017	10/17/2017	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006
Sample Depths						1.5-2.0 ft	1.5-2.0 ft	6.5-7.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	8.5-9.0 ft	1.5-2.0 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	12.0-12.5 ft	1.5-2.0 ft	10.0-10.5 ft	1.5-2.0 ft	6.0-6.5 ft	1.5-2.0 ft	5.0-5.5 ft	1.5-2.0 ft	7.5-8.0 ft
Sample ID						TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-2-17.0N	TP-R-A11-2-22.5N	TP-R-A11-2-27.5N	TP-R-A11-4-12.0N	TP-R-A11-4-18.5N	TP-R-A11-4-22.0N	TP-R-A11-4-28.5N	TP-R-A11-4-2(08.5-09.0)	TP-R-A11-504-12.0N	TP-R-A11-504-17.5N	TP-R-A11-504-1(08.5-09.0)	TP-R-A11-504-1(10.5-11.0)	TP-R-A11-504-1(11.5-12.0)	TP-R-A11-504-1(12.0-12.5)	TP-R-A11-504-22.0N	TP-R-A11-504-210.5N	TP-R-A11-504-32.0N	TP-R-A11-504-36.5N	TP-R-A11-5-12.0N	TP-R-A11-5-15.5N	TP-R-A11-5-22.0N	TP-R-A11-5-28.0N
Parent ID						P-R-A11-2-12.0N																						
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2300	< 2400	NA	NA	NA	NA	< 2300	< 14000	< 2400	< 2100	< 2200	< 2200	< 2200	< 2100
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5700**	< 200	NA	NA	NA	NA	200	**25000**	450	440	78	< 180	**2800**	< 180
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	< 200	NA	NA	NA	NA	86	**1100**	< 200	< 170	< 180	< 180	**3700**	< 180
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	160	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	320	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-2	TP-R-A11-2-2	TP-R-A11-4-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-4-2	TP-R-A11-4-2(201	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-2	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-5-2
Sample Date						8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	10/5/2017	8/8/2006	8/8/2006	10/4/2017	10/10/2017	10/10/2017	10/17/2017	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006
Sample Depths						1.5-2.0 ft	1.5-2.0 ft	6.5-7.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	8.5-9.0 ft	1.5-2.0 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	12.0-12.5 ft	1.5-2.0 ft	10.0-10.5 ft	1.5-2.0 ft	6.0-6.5 ft	1.5-2.0 ft	5.0-5.5 ft	1.5-2.0 ft	7.5-8.0 ft
Sample ID						TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-2-17.0N	TP-R-A11-2-22.5N	TP-R-A11-2-27.5N	TP-R-A11-4-12.0N	TP-R-A11-4-18.5N	TP-R-A11-4-22.0N	TP-R-A11-4-28.5N	TP-R-A11-4-2(08.5-09.0)	TP-R-A11-504-12.0N	TP-R-A11-504-17.5N	TP-R-A11-504-1(08.5-09.0)	TP-R-A11-504-1(10.5-11.0)	TP-R-A11-504-1(11.5-12.0)	TP-R-A11-504-1(12.0-12.5)	TP-R-A11-504-22.0N	TP-R-A11-504-210.5N	TP-R-A11-504-32.0N	TP-R-A11-504-36.5N	TP-R-A11-5-12.0N	TP-R-A11-5-15.5N	TP-R-A11-5-22.0N	TP-R-A11-5-28.0N
Parent ID						TP-R-A11-2-12.0N																						
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																							
SVOCs continued																												
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 380	< 410	NA	NA	NA	NA	< 380	< 2300	< 400	< 350	< 360	< 360	< 370	< 360
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	280	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	200	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	170	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210	< 200	NA	NA	NA	NA	< 190	< 1100	< 200	< 170	< 180	< 180	< 180	< 180
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																												
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																												
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																												
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-2	TP-R-A11-2-2	TP-R-A11-4-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-4-2	TP-R-A11-4-2(201	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-1(20	TP-R-A11-504-2	TP-R-A11-504-2	TP-R-A11-504-3	TP-R-A11-504-3	TP-R-A11-5-1	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-5-2
						Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006	10/5/2017	8/8/2006	8/8/2006	10/4/2017	10/10/2017	10/10/2017	10/17/2017	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006
						Sample Depths	1.5-2.0 ft	1.5-2.0 ft	6.5-7.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	8.5-9.0 ft	1.5-2.0 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	12.0-12.5 ft	1.5-2.0 ft	10.0-10.5 ft	1.5-2.0 ft	6.0-6.5 ft	1.5-2.0 ft	5.0-5.5 ft	1.5-2.0 ft	7.5-8.0 ft
						Sample ID	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	TP-R-A11-2-17.0N	TP-R-A11-2-22.5N	TP-R-A11-2-27.5N	TP-R-A11-4-12.0N	TP-R-A11-4-18.5N	TP-R-A11-4-22.0N	TP-R-A11-4-28.5N	TP-R-A11-4-2(08.5-09.0)	TP-R-A11-504-12.0N	TP-R-A11-504-17.5N	TP-R-A11-504-1(08.5-09.0)	TP-R-A11-504-1(10.5-11.0)	TP-R-A11-504-1(11.5-12.0)	TP-R-A11-504-1(12.0-12.5)	TP-R-A11-504-22.0N	TP-R-A11-504-210.5N	TP-R-A11-504-32.0N	TP-R-A11-504-36.5N	TP-R-A11-5-12.0N	TP-R-A11-5-15.5N	TP-R-A11-5-22.0N	TP-R-A11-5-28.0N
						Parent ID	TP-R-A11-2-12.0N																							
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A11-7-1	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	P-R-A12-1-1(201	P-R-A12-1-1(201	TP-R-A12-426-1	TP-R-A12-426-1	TP-R-A12-426-2	TP-R-A12-426-2	TP-R-A13-625-1	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-4	R-A13-625-4(20
Sample Date						8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	10/11/2017	10/17/2017	8/15/2006	8/15/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	11/2/2017
Sample Depths						1.5-2.0 ft	6.5-7.0 ft	1.5-2.0 ft	6.5-7.0 ft	0.5-1.0 ft	2.0-2.5 ft	8.5-9.0 ft	8.5-9.0 ft	9.0-9.5 ft	10.5-11.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	8.5-9.0 ft	0.5-1.0 ft	9.0-9.5 ft	9.0-9.5 ft	0.5-1.0 ft	9.0-9.5 ft	1.0-1.5 ft	8.0-8.5 ft	8.0-8.5 ft
Sample ID						TP-R-A11-7-12.0N	TP-R-A11-7-17.0N	TP-R-A11-7-22.0N	TP-R-A11-7-27.0N	TP-R-A12-1-11.0N	TP-R-A12-1-12.5N	TP-R-A12-1-19.0FD	TP-R-A12-1-19.0N	TP-R-A12-1-1(09.0-09.5)	TP-R-A12-1-1(10.5-11.0)	TP-R-A12-426-11.0N	TP-R-A12-426-17.0N	TP-R-A12-426-21.0N	TP-R-A12-426-27.5N	TP-R-A13-625-11.0N	TP-R-A13-625-19.0N	TP-R-A13-625-21.0N	TP-R-A13-625-29.5FD	TP-R-A13-625-29.5N	TP-R-A13-625-31.0N	TP-R-A13-625-39.5N	TP-R-A13-625-41.5N	TP-R-A13-625-48.5N	TP-R-A13-625-4(08.0-08.5)
Parent ID												TP-R-A12-1-19.0N											TP-R-A13-625-29.5N							
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 330	NA	NA	**9000**	**9300**	< 360	< 350	< 120	< 110	< 350	< 320	< 350	< 340	< 340	< 320	< 350	< 320	< 320	< 350	< 310	< 350	< 310	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	**480000**	7900	NA	NA	**120000000**	**92000000**	**26000**	16000	320	< 110	< 350	< 320	1100	300	1800	520	180	< 320	300	260	600	**100000**	360	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	**14000**	720	NA	NA	**63000**	**57000**	< 360	< 350	230	< 110	< 350	< 320	< 350	< 340	410	< 320	< 350	< 320	< 320	< 350	< 310	700	< 310	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	**11000**	1100	NA	NA	**86000**	**74000**	330	< 690	180	< 110	< 690	< 650	< 700	< 680	360	< 630	< 710	< 630	< 630	< 700	< 630	620	< 630	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
Nitrocellulose	9004-70-0	ug/kg				140000	< 130000	NA	NA	22000000	19000000	< 140000	< 140000	NA	NA	95000	< 130000	< 140000	< 140000	< 130000	< 130000	< 140000	< 130000	< 130000	< 140000	< 130000	< 140000	< 130000	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 6700	NA	NA	< 670000	< 6000	< 7100	< 6900	< 120	< 110	< 6900	< 6500	< 7000	< 6800	3300	< 6300	< 7100	< 6300	< 6300	< 7000	< 6300	5400	< 6300	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 840	< 840	NA	NA	< 840	< 750	< 890	< 860	< 120	< 110	< 870	< 810	< 870	< 850	< 840	< 790	< 890	< 790	< 790	< 880	< 790	< 870	< 780	< 110 J-
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 330	< 330	NA	NA	< 340	< 300	< 360	< 350	< 120	< 110	< 350	< 320	< 350	< 340	< 340	< 320	< 350	< 320	< 320	< 350	< 310	< 350	< 310	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 2.19	< 2.23	< 2.23	< 2.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	3.3	1.95	3.77	1.98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.174	0.0949	0.186	0.47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	0.319	0.223	0.163	0.41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	40	8.06	7.74	17.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	**13300**	396	**1510**	**576**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.0723	< 0.107	0.0875	< 0.112	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	4.66	1.04	4.2	9.54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.19	< 2.23	< 2.23	< 2.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	1.65	0.342	0.365	0.284	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 10.9	< 2.23	< 11.2	< 2.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	49.8	16.5	9.32	33.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				10.3	10.4	11.4	15.3	10.9	NA	15.5	13.1	NA	NA	13.6	7.5	13.9	11.9	10.5	4.9	15.3	5.3	5	14.6	4.6	13.3	4.1	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	86.7	90.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93.7
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A11-7-1	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	P-R-A12-1-1(201	P-R-A12-1-1(201	TP-R-A12-426-1	TP-R-A12-426-1	TP-R-A12-426-2	TP-R-A12-426-2	TP-R-A13-625-1	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-4	R-A13-625-4(20
Sample Date						8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	10/11/2017	10/17/2017	8/15/2006	8/15/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	11/2/2017
Sample Depths						1.5-2.0 ft	6.5-7.0 ft	1.5-2.0 ft	6.5-7.0 ft	0.5-1.0 ft	2.0-2.5 ft	8.5-9.0 ft	8.5-9.0 ft	9.0-9.5 ft	10.5-11.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	8.5-9.0 ft	0.5-1.0 ft	9.0-9.5 ft	9.0-9.5 ft	0.5-1.0 ft	9.0-9.5 ft	1.0-1.5 ft	8.0-8.5 ft	8.0-8.5 ft
Sample ID						TP-R-A11-7-12.0N	TP-R-A11-7-17.0N	TP-R-A11-7-22.0N	TP-R-A11-7-27.0N	TP-R-A12-1-11.0N	TP-R-A12-1-12.5N	TP-R-A12-1-19.0FD	TP-R-A12-1-19.0N	TP-R-A12-1-1(09.0-09.5)	TP-R-A12-1-1(10.5-11.0)	TP-R-A12-426-11.0N	TP-R-A12-426-17.0N	TP-R-A12-426-21.0N	TP-R-A12-426-27.5N	TP-R-A13-625-11.0N	TP-R-A13-625-19.0N	TP-R-A13-625-21.0N	TP-R-A13-625-29.5FD	TP-R-A13-625-29.5N	TP-R-A13-625-31.0N	TP-R-A13-625-39.5N	TP-R-A13-625-41.5N	TP-R-A13-625-48.5N	TP-R-A13-625-4(08.0-08.5)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	< 220000	< 20000	< 2400	< 2300	NA	NA	< 2300	< 2200	< 2300	< 2300	< 2200	< 2100	< 2400	< 2100	< 2100	< 2300	< 2100	< 2300	< 2100	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	**210000**	**110000**	**2000**	610	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	**25000**	**15000**	67	46	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A11-7-1	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	P-R-A12-1-1(201	P-R-A12-1-1(201	TP-R-A12-426-1	TP-R-A12-426-1	TP-R-A12-426-2	TP-R-A12-426-2	TP-R-A13-625-1	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-4	R-A13-625-4(20
Sample Date						8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	10/11/2017	10/17/2017	8/15/2006	8/15/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	9.0-9.5 ft	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	11/2/2017
Sample Depths						1.5-2.0 ft	6.5-7.0 ft	1.5-2.0 ft	6.5-7.0 ft	0.5-1.0 ft	2.0-2.5 ft	8.5-9.0 ft	8.5-9.0 ft	9.0-9.5 ft	10.5-11.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	8.5-9.0 ft	0.5-1.0 ft	9.0-9.5 ft	9.0-9.5 ft	0.5-1.0 ft	9.0-9.5 ft	1.0-1.5 ft	8.0-8.5 ft	8.0-8.5 ft
Sample ID						TP-R-A11-7-12.0N	TP-R-A11-7-17.0N	TP-R-A11-7-22.0N	TP-R-A11-7-27.0N	TP-R-A12-1-11.0N	TP-R-A12-1-12.5N	TP-R-A12-1-19.0FD	TP-R-A12-1-19.0N	TP-R-A12-1-1(09.0-09.5)	TP-R-A12-1-1(10.5-11.0)	TP-R-A12-426-11.0N	TP-R-A12-426-17.0N	TP-R-A12-426-21.0N	TP-R-A12-426-27.5N	TP-R-A13-625-11.0N	TP-R-A13-625-19.0N	TP-R-A13-625-21.0N	TP-R-A13-625-29.5FD	TP-R-A13-625-29.5N	TP-R-A13-625-31.0N	TP-R-A13-625-39.5N	TP-R-A13-625-41.5N	TP-R-A13-625-48.5N	TP-R-A13-625-4(08.0-08.5)
Parent ID												TP-R-A12-1-19.0N												TP-R-A13-625-29.5N						
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	< 37000	< 3300	< 390	< 380	NA	NA	< 390	< 360	< 390	< 380	< 370	< 350	< 390	< 350	< 350	< 390	< 350	< 380	< 350	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	< 19000	< 1700	< 200	< 190	NA	NA	< 190	< 180	< 190	< 190	< 190	< 180	< 200	< 180	< 180	< 200	< 170	< 190	< 170	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-A11-7-1	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A11-7-2	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1(201	TP-R-A12-1-1(201	TP-R-A12-426-1	TP-R-A12-426-1	TP-R-A12-426-2	TP-R-A12-426-2	TP-R-A13-625-1	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-3	TP-R-A13-625-4	TP-R-A13-625-4	TP-R-A13-625-4(20
						Sample Date	8/7/2006	8/7/2006	8/7/2006	8/7/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	10/11/2017	10/17/2017	8/15/2006	8/15/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	11/2/2017
						Sample Depths	1.5-2.0 ft	6.5-7.0 ft	1.5-2.0 ft	6.5-7.0 ft	0.5-1.0 ft	2.0-2.5 ft	8.5-9.0 ft	8.5-9.0 ft	9.0-9.5 ft	10.5-11.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	8.5-9.0 ft	0.5-1.0 ft	9.0-9.5 ft	9.0-9.5 ft	0.5-1.0 ft	9.0-9.5 ft	1.0-1.5 ft	8.0-8.5 ft	8.0-8.5 ft
						Sample ID	TP-R-A11-7-12.0N	TP-R-A11-7-17.0N	TP-R-A11-7-22.0N	TP-R-A11-7-27.0N	TP-R-A12-1-11.0N	TP-R-A12-1-12.5N	TP-R-A12-1-19.0FD	TP-R-A12-1-19.0N	TP-R-A12-1-1(09.0-09.5)	TP-R-A12-1-1(10.5-11.0)	TP-R-A12-426-11.0N	TP-R-A12-426-17.0N	TP-R-A12-426-21.0N	TP-R-A12-426-27.5N	TP-R-A13-625-11.0N	TP-R-A13-625-19.0N	TP-R-A13-625-21.0N	TP-R-A13-625-29.5FD	TP-R-A13-625-29.5N	TP-R-A13-625-31.0N	TP-R-A13-625-39.5N	TP-R-A13-625-41.5N	TP-R-A13-625-48.5N	TP-R-A13-625-4(08.0-08.5)
						Parent ID							TP-R-A12-1-19.0N											TP-R-A13-625-29.5N							
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A13-625-5	TP-R-A13-625-5	TP-R-A13-625-6	TP-R-A13-625-6	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50
Sample Date						8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
Sample Depths						0.5-1.0 ft	8.5-9.0 ft	1.0-1.5 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	9.5-10.0 ft	1.5-2.0 ft	13.0-13.5 ft	1.5-2.0 ft	14.0-14.5 ft	1.5-2.0 ft	11.0-11.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	10.5-11.0 ft	4.0-4.5 ft	1.5-2.0 ft	10.5-11.0 ft	4.5-5.0 ft
Sample ID						TP-R-A13-625-51.0N	TP-R-A13-625-59.0N	TP-R-A13-625-61.5N	TP-R-A13-625-68.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-111.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-28.5N	TP-R-B10-2/B10-509-210.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-313.5N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-414.5N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-511.5N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-610.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-711.0N	TP-R-B10-2/B10-509-74.5N	TP-R-B10-2/B10-509-82.0N	TP-R-B10-2/B10-509-811.0N	TP-R-B10-2/B10-509-85.0N
Parent ID																					TP-R-B10-2/B10-509-62.0N									
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 320	4800	< 320	< 330	< 340	< 340	< 360	< 340	1000	< 350	160	950	< 330	280	< 330	140	< 370	840	330	360	840	280	890	
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	200	710	**2800000**	2500	420	460	1400	820	720	**6100000**	520	5200	3100	1900	12000	880	850	< 370	**150000**	4400	**110000**	**150000**	**160000**	2900	
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 330	160	**14000**	< 320	480	< 340	780	540	420	**12000**	530	1600	1400	510	3200	430	630	310	**12000**	930	**14000**	**12000**	**11000**	1200	
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 660	< 630	< 640	< 640	< 670	< 690	670	430	< 680	**8200**	370	2800	1200	< 670	4500	350	910	< 730	**8500**	1200	**14000**	**8800**	**11000**	1100	
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 130000	< 130000	2100000	< 130000	< 130000	< 140000	< 140000	< 140000	< 130000	< 130000	< 140000	< 140000	< 130000	< 130000	< 140000	< 130000	< 130000	< 150000	< 130000	< 130000	87000	< 130000	< 130000	< 140000	
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6600	< 6300	**69000**	< 6400	6300	< 6900	6400	3600	3000	**68000**	8900	< 7200	11000	8300	21000	4000	5300	3000	**71000**	7100	**79000**	**71000**	**64000**	< 6800	
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 820	< 790	360	< 800	< 830	< 860	< 860	< 890	< 850	< 840	< 880	< 890	310	< 830	< 870	< 830	< 830	< 910	< 840	< 820	< 890	430	370	< 850	
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 330	< 320	< 320	< 320	< 330	< 340	230	< 360	< 340	3800	< 350	< 360	< 340	< 330	< 350	< 330	< 330	< 370	< 340	< 330	210	< 340	< 340	< 340	
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	< 2.15	< 2.23	3.61	1.25	< 2.19	1.25	1.73	< 2.39	< 2.16	< 2.16	1.29	2.69	2.23	1.94	< 2.25	< 2.11	1.24	< 2.21	< 2.22	1.35	
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	5.06	3.23	6.14	3.94	1.64	5.36	3.07	2.99	2.36	4.36	3.02	3.62	3.97	3.62	3.91	7.08	4.29	3.1	2.61	3.34	
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	0.45	1.14	0.714	0.473	0.34	0.73	1.49	0.557	1.1	0.759	1.37	1.22	1.05	1.17	0.664	0.853	0.713	0.584	0.776	0.759	
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	< 0.538	< 0.557	< 0.547	< 0.578	< 0.549	< 0.542	0.0911	< 0.597	< 0.54	< 0.54	< 0.571	< 0.539	< 0.536	< 0.609	< 0.562	< 0.528	< 0.579	< 0.554	< 0.556	< 0.561	
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	15.3	21.5	16.4	19.2	5.01	31	29.8	17.3	19	20.7	26.1	39.5	36.4	23.3	13.1	21.1	19.1	16.3	17.8	17.8	
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	60.5	3.61	**770**	311	16	199	4.41	209	2.62	137	2.95	**617**	**561**	5.66	78.3	30.8	201	337	2.16	191	
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	0.0416	< 0.107	0.0511	0.0381	< 0.106	0.497	< 0.11	0.051	< 0.111	0.0553	< 0.113	0.0245	0.0238	0.0407	0.0425	< 0.106	0.0314	0.229	< 0.105	0.0257	
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	9.12	9.46	10.4	8.19	3.78	11.5	14	8.38	8.82	12.1	11.7	9.98	11	12.1	8.77	5.82	10.3	7.88	6.69	8.42	
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	< 2.15	< 2.23	< 2.19	< 2.31	< 2.19	< 2.17	< 2.31	< 2.39	< 2.16	< 2.16	< 2.28	< 2.16	< 2.14	< 2.44	< 2.25	< 2.11	< 2.31	< 2.21	< 2.22	< 2.24	
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	< 0.538	< 0.557	< 0.547	< 0.578	< 0.549	< 0.542	< 0.577	< 0.597	< 0.54	< 0.54	< 0.571	< 0.539	< 0.536	< 0.609	< 0.562	< 0.528	< 0.579	< 0.554	< 0.556	< 0.561	
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	< 2.15	< 2.23	< 2.19	< 2.31	< 2.19	1.55	1.87	< 2.39	1.88	< 2.16	2.5	1.45	< 2.14	1.92	< 2.25	< 2.11	< 2.31	< 2.21	< 2.22	< 2.24	
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	37.9	31.5	80.3	54.7	10.7	86.7	84.1	56.7	32.8	59.2	62.5	76.6	72.5	51.9	34.1	22.6	39	47.2	28.9	186	
Moisture																														
Percent Moisture	MOIST	%				8.8	4.9	6.5	6.7	9.8	12.9	12.9	16	11.5	10.4	15	16.2	10.9	10.1	14.1	9.9	9.4	17.9	11	8.9	15.3	10.6	10.9	11.7	
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-A13-625-5	TP-R-A13-625-5	TP-R-A13-625-6	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
Sample Date						8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
Sample Depths						0.5-1.0 ft	8.5-9.0 ft	1.0-1.5 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	9.5-10.0 ft	1.5-2.0 ft	13.0-13.5 ft	1.5-2.0 ft	14.0-14.5 ft	1.5-2.0 ft	11.0-11.5 ft	1.5-2.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	10.5-11.0 ft	4.0-4.5 ft	1.5-2.0 ft	10.5-11.0 ft	4.5-5.0 ft
Sample ID						TP-R-A13-625-51.0N	TP-R-A13-625-59.0N	TP-R-A13-625-61.5N	TP-R-A13-625-68.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-111.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-28.5N	TP-R-B10-2/B10-509-210.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-313.5N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-414.5N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-511.5N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-610.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-711.0N	TP-R-B10-2/B10-509-74.5N	TP-R-B10-2/B10-509-82.0N	TP-R-B10-2/B10-509-811.0N	TP-R-B10-2/B10-509-85.0N
Parent ID																					TP-R-B10-2/B10-509-62.0N									
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 180	< 180	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 200	< 200	< 190	< 190	< 190	< 180	< 180	< 200	< 190	< 180	< 200	< 190	< 190	< 190
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2200	< 2100	< 2100	< 2100	< 2200	< 2300	< 2300	< 2400	< 2300	< 2200	< 2400	< 2400	< 2200	< 2200	< 2300	< 2200	< 2200	< 2400	< 2200	< 2200	< 2400	< 2200	< 2200	< 2300
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 180	< 180	**16000**	< 180	< 180	< 190	< 190	**960**	< 190	< 190	< 200	600	< 190	98	< 190	< 180	< 180	< 200	290	< 180	**3600**	410	< 190	**1700**
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 180	< 180	**930**	< 180	< 180	< 190	< 190	220	< 190	< 190	< 200	110	< 190	< 190	< 190	< 180	< 180	< 200	220	< 180	610	230	< 190	**890**
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	72	< 180	59	< 180	< 180	< 190	44	4200	< 190	290	< 200	56	< 190	89	< 190	< 180	650	< 200	< 190	< 180	< 200	160	< 190	88
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	48	< 180	49	< 180	< 180	< 190	42	**3600**	< 190	230	< 200	49	< 190	68	< 190	< 180	**570**	< 200	< 190	< 180	< 200	130	< 190	65
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	74	< 180	110	< 180	< 180	< 190	75	4200	< 190	280	< 200	69	< 190	88	< 190	< 180	650	< 200	< 190	< 180	< 200	150	< 190	93
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 180	< 180	41	< 180	< 180	< 190	42	1900	< 190	160	< 200	< 200	< 190	50	< 190	< 180	330	< 200	< 190	< 180	< 200	91	< 190	50

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-A13-625-S	TP-R-A13-625-S	TP-R-A13-625-S	TP-R-A13-625-S	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50	TP-R-B10-2/B10-50
						Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
						Sample Depths	0.5-1.0 ft	8.5-9.0 ft	1.0-1.5 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	9.5-10.0 ft	1.5-2.0 ft	13.0-13.5 ft	1.5-2.0 ft	14.0-14.5 ft	1.5-2.0 ft	11.0-11.5 ft	1.5-2.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	10.5-11.0 ft	4.0-4.5 ft	1.5-2.0 ft	10.5-11.0 ft	4.5-5.0 ft
						Sample ID	TP-R-A13-625-51.0N	TP-R-A13-625-59.0N	TP-R-A13-625-61.5N	TP-R-A13-625-68.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-111.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-28.5N	TP-R-B10-2/B10-509-210.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-313.5N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-414.5N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-511.5N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-610.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-711.0N	TP-R-B10-2/B10-509-74.5N	TP-R-B10-2/B10-509-82.0N	TP-R-B10-2/B10-509-811.0N	TP-R-B10-2/B10-509-85.0N
						Parent ID																TP-R-B10-2/B10-509-62.0N									
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
SVOCs continued																															
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 370	< 350	< 360	< 360	< 370	< 380	< 380	< 400	< 380	< 370	< 390	< 400	< 370	< 370	< 390	< 370	< 370	< 410	< 370	< 370	< 390	< 370	< 370	< 380
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 180	< 180	< 180	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 200	< 200	< 190	< 190	< 190	< 180	< 180	< 200	< 190	< 180	< 200	< 190	< 190	< 190
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	72	< 180	71	< 180	< 180	< 190	65	4700	< 190	280	< 200	67	< 190	89	< 190	< 180	680	< 200	< 190	< 180	< 200	160	< 190	130
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 180	< 180	< 180	< 180	< 180	< 190	< 190	**640**	< 190	43	< 200	< 200	< 190	< 190	< 190	< 180	82	< 200	< 190	< 180	< 200	< 190	< 190	< 190
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 180	< 180	< 180	< 180	< 180	< 180	< 190	< 200	< 190	< 190	< 200	< 200	< 190	< 190	< 190	< 190	< 180	< 180	< 200	< 190	< 180	< 200	< 190	< 190	< 190
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 180	< 180	< 180	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 200	< 200	< 190	< 190	< 190	< 180	< 180	< 200	< 190	< 180	< 200	< 190	< 190	< 190
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 180	< 180	50	< 180	< 180	< 190	< 190	1800	< 190	120	< 200	< 200	< 190	< 190	< 190	< 180	330	< 200	< 190	< 180	< 200	70	< 190	< 190
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 180	< 180	< 180	< 180	< 180	< 180	< 190	< 190	< 200	< 190	< 190	< 200	< 200	< 190	< 190	< 190	< 180	< 180	< 200	< 190	< 180	< 200	< 190	< 190	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 180	< 180	< 180	< 180	< 180	< 190	410	< 200	< 190	< 190	< 200	< 200	< 190	< 190	< 190	< 180	< 180	< 200	< 190	< 180	< 200	< 190	< 190	< 190
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																															
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																															
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																															
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-A13-625-5	TP-R-A13-625-5	TP-R-A13-625-6	TP-R-A13-625-6	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50	R-B10-2/B10-50
						Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
						Sample Depths	0.5-1.0 ft	8.5-9.0 ft	1.0-1.5 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	9.5-10.0 ft	1.5-2.0 ft	13.0-13.5 ft	1.5-2.0 ft	14.0-14.5 ft	1.5-2.0 ft	11.0-11.5 ft	1.5-2.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	10.5-11.0 ft	4.0-4.5 ft	1.5-2.0 ft	10.5-11.0 ft	4.5-5.0 ft
						Sample ID	TP-R-A13-625-51.0N	TP-R-A13-625-59.0N	TP-R-A13-625-61.5N	TP-R-A13-625-68.5N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-111.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-28.5N	TP-R-B10-2/B10-509-210.0N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-313.5N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-414.5N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-511.5N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	TP-R-B10-2/B10-509-610.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-711.0N	TP-R-B10-2/B10-509-74.5N	TP-R-B10-2/B10-509-82.0N	TP-R-B10-2/B10-509-811.0N	TP-R-B10-2/B10-509-85.0N
						Parent ID																TP-R-B10-2/B10-509-62.0N									
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5(20	TP-R-B10-505-5(20	TP-R-B10-508-1	TP-R-B10-508-1
Sample Date						8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	10/5/2017	10/5/2017	8/9/2006	8/9/2006
Sample Depths						1.5-2.0 ft	13.0-13.5 ft	7.5-8.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	8.5-9.0 ft	1.5-2.0 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	11.5-12.0 ft	5.5-6.0 ft	1.5-2.0 ft	10.5-11.0 ft	5.5-6.0 ft	11.0-11.5 ft	11.0-11.5 ft	1.5-2.0 ft	10.0-10.5 ft
Sample ID						TP-R-B10-501-12.0N	TP-R-B10-501-113.5N	TP-R-B10-501-18.0N	TP-R-B10-502-12.0N	TP-R-B10-502-110.0N	TP-R-B10-502-22.0N	TP-R-B10-502-29.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-111.0N	TP-R-B10-505-22.0N	TP-R-B10-505-28.5N	TP-R-B10-505-32.0N	TP-R-B10-505-38.5N	TP-R-B10-505-42.0N	TP-R-B10-505-412.0N	TP-R-B10-505-46.0N	TP-R-B10-505-52.0N	TP-R-B10-505-511.0N	TP-R-B10-505-56.0N	BD100517	TP-R-B10-505-5(11.0-11.5)	TP-R-B10-508-12.0N	TP-R-B10-508-110.5N
Parent ID													TP-R-B10-505-12.0N																
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 340	< 360	< 360	< 340	< 320	< 340	< 360	< 330	< 360	< 110	< 110	330	1100
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**570000**	580	230	< 360	**1100000**	1300	< 340	**40000**	4000	**1200000**	< 110	130	**470000**	**770000**
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**22000**	510	1100	< 360	**5100**	< 320	**7900**	**25000**	230	**11000**	< 110	280	4500	**28000**
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**35000**	370	1300	< 710	**16000**	< 640	**13000**	**20000**	270	**13000**	< 110	260	**12000**	**32000**
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	730000	< 130000	< 140000	< 140000	1200000	< 130000	680000	< 140000	< 130000	330000	NA	NA	140000	510000
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6800	< 6700	< 7100	< 7100	< 6700	< 6400	< 6900	< 7100	< 6600	< 7200	< 110	< 110	**100000**	**160000**
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 860	< 840	< 890	< 890	< 840	< 800	< 860	< 890	< 830	< 900	< 110	< 110	< 820	410
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 340	< 340	< 360	< 360	< 340	< 320	< 340	< 360	< 330	< 360	< 110	< 110	140	< 360
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 110	< 110	NA	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 2.22	1.01	< 2.24	< 2.15	< 2.09	< 2.24	< 2.12	2.02	1.05	< 2.16	1.21	1.31	< 2.31	4.06	1.19	< 2.05	1.4	< 2.35	< 2.12	2.12	NA	NA	< 2.12	< 2.32
Arsenic	7440-38-2	mg/kg	19	19	19	5.42	1.41	2.17	2.93	1.24	3.54	1.69	7.01	6.39	2.98	3.36	2.75	3.37	3.89	3.61	2.04	3.54	3.62	4.97	3.92	NA	NA	1.65	3.62
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.527	0.745	0.56	0.427	0.836	0.184	0.545	0.273	0.242	0.779	0.408	0.759	0.934	1.62	0.484	0.152	0.546	0.455	0.419	0.571	NA	NA	0.345	1.1
Cadmium	7440-43-9	mg/kg	2	78	78	< 2.78	< 2.78	< 0.559	< 2.69	< 0.524	< 0.56	< 2.64	< 0.582	< 0.565	0.316	< 0.57	< 2.75	< 0.577	< 2.94	< 0.557	< 0.511	< 2.86	< 0.588	< 2.66	< 0.59	NA	NA	0.0924	0.106
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg		120000	100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	18.6	25.2	19.8	16.5	27.4	14.2	20.7	8.93	7.72	24.4	126	19.8	11.1	52.2	23.2	8.63	19	48.7	14.8	44.5	NA	NA	12.1	23.8
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	**1040**	**1880**	**1300**	8.31	3.53	216	5.75	276	232	2.16	**802**	4.93	69.3	5.81	**527**	3.33	195	281	5.81	**775**	NA	NA	269	71.1
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.0665	< 0.108	0.0135	0.0296	< 0.103	0.0606	< 0.108	0.0584	0.064	< 0.101	0.0717	< 0.108	0.0643	0.0377	0.058	< 0.101	0.012	0.053	< 0.109	0.126	NA	NA	0.135	0.123
Nickel	7440-02-0	mg/kg	48	23000	1600	8.71	10.7	8.38	9	8.66	4.55	7.59	6.2	5.41	11.4	8.42	10.4	8.31	19.5	8.12	1.61	9.2	7.26	6.61	10.3	NA	NA	3.24	11.3
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.22	< 2.22	< 2.24	< 2.15	< 2.09	< 2.24	< 2.12	< 2.33	< 2.26	< 2.16	< 2.28	< 2.2	< 2.31	< 2.35	< 2.23	< 2.05	< 2.29	< 2.35	< 2.12	< 2.36	NA	NA	< 2.12	< 2.32
Silver	7440-22-4	mg/kg	1	5700	390	0.354	0.352	0.21	< 0.538	0.293	0.292	0.238	0.328	0.287	0.335	< 0.57	< 0.551	< 0.577	< 0.589	< 0.557	< 0.511	< 0.572	< 0.588	< 0.531	< 0.59	NA	NA	< 0.531	< 0.58
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 2.22	< 2.22	< 2.24	< 2.15	< 2.09	< 2.24	< 2.12	< 2.33	< 2.26	1.63	2.16	2.74	< 2.31	2.71	< 2.23	< 2.05	< 2.29	< 2.35	< 2.12	< 2.36	NA	NA	< 2.12	< 2.32
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	38.8	43.9	35.9	28.7	36.9	17	30.4	28.9	23.2	39.7	48.1	56.8	52.6	41.9	59.8	8.35	38.6	41.2	28.2	71.4	NA	NA	77.7	60.5
Moisture																													
Percent Moisture	MOIST	%				10.9	10.1	10.6	8.9	6.4	12.4	8.2	15	13.2	7.2	12.3	11	15.8	15.9	11.1	6	12.6	15.8	9.5	16.9	NA	NA	8.6	15.5
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.7	89	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5(20	TP-R-B10-505-5(20	TP-R-B10-508-1	TP-R-B10-508-1
Sample Date						8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	10/5/2017	10/5/2017	8/9/2006	8/9/2006
Sample Depths						1.5-2.0 ft	13.0-13.5 ft	7.5-8.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	8.5-9.0 ft	1.5-2.0 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	11.5-12.0 ft	5.5-6.0 ft	1.5-2.0 ft	10.5-11.0 ft	5.5-6.0 ft	11.0-11.5 ft	11.0-11.5 ft	1.5-2.0 ft	10.0-10.5 ft
Sample ID						TP-R-B10-501-12.0N	TP-R-B10-501-113.5N	TP-R-B10-501-18.0N	TP-R-B10-502-12.0N	TP-R-B10-502-110.0N	TP-R-B10-502-22.0N	TP-R-B10-502-29.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-111.0N	TP-R-B10-505-22.0N	TP-R-B10-505-28.5N	TP-R-B10-505-32.0N	TP-R-B10-505-38.5N	TP-R-B10-505-42.0N	TP-R-B10-505-412.0N	TP-R-B10-505-46.0N	TP-R-B10-505-52.0N	TP-R-B10-505-511.0N	TP-R-B10-505-56.0N	BD100517	TP-R-B10-505-5(11.0-11.5)	TP-R-B10-508-12.0N	TP-R-B10-508-110.5N
Parent ID													TP-R-B10-505-12.0N																
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 200	< 190	< 180	< 190	< 200	< 180	< 200	NA	NA	< 180	< 200
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2300	< 2200	< 2400	< 2400	< 2200	< 2100	< 2300	< 2400	< 2200	< 2400	NA	NA	< 2200	< 2400
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2700**	< 190	250	< 200	**19000**	< 180	**44000**	**2600**	< 180	**2800**	NA	NA	**780**	**1200**
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2100**	< 190	< 200	< 200	**2400**	< 180	**3500**	**1000**	< 180	**1800**	NA	NA	340	390
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	88	< 190	< 200	< 200	430	< 180	270	< 200	< 180	< 200	NA	NA	40	79
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	53	< 190	< 200	< 200	370	< 180	260	< 200	< 180	< 200	NA	NA	< 180	65
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	140	< 190	< 200	< 200	540	< 180	370	46	< 180	40	NA	NA	48	88
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 200	230	< 180	120	< 200	< 180	< 200	NA	NA	< 180	44

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5(20	TP-R-B10-505-5(20	TP-R-B10-508-1	TP-R-B10-508-1
Sample Date						8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	10/5/2017	10/5/2017	8/9/2006	8/9/2006
Sample Depths						1.5-2.0 ft	13.0-13.5 ft	7.5-8.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	8.5-9.0 ft	1.5-2.0 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	11.5-12.0 ft	5.5-6.0 ft	1.5-2.0 ft	10.5-11.0 ft	5.5-6.0 ft	11.0-11.5 ft	11.0-11.5 ft	1.5-2.0 ft	10.0-10.5 ft
Sample ID						TP-R-B10-501-12.0N	TP-R-B10-501-113.5N	TP-R-B10-501-18.0N	TP-R-B10-502-12.0N	TP-R-B10-502-110.0N	TP-R-B10-502-22.0N	TP-R-B10-502-29.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-111.0N	TP-R-B10-505-22.0N	TP-R-B10-505-28.5N	TP-R-B10-505-32.0N	TP-R-B10-505-38.5N	TP-R-B10-505-42.0N	TP-R-B10-505-412.0N	TP-R-B10-505-46.0N	TP-R-B10-505-52.0N	TP-R-B10-505-511.0N	TP-R-B10-505-56.0N	BD100517	TP-R-B10-505-5(11.0-11.5)	TP-R-B10-508-12.0N	TP-R-B10-508-110.5N
Parent ID													TP-R-B10-505-12.0N																
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 380	< 370	< 400	< 400	< 370	< 350	< 380	< 400	< 370	< 400	NA	NA	< 360	< 390
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 200	< 190	< 180	< 190	< 200	< 180	< 200	NA	NA	< 180	< 200
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	< 190	< 200	< 200	480	< 180	300	64	< 180	51	NA	NA	54	90
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55	< 190	< 200	< 200	91	< 180	55	< 200	< 180	< 200	NA	NA	< 180	< 200
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 200	< 190	< 180	< 190	< 200	< 180	< 200	NA	NA	< 180	< 200
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	< 190	< 200	< 200	86	< 180	< 190	< 200	< 180	< 200	NA	NA	< 180	< 200
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 200	240	< 180	140	< 200	< 180	< 200	NA	NA	< 180	< 200
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 200	< 190	< 180	< 190	< 200	< 180	< 200	NA	NA	< 180	< 200
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 190	< 190	< 200	< 200	< 190	< 180	< 190	< 200	< 180	< 200	NA	NA	< 180	< 200
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5(20	TP-R-B10-505-5(20	TP-R-B10-508-1	TP-R-B10-508-1
						Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/9/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	10/5/2017	10/5/2017	8/9/2006	8/9/2006
						Sample Depths	1.5-2.0 ft	13.0-13.5 ft	7.5-8.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	8.5-9.0 ft	1.5-2.0 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	11.5-12.0 ft	5.5-6.0 ft	1.5-2.0 ft	10.5-11.0 ft	5.5-6.0 ft	11.0-11.5 ft	11.0-11.5 ft	1.5-2.0 ft	10.0-10.5 ft
						Sample ID	TP-R-B10-501-12.0N	TP-R-B10-501-113.5N	TP-R-B10-501-18.0N	TP-R-B10-502-12.0N	TP-R-B10-502-110.0N	TP-R-B10-502-22.0N	TP-R-B10-502-29.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-111.0N	TP-R-B10-505-22.0N	TP-R-B10-505-28.5N	TP-R-B10-505-32.0N	TP-R-B10-505-38.5N	TP-R-B10-505-42.0N	TP-R-B10-505-412.0N	TP-R-B10-505-46.0N	TP-R-B10-505-52.0N	TP-R-B10-505-511.0N	TP-R-B10-505-56.0N	BD100517	TP-R-B10-505-5(11.0-11.5)	TP-R-B10-508-12.0N	TP-R-B10-508-110.5N
						Parent ID								TP-R-B10-505-12.0N																	
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B10-508-1	TP-R-B10-508-1(20	TP-R-B10-508-2	TP-R-B10-508-2	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B12-1-1	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-1-3
Sample Date						8/9/2006	10/5/2017	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006
Sample Depths						14.5-15.0 ft	14.0-14.5 ft	10.5-11.0 ft	2.0-2.5 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.5-5.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.0-4.5 ft	0.5-1.0 ft	9.0-9.5 ft	0.5-1.0 ft	2.8-3.3 ft	9.0-9.5 ft	0.5-1.0 ft	7.0-7.5 ft
Sample ID						TP-R-B10-508-115.0N	TP-R-B10-508-1(14.0-14.5)	TP-R-B10-508-211.0N	TP-R-B10-508-22.5N	TP-R-B10-508-32.0N	TP-R-B10-508-317.0N	TP-R-B10-508-36.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-508-417.0N	TP-R-B10-508-46.0N	TP-R-B10-5-12.0N	TP-R-B10-5-112.5N	TP-R-B10-5-15.0N	TP-R-B10-6-12.0N	TP-R-B10-6-112.5N	TP-R-B10-6-14.5N	TP-R-B12-1-11.0N	TP-R-B12-1-19.5N	TP-R-B12-1-21.0N	TP-R-B12-1-23.25N	TP-R-B12-1-29.5N	TP-R-B12-1-31.0N	TP-R-B12-1-37.5N
Parent ID													TP-R-B10-508-42.0N																	
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	< 110	< 320	2300	120	< 330	**40000**	1900	1200	< 320	1500	640	< 330	3500	< 310	< 350	460	< 340	< 310	< 330	5100	< 310	< 340	< 310
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	3900	1600	2900	**2100000**	340	370	**43000**	11000	10000	6900	**630000**	**1200000**	19000	**17000000**	2400	1900	7600	**25000**	660	970	**12000000**	4800	< 340	11000
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	270	200	490	**7800**	< 310	< 330	920	**5400**	3800	360	**40000**	4700	1800	**22000**	630	490	**8200**	< 340	< 310	< 330	**10000**	< 310	< 340	< 310
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 670	310	1200	**8800**	< 610	< 650	890	**5100**	4000	< 650	**32000**	**5400**	4000	**34000**	680	< 710	**6900**	< 680	< 620	< 660	**11000**	< 630	< 690	< 630
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 130000	NA	< 130000	380000	< 120000	< 130000	< 140000	< 140000	< 140000	< 130000	230000	480000	< 130000	3600000	< 120000	< 140000	< 150000	< 140000	< 120000	< 130000	2600000	< 130000	< 140000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	8400	< 110	9700	45000	< 6100	< 6500	7200	35000	25000	11000	**200000**	28000	12000	**130000**	< 6100	3100	**51000**	< 6800	< 6200	< 6600	< 7100	< 6300	< 6900	< 6300
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 840	< 110 J+	< 810	360	< 770	< 810	1100	< 890	< 870	< 810	530	< 870	< 840	< 940	< 770	< 880	< 910	< 850	< 780	< 830	< 880	< 780	< 860	< 780
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 340	< 110	< 320	< 680	< 310	< 330	< 8100	< 360	< 350	< 320	2800	1800	< 330	**7600**	< 310	< 350	< 360	< 340	< 310	< 330	< 350	< 310	< 340	< 310
Tetryl	479-45-8	ug/kg		10000000	780000	NA	< 110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	1.71	NA	< 2.08	< 2.13	< 1.98	< 2.13	1.12	1.52	1.27	< 2.07	< 2.44	NA	NA	NA	1.18	2.75	2.49	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	2.41	NA	1.63	2.09	3.25	< 2.13	4.25	4.67	3.99	1.71	4.06	NA	NA	NA	2.86	2.6	4.28	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.972	NA	0.523	0.134	0.804	0.812	0.189	0.785	0.781	0.757	0.594	NA	NA	NA	0.388	1.38	0.466	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.54	NA	< 0.519	< 0.532	< 0.496	< 0.532	< 0.576	0.139	0.148	< 0.518	< 0.609	NA	NA	NA	< 0.502	< 2.88	< 0.602	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	24	NA	17.5	25.4	12.7	18	15.5	178	116	14.9	17.1	NA	NA	NA	37	35.2	26.2	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	3.66	NA	10.5	240	16.5	3.17	9.78	**6820**	**4090**	10.1	**587**	NA	NA	NA	330	3.04	**990**	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	< 0.106	NA	< 0.105	0.0922	0.0347	< 0.106	< 0.115	0.362	0.41	< 0.103	0.0622	NA	NA	NA	0.0574	< 0.112	0.136	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	9.93	NA	7.05	3.25	10.1	9.04	3.21	12.2	13.7	6.94	7.56	NA	NA	NA	5.51	15.3	8.92	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.16	NA	< 2.08	< 2.13	< 1.98	< 2.13	< 2.3	< 2.28	< 2.25	< 2.07	< 2.44	NA	NA	NA	< 2.01	< 2.31	< 2.41	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	< 0.54	NA	< 0.519	< 0.532	< 0.496	< 0.532	< 0.576	0.319	< 0.563	< 0.518	< 0.609	NA	NA	NA	< 0.502	< 0.577	< 0.602	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 2.16	NA	< 2.08	< 2.13	< 1.98	< 2.13	< 2.3	< 2.28	< 2.25	< 2.07	< 2.44	NA	NA	NA	1.39	2.97	1.73	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	51.6	NA	35.8	28.8	37.3	30.4	12.7	228	226	36.6	34	NA	NA	NA	124	76.2	88.6	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																														
Percent Moisture	MOIST	%				10.9	NA	7.4	7.8	2.1	7.9	15.7	15.5	13.8	7.1	17.9	13.6	10.4	20.2	2.3	15	17.8	11.8	3.4	9.7	15	4	12.5	4.1
Percent Solids	SOLID	%				NA	90.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B10-508-1	TP-R-B10-508-1(20	TP-R-B10-508-2	TP-R-B10-508-2	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B12-1-1	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-1-3
Sample Date						8/9/2006	10/5/2017	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006
Sample Depths						14.5-15.0 ft	14.0-14.5 ft	10.5-11.0 ft	2.0-2.5 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.5-5.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.0-4.5 ft	0.5-1.0 ft	9.0-9.5 ft	0.5-1.0 ft	2.8-3.3 ft	9.0-9.5 ft	0.5-1.0 ft	7.0-7.5 ft
Sample ID						TP-R-B10-508-115.0N	TP-R-B10-508-1(14.0-14.5)	TP-R-B10-508-211.0N	TP-R-B10-508-22.5N	TP-R-B10-508-32.0N	TP-R-B10-508-317.0N	TP-R-B10-508-36.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-508-417.0N	TP-R-B10-508-46.0N	TP-R-B10-5-12.0N	TP-R-B10-5-112.5N	TP-R-B10-5-15.0N	TP-R-B10-6-12.0N	TP-R-B10-6-112.5N	TP-R-B10-6-14.5N	TP-R-B12-1-11.0N	TP-R-B12-1-19.5N	TP-R-B12-1-21.0N	TP-R-B12-1-23.25N	TP-R-B12-1-29.5N	TP-R-B12-1-31.0N	TP-R-B12-1-37.5N
Parent ID													TP-R-B10-508-42.0N																
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 190	NA	< 180	< 180	< 170	< 180	< 200	< 200	< 190	< 180	< 200	< 190	< 190	< 210	< 170	< 980	< 200	< 190	< 170	< 180	< 2000	< 170	< 190	< 170
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2200	NA	< 2200	< 2200	< 2000	< 2200	1200	< 2400	< 2300	< 2200	< 2400	< 2300	< 2200	< 2500	< 2000	< 12000	< 2400	< 2300	< 2100	< 2200	< 24000	< 2100	< 2300	< 2100
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 190	NA	< 180	**1400**	< 170	< 180	**24000**	**1500**	**1200**	130	**830**	**42000**	81	**44000**	110	< 980	260	**2400**	93	**10000**	**3800000**	**760**	**2200**	**3100**
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 190	NA	< 180	190	< 170	< 180	**1400**	490	410	38	460	**3000**	< 190	**7100**	< 170	< 980	96	84	< 170	350	**220000**	49	160	460
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 190	NA	< 180	91	96	< 180	< 200	480	180	< 180	< 200	460	< 190	60	360	< 980	< 200	2600	< 170	2300	840	< 170	< 190	< 170
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	NA	< 180	62	83	< 180	< 200	300	140	< 180	< 200	350	< 190	48	310	< 980	< 200	**2000**	< 170	**2000**	**570**	< 170	< 190	< 170
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 190	NA	< 180	110	110	< 180	< 200	450	190	< 180	< 200	460	< 190	88	380	< 980	< 200	2700	< 170	2400	910	< 170	< 190	< 170
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 190	NA	< 180	42	44	< 180	< 200	200	83	< 180	< 200	150	< 190	< 210	160	< 980	< 200	1000	< 170	1300	< 2000	< 170	< 190	< 170

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B10-508-1	R-B10-508-1(20	TP-R-B10-508-2	TP-R-B10-508-2	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B12-1-1	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-1-3
Sample Date						8/9/2006	10/5/2017	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006
Sample Depths						14.5-15.0 ft	14.0-14.5 ft	10.5-11.0 ft	2.0-2.5 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.5-5.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.0-4.5 ft	0.5-1.0 ft	9.0-9.5 ft	0.5-1.0 ft	2.8-3.3 ft	9.0-9.5 ft	0.5-1.0 ft	7.0-7.5 ft
Sample ID						TP-R-B10-508-115.0N	TP-R-B10-508-1(14.0-14.5)	TP-R-B10-508-211.0N	TP-R-B10-508-22.5N	TP-R-B10-508-32.0N	TP-R-B10-508-317.0N	TP-R-B10-508-36.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-508-417.0N	TP-R-B10-508-46.0N	TP-R-B10-5-12.0N	TP-R-B10-5-112.5N	TP-R-B10-5-15.0N	TP-R-B10-6-12.0N	TP-R-B10-6-112.5N	TP-R-B10-6-14.5N	TP-R-B12-1-11.0N	TP-R-B12-1-19.5N	TP-R-B12-1-21.0N	TP-R-B12-1-23.25N	TP-R-B12-1-29.5N	TP-R-B12-1-31.0N	TP-R-B12-1-37.5N
Parent ID													TP-R-B10-508-42.0N																	
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 370	NA	< 360	< 360	< 340	< 360	< 400	< 390	< 390	< 360	< 410	< 390	< 370	< 420	< 340	< 2000	< 410	< 380	< 350	< 370	< 3900	< 350	< 380	< 350
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 190	NA	< 180	< 180	< 170	< 180	< 200	< 200	< 190	< 180	< 200	< 190	< 190	< 210	< 170	< 980	< 200	< 190	< 170	< 180	< 2000	< 170	< 190	< 170
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 190	NA	< 180	96	100	< 180	< 200	470	180	< 180	< 200	440	< 190	100	370	< 980	< 200	2700	< 170	2400	790	< 170	< 190	< 170
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 190	NA	< 180	< 180	< 170	< 180	< 200	74	< 190	< 180	< 200	60	< 190	< 210	78	< 980	< 200	370	< 170	320	< 2000	< 170	< 190	< 170
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 190	NA	< 180	< 180	< 170	< 180	< 200	< 200	< 190	< 180	< 200	< 190	< 190	< 210	< 170	< 980	< 200	< 190	< 170	< 180	< 2000	< 170	< 190	< 170
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 190	NA	< 180	< 180	< 170	< 180	< 200	< 200	< 190	< 180	< 200	< 190	< 190	< 210	< 170	< 980	< 200	< 190	< 170	< 180	< 2000	< 170	< 190	< 170
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 190	NA	< 180	54	44	< 180	< 200	210	72	< 180	< 200	210	< 190	< 210	190	< 980	< 200	1200	< 170	1200	< 2000	< 170	< 190	< 170
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 190	NA	< 180	< 180	< 170	< 180	< 200	< 200	< 190	< 180	< 200	< 190	< 190	< 210	< 170	< 980	< 200	< 190	< 170	< 180	< 2000	< 170	< 190	< 170
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 190	NA	< 180	< 180	< 170	< 180	< 200	< 200	< 190	< 180	< 200	< 190	< 190	< 210	< 170	< 980	< 200	< 190	< 170	< 180	< 2000	< 170	< 190	< 170
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-B10-508-1	R-B10-508-1(20	TP-R-B10-508-2	TP-R-B10-508-2	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-5-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B12-1-1	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-3	TP-R-B12-1-3
						Sample Date	8/9/2006	10/5/2017	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006
						Sample Depths	14.5-15.0 ft	14.0-14.5 ft	10.5-11.0 ft	2.0-2.5 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.5-5.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.0-4.5 ft	0.5-1.0 ft	9.0-9.5 ft	0.5-1.0 ft	2.8-3.3 ft	9.0-9.5 ft	0.5-1.0 ft	7.0-7.5 ft
						Sample ID	TP-R-B10-508-115.0N	1(14.0-14.5)	TP-R-B10-508-211.0N	TP-R-B10-508-22.5N	TP-R-B10-508-32.0N	TP-R-B10-508-317.0N	TP-R-B10-508-36.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-508-417.0N	TP-R-B10-508-46.0N	TP-R-B10-5-12.0N	TP-R-B10-5-112.5N	TP-R-B10-5-15.0N	TP-R-B10-6-12.0N	TP-R-B10-6-112.5N	TP-R-B10-6-14.5N	TP-R-B12-1-11.0N	TP-R-B12-1-19.5N	TP-R-B12-1-21.0N	TP-R-B12-1-23.25N	TP-R-B12-1-29.5N	TP-R-B12-1-31.0N	TP-R-B12-1-37.5N
						Parent ID								TP-R-B10-508-42.0N																
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-1	TP-R-B13-1-1	P-R-B13-1-1(201	TP-R-B13-1-2	TP-R-B13-1-2	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-2-1
Sample Date						8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	11/1/2017	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/7/2006	8/7/2006	8/7/2006	8/2/2006
Sample Depths						1.0-1.5 ft	11.0-11.5 ft	7.5-8.0 ft	1.0-1.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	12.0-12.5 ft	13.5-14.0 ft	2.0-2.5 ft	6.0-6.5 ft	1.5-2.0 ft	11.5-12.0 ft	6.5-7.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	6.0-6.5 ft	11.5-12.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft
Sample ID						TP-R-B12-234-11.5N	TP-R-B12-234-111.5N	TP-R-B12-234-18.0N	TP-R-B12-234-21.5N	TP-R-B12-234-25.5N	TP-R-B12-234-28.5N	TP-R-B13-1-12.0N	TP-R-B13-1-113.0N	TP-R-B13-1-16.0N	TP-R-B13-1-1(12.0-12.5)	TP-R-B13-1-214.0N	TP-R-B13-1-22.5N	TP-R-B13-1-26.5N	TP-R-B13-1-32.0N	TP-R-B13-1-312.0N	TP-R-B13-1-37.0N	TP-R-B13-1-42.0N	TP-R-B13-1-412.0N	TP-R-B13-1-46.5FD	TP-R-B13-1-46.5N	TP-R-B13-1-46.5N	TP-R-B13-1-512.0N	TP-R-B13-1-52.5N	TP-R-B13-1-57.5N	TP-R-B13-2-12.0N
Parent ID																								TP-R-B13-1-46.5N						T
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 350	< 310	< 340	**120000**	< 320	180	< 360	210	< 120	< 330	160	220	< 360	< 310	< 320	< 320	210	230	< 330	< 320	< 340	< 320
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	240	< 350	200	650	**1600000**	< 320	**400000**	8200	**31000**	**83000 J+**	4000	12000	4400	**110000**	970	270	970	1200	**540000**	**430000**	2700	**2600000**	**22000**	< 320
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 350	< 350	< 310	390	< 320	< 320	2200	130	2700	660	760	2800	1500	2800	500	< 310	600	130	< 320	< 320	1500	**9100**	2800	< 320
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 700	< 690	< 630	280	< 6300	< 640	3200	< 720	3600	690	1900	3500	1800	4100	< 720	< 620	970	< 640	< 640	< 640	240	**8700**	1900	< 630
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 140000	< 140000	< 120000	< 140000	640000	< 130000	190000	< 140000	< 130000	NA	< 130000	< 130000	< 130000	< 130000	< 140000	< 120000	< 130000	< 130000	150000	240000	< 130000	1600000	< 140000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 6900	< 6300	< 6800	9000	< 6400	13000	20000	17000	< 120	5900	18000	11000	17000	4300	2800	< 6400	6300	25000	28000	< 6700	< 6500	< 6800	< 6300
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 870	< 860	< 790	< 850	< 790	< 800	< 800	< 900	< 840	< 120	< 840	< 810	< 800	< 810	< 900	< 780	< 800	< 800	< 800	< 800	< 830	< 810	< 860	< 790
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 350	< 350	< 310	< 340	< 320	< 320	< 320	< 360	< 330	< 120	< 330	< 320	140	< 330	< 360	< 310	< 320	< 320	770	660	< 330	< 320	< 340	< 320
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	1.57	1.97	1.3	NA	1.08	1.12	0.993	1.27	1.56	< 2.03	1.59	< 2.13	1.28	1.36	< 2.22	1.16	< 2.26	1.35
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	1.9	2.53	2.29	NA	4.49	2.28	1.38	4.21	2.21	1.02	3.93	2.46	1.12	1.62	1.08	1.06	1.05	1.57
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	0.293	0.293	0.297	NA	0.394	0.163	0.254	0.236	0.602	0.412	0.71	0.395	0.237	0.213	0.353	0.253	0.388	0.681
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	< 0.513	< 0.586	< 0.551	NA	< 0.547	< 0.531	< 0.52	< 0.542	< 0.572	< 0.509	< 0.525	< 0.532	< 0.516	< 0.531	0.262	0.398	0.389	< 0.522
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	5.24	9.31	10.7	NA	10.9	5.37	5.78	9.55	13.8	13.7	20.5	16.8	4.21	5.57	9.21	6.89	9.02	15.1
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	352	6.24	251	NA	17	247	61.2	243	8.94	1.45	47.4	2.13	12.1	16.6	29.6	**658**	144	4.7
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	0.0305	0.0132	< 0.11	NA	< 0.105	0.0138	< 0.103	0.013	< 0.119	< 0.101	0.0312	< 0.0985	< 0.0989	< 0.098	< 0.105	0.0278	< 0.111	0.0126
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	2.32	3.76	4.26	NA	4.61	2.36	2.09	3.97	4.68	4.55	9.65	6.46	1.92	2.36	3.56	2.57	4.04	9.47
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	< 2.05	< 2.35	3.33	NA	< 2.19	< 2.12	< 2.08	< 2.17	< 2.29	< 2.03	< 2.1	< 2.13	< 2.06	< 2.12	< 2.22	< 2.14	< 2.26	< 2.09
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	< 0.513	< 0.586	< 0.551	NA	< 0.547	< 0.531	< 0.52	< 0.542	< 0.572	< 0.509	< 0.525	< 0.532	< 0.516	< 0.531	0.202	0.279	< 0.564	< 0.522
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	< 2.05	< 2.35	< 2.21	NA	< 2.19	< 2.12	< 2.08	< 2.17	< 2.29	< 2.03	1.42	< 2.13	< 2.06	< 2.12	< 11.1	< 2.14	< 2.26	< 2.09
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	20.9	45	45	NA	47.9	23.7	14.9	23.9	91.6	24.8	61.1	47.7	19.5	16.6	28.4	21.2	36.8	44.7
Moisture																														
Percent Moisture	MOIST	%				13.9	13.1	4.5	12.1	4.9	6.3	6.3	16.4	10.2	NA	10.4	7.6	6.6	7.7	16.8	3.6	5.7	6.1	5.9	5.8	10	7.6	12.3	5.2
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	85.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-1	TP-R-B13-1-1	P-R-B13-1-1(201	TP-R-B13-1-2	TP-R-B13-1-2	TP-R-B13-1-2	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-2-1
Sample Date						8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	11/1/2017	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/7/2006	8/7/2006	8/7/2006	8/2/2006
Sample Depths						1.0-1.5 ft	11.0-11.5 ft	7.5-8.0 ft	1.0-1.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	12.0-12.5 ft	13.5-14.0 ft	2.0-2.5 ft	6.0-6.5 ft	1.5-2.0 ft	11.5-12.0 ft	6.5-7.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	6.0-6.5 ft	11.5-12.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft
Sample ID						TP-R-B12-234-111.5N	TP-R-B12-234-111.5N	TP-R-B12-234-18.0N	TP-R-B12-234-21.5N	TP-R-B12-234-25.5N	TP-R-B12-234-28.5N	TP-R-B13-1-12.0N	TP-R-B13-1-113.0N	TP-R-B13-1-16.0N	TP-R-B13-1-1(12.0-12.5)	TP-R-B13-1-214.0N	TP-R-B13-1-22.5N	TP-R-B13-1-26.5N	TP-R-B13-1-32.0N	TP-R-B13-1-312.0N	TP-R-B13-1-37.0N	TP-R-B13-1-42.0N	TP-R-B13-1-412.0N	TP-R-B13-1-46.5FD	TP-R-B13-1-46.5N	TP-R-B13-1-46.5N	TP-R-B13-1-512.0N	TP-R-B13-1-52.5N	TP-R-B13-1-57.5N	TP-R-B13-2-12.0N
Parent ID																								TP-R-B13-1-46.5N						T
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	< 18	< 20	< 19	NA	< 19	< 18	< 18	< 18	< 20	< 18	< 18	< 18	< 18	< 18	< 18	< 19	< 18	< 19	< 18
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2300	< 2300	< 2100	< 2300	< 21000	< 2100	< 2100	< 2400	< 2200	NA	< 2200	< 2200	< 2100	< 2200	< 2400	< 2100	< 2100	< 2100	< 2100	< 2100	< 2200	< 2200	< 2300	< 2100
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	99	< 190	< 170	110	**7100000**	< 180	290	260	< 190	NA	< 190	140	< 180	330	< 200	< 170	< 180	< 180	**2000**	**1600**	< 190	**2900**	85	< 180
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 190	< 190	< 170	< 190	**6500000**	< 180	640	57	76	NA	< 190	200	< 180	280	< 200	< 170	< 180	< 180	**3500**	**2800**	< 190	**2800**	72	< 180
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-1	TP-R-B13-1-1	P-R-B13-1-1(201	TP-R-B13-1-2	TP-R-B13-1-2	TP-R-B13-1-2	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-2-1
Sample Date						8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	11/1/2017	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/7/2006	8/7/2006	8/7/2006	8/2/2006
Sample Depths						1.0-1.5 ft	11.0-11.5 ft	7.5-8.0 ft	1.0-1.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	12.0-12.5 ft	13.5-14.0 ft	2.0-2.5 ft	6.0-6.5 ft	1.5-2.0 ft	11.5-12.0 ft	6.5-7.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	6.0-6.5 ft	11.5-12.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft
Sample ID						TP-R-B12-234-11.5N	TP-R-B12-234-111.5N	TP-R-B12-234-18.0N	TP-R-B12-234-21.5N	TP-R-B12-234-25.5N	TP-R-B12-234-28.5N	TP-R-B13-1-12.0N	TP-R-B13-1-113.0N	TP-R-B13-1-16.0N	TP-R-B13-1-1(12.0-12.5)	TP-R-B13-1-214.0N	TP-R-B13-1-22.5N	TP-R-B13-1-26.5N	TP-R-B13-1-32.0N	TP-R-B13-1-312.0N	TP-R-B13-1-37.0N	TP-R-B13-1-42.0N	TP-R-B13-1-412.0N	TP-R-B13-1-46.5FD	TP-R-B13-1-46.5N	TP-R-B13-1-46.5N	TP-R-B13-1-512.0N	TP-R-B13-1-52.5N	TP-R-B13-1-57.5N	TP-R-B13-2-12.0N
Parent ID																								TP-R-B13-1-46.5N						T
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 390	< 380	< 350	< 380	< 3500	< 360	< 360	< 400	< 370	NA	< 370	< 360	< 360	< 360	< 400	< 350	< 350	< 350	< 350	< 350	< 370	< 360	< 380	< 350
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	39	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 190	< 190	< 170	< 190	< 1800	< 180	< 180	< 200	< 190	NA	< 190	< 180	< 180	< 180	< 200	< 170	< 180	< 180	< 180	< 180	< 190	< 180	< 190	< 180
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	< 2500	< 2500	< 2400	NA	< 2600	< 2600	< 2600	< 2500	< 2900	< 2500	< 2600	< 2600	< 2600	< 2500	< 2500	< 2500	< 2500	< 2700	< 3000
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	< 620	< 620	< 610	NA	< 660	< 660	< 650	< 640	< 720	< 630	< 650	< 650	< 610	< 620	< 640	< 630	< 670	< 760
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	< 620	< 620	< 610	NA	< 660	< 660	< 650	< 640	< 720	< 630	< 650	< 650	< 610	< 620	< 640	< 630	< 670	< 760
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B12-234-2	TP-R-B13-1-1	TP-R-B13-1-1	TP-R-B13-1-1	P-R-B13-1-1(201	TP-R-B13-1-2	TP-R-B13-1-2	TP-R-B13-1-2	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-1-5	TP-R-B13-2-1
						Sample Date	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/4/2006	8/4/2006	8/4/2006	11/1/2017	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/7/2006	8/7/2006	8/7/2006	8/2/2006
						Sample Depths	1.0-1.5 ft	11.0-11.5 ft	7.5-8.0 ft	1.0-1.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	12.0-12.5 ft	13.5-14.0 ft	2.0-2.5 ft	6.0-6.5 ft	1.5-2.0 ft	11.5-12.0 ft	6.5-7.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	6.0-6.5 ft	11.5-12.0 ft	2.0-2.5 ft	7.0-7.5 ft	1.5-2.0 ft
						Sample ID	TP-R-B12-234-11.5N	TP-R-B12-234-111.5N	TP-R-B12-234-18.0N	TP-R-B12-234-21.5N	TP-R-B12-234-25.5N	TP-R-B12-234-28.5N	TP-R-B13-1-12.0N	TP-R-B13-1-113.0N	TP-R-B13-1-16.0N	TP-R-B13-1-1(12.0-12.5)	TP-R-B13-1-214.0N	TP-R-B13-1-22.5N	TP-R-B13-1-26.5N	TP-R-B13-1-32.0N	TP-R-B13-1-312.0N	TP-R-B13-1-37.0N	TP-R-B13-1-42.0N	TP-R-B13-1-412.0N	TP-R-B13-1-46.5FD	TP-R-B13-1-46.5N	TP-R-B13-1-46.5N	TP-R-B13-1-512.0N	TP-R-B13-1-52.5N	TP-R-B13-1-57.5N	TP-R-B13-2-12.0N
						Parent ID																			TP-R-B13-1-46.5N						T
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	< 620	< 620	< 610	NA	< 660	< 660	< 650	< 640	< 720	< 630	< 650	< 650	< 610	< 620	< 640	< 630	< 670	< 760
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	< 620	< 620	< 610	NA	< 660	< 660	< 650	< 640	< 720	< 630	< 650	< 650	< 610	< 620	< 640	< 630	< 670	< 760
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8
Sample Date						8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/2/2006	8/2/2006	8/2/2006
Sample Depths						11.5-12.0 ft	11.5-12.0 ft	5.0-5.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	4.0-4.5 ft	8.5-9.0 ft	1.5-2.0 ft	3.0-3.5 ft	4.5-5.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	1.5-2.0 ft	4.5-5.0 ft	7.5-8.0 ft
Sample ID						TP-R-B13-2-112.0FD	TP-R-B13-2-112.0N	TP-R-B13-2-15.5N	TP-R-B13-2-22.0N	TP-R-B13-2-213.0N	TP-R-B13-2-26.0N	TP-R-B13-2-32.0N	TP-R-B13-2-36.0N	TP-R-B13-2-310.0N	TP-R-B13-2-42.0N	TP-R-B13-2-46.0N	TP-R-B13-2-410.0N	TP-R-B13-2-52.0N	TP-R-B13-2-54.5N	TP-R-B13-2-59.0N	TP-R-B13-2-62.0N	TP-R-B13-2-63.5N	TP-R-B13-2-65.0N	TP-R-B13-2-72.0N	TP-R-B13-2-712.0N	TP-R-B13-2-76.5N	TP-R-B13-2-82.0N	TP-R-B13-2-85.0N	TP-R-B13-2-88.0FD
Parent ID						TP-R-B13-2-112.0N																							TP-R-B13-2-88.0N
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 330	< 320	< 340	< 350	< 340	< 340	< 310	< 320	< 330	< 310	< 330	< 340	< 320	< 340	5400	**9200**	**18000**	< 340	< 330	< 310	< 350	110	< 330
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 330	< 330	< 320	130	14000	610	< 340	< 310	< 320	< 330	< 310	910	< 340	< 320	680	**56000**	**1800000**	**1700000**	< 340	2500	< 310	200	570	2500
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 330	< 330	< 320	< 340	< 350	390	< 340	< 310	< 320	< 330	< 310	< 330	< 340	< 320	< 340	**29000**	**62000**	**66000**	230	230	< 310	< 350	< 330	< 330
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 660	< 660	< 630	< 680	< 700	410	< 690	< 630	< 640	< 660	< 620	< 660	< 680	< 650	< 680	< 690	**7000**	**5500**	< 680	< 670	< 630	< 700	< 660	< 660
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrocellulose	9004-70-0	ug/kg				< 130000	< 130000	< 130000	< 140000	< 140000	150000	< 140000	< 130000	< 130000	< 130000	< 120000	< 130000	< 140000	< 130000	< 140000	1300000	3100000	1600000	120000	< 130000	< 130000	250000	< 130000	< 130000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6600	< 6600	< 6300	< 6800	15000	< 6800	< 6900	< 6300	< 6400	< 6600	< 6200	4200	< 6800	< 6500	5200	**130000**	**110000**	**120000**	16000	9300	< 6300	7400	< 6600	7400
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 820	< 820	< 790	< 850	< 870	< 850	< 860	< 780	< 800	< 820	< 780	< 830	< 840	< 810	< 850	< 860	< 840	< 860	< 850	< 840	< 780	< 870	< 820	< 820
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 330	< 330	< 320	< 340	< 350	< 340	< 340	< 310	< 320	< 330	< 310	< 330	< 340	< 320	< 340	580	1900	< 340	< 340	< 330	< 310	< 350	< 330	< 330
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	1.21	< 2.1	< 2.03	< 2.25	< 2.3	1.27	1.58	0.966	0.995	< 2.15	< 2.08	< 2.17	1.19	1.42	< 2.2	1.02	1.1	< 2.21	1.35	1.21	1.16	2.09	1.51	1.17
Arsenic	7440-38-2	mg/kg	19	19	19	1.91	1.74	1.48	5.5	2.2	4.95	4.6	1.81	2.54	2.65	1.82	4.2	3.52	1.84	< 2.2	2.39	1.62	1.26	**20.8**	6.08	3.33	**36.1**	9.51	< 2.1
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.537	0.503	1.03	0.755	0.337	0.713	0.852	0.639	0.598	0.802	0.648	1.18	0.853	0.63	0.496	0.537	0.495	0.177	0.832	0.421	0.358	0.65	0.137	0.186
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.544	< 0.525	< 0.507	< 0.563	< 0.575	< 0.562	< 0.556	< 0.521	< 0.523	< 0.537	< 0.52	< 0.543	< 0.541	< 0.514	< 0.55	< 0.563	< 0.541	< 0.554	< 0.548	< 0.553	< 0.511	0.0787	< 0.531	< 0.525
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	14.6	12.5	15.4	18.6	8.98	15.2	14.4	13.8	13.7	16	14.4	18	15.1	12.8	16	46.8	35.1	20.5	36	12.5	14	33.9	15.7	7.04
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	2.86	2.55	2.48	42.9	26.7	30.8	8.49	3.65	3.32	6.15	2.67	5.16	6.99	2.81	2.77	16.1	15.3	15.8	121	5.84	2.39	104	102	17.6
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.0235	0.0119	< 0.105	2.44	0.0387	0.102	0.0307	0.012	0.0139	0.0354	0.0148	0.0143	0.0669	0.0175	0.0176	0.0328	0.029	0.0578	0.303	0.0196	< 0.103	1.47	0.228	0.0202
Nickel	7440-02-0	mg/kg	48	23000	1600	6.3	4.88	4	10.9	2.83	8.13	11.1	6.19	6.37	10.4	5.86	8.33	9.51	7.17	4.51	7.16	5.14	3.41	12.1	4.34	3.61	9.38	3.75	2.46
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.18	< 2.1	< 2.03	< 2.25	< 2.3	< 2.25	< 2.22	< 2.08	< 2.09	< 2.15	< 2.08	< 2.17	< 2.17	< 10.3	< 2.2	< 2.25	< 2.17	< 2.21	< 2.19	< 2.21	< 2.04	< 2.25	< 2.12	< 2.1
Silver	7440-22-4	mg/kg	1	5700	390	< 0.544	< 0.525	< 0.507	0.231	< 0.575	< 0.562	< 0.556	< 0.521	< 0.523	< 0.537	< 0.52	< 0.543	< 0.541	< 0.514	< 0.55	< 0.563	< 0.541	< 0.554	0.217	< 0.553	< 0.511	< 0.562	< 0.531	< 0.525
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 2.18	< 2.1	< 2.03	< 2.25	< 2.3	< 2.25	1.52	< 2.08	< 2.09	1.92	< 2.08	1.63	< 2.17	< 2.05	< 2.2	< 2.25	< 2.17	< 2.21	< 2.19	< 2.21	< 2.04	< 2.25	< 2.12	< 2.1
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	76.7	64.3	38.7	85.6	25	67.3	72.6	48.7	53.5	106	42.4	56.7	49.7	67.7	51	76.7	50	49.6	109	44.9	26	425	80.4	17.7
Moisture																													
Percent Moisture	MOIST	%				9	8.4	5.2	12.1	13.9	11.9	12.7	4	6.2	8.8	3.9	9.7	11.2	7.3	11.8	12.9	11.2	12.3	11.4	10.4	4.1	13.7	8.6	8.5
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8
Sample Date						8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006
Sample Depths						11.5-12.0 ft	11.5-12.0 ft	5.0-5.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	4.0-4.5 ft	8.5-9.0 ft	1.5-2.0 ft	3.0-3.5 ft	4.5-5.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	1.5-2.0 ft	4.5-5.0 ft	7.5-8.0 ft	
Sample ID						TP-R-B13-2-112.0FD	TP-R-B13-2-112.0N	TP-R-B13-2-15.5N	TP-R-B13-2-22.0N	TP-R-B13-2-213.0N	TP-R-B13-2-26.0N	TP-R-B13-2-32.0N	TP-R-B13-2-36.0N	TP-R-B13-2-310.0N	TP-R-B13-2-42.0N	TP-R-B13-2-46.0N	TP-R-B13-2-410.0N	TP-R-B13-2-52.0N	TP-R-B13-2-54.5N	TP-R-B13-2-59.0N	TP-R-B13-2-62.0N	TP-R-B13-2-63.5N	TP-R-B13-2-65.0N	TP-R-B13-2-72.0N	TP-R-B13-2-712.0N	TP-R-B13-2-76.5N	TP-R-B13-2-82.0N	TP-R-B13-2-85.0N	TP-R-B13-2-88.0FD	
Parent ID						TP-R-B13-2-112.0N																							TP-R-B13-2-88.0	
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 19	< 19	< 18	< 98	< 19	< 19	
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 19	< 19	< 18	< 98	< 19	< 19	
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 19	< 19	< 18	< 98	< 19	< 19	
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 19	< 19	< 18	< 98	< 19	< 19	
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 19	< 19	< 18	< 98	< 19	< 19	
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 19	< 19	< 18	< 19	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	45	< 19	< 18	120	8.4	< 19	
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 19	< 19	< 18	9	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	26	< 19	< 18	33	< 19	< 19	
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 19	< 19	< 18	9	< 20	< 19	< 19	< 18	< 18	< 19	< 18	< 19	< 19	< 18	< 19	< 20	< 19	< 19	71	< 19	< 18	153	8.4	< 19	
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 180	< 180	< 180	< 190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	< 190	< 190	< 170	< 190	< 180	< 180	
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2200	< 2200	< 2100	< 2300	< 2300	< 2300	< 2300	< 2100	< 2100	< 2200	< 2100	< 2200	< 2300	< 2200	< 2300	< 11000	< 11000	< 11000	< 2300	< 2200	< 2100	< 2300	< 2200	< 2200	
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 180	< 180	< 180	< 190	260	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	**23000**	**60000**	**130000**	< 190	< 190	< 170	120	83	93	
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 180	< 180	< 180	< 190	97	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	**830**	**5700**	**5500**	< 190	< 190	< 170	< 190	< 180	< 180	
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 180	< 180	< 180	260	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	510	< 190	< 170	590	150	< 180	
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 180	280	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	470	< 190	< 170	**620**	130	< 180	
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 180	< 180	< 180	380	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	880	< 190	< 170	1200	210	< 180	
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 180	< 180	< 180	170	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	310	< 190	< 170	600	93	< 180	

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8
Sample Date						8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006	8/3/2006	8/3/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006
Sample Depths						11.5-12.0 ft	11.5-12.0 ft	5.0-5.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	4.0-4.5 ft	8.5-9.0 ft	1.5-2.0 ft	3.0-3.5 ft	4.5-5.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	1.5-2.0 ft	4.5-5.0 ft	7.5-8.0 ft
Sample ID						TP-R-B13-2-112.0FD	TP-R-B13-2-112.0N	TP-R-B13-2-15.5N	TP-R-B13-2-22.0N	TP-R-B13-2-213.0N	TP-R-B13-2-26.0N	TP-R-B13-2-32.0N	TP-R-B13-2-36.0N	TP-R-B13-2-310.0N	TP-R-B13-2-42.0N	TP-R-B13-2-46.0N	TP-R-B13-2-410.0N	TP-R-B13-2-52.0N	TP-R-B13-2-54.5N	TP-R-B13-2-59.0N	TP-R-B13-2-62.0N	TP-R-B13-2-63.5N	TP-R-B13-2-65.0N	TP-R-B13-2-72.0N	TP-R-B13-2-712.0N	TP-R-B13-2-76.5N	TP-R-B13-2-82.0N	TP-R-B13-2-85.0N	TP-R-B13-2-88.0FD
Parent ID						P-R-B13-2-112.0N																							TP-R-B13-2-88.0
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 370	< 360	< 350	< 380	< 390	< 380	< 380	< 350	< 360	< 370	< 350	< 370	< 380	< 360	< 380	< 1900	< 1900	< 1900	95	< 370	< 350	670	< 360	< 360
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 180	< 180	< 180	< 190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	< 190	< 190	< 170	< 190	< 180	< 180
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 180	< 180	< 180	380	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	620	< 190	< 170	730	160	< 180
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 180	< 180	< 180	< 190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	89	< 190	< 170	100	< 180	< 180
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 180	< 180	< 180	< 190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	200	< 190	< 170	350	110	< 180
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 180	< 180	< 180	< 190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	240	< 190	< 170	300	< 180	< 180
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 180	< 180	< 180	190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	300	< 190	< 170	360	88	< 180
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 180	< 180	< 180	< 190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	< 190	< 190	< 170	< 190	< 180	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 180	< 180	< 180	< 190	< 190	< 190	< 190	< 170	< 180	< 180	< 170	< 180	< 190	< 180	< 190	< 960	< 940	< 950	530	< 190	< 170	220	54	< 180
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 2700	< 2700	< 2700	< 2700	< 2900	< 2500	< 2700	< 2400	< 2600	< 2500	< 2300	< 2700	< 2900	< 2700	< 2700	< 3000	< 2800	< 2500	< 2600	< 2500	< 2300	< 2800	< 2500	< 2500
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 680	< 680	< 680	< 670	< 720	< 620	< 680	< 600	< 650	< 630	< 580	< 670	< 710	< 670	< 690	< 760	< 710	< 630	< 640	< 620	< 590	< 690	< 630	< 640
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 680	< 680	< 680	< 670	< 720	< 620	< 680	< 600	< 650	< 630	< 580	< 670	< 710	< 670	< 690	< 760	< 710	< 630	< 640	< 620	< 590	< 690	< 630	< 640
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-2	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-4	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-5	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-6	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-7	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8	TP-R-B13-2-8
					Sample Date	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/3/2006	8/3/2006	8/3/2006	8/3/2006	8/2/2006	8/2/2006	8/2/2006
					Sample Depths	11.5-12.0 ft	11.5-12.0 ft	5.0-5.5 ft	1.5-2.0 ft	12.5-13.0 ft	5.5-6.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	5.5-6.0 ft	9.5-10.0 ft	1.5-2.0 ft	4.0-4.5 ft	8.5-9.0 ft	1.5-2.0 ft	3.0-3.5 ft	4.5-5.0 ft	1.5-2.0 ft	11.5-12.0 ft	6.0-6.5 ft	1.5-2.0 ft	4.5-5.0 ft	7.5-8.0 ft
					Sample ID	TP-R-B13-2-112.0FD	TP-R-B13-2-112.0N	TP-R-B13-2-15.5N	TP-R-B13-2-22.0N	TP-R-B13-2-213.0N	TP-R-B13-2-26.0N	TP-R-B13-2-32.0N	TP-R-B13-2-36.0N	TP-R-B13-2-310.0N	TP-R-B13-2-42.0N	TP-R-B13-2-46.0N	TP-R-B13-2-410.0N	TP-R-B13-2-52.0N	TP-R-B13-2-54.5N	TP-R-B13-2-59.0N	TP-R-B13-2-62.0N	TP-R-B13-2-63.5N	TP-R-B13-2-65.0N	TP-R-B13-2-72.0N	TP-R-B13-2-712.0N	TP-R-B13-2-76.5N	TP-R-B13-2-82.0N	TP-R-B13-2-85.0N	TP-R-B13-2-88.0FD
					Parent ID	TP-R-B13-2-112.0N																							TP-R-B13-2-88.0
					Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
VOCs continued																													
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	< 680	< 680	< 680	< 670	< 720	< 620	< 680	< 600	< 650	< 630	< 580	< 670	< 710	< 670	< 690	< 760	< 710	< 630	< 640	< 620	< 590	< 690	< 630	< 640
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 680	< 680	< 680	< 670	< 720	< 620	< 680	< 600	< 650	< 630	< 580	< 670	< 710	< 670	< 690	< 760	< 710	< 630	< 640	< 620	< 590	< 690	< 630	< 640
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B13-2-8	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-1	TP-R-C13-666-1(20	TP-R-C13-666-2	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-3	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-5	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-01
Sample Date						8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	11/7/2017	8/17/2006	8/17/2006	8/16/2006	8/16/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	10/4/2017	10/4/2017
Sample Depths						7.5-8.0 ft	1.5-2.0 ft	6.0-6.5 ft	9.5-10.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	10.0-10.5 ft	1.0-1.5 ft	6.5-7.0 ft	6.5-7.0 ft	1.0-1.5 ft	6.5-7.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	7.0-7.5 ft	0.5-1.0 ft	7.5-8.0 ft	1.0-1.5 ft	10.5-11.0 ft
Sample ID						TP-R-B13-2-88.0N	TP-R-B13-2-92.0N	TP-R-B13-2-96.5N	TP-R-B13-2-910.0N	TP-R-C10-439-12.0N	TP-R-C10-439-18.5N	TP-R-C10-439-22.0N	TP-R-C10-439-211.0N	TP-R-C10-439-32.0N	TP-R-C10-439-310.5N	TP-R-C13-666-11.5N	TP-R-C13-666-17.0N	TP-R-C13-666-1(06.5-07.0)	TP-R-C13-666-21.5N	TP-R-C13-666-27.0N	TP-R-C13-666-31.0N	TP-R-C13-666-37.0N	TP-R-C13-666-41.0N	TP-R-C13-666-47.5FD	TP-R-C13-666-47.5N	TP-R-C13-666-51.0N	TP-R-C13-666-58.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-01(10.5-11.0)
Parent ID																									TP-R-C13-666-47.5N					
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	130	< 330	440	< 340	NA	NA	NA	NA	NA	NA	980	< 350	< 130	< 300	< 380	< 340	< 360	180	< 360	< 340	2300	< 350	< 120	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	6000	< 330	150	1700	NA	NA	NA	NA	NA	NA	**4000000**	**40000**	3700	**120000000**	7300	350	410	15000	1200	2500	**20000000**	4000	< 120	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	240	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	120	< 330	< 370	270	NA	NA	NA	NA	NA	NA	**24000**	230	790	2100	< 380	< 340	< 360	1700	< 360	< 340	**8200**	< 350	< 120	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 650	< 660	< 730	< 680	NA	NA	NA	NA	NA	NA	**29000**	< 710	730	630	< 750	< 670	< 720	1700	< 720	< 690	**6700**	< 690	< 120	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
Nitrocellulose	9004-70-0	ug/kg				< 130000	140000	< 150000	< 140000	NA	NA	NA	NA	NA	NA	1100000	< 140000	NA	28000000	< 150000	< 130000	< 140000	< 130000	< 140000	< 140000	3300000	< 140000	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	14000	< 6600	< 7300	11000	NA	NA	NA	NA	NA	NA	**130000**	3300	< 130	10000	< 7500	< 6700	< 7200	11000	< 7200	< 6900	**48000**	< 6900	< 120	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 820	< 820	< 920	< 850	NA	NA	NA	NA	NA	NA	< 900	< 880	< 130 J-	3900	< 940	< 840	< 910	< 830	< 900	< 860	< 750	< 870	< 120	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 330	< 330	< 370	< 340	NA	NA	NA	NA	NA	NA	150	< 350	< 130	190	< 380	< 340	< 360	< 330	< 360	< 340	570	< 350	< 120	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 120	< 110
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	1.4	1.17	< 2.33	< 2.22	4.36	1.1	1.14	1.69	1.32	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	1.28	11.1	4.22	2.45	**47.2**	8.14	3.67	4.41	4.08	2.64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.163	0.608	0.51	0.448	0.23	0.559	0.347	0.657	0.456	0.375	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	< 0.535	< 0.542	0.203	< 0.556	< 0.526	< 2.71	< 0.528	< 2.74	< 0.567	< 0.528	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	12.2	24.9	264	22.6	33.7	15.4	12	18.4	14.3	10.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	18.9	59.4	171	52.3	**7510**	3.92	160	4.22	**1610**	3.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.021	0.744	0.214	0.107	0.103	< 0.105	0.0463	0.0299	0.112	< 0.105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	4.09	32.1	9.74	5.24	4.63	7.98	5.31	9.45	7.24	4.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 2.14	< 2.17	< 2.33	< 2.22	< 2.1	< 2.16	< 2.11	< 2.19	< 2.27	< 2.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	< 0.535	< 0.542	1.07	< 0.556	1.02	< 0.541	< 0.528	< 0.547	0.204	< 0.528	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			< 2.14	< 2.17	< 2.33	< 2.22	2.58	< 2.16	< 2.11	2.15	2.21	< 2.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	22	142	142	48.2	37.1	25.2	21.7	31.9	57.9	26.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																														
Percent Moisture	MOIST	%				8.3	8.6	18.2	11.8	7.7	9.4	6.2	11.3	15.2	8.1	16.9	15.2	NA	NA	20.3	11.1	17.2	9.8	16.7	12.7	NA	13.5	NA	NA
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.2	92.9
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B13-2-8	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-1	TP-R-C13-666-1(2	TP-R-C13-666-2	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-5	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-01
Sample Date						8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	11/7/2017	8/17/2006	8/17/2006	8/16/2006	8/16/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	10/4/2017	10/4/2017
Sample Depths						7.5-8.0 ft	1.5-2.0 ft	6.0-6.5 ft	9.5-10.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	10.0-10.5 ft	1.0-1.5 ft	6.5-7.0 ft	6.5-7.0 ft	1.0-1.5 ft	6.5-7.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	7.0-7.5 ft	0.5-1.0 ft	7.5-8.0 ft	1.0-1.5 ft	10.5-11.0 ft
Sample ID						TP-R-B13-2-88.0N	TP-R-B13-2-92.0N	TP-R-B13-2-96.5N	TP-R-B13-2-910.0N	TP-R-C10-439-12.0N	TP-R-C10-439-18.5N	TP-R-C10-439-22.0N	TP-R-C10-439-211.0N	TP-R-C10-439-32.0N	TP-R-C10-439-310.5N	TP-R-C13-666-11.5N	TP-R-C13-666-17.0N	TP-R-C13-666-1(06.5-07.0)	TP-R-C13-666-21.5N	TP-R-C13-666-27.0N	TP-R-C13-666-31.0N	TP-R-C13-666-37.0N	TP-R-C13-666-41.0N	TP-R-C13-666-47.5FD	TP-R-C13-666-47.5N	TP-R-C13-666-47.5N	TP-R-C13-666-51.0N	TP-R-C13-666-58.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-01(10.5-11.0)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 19	< 19	< 21	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 19	< 19	< 21	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 19	< 19	< 21	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 19	< 19	< 21	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 19	< 19	< 21	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 19	22	15	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 19	26	15	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 19	48	30	< 19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 180	< 180	< 200	< 190	NA	NA	NA	NA	NA	NA	< 200	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	< 170	< 190	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 2200	< 2200	< 2400	< 2300	NA	NA	NA	NA	NA	NA	< 2400	< 2400	NA	< 500000	< 2500	< 2200	< 2400	< 2200	< 2400	< 2300	< 2000	< 2300	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	110	< 180	< 200	120	NA	NA	NA	NA	NA	NA	**3200**	< 200	NA	**280000**	< 210	< 190	< 200	< 180	< 200	< 190	**8400**	< 190	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 180	< 180	< 200	100	NA	NA	NA	NA	NA	NA	**1200**	< 200	NA	**73000**	< 210	< 190	< 200	< 180	< 200	< 190	**1700**	< 190	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 180	390	78	< 190	NA	NA	NA	NA	NA	NA	270	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	290	< 190	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	400	72	< 190	NA	NA	NA	NA	NA	NA	300	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	420	< 190	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 180	590	110	44	NA	NA	NA	NA	NA	NA	390	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	650	< 190	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	3800000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 180	280	43	< 190	NA	NA	NA	NA	NA	NA	190	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	200	< 190	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-R-B13-2-8	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-1	TP-R-C13-666-1(20	TP-R-C13-666-2	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-5	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-01
Sample Date						8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	11/7/2017	8/17/2006	8/17/2006	8/16/2006	8/16/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	10/4/2017	10/4/2017
Sample Depths						7.5-8.0 ft	1.5-2.0 ft	6.0-6.5 ft	9.5-10.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	10.0-10.5 ft	1.0-1.5 ft	6.5-7.0 ft	6.5-7.0 ft	1.0-1.5 ft	6.5-7.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	7.0-7.5 ft	0.5-1.0 ft	7.5-8.0 ft	1.0-1.5 ft	10.5-11.0 ft
Sample ID						TP-R-B13-2-88.0N	TP-R-B13-2-92.0N	TP-R-B13-2-96.5N	TP-R-B13-2-910.0N	TP-R-C10-439-12.0N	TP-R-C10-439-18.5N	TP-R-C10-439-22.0N	TP-R-C10-439-211.0N	TP-R-C10-439-32.0N	TP-R-C10-439-310.5N	TP-R-C13-666-11.5N	TP-R-C13-666-17.0N	TP-R-C13-666-1(06.5-07.0)	TP-R-C13-666-21.5N	TP-R-C13-666-27.0N	TP-R-C13-666-31.0N	TP-R-C13-666-37.0N	TP-R-C13-666-41.0N	TP-R-C13-666-47.5FD	TP-R-C13-666-47.5N	TP-R-C13-666-47.5N	TP-R-C13-666-51.0N	TP-R-C13-666-58.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-01(10.5-11.0)
Parent ID						N																								
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	< 360	< 360	< 410	< 380	NA	NA	NA	NA	NA	NA	< 400	< 390	NA	< 83000	< 420	< 370	< 400	< 370	< 400	< 380	< 330	< 390	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 180	< 180	< 200	< 190	NA	NA	NA	NA	NA	NA	< 200	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	< 170	< 190	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 180	490	95	44	NA	NA	NA	NA	NA	NA	310	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	360	< 190	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 180	74	< 200	< 190	NA	NA	NA	NA	NA	NA	50	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	74	< 190	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 180	< 180	< 200	< 190	NA	NA	NA	NA	NA	NA	< 200	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	< 170	< 190	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	< 180	< 180	< 200	< 190	NA	NA	NA	NA	NA	NA	< 200	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	< 170	< 190	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 180	260	47	< 190	NA	NA	NA	NA	NA	NA	210	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	310	< 190	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 180	< 180	< 200	< 190	NA	NA	NA	NA	NA	NA	< 200	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	< 170	< 190	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 180	< 180	< 200	< 190	NA	NA	NA	NA	NA	NA	< 200	< 200	NA	< 42000	< 210	< 190	< 200	< 180	< 200	< 190	< 170	< 190	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	< 2600	< 2200	< 3100	< 2400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	< 650	< 540	< 780	< 610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	< 650	< 540	< 780	< 610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-B13-2-8	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-B13-2-9	TP-R-C10-439-1	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-2	TP-R-C10-439-3	TP-R-C10-439-3	TP-R-C13-666-1	TP-R-C13-666-1	R-C13-666-1(20	TP-R-C13-666-2	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-4	TP-R-C13-666-5	TP-R-C13-666-5	TP-RD-A11-01	TP-RD-A11-01
						Sample Date	8/2/2006	8/2/2006	8/2/2006	8/2/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/17/2006	8/17/2006	11/7/2017	8/17/2006	8/17/2006	8/16/2006	8/16/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	8/17/2006	10/4/2017	10/4/2017
						Sample Depths	7.5-8.0 ft	1.5-2.0 ft	6.0-6.5 ft	9.5-10.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	10.0-10.5 ft	1.0-1.5 ft	6.5-7.0 ft	6.5-7.0 ft	1.0-1.5 ft	6.5-7.0 ft	0.5-1.0 ft	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	7.0-7.5 ft	0.5-1.0 ft	7.5-8.0 ft	1.0-1.5 ft	10.5-11.0 ft
						Sample ID	TP-R-B13-2-88.0N	TP-R-B13-2-92.0N	TP-R-B13-2-96.5N	TP-R-B13-2-910.0N	TP-R-C10-439-12.0N	TP-R-C10-439-18.5N	TP-R-C10-439-22.0N	TP-R-C10-439-211.0N	TP-R-C10-439-32.0N	TP-R-C10-439-310.5N	TP-R-C13-666-11.5N	TP-R-C13-666-17.0N	TP-R-C13-666-1(06.5-07.0)	TP-R-C13-666-21.5N	TP-R-C13-666-27.0N	TP-R-C13-666-31.0N	TP-R-C13-666-37.0N	TP-R-C13-666-41.0N	TP-R-C13-666-47.5FD	TP-R-C13-666-47.5N	TP-R-C13-666-51.0N	TP-R-C13-666-58.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-01(10.5-11.0)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	< 650	< 540	< 780	< 610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	< 650	< 540	< 780	< 610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-02	TP-RD-A11-02	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-06	TP-RD-A11-06
Sample Date						10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/5/2017	10/10/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/16/2017	10/16/2017	10/16/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/12/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	6.0-6.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	9.5-10.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft
Sample ID						TP-RD-A11-01(03.0-03.5)	TP-RD-A11-01(05.0-05.5)	TP-RD-A11-01(07.0-07.5)	TP-RD-A11-01(09.0-09.5)	TP-RD-A11-02(06.0-06.5)	TP-RD-A11-02(07.0-07.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-02A(03.0-03.5)	TP-RD-A11-02A(05.0-05.5)	TP-RD-A11-02A(07.0-07.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-03(03.0-03.5)	TP-RD-A11-03(05.0-05.5)	TP-RD-A11-03(07.0-07.5)	TP-RD-A11-03(08.5-09.0)	TP-RD-A11-03(10.5-11.0)	TP-RD-A11-03(11.5-12.0)	TP-RD-A11-03(09.5-10.0)	TP-RD-A11-04(01.0-01.5)	TP-RD-A11-04(03.0-03.5)	TP-RD-A11-04(05.0-05.5)	TP-RD-A11-04(07.0-07.5)	BD10122017	TP-RD-A11-06(01.0-01.5)
Parent ID																													TP-RD-A11-06(01.0-01.5)
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 120	< 110	< 110	120	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	910	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 120	< 120	< 110	< 110	**210000**	< 100 J	< 110	< 110	< 110	< 110	**79000000**	**110000**	1600	15000	**250000**	9200	770	1600	< 100	< 100	< 100	< 100	< 120	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 120	< 110	< 110	670	< 100 J	< 110	< 110	< 110	< 110	**14000000**	**1700**	< 110	**14000**	**200000**	**2500**	120	< 110	< 100	< 100	< 100	< 100	< 120	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 120	< 110	< 110	360	< 100	< 110	< 110	< 110	< 110	**270000**	550	< 110	< 110	**1300**	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 120	< 120	< 110	< 110	1400 P	< 100	< 110	< 110	< 110	< 110	**380000**	1000	170	470	2700	110 J-	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 120	< 120	< 110	< 110	3000	< 100	< 110	< 110	< 110	< 110	**540000**	1500	200	890	3400	160 J-	150	< 110	< 100	< 100	< 100	< 100	< 120	< 120
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120 J+	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 120	< 120	< 110	< 110	< 110 J+	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110 J+	< 110	< 100	< 100	< 100	< 100	< 120	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120 J+	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 120000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 100	< 100	< 100	< 120	< 120
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				84	86.7	89.6	93.6	94.3	95.5	92.6	91.3	90.8	93.2	83.8	90.6	90.3	92.2	89.9	94.5	94	95.2	96.3	96.1	95.7	96.5	83.5	83.9
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-02	TP-RD-A11-02	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-06	TP-RD-A11-06
Sample Date						10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/5/2017	10/10/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/16/2017	10/16/2017	10/16/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/12/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	6.0-6.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	9.5-10.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft
Sample ID						TP-RD-A11-01(03.0-03.5)	TP-RD-A11-01(05.0-05.5)	TP-RD-A11-01(07.0-07.5)	TP-RD-A11-01(09.0-09.5)	TP-RD-A11-02(06.0-06.5)	TP-RD-A11-02(07.0-07.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-02A(03.0-03.5)	TP-RD-A11-02A(05.0-05.5)	TP-RD-A11-02A(07.0-07.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-03(03.0-03.5)	TP-RD-A11-03(05.0-05.5)	TP-RD-A11-03(07.0-07.5)	TP-RD-A11-03(08.5-09.0)	TP-RD-A11-03(10.5-11.0)	TP-RD-A11-03(11.5-12.0)	TP-RD-A11-03(09.5-10.0)	TP-RD-A11-04(01.0-01.5)	TP-RD-A11-04(03.0-03.5)	TP-RD-A11-04(05.0-05.5)	TP-RD-A11-04(07.0-07.5)	BD10122017	TP-RD-A11-06(01.0-01.5)
Parent ID																														TP-RD-A11-06(01.0-01.5)	
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
PCBs																															
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																															
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																															
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-02	TP-RD-A11-02	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-06	TP-RD-A11-06
						Sample Date	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/5/2017	10/10/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/16/2017	10/16/2017	10/16/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/12/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	6.0-6.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	9.5-10.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-A11-01(03.0-03.5)	TP-RD-A11-01(05.0-05.5)	TP-RD-A11-01(07.0-07.5)	TP-RD-A11-01(09.0-09.5)	TP-RD-A11-02(06.0-06.5)	TP-RD-A11-02(07.0-07.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-02A(03.0-03.5)	TP-RD-A11-02A(05.0-05.5)	TP-RD-A11-02A(07.0-07.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-03(03.0-03.5)	TP-RD-A11-03(05.0-05.5)	TP-RD-A11-03(07.0-07.5)	TP-RD-A11-03(08.5-09.0)	TP-RD-A11-03(10.5-11.0)	TP-RD-A11-03(11.5-12.0)	TP-RD-A11-03(09.5-10.0)	TP-RD-A11-04(01.0-01.5)	TP-RD-A11-04(03.0-03.5)	TP-RD-A11-04(05.0-05.5)	TP-RD-A11-04(07.0-07.5)	BD10122017	TP-RD-A11-06(01.0-01.5)
						Parent ID																								TP-RD-A11-06(01.0-01.5)
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-02	TP-RD-A11-02	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-06	TP-RD-A11-06
						Sample Date	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/5/2017	10/10/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/16/2017	10/16/2017	10/16/2017	10/16/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/12/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	6.0-6.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	9.5-10.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-A11-01(03.0-03.5)	TP-RD-A11-01(05.0-05.5)	TP-RD-A11-01(07.0-07.5)	TP-RD-A11-01(09.0-09.5)	TP-RD-A11-02(06.0-06.5)	TP-RD-A11-02(07.0-07.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-02A(03.0-03.5)	TP-RD-A11-02A(05.0-05.5)	TP-RD-A11-02A(07.0-07.5)	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-03(03.0-03.5)	TP-RD-A11-03(05.0-05.5)	TP-RD-A11-03(07.0-07.5)	TP-RD-A11-03(08.5-09.0)	TP-RD-A11-03(10.5-11.0)	TP-RD-A11-03(11.5-12.0)	TP-RD-A11-03(09.5-10.0)	TP-RD-A11-04(01.0-01.5)	TP-RD-A11-04(03.0-03.5)	TP-RD-A11-04(05.0-05.5)	TP-RD-A11-04(07.0-07.5)	BD10122017	TP-RD-A11-06(01.0-01.5)
						Parent ID																								TP-RD-A11-06(01.0-01.5)
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11
Sample Date						10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
Sample ID						TP-RD-A11-06(03.0-03.5)	TP-RD-A11-06(05.0-05.5)	TP-RD-A11-06(07.0-07.5)	TP-RD-A11-06(08.0-09.0)	TP-RD-A11-08(01.0-01.5)	TP-RD-A11-08(03.0-03.5)	TP-RD-A11-08(05.0-05.5)	TP-RD-A11-08(07.0-07.5)	TP-RD-A11-08(09.0-09.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-09(03.0-03.5)	TP-RD-A11-09(05.0-05.5)	TP-RD-A11-09(07.0-07.5)	TP-RD-A11-10(01.0-01.5)	TP-RD-A11-10(03.0-03.5)	TP-RD-A11-10(05.0-05.5)	TP-RD-A11-10(07.0-07.5)	TP-RD-A11-10(08.0-08.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-11(03.0-03.5)	TP-RD-A11-11(05.0-05.5)	TP-RD-A11-11(07.0-07.5)
Parent ID																															
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	430	310	< 110	< 110	< 110	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	290	230 J	< 110	< 110	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	140	150	< 110	< 110	< 110	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	180	160	< 110	< 110	< 110	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120 J+	< 100 J+	< 110 J+	< 100 J+	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 100	< 110	< 100	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				85.4	95.5	95.1	96	89.5	91.9	96.3	94.3	92.4	92.9	89.2	92.3	92.3	92.2	89.5	88.9	89.4	88.9	90.8	88.4	89	90.1	91.9	89.3		
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11
Sample Date						10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
Sample ID						TP-RD-A11-06(03.0-03.5)	TP-RD-A11-06(05.0-05.5)	TP-RD-A11-06(07.0-07.5)	TP-RD-A11-06(08.0-09.0)	TP-RD-A11-08(01.0-01.5)	TP-RD-A11-08(03.0-03.5)	TP-RD-A11-08(05.0-05.5)	TP-RD-A11-08(07.0-07.5)	TP-RD-A11-08(09.0-09.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-09(03.0-03.5)	TP-RD-A11-09(05.0-05.5)	TP-RD-A11-09(07.0-07.5)	TP-RD-A11-10(01.0-01.5)	TP-RD-A11-10(03.0-03.5)	TP-RD-A11-10(05.0-05.5)	TP-RD-A11-10(07.0-07.5)	TP-RD-A11-10(08.0-08.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-11(03.0-03.5)	TP-RD-A11-11(05.0-05.5)	TP-RD-A11-11(07.0-07.5)
Parent ID																																
Notes																																
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																											
PCBs																																
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																																
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																																
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11
Sample Date						10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
Sample ID						TP-RD-A11-06(3.0-03.5)	TP-RD-A11-06(05.0-05.5)	TP-RD-A11-06(07.0-07.5)	TP-RD-A11-06(08.0-09.0)	TP-RD-A11-08(01.0-01.5)	TP-RD-A11-08(03.0-03.5)	TP-RD-A11-08(05.0-05.5)	TP-RD-A11-08(07.0-07.5)	TP-RD-A11-08(09.0-09.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-09(03.0-03.5)	TP-RD-A11-09(05.0-05.5)	TP-RD-A11-09(07.0-07.5)	TP-RD-A11-10(01.0-01.5)	TP-RD-A11-10(03.0-03.5)	TP-RD-A11-10(05.0-05.5)	TP-RD-A11-10(07.0-07.5)	TP-RD-A11-10(08.0-08.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-11(03.0-03.5)	TP-RD-A11-11(05.0-05.5)	TP-RD-A11-11(07.0-07.5)
Parent ID																															
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
SVOCs continued																															
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																															
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																															
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																															
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11
						Sample Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
						Sample ID	TP-RD-A11-06(03.0-03.5)	TP-RD-A11-06(05.0-05.5)	TP-RD-A11-06(07.0-07.5)	TP-RD-A11-06(08.0-09.0)	TP-RD-A11-08(01.0-01.5)	TP-RD-A11-08(03.0-03.5)	TP-RD-A11-08(05.0-05.5)	TP-RD-A11-08(07.0-07.5)	TP-RD-A11-08(09.0-09.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-09(03.0-03.5)	TP-RD-A11-09(05.0-05.5)	TP-RD-A11-09(07.0-07.5)	TP-RD-A11-10(01.0-01.5)	TP-RD-A11-10(03.0-03.5)	TP-RD-A11-10(05.0-05.5)	TP-RD-A11-10(07.0-07.5)	TP-RD-A11-10(08.0-08.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-11(03.0-03.5)	TP-RD-A11-11(05.0-05.5)	TP-RD-A11-11(07.0-07.5)
						Parent ID										TP-RD-A11-09(01.0-01.5)										TP-RD-A11-11(01.0-01.5)				
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16
Sample Date						10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
Sample Depths						8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	6.0-6.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
Sample ID						TP-RD-A11-11(08.0-08.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-12(03.0-03.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-13(03.0-03.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-14(03.0-03.5)	TP-RD-A11-14(05.0-05.5)	BD102517	TP-RD-A11-14(06.0-06.5)	TP-RD-A11-14(06.0-06.5)	TP-RD-A11-14(07.0-07.5)	TP-RD-A11-14(08.5-09.0)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15(03.0-03.5)	TP-RD-A11-15(05.0-05.5)	TP-RD-A11-15(08.0-08.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-15A(03.0-03.5)	TP-RD-A11-15A(05.0-05.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-16(03.0-03.5)	TP-RD-A11-16(05.0-05.5)	TP-RD-A11-16(07.0-07.5)	TP-RD-A11-16(08.0-08.5)
Parent ID															TP-RD-A11-14(06.0-06.5)														
Notes																												
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																							
Explosives and Energetics																												
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 110	< 110	< 110	< 110	270	460	1100	220	200	880	480	150	160	**46000**	210	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 110	< 110	< 110	< 110	120	< 110	150	< 110	< 110	< 110	< 110	160	170	180	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	200	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 110	< 110	< 110	< 110	250	260	220	< 110	< 110	150	< 110	170	180	730	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 110	< 110	< 110	< 110	360	290	400	< 110	< 110	200	120	290	280	940	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110	< 110	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 110	< 110	< 110
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				95	88.1	88.7	87.8	88.4	88.1	88.2	95.1	89.7	89	90.6	89.9	86.5	87.6	96.9	88.4	90	94.8	98.4	86.4	86.7	89.8	89.7	88.8
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16
Sample Date						10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
Sample Depths						8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	6.0-6.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
Sample ID						TP-RD-A11-11(08.0-08.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-12(03.0-03.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-13(03.0-03.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-14(03.0-03.5)	TP-RD-A11-14(05.0-05.5)	BD102517	TP-RD-A11-14(06.0-06.5)	TP-RD-A11-14(07.0-07.5)	TP-RD-A11-14(08.5-09.0)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15(03.0-03.5)	TP-RD-A11-15(05.0-05.5)	TP-RD-A11-15(08.0-08.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-15A(03.0-03.5)	TP-RD-A11-15A(05.0-05.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-16(03.0-03.5)	TP-RD-A11-16(05.0-05.5)	TP-RD-A11-16(07.0-07.5)	TP-RD-A11-16(08.0-08.5)
Parent ID														TP-RD-A11-14(06.0-06.5)																
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16
Sample Date						10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
Sample Depths						8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	6.0-6.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
Sample ID						TP-RD-A11-11(08.0-08.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-12(03.0-03.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-13(03.0-03.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-14(03.0-03.5)	TP-RD-A11-14(05.0-05.5)	BD102517	TP-RD-A11-14(06.0-06.5)	TP-RD-A11-14(07.0-07.5)	TP-RD-A11-14(08.5-09.0)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15(03.0-03.5)	TP-RD-A11-15(05.0-05.5)	TP-RD-A11-15(08.0-08.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-15A(03.0-03.5)	TP-RD-A11-15A(05.0-05.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-16(03.0-03.5)	TP-RD-A11-16(05.0-05.5)	TP-RD-A11-16(07.0-07.5)	TP-RD-A11-16(08.0-08.5)
Parent ID															TP-RD-A11-14(06.0-06.5)															
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
SVOCs continued																															
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																															
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																															
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																															
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-11	TP-RD-A11-12	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16
						Sample Date	10/20/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
						Sample Depths	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	6.0-6.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
						Sample ID	TP-RD-A11-11(08.0-08.5)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-12(03.0-03.5)	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-13(03.0-03.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-14(03.0-03.5)	TP-RD-A11-14(05.0-05.5)	BD102517	TP-RD-A11-14(06.0-06.5)	TP-RD-A11-14(07.0-07.5)	TP-RD-A11-14(08.5-09.0)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15(03.0-03.5)	TP-RD-A11-15(05.0-05.5)	TP-RD-A11-15(08.0-08.5)	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-15A(03.0-03.5)	TP-RD-A11-15A(05.0-05.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-16(03.0-03.5)	TP-RD-A11-16(05.0-05.5)	TP-RD-A11-16(07.0-07.5)	TP-RD-A11-16(08.0-08.5)
						Parent ID										TP-RD-A11-14(06.0-06.5)															
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20A
Sample Date						10/26/2017	10/26/2017	10/26/2017	10/26/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017
Sample Depths						1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A11-17(01.0-01.5)	TP-RD-A11-17(03.0-03.5)	TP-RD-A11-17(05.0-05.5)	TP-RD-A11-17(07.0-07.5)	BD110317	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18(03.0-03.5)	TP-RD-A11-18(05.0-05.5)	TP-RD-A11-18(07.0-07.5)	TP-RD-A11-18(08.0-08.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-18A(03.0-03.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19(03.0-03.5)	TP-RD-A11-19(05.0-05.5)	TP-RD-A11-19(07.0-07.5)	TP-RD-A11-19(08.0-08.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-19A(03.0-03.5)	TP-RD-A11-19A(05.0-05.5)	TP-RD-A11-19A(07.0-07.5)	TP-RD-A11-19A(08.0-08.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20A(03.0-03.5)
Parent ID										TP-RD-A11-18(01.0-01.5)																				
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	7600	230	< 120	< 110	< 110	1600 J	6800	< 110	< 110	220	< 110	< 110	1600	900	1300	**24000**	14000	< 110	< 110	< 110	130	4900	< 120	1300
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	1800	150	< 120	< 110	140	120	280	< 110	< 110	< 110	< 110	< 110	980	740	550	270	380	< 110	< 110	< 110	< 110	< 100	< 120	< 120
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	3000	190	< 120	< 110	320	300	530	< 110	< 110	160	< 110	< 110	1100	800	480	300	490	< 110	< 110	< 110	< 110	< 100	< 120	< 120
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 1200 J-	< 130 J-	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 1200 J-	< 130 J-	< 120	< 110	< 110	< 110 J	< 120	< 110	< 110	< 110	< 110 J-	< 110 J-	< 110	< 110	< 110	110	< 100 J-	< 110 J-	< 110 J-	< 110 J-	< 110 J-	< 100 J-	< 120	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 1200	< 130	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 100	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				85.2	76.5	86.3	89.6	87.8	87.5	87	88.1	91.2	88.9	88.3	91.3	87.7	89.1	91.5	94.8	95.8	94.1	94.8	92.6	94.8	95.8	86.5	82.8
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20A
Sample Date						10/26/2017	10/26/2017	10/26/2017	10/26/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017
Sample Depths						1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A11-17(01.0-01.5)	TP-RD-A11-17(03.0-03.5)	TP-RD-A11-17(05.0-05.5)	TP-RD-A11-17(07.0-07.5)	BD110317	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18(03.0-03.5)	TP-RD-A11-18(05.0-05.5)	TP-RD-A11-18(07.0-07.5)	TP-RD-A11-18(08.0-08.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-18A(03.0-03.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19(03.0-03.5)	TP-RD-A11-19(05.0-05.5)	TP-RD-A11-19(07.0-07.5)	TP-RD-A11-19(08.0-08.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-19A(03.0-03.5)	TP-RD-A11-19A(05.0-05.5)	TP-RD-A11-19A(07.0-07.5)	TP-RD-A11-19A(08.0-08.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20A(03.0-03.5)
Parent ID										TP-RD-A11-18(01.0-01.5)																			
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20A
Sample Date						10/26/2017	10/26/2017	10/26/2017	10/26/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017
Sample Depths						1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A11-17(01.0-01.5)	TP-RD-A11-17(03.0-03.5)	TP-RD-A11-17(05.0-05.5)	TP-RD-A11-17(07.0-07.5)	BD110317	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18(03.0-03.5)	TP-RD-A11-18(05.0-05.5)	TP-RD-A11-18(07.0-07.5)	TP-RD-A11-18(08.0-08.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-18A(03.0-03.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19(03.0-03.5)	TP-RD-A11-19(05.0-05.5)	TP-RD-A11-19(07.0-07.5)	TP-RD-A11-19(08.0-08.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-19A(03.0-03.5)	TP-RD-A11-19A(05.0-05.5)	TP-RD-A11-19A(07.0-07.5)	TP-RD-A11-19A(08.0-08.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20A(03.0-03.5)
Parent ID						TP-RD-A11-18(01.0-01.5)																									
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
SVOCs continued																															
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																															
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																															
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																															
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20A
						Sample Date	10/26/2017	10/26/2017	10/26/2017	10/26/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017
						Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-A11-17(01.0-01.5)	TP-RD-A11-17(03.0-03.5)	TP-RD-A11-17(05.0-05.5)	TP-RD-A11-17(07.0-07.5)	BD110317	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18(03.0-03.5)	TP-RD-A11-18(05.0-05.5)	TP-RD-A11-18(07.0-07.5)	TP-RD-A11-18(08.0-08.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-18A(03.0-03.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19(03.0-03.5)	TP-RD-A11-19(05.0-05.5)	TP-RD-A11-19(07.0-07.5)	TP-RD-A11-19(08.0-08.5)	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-19A(03.0-03.5)	TP-RD-A11-19A(05.0-05.5)	TP-RD-A11-19A(07.0-07.5)	TP-RD-A11-19A(08.0-08.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20A(03.0-03.5)
						Parent ID	TP-RD-A11-18(01.0-01.5)																							
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A11-7A
Sample Date						11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft
Sample ID						TP-RD-A11-20A(05.0-05.5)	TP-RD-A11-20A(07.0-07.5)	TP-RD-A11-20A(08.0-08.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-20C(03.0-03.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-21(03.0-03.5)	TP-RD-A11-21(05.0-05.5)	TP-RD-A11-21(07.0-07.5)	TP-RD-A11-21(09.0-09.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-22(02.0-02.5)	TP-RD-A11-22(04.0-04.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-23(02.0-02.5)	TP-RD-A11-23(04.0-04.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-3A(03.0-03.5)	TP-RD-A11-3A(05.0-05.5)	TP-RD-A11-3A(07.0-07.5)	TP-RD-A11-3A(08.5-09.0)	BD101317	TP-RD-A11-7A(01.0-01.5)
Parent ID																													TP-RD-A11-7A(03.0-03.5)	
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	170	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 120	< 110	< 110	< 110 J-	< 120 J-	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				82.1	92.2	90.5	87.5	84.6	85.6	84.7	88.8	91	89.6	86.6	85.6	86.2	83.8	85.5	88.1	81.5	90	87	91.2	90.4	91.6	87.1	86.7	
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A11-7A
Sample Date						11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft
Sample ID						TP-RD-A11-20A(05.0-05.5)	TP-RD-A11-20A(07.0-07.5)	TP-RD-A11-20A(08.0-08.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-20C(03.0-03.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-21(03.0-03.5)	TP-RD-A11-21(05.0-05.5)	TP-RD-A11-21(07.0-07.5)	TP-RD-A11-21(09.0-09.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-22(02.0-02.5)	TP-RD-A11-22(04.0-04.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-23(02.0-02.5)	TP-RD-A11-23(04.0-04.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-3A(03.0-03.5)	TP-RD-A11-3A(05.0-05.5)	TP-RD-A11-3A(07.0-07.5)	TP-RD-A11-3A(08.5-09.0)	BD101317	TP-RD-A11-7A(01.0-01.5)
Parent ID																													TP-RD-A11-7A(03.0-03.5)	
Notes																																
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																											
PCBs																																
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																																
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																																
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A11-7A
						Sample Date	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017
						Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-A11-20A(05.0-05.5)	TP-RD-A11-20A(07.0-07.5)	TP-RD-A11-20A(08.0-08.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-20C(03.0-03.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-21(03.0-03.5)	TP-RD-A11-21(05.0-05.5)	TP-RD-A11-21(07.0-07.5)	TP-RD-A11-21(09.0-09.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-22(02.0-02.5)	TP-RD-A11-22(04.0-04.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-23(02.0-02.5)	TP-RD-A11-23(04.0-04.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-3A(03.0-03.5)	TP-RD-A11-3A(05.0-05.5)	TP-RD-A11-3A(07.0-07.5)	TP-RD-A11-3A(08.5-09.0)	BD101317	TP-RD-A11-7A(01.0-01.5)
						Parent ID																								TP-RD-A11-7A(03.0-03.5)	
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
SVOCs continued																															
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																															
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																															
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																															
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-20C	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-24	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A11-7A
						Sample Date	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017
						Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-A11-20A(05.0-05.5)	TP-RD-A11-20A(07.0-07.5)	TP-RD-A11-20A(08.0-08.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-20C(03.0-03.5)	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-21(03.0-03.5)	TP-RD-A11-21(05.0-05.5)	TP-RD-A11-21(07.0-07.5)	TP-RD-A11-21(09.0-09.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-22(02.0-02.5)	TP-RD-A11-22(04.0-04.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-23(02.0-02.5)	TP-RD-A11-23(04.0-04.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-3A(03.0-03.5)	TP-RD-A11-3A(05.0-05.5)	TP-RD-A11-3A(07.0-07.5)	TP-RD-A11-3A(08.5-09.0)	BD101317	TP-RD-A11-7A(01.0-01.5)
						Parent ID																								TP-RD-A11-7A(03.0-03.5)	
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02	TP-RD-A12-02A	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-04
Sample Date						10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/6/2017	10/6/2017	10/11/2017	10/11/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A11-7A(03.0-03.5)	TP-RD-A11-7A(05.0-05.5)	TP-RD-A11-7A(07.0-07.5)	TP-RD-A11-7A(08.5-09.0)	BD101117	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-01(03.0-03.5)	TP-RD-A12-01(05.0-05.5)	TP-RD-A12-01(07.0-07.5)	TP-RD-A12-01(09.0-09.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02(02.0-02.5)	TP-RD-A12-02A(00.5-01.0)	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03(03.0-03.5)	TP-RD-A12-03(05.0-05.5)	TP-RD-A12-03(07.0-07.5)	TP-RD-A12-03(09.0-09.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-03A(03.0-03.5)	TP-RD-A12-03A(05.0-05.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-04(03.0-03.5)
Parent ID						TP-RD-A12-01(03.0-03.5)																									
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	460	< 110	< 110	< 120	< 110	310	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	520	< 110	< 110	< 120	< 110	200	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	650	< 110	< 110	< 120	< 110	210	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				89.2	91.8	91.2	93.4	91.7	91.1	91.2	91.9	89.9	87.8	89	90.7	88.1	86.6	95	87.5	90.1	88.6	94	85.9	90.1	92.7	89.5	87.6
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02	TP-RD-A12-02A	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-04
Sample Date						10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/6/2017	10/6/2017	10/11/2017	10/11/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A11-7A(03.0-03.5)	TP-RD-A11-7A(05.0-05.5)	TP-RD-A11-7A(07.0-07.5)	TP-RD-A11-7A(08.5-09.0)	BD101117	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-01(03.0-03.5)	TP-RD-A12-01(05.0-05.5)	TP-RD-A12-01(07.0-07.5)	TP-RD-A12-01(09.0-09.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02(02.0-02.5)	TP-RD-A12-02A(00.5-01.0)	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03(03.0-03.5)	TP-RD-A12-03(05.0-05.5)	TP-RD-A12-03(07.0-07.5)	TP-RD-A12-03(09.0-09.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-03A(03.0-03.5)	TP-RD-A12-03A(05.0-05.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-04(03.0-03.5)
Parent ID						TP-RD-A12-01(03.0-03.5)																								
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02	TP-RD-A12-02A	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-04
Sample Date						10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/6/2017	10/6/2017	10/11/2017	10/11/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A11-7A(03.0-03.5)	TP-RD-A11-7A(05.0-05.5)	TP-RD-A11-7A(07.0-07.5)	TP-RD-A11-7A(08.5-09.0)	BD101117	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-01(03.0-03.5)	TP-RD-A12-01(05.0-05.5)	TP-RD-A12-01(07.0-07.5)	TP-RD-A12-01(09.0-09.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02(02.0-02.5)	TP-RD-A12-02A(00.5-01.0)	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03(03.0-03.5)	TP-RD-A12-03(05.0-05.5)	TP-RD-A12-03(07.0-07.5)	TP-RD-A12-03(09.0-09.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-03A(03.0-03.5)	TP-RD-A12-03A(05.0-05.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-04(03.0-03.5)
Parent ID						TP-RD-A12-01(03.0-03.5)																								
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02	TP-RD-A12-02A	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-04
						Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/6/2017	10/11/2017	10/11/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-A11-7A(03.0-03.5)	TP-RD-A11-7A(05.0-05.5)	TP-RD-A11-7A(07.0-07.5)	TP-RD-A11-7A(08.5-09.0)	BD101117	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-01(03.0-03.5)	TP-RD-A12-01(05.0-05.5)	TP-RD-A12-01(07.0-07.5)	TP-RD-A12-01(09.0-09.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02(02.0-02.5)	TP-RD-A12-02A(00.5-01.0)	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03(03.0-03.5)	TP-RD-A12-03(05.0-05.5)	TP-RD-A12-03(07.0-07.5)	TP-RD-A12-03(09.0-09.5)	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-03A(03.0-03.5)	TP-RD-A12-03A(05.0-05.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-A12-04(03.0-03.5)
						Parent ID					TP-RD-A12-01(03.0-03.5)																				
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A12-04	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-06	TP-RD-A12-06	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-03	TP-RD-A13-03	TP-RD-A13-04	TP-RD-A13-04
Sample Date						10/26/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
Sample Depths						5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A12-04(05.0-05.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A12-05(03.0-03.5)	TP-RD-A12-05(05.0-05.5)	TP-RD-A12-05(07.0-07.5)	TP-RD-A12-05(08.0-08.5)	TP-RD-A12-06(03.0-03.5)	TP-RD-A12-06(05.0-05.5)	BD110117	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-01A(03.0-03.5)	TP-RD-A13-01A(05.0-05.5)	TP-RD-A13-01A(07.0-07.5)	TP-RD-A13-01A(08.0-08.5)	BD110217	TP-RD-A13-02(01.0-01.5)	TP-RD-A13-02(03.0-03.5)	TP-RD-A13-02(05.0-05.5)	TP-RD-A13-02(07.0-07.5)	TP-RD-A13-02(08.0-08.5)	TP-RD-A13-03(03.0-03.5)	TP-RD-A13-03(05.0-05.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-04(03.0-03.5)
Parent ID															TP-RD-A13-01A(03.0-03.5)									TP-RD-A13-02(07.0-07.5)						
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 120	< 120	< 110	< 100	< 100	< 110	140	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	280	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 120	< 120	< 120	< 110	< 100	< 100	2300	1700	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	**43000**	17000	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	250	120	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 120	< 120	< 120	< 110	< 100	< 100	430	280	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	690	680 J	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 120	< 120	< 120	< 110	< 100	< 100	480	210	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	850	850 J	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 120	< 120 J-	< 120 J-	< 110 J-	< 100 J-	< 100 J-	< 110 J-	< 110 J-	< 130	< 140 J-	< 130 J	< 120 J-	< 100 J-	< 100 J-	< 110 J-	< 120 J-	< 120 J-	< 120 J-	< 110 J	< 110 J-	< 110	< 110 J	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110 J	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 120	< 120	< 110	< 100	< 100	< 110	< 110	< 130	< 140	< 130	< 120	< 100	< 100	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				86.8	80.6	82.5	93.8	95.5	95.8	89.8	90.7	78.4	73	78.8	85.1	95.3	95.4	91	83.7	83.3	81.6	90.6	91.2	90.7	92.8	90.1	93.5
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A12-04	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-06	TP-RD-A12-06	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-03	TP-RD-A13-03	TP-RD-A13-04	TP-RD-A13-04
Sample Date						10/26/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
Sample Depths						5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A12-04(5.0-05.5)	TP-RD-A12-05(01.0-01.5)	TP-RD-A12-05(03.0-03.5)	TP-RD-A12-05(05.0-05.5)	TP-RD-A12-05(07.0-07.5)	TP-RD-A12-05(08.0-08.5)	TP-RD-A12-06(03.0-03.5)	TP-RD-A12-06(05.0-05.5)	BD110117	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-01A(03.0-03.5)	TP-RD-A13-01A(05.0-05.5)	TP-RD-A13-01A(07.0-07.5)	TP-RD-A13-01A(08.0-08.5)	BD110217	TP-RD-A13-02(01.0-01.5)	TP-RD-A13-02(03.0-03.5)	TP-RD-A13-02(05.0-05.5)	TP-RD-A13-02(07.0-07.5)	TP-RD-A13-02(08.0-08.5)	TP-RD-A13-03(03.0-03.5)	TP-RD-A13-03(05.0-05.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-04(03.0-03.5)
Parent ID															TP-RD-A13-01A(03.0-03.5)						TP-RD-A13-02(07.0-07.5)									
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A12-04	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-06	TP-RD-A12-06	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-03	TP-RD-A13-03	TP-RD-A13-04	TP-RD-A13-04
Sample Date						10/26/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
Sample Depths						5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-A12-04(5.0-5.5)	TP-RD-A12-05(1.0-1.5)	TP-RD-A12-05(3.0-3.5)	TP-RD-A12-05(5.0-5.5)	TP-RD-A12-05(7.0-7.5)	TP-RD-A12-05(8.0-8.5)	TP-RD-A12-06(3.0-3.5)	TP-RD-A12-06(5.0-5.5)	BD110117	TP-RD-A13-01A(1.0-1.5)	TP-RD-A13-01A(3.0-3.5)	TP-RD-A13-01A(5.0-5.5)	TP-RD-A13-01A(7.0-7.5)	TP-RD-A13-01A(8.0-8.5)	BD110217	TP-RD-A13-02(1.0-1.5)	TP-RD-A13-02(3.0-3.5)	TP-RD-A13-02(5.0-5.5)	TP-RD-A13-02(7.0-7.5)	TP-RD-A13-02(8.0-8.5)	TP-RD-A13-03(3.0-3.5)	TP-RD-A13-03(5.0-5.5)	TP-RD-A13-04(1.0-1.5)	TP-RD-A13-04(3.0-3.5)
Parent ID														TP-RD-A13-01A(3.0-3.5)						TP-RD-A13-02(7.0-7.5)									
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A12-04	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A12-06	TP-RD-A12-06	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-03	TP-RD-A13-03	TP-RD-A13-04	TP-RD-A13-04
						Sample Date	10/26/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017
						Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-A12-04(5.0-5.5)	TP-RD-A12-05(1.0-1.5)	TP-RD-A12-05(3.0-3.5)	TP-RD-A12-05(5.0-5.5)	TP-RD-A12-05(7.0-7.5)	TP-RD-A12-05(8.0-8.5)	TP-RD-A12-06(3.0-3.5)	TP-RD-A12-06(5.0-5.5)	BD110117	TP-RD-A13-01A(1.0-1.5)	TP-RD-A13-01A(3.0-3.5)	TP-RD-A13-01A(5.0-5.5)	TP-RD-A13-01A(7.0-7.5)	TP-RD-A13-01A(8.0-8.5)	BD110217	TP-RD-A13-02(1.0-1.5)	TP-RD-A13-02(3.0-3.5)	TP-RD-A13-02(5.0-5.5)	TP-RD-A13-02(7.0-7.5)	TP-RD-A13-02(8.0-8.5)	TP-RD-A13-03(3.0-3.5)	TP-RD-A13-03(5.0-5.5)	TP-RD-A13-04(1.0-1.5)	TP-RD-A13-04(3.0-3.5)
						Parent ID										TP-RD-A13-01A(03.0-03.5)						TP-RD-A13-02(07.0-07.5)										
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A13-05	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-06	TP-RD-A13-07	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06
						Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017	10/3/2017	10/16/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017
						Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.5-5.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
						Sample ID	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-05(03.0-03.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-06(03.0-03.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-A13-07(03.0-03.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-01(03.0-03.5)	TP-RD-B10-01(04.0-05.0)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-02(03.0-03.5)	TP-RD-B10-02(04.0-05.0)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-03(03.0-03.5)	TP-RD-B10-03(04.0-05.0)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-04(03.0-03.5)	TP-RD-B10-04(04.5-0.50)	TP-RD-B10-05(01.0-01.5)	TP-RD-B10-05(02.0-02.5)	TP-RD-B10-05(03.0-03.5)	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-06(03.0-03.5)	TP-RD-B10-06(05.0-05.5)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	300	570	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110 J+	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	120	160	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110 J+	< 110	< 110	< 110 J+	< 110	< 120	< 120 J+	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110 J+	< 110	< 110 J+	< 110	< 110 J+	< 110 J+	< 120 J+	< 120 J+	< 110 J+	< 110 J+	< 120 J+	< 110 J+	< 110 J+	< 110	< 110	< 110	< 110	< 110	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 120 J+	< 120 J+	< 110 J+	< 110 J+	< 120 J+	< 110 J+	< 110 J+	< 110 J	< 110	< 110	< 110	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 120 J+	< 120 J+	< 110 J+	< 110 J+	< 120 J+	< 110 J+	< 110 J+	< 110	< 110	< 110	< 110	< 110	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 120 J+	< 120 J+	< 110 J+	< 110 J+	< 120 J+	< 110 J+	< 110 J+	< 110	< 110	< 110	< 110	< 110	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 120
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																														
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				89.6	94.4	85.6	91.7	93.3	94.5	88.2	88.7	87.2	89.2	88.8	89.7	87	86.9	84.6	87.6	88.5	86.4	89.7	88.4	90.5	88.9	91.8	84.1	
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A13-05	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-06	TP-RD-A13-07	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06
Sample Date						12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017	10/3/2017	10/16/2017	10/4/2017	10/4/2017	10/4/2017
Sample Depths						1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.5-5.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
Sample ID						TP-RD-A13-05(01.0-01.5)	TP-RD-A13-05(03.0-03.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-06(03.0-03.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-A13-07(03.0-03.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-01(03.0-03.5)	TP-RD-B10-01(04.0-05.0)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-02(03.0-03.5)	TP-RD-B10-02(04.0-05.0)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-03(03.0-03.5)	TP-RD-B10-03(04.0-05.0)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-04(03.0-03.5)	TP-RD-B10-04(04.5-0.50)	TP-RD-B10-05(01.0-01.5)	TP-RD-B10-05(02.0-02.5)	TP-RD-B10-05(03.0-03.5)	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-06(03.0-03.5)	TP-RD-B10-06(05.0-05.5)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-A13-05	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-06	TP-RD-A13-07	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06
Sample Date						12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017	10/3/2017	10/16/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017
Sample Depths						1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.5-5.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
Sample ID						TP-RD-A13-05(01.0-01.5)	TP-RD-A13-05(03.0-03.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-06(03.0-03.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-A13-07(03.0-03.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-01(03.0-03.5)	TP-RD-B10-01(04.0-05.0)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-02(03.0-03.5)	TP-RD-B10-02(04.0-05.0)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-03(03.0-03.5)	TP-RD-B10-03(04.0-05.0)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-04(03.0-03.5)	TP-RD-B10-04(04.5-0.50)	TP-RD-B10-05(01.0-01.5)	TP-RD-B10-05(02.0-02.5)	TP-RD-B10-05(03.0-03.5)	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-06(03.0-03.5)	TP-RD-B10-06(05.0-05.5)
Parent ID																														
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-A13-05	TP-RD-A13-05	TP-RD-A13-06	TP-RD-A13-06	TP-RD-A13-07	TP-RD-A13-07	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06
						Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/3/2017	10/3/2017	10/16/2017	10/4/2017	10/4/2017	10/4/2017
						Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.5-5.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
						Sample ID	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-05(03.0-03.5)	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-06(03.0-03.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-A13-07(03.0-03.5)	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-01(03.0-03.5)	TP-RD-B10-01(04.0-05.0)	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-02(03.0-03.5)	TP-RD-B10-02(04.0-05.0)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-03(03.0-03.5)	TP-RD-B10-03(04.0-05.0)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-04(03.0-03.5)	TP-RD-B10-04(04.5-0.50)	TP-RD-B10-05(01.0-01.5)	TP-RD-B10-05(02.0-02.5)	TP-RD-B10-05(03.0-03.5)	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-06(03.0-03.5)	TP-RD-B10-06(05.0-05.5)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12
Sample Date						10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/17/2017	10/17/2017	10/17/2017	10/3/2017	10/3/2017	10/10/2017	10/17/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/3/2017	10/10/2017
Sample Depths						6.0-6.5 ft	2.5-3.0 ft	1.0-1.5 ft	2.5-3.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.5-10.8 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	3.5-4.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	3.5-4.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.5-2.0 ft
Sample ID						TP-RD-B10-06(06.0-06.5)	BD100317A	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-07(02.5-03.0)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-08(03.0-03.5)	TP-RD-B10-08(05.0-05.5)	TP-RD-B10-08(07.0-07.5)	TP-RD-B10-08(09.0-09.5)	TP-RD-B10-08(10.5.0-10.8)	TP-RD-B10-09(01.0-01.5)	TP-RD-B10-09(02.0-02.5)	TP-RD-B10-09(03.0-03.5)	TP-RD-B10-09(03.5-04.0)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-10(03.5-04.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-11(03.0-03.5)	TP-RD-B10-11(05.0-05.5)	TP-RD-B10-11(06.0-06.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)
Parent ID						TP-RD-B10-07(02.5-03.0)															TP-RD-B10-10(01.0-01.5)									
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	240	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110 J	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	**190000**	700	1500	< 110	410	890	< 110	1400	1200 J	< 120	1600	< 110	< 120	< 110	< 110	860	**1700000**
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 120	< 120	< 120	< 120	< 120	< 120	**910**	< 110	< 110	< 110	< 110	< 110	< 110	480	180 J	160	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 120	< 120	< 120	< 120	< 120	< 120	210	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 120	< 120	< 120	< 120	< 120	< 120	**8800**	< 110	160	150	140 J-	160	< 110	650	350 J	< 120	620 J-	< 110	< 120	< 110	< 110	370	< 120000
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 120	< 120	< 120	160	< 120	< 120	**25000**	150	220	150	140 J-	160	< 110	1000	590 J	< 120	810 J-	< 110	< 120	< 110	< 110	310	< 120000
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110 J+	< 110	< 110	< 110	< 110 J+	< 110 J+	< 120	< 110	< 110	< 120	< 110	< 110	< 110 J+	< 120000
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110 J+	< 110	< 110	< 110	< 110 J+	< 110 J	< 120	< 110	< 110	< 120	< 110	< 110	< 110 J+	< 120000
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110 J+	< 110	< 110	< 110	< 110 J+	< 110 J	< 120	< 110	< 110	< 120	< 110	< 110	< 110 J+	< 120000
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 120000
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				89.9	85.6	84.9	84.9	83.9	82.3	85.7	86.3	90.8	93.9	89.7	87.6	88.2	88.9	87.7	88	85.2	87.9	87.1	85.7	89.8	87.1	88	84.4
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12
Sample Date						10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/17/2017	10/17/2017	10/3/2017	10/3/2017	10/10/2017	10/17/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/3/2017	10/10/2017
Sample Depths						6.0-6.5 ft	2.5-3.0 ft	1.0-1.5 ft	2.5-3.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.5-10.8 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	3.5-4.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	3.5-4.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.5-2.0 ft
Sample ID						TP-RD-B10-06(06.0-06.5)	BD100317A	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-07(02.5-03.0)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-08(03.0-03.5)	TP-RD-B10-08(05.0-05.5)	TP-RD-B10-08(07.0-07.5)	TP-RD-B10-08(09.0-09.5)	TP-RD-B10-08(10.5.0-10.8)	TP-RD-B10-09(01.0-01.5)	TP-RD-B10-09(02.0-02.5)	TP-RD-B10-09(03.0-03.5)	TP-RD-B10-09(03.5-04.0)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-10(03.5-04.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-11(03.0-03.5)	TP-RD-B10-11(05.0-05.5)	TP-RD-B10-11(06.0-06.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)
Parent ID						TP-RD-B10-07(02.5-03.0)															TP-RD-B10-10(01.0-01.5)									
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12
Sample Date						10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/17/2017	10/17/2017	10/3/2017	10/3/2017	10/10/2017	10/17/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/3/2017	10/10/2017
Sample Depths						6.0-6.5 ft	2.5-3.0 ft	1.0-1.5 ft	2.5-3.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.5-10.8 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	3.5-4.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	3.5-4.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.5-2.0 ft
Sample ID						TP-RD-B10-06(06.0-06.5)	BD100317A	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-07(02.5-03.0)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-08(03.0-03.5)	TP-RD-B10-08(05.0-05.5)	TP-RD-B10-08(07.0-07.5)	TP-RD-B10-08(09.0-09.5)	TP-RD-B10-08(10.5.0-10.8)	TP-RD-B10-09(01.0-01.5)	TP-RD-B10-09(02.0-02.5)	TP-RD-B10-09(03.0-03.5)	TP-RD-B10-09(03.5-04.0)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-10(03.5-04.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-11(03.0-03.5)	TP-RD-B10-11(05.0-05.5)	TP-RD-B10-11(06.0-06.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)
Parent ID						TP-RD-B10-07(02.5-03.0)															TP-RD-B10-10(01.0-01.5)									
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-12	TP-RD-B10-12
						Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	10/17/2017	10/17/2017	10/3/2017	10/3/2017	10/10/2017	10/17/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/3/2017	10/10/2017
						Sample Depths	6.0-6.5 ft	2.5-3.0 ft	1.0-1.5 ft	2.5-3.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.5-10.8 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	3.5-4.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	3.5-4.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.5-2.0 ft
						Sample ID	TP-RD-B10-06(06.0-06.5)	BD100317A	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-07(02.5-03.0)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-08(03.0-03.5)	TP-RD-B10-08(05.0-05.5)	TP-RD-B10-08(07.0-07.5)	TP-RD-B10-08(09.0-09.5)	TP-RD-B10-08(10.5.0-10.8)	TP-RD-B10-09(01.0-01.5)	TP-RD-B10-09(02.0-02.5)	TP-RD-B10-09(03.0-03.5)	TP-RD-B10-09(03.5-04.0)	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-10(03.5-04.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-11(03.0-03.5)	TP-RD-B10-11(05.0-05.5)	TP-RD-B10-11(06.0-06.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)
						Parent ID	TP-RD-B10-07(02.5-03.0)														TP-RD-B10-10(01.0-01.5)									
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B10-16	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01B
						Sample Date	10/10/2017	10/16/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/12/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/16/2017	10/16/2017	10/25/2017
						Sample Depths	2.5-3.0 ft	3.5-4.0 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B10-12(02.5-03.0)	TP-RD-B10-12(03.5-04.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-13(10.0-10.5)	TP-RD-B10-13(03.0-03.5)	TP-RD-B10-13(05.0-05.5)	TP-RD-B10-13(07.0-07.5)	TP-RD-B10-13(09.0-09.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14(02.0-02.5)	TP-RD-B10-14A(01.0-01.5)	BD110617	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-15(02.0-02.5)	TP-RD-B10-16(01.0-01.5)	TP-RD-B10-16(02.0-02.5)	BD100617	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01(03.0-03.5)	TP-RD-B11-01(04.0-04.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01B(02.0-02.5)	TP-RD-B11-01B(03.0-03.5)
						Parent ID											TP-RD-B10-15(02.0-02.5)							TP-RD-B11-01(04.0-04.5)							
						Notes																										
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	14000	140	< 110	< 100	< 100	< 110	< 100	< 100	260	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	1100	130	< 110	1600	< 110	360 J	560
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	500	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	470	< 110	< 110	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	790	320	< 110	< 100	< 100	< 110	< 100	< 100	120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	900	< 110	< 110	480
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	740	270	< 110	< 100	< 100	< 110	< 100	< 100	250	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	150	< 110	< 110	1200	< 110	< 110	420
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110 J	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120 J+	< 110 J+	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120 J+	< 110	< 110	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 120	< 120 J+	< 110	< 100	< 100	< 110	< 100	< 100	< 120 J+	< 110 J+	< 110	< 120 J-	< 120 J-	< 120 J	< 120 J	< 120 J-	< 120	< 120	< 110	< 110	< 120 J+	< 110	< 110 J	< 120
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120 J+	< 110 J+	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120 J+	< 110	< 110	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 120	< 110	< 100	< 100	< 110	< 100	< 100	< 120	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																														
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				84.4	85.9	92.6	97.4	98.2	94.7	98	97.1	85.7	92.4	92.8	83.9	85.7	84.4	85.1	84.2	84.2	83.3	87.9	87.9	84.8	87.4	87.9	86.9
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B10-16	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01B
						Sample Date	10/10/2017	10/16/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/12/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/16/2017	10/16/2017	10/25/2017
						Sample Depths	2.5-3.0 ft	3.5-4.0 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B10-12(02.5-03.0)	TP-RD-B10-12(03.5-04.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-13(10.0-10.5)	TP-RD-B10-13(03.0-03.5)	TP-RD-B10-13(05.0-05.5)	TP-RD-B10-13(07.0-07.5)	TP-RD-B10-13(09.0-09.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14(02.0-02.5)	TP-RD-B10-14A(01.0-01.5)	BD110617	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-15(02.0-02.5)	TP-RD-B10-16(01.0-01.5)	TP-RD-B10-16(02.0-02.5)	BD100617	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01(03.0-03.5)	TP-RD-B11-01(04.0-04.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01B(02.0-02.5)	TP-RD-B11-01B(03.0-03.5)
						Parent ID												TP-RD-B10-15(02.0-02.5)						TP-RD-B11-01(04.0-04.5)							
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
PCBs																															
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																															
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																															
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B10-16	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01B
Sample Date						10/10/2017	10/16/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/12/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/16/2017	10/16/2017	10/25/2017
Sample Depths						2.5-3.0 ft	3.5-4.0 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B10-12(02.5-03.0)	TP-RD-B10-12(03.5-04.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-13(10.0-10.5)	TP-RD-B10-13(03.0-03.5)	TP-RD-B10-13(05.0-05.5)	TP-RD-B10-13(07.0-07.5)	TP-RD-B10-13(09.0-09.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14(02.0-02.5)	TP-RD-B10-14A(01.0-01.5)	BD110617	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-15(02.0-02.5)	TP-RD-B10-16(01.0-01.5)	TP-RD-B10-16(02.0-02.5)	BD100617	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01(03.0-03.5)	TP-RD-B11-01(04.0-04.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01B(02.0-02.5)	TP-RD-B11-01B(03.0-03.5)
Parent ID																	TP-RD-B10-15(02.0-02.5)						TP-RD-B11-01(04.0-04.5)							
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-14	TP-RD-B10-14	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B10-16	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01B
						Sample Date	10/10/2017	10/16/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/12/2017	10/12/2017	10/16/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/16/2017	10/16/2017	10/25/2017
						Sample Depths	2.5-3.0 ft	3.5-4.0 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-4.5 ft	1.0-1.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B10-12(02.5-03.0)	TP-RD-B10-12(03.5-04.0)	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-13(10.0-10.5)	TP-RD-B10-13(03.0-03.5)	TP-RD-B10-13(05.0-05.5)	TP-RD-B10-13(07.0-07.5)	TP-RD-B10-13(09.0-09.5)	TP-RD-B10-14(01.0-01.5)	TP-RD-B10-14(02.0-02.5)	TP-RD-B10-14A(01.0-01.5)	BD110617	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-15(02.0-02.5)	TP-RD-B10-16(01.0-01.5)	TP-RD-B10-16(02.0-02.5)	BD100617	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01(03.0-03.5)	TP-RD-B11-01(04.0-04.5)	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01B(02.0-02.5)	TP-RD-B11-01B(03.0-03.5)
						Parent ID											TP-RD-B10-15(02.0-02.5)							TP-RD-B11-01(04.0-04.5)							
						Notes																										
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05A
Sample Date						10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/16/2017	10/16/2017
Sample Depths						5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B11-01B(05.0-05.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-01C(03.0-03.5)	TP-RD-B11-01C(05.0-05.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-03(03.0-03.5)	TP-RD-B11-03(05.0-05.5)	TP-RD-B11-03(07.0-07.5)	TP-RD-B11-03(08.5-09.0)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04(03.0-03.5)	TP-RD-B11-04(05.0-05.5)	TP-RD-B11-04(07.0-07.5)	TP-RD-B11-04(08.5-09.0)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-04A(02.0-02.5)	TP-RD-B11-04A(03.0-03.5)	TP-RD-B11-04A(04.0-04.5)	TP-RD-B11-04A(05.0-05.5)	TP-RD-B11-04A(07.0-07.5)	TP-RD-B11-04A(08.5-09.0)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05A(03.0-03.5)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	2200	140	< 110	330	< 120	< 110	< 110	< 110	< 110	< 110	1400	< 110	< 110	< 110	< 120	830	2100	340	610	**2300000**	11000	**25000**	340	720
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	670	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	340	< 110	< 110	< 110	< 120	220	2600 J-	340	1300	< 120000	1000	1500	**6300**	350
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	700	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	440	< 110	< 110	< 110	< 120	290	3300 J	410	1500	< 120000	890	1100	**12000**	470
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 120 J	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 120	< 120	< 110	< 110	< 120 J	< 110	< 110	< 110	< 110	< 110	< 120 J+	< 110 J+	< 110 J+	< 110 J+	< 120 J	< 110	< 110	< 110 J+	< 120	< 120000 J+	< 110	< 120	< 120	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120	< 120	< 110	< 110	< 120	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 110 J+	< 120 J+	< 110 J+	< 110 J+	< 110 J+	< 120 J	< 110	< 110	< 110	< 120	< 120000 J+	< 110	< 120	< 120	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 120	< 120000	< 110	< 120	< 120	< 110
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				86	84.1	87.2	88.8	85.8	87.3	90.2	89.3	91.5	93.7	83.7	89.4	90	92	85.5	87.1	89.5	88.8	84	86.2	87.9	85.2	85.2	87.2
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05A
Sample Date						10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/16/2017	10/16/2017
Sample Depths						5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B11-01B(05.0-05.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-01C(03.0-03.5)	TP-RD-B11-01C(05.0-05.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-03(03.0-03.5)	TP-RD-B11-03(05.0-05.5)	TP-RD-B11-03(07.0-07.5)	TP-RD-B11-03(08.5-09.0)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04(03.0-03.5)	TP-RD-B11-04(05.0-05.5)	TP-RD-B11-04(07.0-07.5)	TP-RD-B11-04(08.5-09.0)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-04A(02.0-02.5)	TP-RD-B11-04A(03.0-03.5)	TP-RD-B11-04A(04.0-04.5)	TP-RD-B11-04A(05.0-05.5)	TP-RD-B11-04A(07.0-07.5)	TP-RD-B11-04A(08.5-09.0)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05A(03.0-03.5)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05A
						Sample Date	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/16/2017	10/16/2017
						Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B11-01B(05.0-05.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-01C(03.0-03.5)	TP-RD-B11-01C(05.0-05.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-03(03.0-03.5)	TP-RD-B11-03(05.0-05.5)	TP-RD-B11-03(07.0-07.5)	TP-RD-B11-03(08.5-09.0)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04(03.0-03.5)	TP-RD-B11-04(05.0-05.5)	TP-RD-B11-04(07.0-07.5)	TP-RD-B11-04(08.5-09.0)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-04A(02.0-02.5)	TP-RD-B11-04A(03.0-03.5)	TP-RD-B11-04A(04.0-04.5)	TP-RD-B11-04A(05.0-05.5)	TP-RD-B11-04A(07.0-07.5)	TP-RD-B11-04A(08.5-09.0)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05A(03.0-03.5)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-05A	TP-RD-B11-05A
						Sample Date	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/16/2017	10/16/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017	10/16/2017	10/16/2017
						Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B11-01B(05.0-05.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-01C(03.0-03.5)	TP-RD-B11-01C(05.0-05.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-03(03.0-03.5)	TP-RD-B11-03(05.0-05.5)	TP-RD-B11-03(07.0-07.5)	TP-RD-B11-03(08.5-09.0)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04(03.0-03.5)	TP-RD-B11-04(05.0-05.5)	TP-RD-B11-04(07.0-07.5)	TP-RD-B11-04(08.5-09.0)	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-04A(02.0-02.5)	TP-RD-B11-04A(03.0-03.5)	TP-RD-B11-04A(04.0-04.5)	TP-RD-B11-04A(05.0-05.5)	TP-RD-B11-04A(07.0-07.5)	TP-RD-B11-04A(08.5-09.0)	TP-RD-B11-05A(01.0-01.5)	TP-RD-B11-05A(03.0-03.5)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10
Sample Date						10/16/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
Sample Depths						5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	
Sample ID						TP-RD-B11-05A(05.0-05.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05B(03.0-03.5)	TP-RD-B11-05B(05.0-05.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-06(03.0-03.5)	TP-RD-B11-06(05.0-05.5)	TP-RD-B11-06(07.0-07.5)	TP-RD-B11-06(09.0-09.5)	TP-RD-B11-07(03.0-03.5)	TP-RD-B11-07(01.0-01.5)	BD110717A	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-08(03.0-03.5)	TP-RD-B11-08(05.0-05.5)	TP-RD-B11-08(07.0-07.5)	TP-RD-B11-08(09.0-09.5)	TP-RD-B11-09(01.0-01.5)	TP-RD-B11-09(02.0-02.5)	TP-RD-B11-09(04.0-04.5)	BD112917A	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-10(02.0-02.5)	
Parent ID																		TP-RD-B11-08(09.0-09.5)									TP-RD-B11-10(02.0-02.5)			
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	160	170	< 110	< 110	< 120	< 110 J	< 110	940	**29000**	160	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	150	< 110	< 110	< 120	< 110	< 110	110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	410	170	< 110	< 120	< 110	< 110	660	180	110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	680	130	< 110	< 120	< 110	< 110	940	190	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110	< 110	< 110	< 110	< 120	< 110 J	< 110	< 110	< 110	< 110	< 120 J-	< 110 J-	< 110 J-	< 120	< 120	< 110	< 110	< 110 J	< 120	< 120	< 110	< 120	< 110	< 120 J
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 120 J
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_ 0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_ 1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_ 3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				89.9	87.8	87.6	88.9	85.9	88.4	87.2	89	90.2	89.9	86.1	87.2	89.2	85.4	86.6	87.1	90.5	90.2	85.3	86.6	90.1	84.6	87.3	84.1		
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10
						Sample Date	10/16/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
						Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	
						Sample ID	TP-RD-B11-05A(05.0-05.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05B(03.0-03.5)	TP-RD-B11-05B(05.0-05.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-06(03.0-03.5)	TP-RD-B11-06(05.0-05.5)	TP-RD-B11-06(07.0-07.5)	TP-RD-B11-06(09.0-09.5)	TP-RD-B11-07(03.0-03.5)	TP-RD-B11-07(01.0-01.5)	BD110717A	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-08(03.0-03.5)	TP-RD-B11-08(05.0-05.5)	TP-RD-B11-08(07.0-07.5)	TP-RD-B11-08(09.0-09.5)	TP-RD-B11-09(01.0-01.5)	TP-RD-B11-09(02.0-02.5)	TP-RD-B11-09(04.0-04.5)	BD112917A	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-10(02.0-02.5)	
						Parent ID													TP-RD-B11-08(09.0-09.5)										TP-RD-B11-10(02.0-02.5)		
						Notes																										
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																											
PCBs																																
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																																
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																																
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10
Sample Date						10/16/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
Sample Depths						5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft
Sample ID						TP-RD-B11-05A(05.0-05.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05B(03.0-03.5)	TP-RD-B11-05B(05.0-05.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-06(03.0-03.5)	TP-RD-B11-06(05.0-05.5)	TP-RD-B11-06(07.0-07.5)	TP-RD-B11-06(09.0-09.5)	TP-RD-B11-07(03.0-03.5)	TP-RD-B11-07(01.0-01.5)	BD110717A	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-08(03.0-03.5)	TP-RD-B11-08(05.0-05.5)	TP-RD-B11-08(07.0-07.5)	TP-RD-B11-08(09.0-09.5)	TP-RD-B11-09(01.0-01.5)	TP-RD-B11-09(02.0-02.5)	TP-RD-B11-09(04.0-04.5)	BD112917A	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-10(02.0-02.5)
Parent ID																		TP-RD-B11-08(09.0-09.5)									TP-RD-B11-10(02.0-02.5)		
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-07	TP-RD-B11-07	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-09	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10
						Sample Date	10/16/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
						Sample Depths	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft		
						Sample ID	TP-RD-B11-05A(05.0-05.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05B(03.0-03.5)	TP-RD-B11-05B(05.0-05.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-06(03.0-03.5)	TP-RD-B11-06(05.0-05.5)	TP-RD-B11-06(07.0-07.5)	TP-RD-B11-06(09.0-09.5)	TP-RD-B11-07(03.0-03.5)	TP-RD-B11-07(01.0-01.5)	BD110717A	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-08(03.0-03.5)	TP-RD-B11-08(05.0-05.5)	TP-RD-B11-08(07.0-07.5)	TP-RD-B11-08(09.0-09.5)	TP-RD-B11-09(01.0-01.5)	TP-RD-B11-09(02.0-02.5)	TP-RD-B11-09(04.0-04.5)	BD112917A	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-10(02.0-02.5)	
						Parent ID													TP-RD-B11-08(09.0-09.5)													
						Notes																											
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																												
VOCs continued																																	
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-14	TP-RD-B11-15	TP-RD-B11-16	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23
Sample Date						11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
Sample Depths						4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
Sample ID						TP-RD-B11-10(4.0-4.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-11(03.0-03.5)	BD112917B	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-12(03.0-03.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-13(03.0-03.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-14(03.0-03.5)	TP-RD-B11-15(03.0-03.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-16(03.0-03.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-17(03.0-03.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-18(03.0-03.5)	TP-RD-B11-19(01.0-01.5)	TP-RD-B11-19(03.0-03.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)
Parent ID									TP-RD-B11-12(03.0-03.5)																				
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 110	180	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120 J	< 120	< 110	< 110
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				86.2	90.3	90.2	89.8	90.2	89.8	88.4	87.7	90.3	90.1	89.9	87.3	84.7	85	85	84.1	85.1	85	86.4	85.3	85	86	88.4	88.4
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-14	TP-RD-B11-15	TP-RD-B11-16	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23
						Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
						Sample Depths	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B11-10(04.0-04.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-11(03.0-03.5)	BD112917B	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-12(03.0-03.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-13(03.0-03.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-14(03.0-03.5)	TP-RD-B11-15(03.0-03.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-16(03.0-03.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-17(03.0-03.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-18(03.0-03.5)	TP-RD-B11-19(01.0-01.5)	TP-RD-B11-19(03.0-03.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)
						Parent ID				TP-RD-B11-12(03.0-03.5)																					
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
PCBs																															
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																															
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																															
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-14	TP-RD-B11-15	TP-RD-B11-16	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23
Sample Date						11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
Sample Depths						4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
Sample ID						TP-RD-B11-10(04.0-04.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-11(03.0-03.5)	BD112917B	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-12(03.0-03.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-13(03.0-03.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-14(03.0-03.5)	TP-RD-B11-15(03.0-03.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-16(03.0-03.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-17(03.0-03.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-18(03.0-03.5)	TP-RD-B11-19(01.0-01.5)	TP-RD-B11-19(03.0-03.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)
Parent ID									TP-RD-B11-12(03.0-03.5)																TP-RD-B11-20(01.0-01.5)				
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-11	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-14	TP-RD-B11-15	TP-RD-B11-16	TP-RD-B11-16	TP-RD-B11-17	TP-RD-B11-17	TP-RD-B11-18	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-19	TP-RD-B11-20	TP-RD-B11-20	TP-RD-B11-21	TP-RD-B11-22	TP-RD-B11-23
						Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017	12/4/2017
						Sample Depths	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B11-10(04.0-04.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-11(03.0-03.5)	BD112917B	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-12(03.0-03.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-13(03.0-03.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-14(03.0-03.5)	TP-RD-B11-15(03.0-03.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-16(03.0-03.5)	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-17(03.0-03.5)	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-18(03.0-03.5)	TP-RD-B11-19(01.0-01.5)	TP-RD-B11-19(03.0-03.5)	BD120417	TP-RD-B11-20(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)
						Parent ID				TP-RD-B11-12(03.0-03.5)																					
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-24	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-02	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-04	TP-RD-B12-04
Sample Date						12/4/2017	12/4/2017	12/5/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	10/23/2017	10/23/2017	10/26/2017	10/26/2017	10/26/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
Sample Depths						1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.0-10.5 ft	12.0-12.5 ft	9.0-9.5 ft	13.0-13.5 ft	14.0-14.5 ft	15.0-15.5 ft	16.5-17.0 ft	17.5-18.0 ft	18.5-19.0 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B11-24(01.0-01.5)	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-01(03.0-03.5)	TP-RD-B12-01(05.0-05.5)	TP-RD-B12-02(09.0-09.5)	BD101817	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-02A(03.0-03.5)	TP-RD-B12-02A(05.0-05.5)	TP-RD-B12-02A(07.0-07.5)	TP-RD-B12-02A(09.0-09.5)	TP-RD-B12-03(10.0-10.5)	TP-RD-B12-03(12.0-12.5)	TP-RD-B12-03(09.0-09.5)	TP-RD-B12-03(13.0-13.5)	TP-RD-B12-03(14.0-14.5)	TP-RD-B12-03(15.0-15.5)	TP-RD-B12-03(16.5-17.0)	TP-RD-B12-03(17.5-18.0)	TP-RD-B12-03(18.5-19.0)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-04(03.0-03.5)
Parent ID													TP-RD-B12-02A(03.0-03.5)																
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 120	< 120	< 110	< 110	< 110	500	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	120	< 110	< 110	< 120	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 120	< 120	160	< 110	< 110	5000	< 120	< 110	< 120	< 110	< 110	< 120	380	520 J	650	1000	560	600	790	660	490	< 120	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 120	< 120	120	< 110	< 110	450	< 120	< 110	< 120	< 110	< 110	< 120	< 110	110	230	210	< 110	< 110	< 110	< 110	120	< 120	140
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 120	< 120	140	< 110	< 110	300	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	140	130	< 110	< 110	< 110	< 110	120	150	200
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	550	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110 J-	< 110 J	< 120	< 120	< 110	< 110 J-	< 110 J-	< 110 J-	< 110 J-	< 120 J-	< 120 J-
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110 J-	< 110 J	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 120	< 120	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				88.4	83.9	84.5	87.5	91.7	91.6	83.2	85.8	90	85.9	90.3	90.4	85.9	90.9	89.2	86.4	86.7	90.4	90.1	90	89.6	88.8	81.3	82.9
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-24	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-02	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-04	TP-RD-B12-04
Sample Date						12/4/2017	12/4/2017	12/5/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	10/23/2017	10/23/2017	10/26/2017	10/26/2017	10/26/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
Sample Depths						1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.0-10.5 ft	12.0-12.5 ft	9.0-9.5 ft	13.0-13.5 ft	14.0-14.5 ft	15.0-15.5 ft	16.5-17.0 ft	17.5-18.0 ft	18.5-19.0 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B11-24(01.0-01.5)	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-01(03.0-03.5)	TP-RD-B12-01(05.0-05.5)	TP-RD-B12-02(09.0-09.5)	BD101817	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-02A(03.0-03.5)	TP-RD-B12-02A(05.0-05.5)	TP-RD-B12-02A(07.0-07.5)	TP-RD-B12-02A(09.0-09.5)	TP-RD-B12-03(10.0-10.5)	TP-RD-B12-03(12.0-12.5)	TP-RD-B12-03(09.0-09.5)	TP-RD-B12-03(13.0-13.5)	TP-RD-B12-03(14.0-14.5)	TP-RD-B12-03(15.0-15.5)	TP-RD-B12-03(16.5-17.0)	TP-RD-B12-03(17.5-18.0)	TP-RD-B12-03(18.5-19.0)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-04(03.0-03.5)
Parent ID													TP-RD-B12-02A(03.0-03.5)																
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B11-24	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-02	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-04	TP-RD-B12-04
Sample Date						12/4/2017	12/4/2017	12/5/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	10/23/2017	10/23/2017	10/26/2017	10/26/2017	10/26/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
Sample Depths						1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.0-10.5 ft	12.0-12.5 ft	9.0-9.5 ft	13.0-13.5 ft	14.0-14.5 ft	15.0-15.5 ft	16.5-17.0 ft	17.5-18.0 ft	18.5-19.0 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B11-24(01.0-01.5)	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-01(03.0-03.5)	TP-RD-B12-01(05.0-05.5)	TP-RD-B12-02(09.0-09.5)	BD101817	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-02A(03.0-03.5)	TP-RD-B12-02A(05.0-05.5)	TP-RD-B12-02A(07.0-07.5)	TP-RD-B12-02A(09.0-09.5)	TP-RD-B12-03(10.0-10.5)	TP-RD-B12-03(12.0-12.5)	TP-RD-B12-03(09.0-09.5)	TP-RD-B12-03(13.0-13.5)	TP-RD-B12-03(14.0-14.5)	TP-RD-B12-03(15.0-15.5)	TP-RD-B12-03(16.5-17.0)	TP-RD-B12-03(17.5-18.0)	TP-RD-B12-03(18.5-19.0)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-04(03.0-03.5)
Parent ID													TP-RD-B12-02A(03.0-03.5)																	
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-24	TP-RD-B11-25	TP-RD-B11-26	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-02	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-04	TP-RD-B12-04
						Sample Date	12/4/2017	12/4/2017	12/5/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/23/2017	10/23/2017	10/23/2017	10/26/2017	10/26/2017	10/26/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
						Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	10.0-10.5 ft	12.0-12.5 ft	9.0-9.5 ft	13.0-13.5 ft	14.0-14.5 ft	15.0-15.5 ft	16.5-17.0 ft	17.5-18.0 ft	18.5-19.0 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B11-24(01.0-01.5)	TP-RD-B11-25(01.0-01.5)	TP-RD-B11-26(01.0-01.5)	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-01(03.0-03.5)	TP-RD-B12-01(05.0-05.5)	TP-RD-B12-02(09.0-09.5)	BD101817	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-02A(03.0-03.5)	TP-RD-B12-02A(05.0-05.5)	TP-RD-B12-02A(07.0-07.5)	TP-RD-B12-02A(09.0-09.5)	TP-RD-B12-03(10.0-10.5)	TP-RD-B12-03(12.0-12.5)	TP-RD-B12-03(09.0-09.5)	TP-RD-B12-03(13.0-13.5)	TP-RD-B12-03(14.0-14.5)	TP-RD-B12-03(15.0-15.5)	TP-RD-B12-03(16.5-17.0)	TP-RD-B12-03(17.5-18.0)	TP-RD-B12-03(18.5-19.0)	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-04(03.0-03.5)
						Parent ID								TP-RD-B12-02A(03.0-03.5)																
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08
Sample Date						11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
Sample ID						TP-RD-B12-04(05.0-05.5)	TP-RD-B12-04(07.0-07.5)	TP-RD-B12-04(09.0-09.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-05(03.0-03.5)	TP-RD-B12-05(05.0-05.5)	TP-RD-B12-05(07.0-07.5)	TP-RD-B12-05(09.0-09.5)	BD113017A	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-06(03.0-03.5)	TP-RD-B12-06(05.0-05.5)	BD110217A	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-07(10.0-10.5)	TP-RD-B12-07(03.0-03.5)	TP-RD-B12-07(05.0-05.5)	TP-RD-B12-07(07.0-07.5)	TP-RD-B12-07(09.0-09.5)	BD110717B	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-08(03.0-03.5)	TP-RD-B12-08(05.0-05.5)	TP-RD-B12-08(07.0-07.5)
Parent ID														TP-RD-B12-06(05.0-05.5)				TP-RD-B12-07(07.0-07.5)							TP-RD-B12-07(07.0-07.5)					
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 120	320	< 110	< 120	< 120	< 120	< 100	< 100	< 110	190	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	120	< 110	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	140	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 120	140	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	160	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	150	< 120	120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 120 J-	< 120 J-	< 110 J-	< 120 J-	< 120 J-	< 120 J-	< 100 J-	< 100 J-	< 110	< 130	< 110	< 110 J	< 110 J-	< 110 J-	< 110 J-	< 110 J-	< 110 J-	< 110 J-	< 110 J	< 110 J-	< 110 J-	< 120	< 110 J-	< 110 J-	< 110 J
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 120	< 120	< 110	< 120	< 120	< 120	< 100	< 100	< 110	< 130	< 110	< 110 J	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																														
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				85.7	86.9	90.9	82.7	86.1	86.7	96.9	96	94.5	79.3	89.9	94.3	91.6	87.6	91.8	88.3	90.8	91.6	90.6	90.6	86.1	88.5	94.1	89.6
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08
Sample Date						11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
Sample ID						TP-RD-B12-04(05.0-05.5)	TP-RD-B12-04(07.0-07.5)	TP-RD-B12-04(09.0-09.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-05(03.0-03.5)	TP-RD-B12-05(05.0-05.5)	TP-RD-B12-05(07.0-07.5)	TP-RD-B12-05(09.0-09.5)	BD113017A	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-06(03.0-03.5)	TP-RD-B12-06(05.0-05.5)	BD110217A	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-07(10.0-10.5)	TP-RD-B12-07(03.0-03.5)	TP-RD-B12-07(05.0-05.5)	TP-RD-B12-07(07.0-07.5)	TP-RD-B12-07(09.0-09.5)	BD110717B	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-08(03.0-03.5)	TP-RD-B12-08(05.0-05.5)	TP-RD-B12-08(07.0-07.5)
Parent ID														TP-RD-B12-06(05.0-05.5)				TP-RD-B12-07(07.0-07.5)							TP-RD-B12-07(07.0-07.5)				
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08
Sample Date						11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
Sample ID						TP-RD-B12-04(5.0-5.5)	TP-RD-B12-04(7.0-7.5)	TP-RD-B12-04(9.0-9.5)	TP-RD-B12-05(1.0-1.5)	TP-RD-B12-05(3.0-3.5)	TP-RD-B12-05(5.0-5.5)	TP-RD-B12-05(7.0-7.5)	TP-RD-B12-05(9.0-9.5)	BD113017A	TP-RD-B12-06(1.0-1.5)	TP-RD-B12-06(3.0-3.5)	TP-RD-B12-06(5.0-5.5)	BD110217A	TP-RD-B12-07(1.0-1.5)	TP-RD-B12-07(10.0-10.5)	TP-RD-B12-07(3.0-3.5)	TP-RD-B12-07(5.0-5.5)	TP-RD-B12-07(7.0-7.5)	TP-RD-B12-07(9.0-9.5)	BD110717B	TP-RD-B12-08(1.0-1.5)	TP-RD-B12-08(3.0-3.5)	TP-RD-B12-08(5.0-5.5)	TP-RD-B12-08(7.0-7.5)
Parent ID														TP-RD-B12-06(05.0-05.5)				TP-RD-B12-07(07.0-07.5)							TP-RD-B12-07(07.0-07.5)					
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08
						Sample Date	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017
						Sample Depths	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
						Sample ID	TP-RD-B12-04(05.0-05.5)	TP-RD-B12-04(07.0-07.5)	TP-RD-B12-04(09.0-09.5)	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-05(03.0-03.5)	TP-RD-B12-05(05.0-05.5)	TP-RD-B12-05(07.0-07.5)	TP-RD-B12-05(09.0-09.5)	BD113017A	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-06(03.0-03.5)	TP-RD-B12-06(05.0-05.5)	BD110217A	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-07(10.0-10.5)	TP-RD-B12-07(03.0-03.5)	TP-RD-B12-07(05.0-05.5)	TP-RD-B12-07(07.0-07.5)	TP-RD-B12-07(09.0-09.5)	BD110717B	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-08(03.0-03.5)	TP-RD-B12-08(05.0-05.5)	TP-RD-B12-08(07.0-07.5)
						Parent ID									TP-RD-B12-06(05.0-05.5)				TP-RD-B12-07(07.0-07.5)						TP-RD-B12-07(07.0-07.5)					
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-04
Sample Date						11/7/2017	11/30/2017	11/30/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017
Sample Depths						9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft
Sample ID						TP-RD-B12-08(9.0-09.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-09(03.0-03.5)	TP-RD-B12-09(05.0-05.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-01(03.0-03.5)	TP-RD-B13-01(05.0-05.5)	TP-RD-B13-01(07.0-07.5)	BD103017	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-02(03.0-03.5)	TP-RD-B13-02(05.0-05.5)	TP-RD-B13-02(07.0-07.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-03(03.0-03.5)	TP-RD-B13-03(05.0-05.5)	TP-RD-B13-03(07.0-07.5)	TP-RD-B13-04(01.0-01.5)
Parent ID													TP-RD-B12-14(01.0-01.5)							TP-RD-B13-02(07.0-07.5)										
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	180	220 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 120	< 120	< 120	< 120	< 130	< 120	170	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	1000	650 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110 J-	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130 J-	< 130 J-	< 120 J-	< 110 J-	< 110 J-	< 130 J-	< 120 J-	< 110 J-	< 110 J	< 120 J	< 110 J-	< 110 J-	< 120 J-	< 120 J-
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110 J	< 120	< 110	< 110	< 120	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120 J	< 110	< 130	< 130	< 120	< 110	< 110	< 130	< 120	< 110	< 110 J	< 120	< 110	< 110	< 120	< 120
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				88.2	86.5	86.3	86.2	83.6	78.5	85.7	84.6	85	90.2	74.9	77.6	83.8	93.8	93.7	76.4	80.7	93.8	93.6	84.3	93.1	91.3	82.8	82.8
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-04
Sample Date						11/7/2017	11/30/2017	11/30/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017
Sample Depths						9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft
Sample ID						TP-RD-B12-08(9.0-9.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-09(03.0-03.5)	TP-RD-B12-09(05.0-05.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-01(03.0-03.5)	TP-RD-B13-01(05.0-05.5)	TP-RD-B13-01(07.0-07.5)	BD103017	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-02(03.0-03.5)	TP-RD-B13-02(05.0-05.5)	TP-RD-B13-02(07.0-07.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-03(03.0-03.5)	TP-RD-B13-03(05.0-05.5)	TP-RD-B13-03(07.0-07.5)	TP-RD-B13-04(01.0-01.5)
Parent ID													TP-RD-B12-14(01.0-01.5)							TP-RD-B13-02(07.0-07.5)										
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-04
						Sample Date	11/7/2017	11/30/2017	11/30/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017
						Sample Depths	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B12-08(9.0-9.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-09(03.0-03.5)	TP-RD-B12-09(05.0-05.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-01(03.0-03.5)	TP-RD-B13-01(05.0-05.5)	TP-RD-B13-01(07.0-07.5)	BD103017	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-02(03.0-03.5)	TP-RD-B13-02(05.0-05.5)	TP-RD-B13-02(07.0-07.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-03(03.0-03.5)	TP-RD-B13-03(05.0-05.5)	TP-RD-B13-03(07.0-07.5)	TP-RD-B13-04(01.0-01.5)
						Parent ID								TP-RD-B12-14(01.0-01.5)							TP-RD-B13-02(07.0-07.5)										
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-09	TP-RD-B12-10	TP-RD-B12-12	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14	TP-RD-B12-15	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-03	TP-RD-B13-04
						Sample Date	11/7/2017	11/30/2017	11/30/2017	11/30/2017	12/5/2017	12/5/2017	12/4/2017	12/5/2017	12/5/2017	12/5/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017
						Sample Depths	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B12-08(9.0-9.5)	TP-RD-B12-09(01.0-01.5)	TP-RD-B12-09(03.0-03.5)	TP-RD-B12-09(05.0-05.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B12-12(01.0-01.5)	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)	TP-RD-B12-15(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-01(03.0-03.5)	TP-RD-B13-01(05.0-05.5)	TP-RD-B13-01(07.0-07.5)	BD103017	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-02(03.0-03.5)	TP-RD-B13-02(05.0-05.5)	TP-RD-B13-02(07.0-07.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-03(03.0-03.5)	TP-RD-B13-03(05.0-05.5)	TP-RD-B13-03(07.0-07.5)	TP-RD-B13-04(01.0-01.5)
						Parent ID								TP-RD-B12-14(01.0-01.5)							TP-RD-B13-02(07.0-07.5)										
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-10
Sample Date						10/30/2017	10/30/2017	10/30/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B13-04(3.0-3.5)	TP-RD-B13-04(5.0-5.5)	TP-RD-B13-04(7.0-7.5)	BD120117B	TP-RD-B13-05(1.0-1.5)	TP-RD-B13-05(3.0-3.5)	TP-RD-B13-05(5.0-5.5)	TP-RD-B13-06(1.0-1.5)	TP-RD-B13-06(3.0-3.5)	TP-RD-B13-06(5.0-5.5)	TP-RD-B13-06(7.0-7.5)	TP-RD-B13-07(1.0-1.5)	TP-RD-B13-07(3.0-3.5)	TP-RD-B13-07(5.0-5.5)	TP-RD-B13-08(1.0-1.5)	TP-RD-B13-08(3.0-3.5)	TP-RD-B13-08(5.0-5.5)	TP-RD-B13-08(7.0-7.5)	TP-RD-B13-09(1.0-1.5)	TP-RD-B13-09(3.0-3.5)	TP-RD-B13-09(5.0-5.5)	TP-RD-B13-09(7.0-7.5)	TP-RD-B13-10(1.0-1.5)	TP-RD-B13-10(3.0-3.5)
Parent ID									TP-RD-B13-05(5.0-5.5)																				
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	1200
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	210	1000	7900
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	160	4200
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	310	270	< 110	< 100	160	2600
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	380	320	< 110	< 100	480	2600
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 110	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110 J-	< 110 J-	< 110 J-	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110 J-	< 110 J-	< 120 J-	< 110 J-	< 110 J	< 120	< 120	< 110	< 120	< 120 J-	< 120	< 110 J-	< 100 J-	< 110 J-	< 1200 J-
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 110	< 110	< 110	< 120	< 120	< 110 J	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 120	< 120	< 110	< 120	< 120	< 120	< 110	< 100	< 110	< 1200
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				87.4	94.3	92.8	93.9	86.1	86.7	93.9	83	85.8	89.7	87.8	84.1	91.2	94.9	82	86.9	92.7	84.4	86.7	84.4	93.1	95.5	92	86.8
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent																											

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-10
Sample Date						10/30/2017	10/30/2017	10/30/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B13-04(3.0-03.5)	TP-RD-B13-04(05.0-05.5)	TP-RD-B13-04(07.0-07.5)	BD120117B	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-05(03.0-03.5)	TP-RD-B13-05(05.0-05.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-06(03.0-03.5)	TP-RD-B13-06(05.0-05.5)	TP-RD-B13-06(07.0-07.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-07(03.0-03.5)	TP-RD-B13-07(05.0-05.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-08(03.0-03.5)	TP-RD-B13-08(05.0-05.5)	TP-RD-B13-08(07.0-07.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-09(03.0-03.5)	TP-RD-B13-09(05.0-05.5)	TP-RD-B13-09(07.0-07.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-10(03.0-03.5)
Parent ID									TP-RD-B13-05(05.0-05.5)																					
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-10
Sample Date						10/30/2017	10/30/2017	10/30/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B13-04(3.0-03.5)	TP-RD-B13-04(05.0-05.5)	TP-RD-B13-04(07.0-07.5)	BD120117B	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-05(03.0-03.5)	TP-RD-B13-05(05.0-05.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-06(03.0-03.5)	TP-RD-B13-06(05.0-05.5)	TP-RD-B13-06(07.0-07.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-07(03.0-03.5)	TP-RD-B13-07(05.0-05.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-08(03.0-03.5)	TP-RD-B13-08(05.0-05.5)	TP-RD-B13-08(07.0-07.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-09(03.0-03.5)	TP-RD-B13-09(05.0-05.5)	TP-RD-B13-09(07.0-07.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-10(03.0-03.5)
Parent ID									TP-RD-B13-05(05.0-05.5)																					
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-07	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-10
						Sample Date	10/30/2017	10/30/2017	10/30/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B13-04(03.0-03.5)	TP-RD-B13-04(05.0-05.5)	TP-RD-B13-04(07.0-07.5)	BD120117B	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-05(03.0-03.5)	TP-RD-B13-05(05.0-05.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-06(03.0-03.5)	TP-RD-B13-06(05.0-05.5)	TP-RD-B13-06(07.0-07.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-07(03.0-03.5)	TP-RD-B13-07(05.0-05.5)	TP-RD-B13-08(01.0-01.5)	TP-RD-B13-08(03.0-03.5)	TP-RD-B13-08(05.0-05.5)	TP-RD-B13-08(07.0-07.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-09(03.0-03.5)	TP-RD-B13-09(05.0-05.5)	TP-RD-B13-09(07.0-07.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-10(03.0-03.5)
						Parent ID				TP-RD-B13-05(05.0-05.5)																					
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-02
Sample Date						11/1/2017	11/1/2017	11/1/2017	11/7/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft
Sample ID						TP-RD-B13-10(05.0-05.5)	TP-RD-B13-10(07.0-07.5)	TP-RD-B13-10(08.0-08.5)	TP-RD-B13-10(09.0-09.5)	BD120117A	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-11(03.0-03.5)	TP-RD-B13-11(05.0-05.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-12(03.0-03.5)	TP-RD-B13-12(05.0-05.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-13(03.0-03.5)	TP-RD-B13-13(05.0-05.5)	TP-RD-B13-14(01.0-01.5)	TP-RD-B13-14(03.0-03.5)	TP-RD-B13-14(05.0-05.5)	TP-RD-B13-15(01.0-01.5)	TP-RD-B13-15(03.0-03.5)	TP-RD-B13-15(05.0-05.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-01(03.0-03.5)	TP-RD-B14-01(05.0-05.5)	TP-RD-B14-02(01.0-01.5)
Parent ID										TP-RD-B13-11(05.0-05.5)																				
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	2400	440 J+	430 J+	230	190	310	270	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 100	< 110	< 110	200	110	160	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	210	< 120	< 110	< 100	< 120
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	150	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	170	130	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	160	< 110	< 100	630	1500	< 130	3300	570	6600	< 120	< 110	< 100	< 120
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 110 J-	< 100	< 110	< 110 J-	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120 J-	< 110 J-	< 100 J-	< 120 J-
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 100	< 110	< 110	< 110	< 110	< 110	< 110 J	< 110	< 110	< 110	< 120	< 110	< 100	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 110	< 100	< 120
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				94.6	95.3	94.7	87	89.8	92.7	91.3	90	89.9	90.4	94	84.6	95.1	96.9	84.3	81.5	79.8	84.3	81.5	82.8	84.4	93	95.5	84.7
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-02
Sample Date						11/1/2017	11/1/2017	11/1/2017	11/7/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft
Sample ID						TP-RD-B13-10(05.0-05.5)	TP-RD-B13-10(07.0-07.5)	TP-RD-B13-10(08.0-08.5)	TP-RD-B13-10(09.0-09.5)	BD120117A	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-11(03.0-03.5)	TP-RD-B13-11(05.0-05.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-12(03.0-03.5)	TP-RD-B13-12(05.0-05.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-13(03.0-03.5)	TP-RD-B13-13(05.0-05.5)	TP-RD-B13-14(01.0-01.5)	TP-RD-B13-14(03.0-03.5)	TP-RD-B13-14(05.0-05.5)	TP-RD-B13-15(01.0-01.5)	TP-RD-B13-15(03.0-03.5)	TP-RD-B13-15(05.0-05.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-01(03.0-03.5)	TP-RD-B14-01(05.0-05.5)	TP-RD-B14-02(01.0-01.5)
Parent ID										TP-RD-B13-11(05.0-05.5)																				
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-02
Sample Date						11/1/2017	11/1/2017	11/1/2017	11/7/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017
Sample Depths						5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft
Sample ID						TP-RD-B13-10(05.0-05.5)	TP-RD-B13-10(07.0-07.5)	TP-RD-B13-10(08.0-08.5)	TP-RD-B13-10(09.0-09.5)	BD120117A	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-11(03.0-03.5)	TP-RD-B13-11(05.0-05.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-12(03.0-03.5)	TP-RD-B13-12(05.0-05.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-13(03.0-03.5)	TP-RD-B13-13(05.0-05.5)	TP-RD-B13-14(01.0-01.5)	TP-RD-B13-14(03.0-03.5)	TP-RD-B13-14(05.0-05.5)	TP-RD-B13-15(01.0-01.5)	TP-RD-B13-15(03.0-03.5)	TP-RD-B13-15(05.0-05.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-01(03.0-03.5)	TP-RD-B14-01(05.0-05.5)	TP-RD-B14-02(01.0-01.5)
Parent ID										TP-RD-B13-11(05.0-05.5)																				
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
SVOCs continued																													
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																													
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																													
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																													
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-10	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-12	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-13	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-14	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B13-15	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-01	TP-RD-B14-02
						Sample Date	11/1/2017	11/1/2017	11/1/2017	11/7/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017
						Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	9.0-9.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B13-10(05.0-05.5)	TP-RD-B13-10(07.0-07.5)	TP-RD-B13-10(08.0-08.5)	TP-RD-B13-10(09.0-09.5)	BD120117A	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-11(03.0-03.5)	TP-RD-B13-11(05.0-05.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-12(03.0-03.5)	TP-RD-B13-12(05.0-05.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-13(03.0-03.5)	TP-RD-B13-13(05.0-05.5)	TP-RD-B13-14(01.0-01.5)	TP-RD-B13-14(03.0-03.5)	TP-RD-B13-14(05.0-05.5)	TP-RD-B13-15(01.0-01.5)	TP-RD-B13-15(03.0-03.5)	TP-RD-B13-15(05.0-05.5)	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-01(03.0-03.5)	TP-RD-B14-01(05.0-05.5)	TP-RD-B14-02(01.0-01.5)
						Parent ID	TP-RD-B13-11(05.0-05.5)																							
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B14-02	TP-RD-B14-02	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-04	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01B
Sample Date						11/8/2017	11/8/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	10/16/2017	10/16/2017	10/16/2017	10/17/2017	10/17/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017	10/23/2017	10/17/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	2.5-3.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.5-4.0 ft	0.5-1.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B14-02(03.0-03.5)	TP-RD-B14-02(05.0-05.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-B14-03(03.0-03.5)	TP-RD-B14-03(05.0-05.5)	TP-RD-B14-04(03.0-03.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-01(02.5-03.0)	TP-RD-C10-01(03.0-03.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C10-02(03.0-03.5)	TP-RD-C10-02(03.5-04.0)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01(02.0-02.5)	TP-RD-C11-01(03.0-03.5)	TP-RD-C11-01(04.0-04.5)	TP-RD-C11-01(05.0-05.5)	TP-RD-C11-01(06.0-06.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01A(02.0-02.5)	TP-RD-C11-01A(03.0-03.5)	TP-RD-C11-01B(01.0-01.5)	TP-RD-C11-01B(03.0-03.5)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
Explosives and Energetics																													
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	370	< 110	< 110	< 110	< 110
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	280	< 110	< 110	< 110	< 110
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 110	< 130	1600	380	230	< 110	< 110	< 110	< 110	< 110	< 110	**62000**	**280000**	990	8400	750	810	160	3300	4300	150	< 110	< 110
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	190	< 120	< 110	< 110	< 100	**3600**	290	< 110	< 110	< 110
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	210	< 110	< 110	< 110	< 110
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	230 J-	130	< 110	< 110	< 100	2200 J-	440 J-	< 110	< 110	< 110
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	160	< 110	< 110	< 110	< 110
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	< 130	< 110	< 110	< 110	< 110
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 110	< 130	130	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	**16000**	530 J-	940	210	210	< 100	4600	1200 J-	< 110	< 110	< 110
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	< 130	< 110	< 110	< 110	< 110
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	< 130	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	< 130	< 110	< 110	< 110	< 110
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	< 130	< 110	< 110	< 110	< 110
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 110 J-	< 110 J-	< 130	< 120	< 110 J-	< 120	< 110 J+	< 110 J+	< 110 J+	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110 J-	< 100 J-	< 130	120	< 110	< 110	< 110
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110 J-	< 100 J-	< 130	< 110	< 110	< 110	< 110
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	< 130	< 110	< 110	< 110	< 110
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 110	< 130	< 120	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 110	< 12000	< 11000	< 110	< 120	< 110	< 110	< 100	< 130	< 110	< 110	< 110	< 110
Field																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																													
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																													
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																													
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																													
Percent Moisture	MOIST	%				87.7	94.5	79.2	86.3	93.4	84.2	89.4	87.9	89.5	90.6	89.3	88.6	84.1	88.6	87.1	84.1	91.1	92.2	95.4	78.8	87	89.1	87.6	87.6
Percent Solids	SOLID	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	percent																											

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-B14-02	TP-RD-B14-02	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-04	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01B
Sample Date						11/8/2017	11/8/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	10/16/2017	10/16/2017	10/16/2017	10/17/2017	10/17/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017	10/23/2017	10/17/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	2.5-3.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.5-4.0 ft	0.5-1.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-B14-02(03.0-03.5)	TP-RD-B14-02(05.0-05.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-B14-03(03.0-03.5)	TP-RD-B14-03(05.0-05.5)	TP-RD-B14-04(03.0-03.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-01(02.5-03.0)	TP-RD-C10-01(03.0-03.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C10-02(03.0-03.5)	TP-RD-C10-02(03.5-04.0)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01(02.0-02.5)	TP-RD-C11-01(03.0-03.5)	TP-RD-C11-01(04.0-04.5)	TP-RD-C11-01(05.0-05.5)	TP-RD-C11-01(06.0-06.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01A(02.0-02.5)	TP-RD-C11-01A(03.0-03.5)	TP-RD-C11-01B(01.0-01.5)	TP-RD-C11-01B(03.0-03.5)
Parent ID																													
Notes																													
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																								
PCBs																													
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																													
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B14-02	TP-RD-B14-02	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-04	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01B
						Sample Date	11/8/2017	11/8/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	10/16/2017	10/16/2017	10/16/2017	10/17/2017	10/17/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017	10/23/2017	10/17/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	2.5-3.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.5-4.0 ft	0.5-1.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B14-02(03.0-03.5)	TP-RD-B14-02(05.0-05.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-B14-03(03.0-03.5)	TP-RD-B14-03(05.0-05.5)	TP-RD-B14-04(03.0-03.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-01(02.5-03.0)	TP-RD-C10-01(03.0-03.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C10-02(03.0-03.5)	TP-RD-C10-02(03.5-04.0)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01(02.0-02.5)	TP-RD-C11-01(03.0-03.5)	TP-RD-C11-01(04.0-04.5)	TP-RD-C11-01(05.0-05.5)	TP-RD-C11-01(06.0-06.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01A(02.0-02.5)	TP-RD-C11-01A(03.0-03.5)	TP-RD-C11-01B(01.0-01.5)	TP-RD-C11-01B(03.0-03.5)
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B14-02	TP-RD-B14-02	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-03	TP-RD-B14-04	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01B
						Sample Date	11/8/2017	11/8/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	10/16/2017	10/16/2017	10/16/2017	10/17/2017	10/17/2017	10/17/2017	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/17/2017	10/17/2017	10/17/2017	10/23/2017	10/23/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	2.5-3.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	3.5-4.0 ft	0.5-1.0 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-B14-02(03.0-03.5)	TP-RD-B14-02(05.0-05.5)	TP-RD-B14-03(01.0-01.5)	TP-RD-B14-03(03.0-03.5)	TP-RD-B14-03(05.0-05.5)	TP-RD-B14-04(03.0-03.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-01(02.5-03.0)	TP-RD-C10-01(03.0-03.5)	TP-RD-C10-02(01.0-01.5)	TP-RD-C10-02(03.0-03.5)	TP-RD-C10-02(03.5-04.0)	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01(02.0-02.5)	TP-RD-C11-01(03.0-03.5)	TP-RD-C11-01(04.0-04.5)	TP-RD-C11-01(05.0-05.5)	TP-RD-C11-01(06.0-06.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01A(02.0-02.5)	TP-RD-C11-01A(03.0-03.5)	TP-RD-C11-01B(01.0-01.5)	TP-RD-C11-01B(03.0-03.5)
						Parent ID																									
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-C11-01B	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03
Sample Date						10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/11/2017	10/11/2017
Sample Depths						5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	5.0-5.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	0.5-1.0 ft	1.0-1.5 ft
Sample ID						TP-RD-C11-01B(05.0-05.5)	TP-RD-C11-01B(06.0-06.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01C(03.0-03.5)	TP-RD-C11-01C(05.0-05.5)	TP-RD-C11-01C(06.0-06.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)	BD102317	TP-RD-C11-02(03.0-03.5)	TP-RD-C11-02(05.0-05.5)	TP-RD-C11-02(06.0-06.5)	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02A(03.0-03.5)	TP-RD-C11-02A(05.0-05.5)	TP-RD-C11-02A(06.0-06.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-02B(03.0-03.5)	TP-RD-C11-02B(05.0-05.5)	TP-RD-C11-02B(07.0-07.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)
Parent ID								TP-RD-C11-01C(01.0-01.5)									TP-RD-C11-02(05.0-05.5)													
Notes																															
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
Explosives and Energetics																															
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	1400	130	290	280 J	< 120	< 110	< 110	< 120	< 110	< 110	19000	< 110	2800 J	< 120	< 120	< 120	< 110	410	110	< 110	< 120	< 130	< 110	< 100
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 110	420	310	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 110	340	370	< 120	< 110	< 110	< 120	< 110	< 110	150	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	180	< 110	450	490	< 120	< 110	< 110	< 120	< 110	< 110	190	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	130	< 110	< 120	< 130	< 110	< 100
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 110	< 110 J-	< 120	< 120	< 120	< 110	< 110	< 120 J-	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110 J-	< 110 J-	< 120 J-	< 130 J-	< 110	< 100
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110	< 110 J-	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110 J-	< 110 J-	< 110 J-	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 120	< 110	< 110	< 110	< 110	< 110	< 120	< 120	< 120	< 110	< 110	< 110	< 110	< 120	< 130	< 110	< 100
Field																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																															
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																															
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_ 0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_ 1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_ 3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																															
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																															
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				93.7	95	85.9	85.5	85.8	91.4	89.2	84.1	93.8	88.7	89.4	89.2	89.7	85.9	81.7	80.4	91.3	94	88	94.2	85	78.1	89.7	96.4
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-C11-01B	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03
Sample Date						10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/11/2017	10/11/2017
Sample Depths						5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	5.0-5.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	0.5-1.0 ft	1.0-1.5 ft
Sample ID						TP-RD-C11-01B(05.0-05.5)	TP-RD-C11-01B(06.0-06.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01C(03.0-03.5)	TP-RD-C11-01C(05.0-05.5)	TP-RD-C11-01C(06.0-06.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)	BD102317	TP-RD-C11-02(03.0-03.5)	TP-RD-C11-02(05.0-05.5)	TP-RD-C11-02(06.0-06.5)	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02A(03.0-03.5)	TP-RD-C11-02A(05.0-05.5)	TP-RD-C11-02A(06.0-06.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-02B(03.0-03.5)	TP-RD-C11-02B(05.0-05.5)	TP-RD-C11-02B(07.0-07.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)
Parent ID									TP-RD-C11-01C(01.0-01.5)								TP-RD-C11-02(05.0-05.5)													
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-C11-01B	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03
Sample Date						10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/11/2017	10/11/2017
Sample Depths						5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	5.0-5.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	0.5-1.0 ft	1.0-1.5 ft
Sample ID						TP-RD-C11-01B(05.0-05.5)	TP-RD-C11-01B(06.0-06.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01C(03.0-03.5)	TP-RD-C11-01C(05.0-05.5)	TP-RD-C11-01C(06.0-06.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)	BD102317	TP-RD-C11-02(03.0-03.5)	TP-RD-C11-02(05.0-05.5)	TP-RD-C11-02(06.0-06.5)	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02A(03.0-03.5)	TP-RD-C11-02A(05.0-05.5)	TP-RD-C11-02A(06.0-06.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-02B(03.0-03.5)	TP-RD-C11-02B(05.0-05.5)	TP-RD-C11-02B(07.0-07.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)
Parent ID									TP-RD-C11-01C(01.0-01.5)								TP-RD-C11-02(05.0-05.5)													
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-C11-01B	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-02B	TP-RD-C11-03	TP-RD-C11-03
						Sample Date	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	10/11/2017	10/11/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/11/2017	10/11/2017
						Sample Depths	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	0.5-1.0 ft	1.0-1.5 ft	5.0-5.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	0.5-1.0 ft	1.0-1.5 ft
						Sample ID	TP-RD-C11-01B(05.0-05.5)	TP-RD-C11-01B(06.0-06.5)	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01C(03.0-03.5)	TP-RD-C11-01C(05.0-05.5)	TP-RD-C11-01C(06.0-06.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02(01.0-01.5)	BD102317	TP-RD-C11-02(03.0-03.5)	TP-RD-C11-02(05.0-05.5)	TP-RD-C11-02(06.0-06.5)	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02A(03.0-03.5)	TP-RD-C11-02A(05.0-05.5)	TP-RD-C11-02A(06.0-06.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-02B(03.0-03.5)	TP-RD-C11-02B(05.0-05.5)	TP-RD-C11-02B(07.0-07.5)	TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03(01.0-01.5)
						Parent ID			TP-RD-C11-01C(01.0-01.5)								TP-RD-C11-02(05.0-05.5)													
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-05	TP-RD-C11-06	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-10	TP-RD-C11-11	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-12
Sample Date						10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-C11-03(03.0-03.5)	TP-RD-C11-03(05.0-05.5)	TP-RD-C11-03(06.0-06.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04(03.0-03.5)	TP-RD-C11-04(05.0-05.5)	TP-RD-C11-04(06.0-06.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-05(03.0-03.5)	TP-RD-C11-06(01.0-01.5)	TP-RD-C11-06(03.0-03.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-07(03.0-03.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-08(03.0-03.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-09(03.0-03.5)	TP-RD-C11-09(05.0-05.5)	TP-RD-C11-10(03.0-03.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-11(03.0-03.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-12(03.0-03.5)
Parent ID																	TP-RD-C11-07(01.0-01.5)													
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 110	< 100	< 110	210	< 110	< 100	< 120	< 120	150	1300	< 120	390	270 J	260	500	240	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	400	< 120	< 120	< 120 J	< 120	510	< 120	210	< 110	< 110	220	< 130	< 130	< 120	< 130
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	< 120	130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	320	890	< 120	220	180 J	< 120	1000	150	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	530	820	< 120	460	380 J	200	1200	290	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120	< 120	240	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 100	< 110	120	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	< 120	< 130	< 120	< 120	< 110	< 110	990	210	190	< 120	< 130
Octahydro-1,3,5,7-tetranitro-1,3,5,7	2691-41-0	ug/kg		10000000	3900000	< 110	< 100	< 110 J-	< 110	< 110	< 100	< 120	< 120 J-	< 130	< 130	< 120	< 120	< 120 J	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 110 J-	< 100 J-	< 110 J-	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	120	< 130	< 120	< 120	< 110	< 110	990	< 130	< 130	< 120	< 130
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
Tetryl	479-45-8	ug/kg		10000000	780000	< 110	< 100	< 110	< 110	< 110	< 100	< 120	< 120	< 130	< 130	< 120	< 120	< 120 J	< 120	< 130	< 120	< 120	< 110	< 110	< 120	< 130	< 130	< 120	< 130
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																														
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				94.6	96.5	91.6	88.4	94	96.7	80.7	81.5	79.6	79	83.2	82.6	83.5	83.5	79.6	83.2	83.9	88.3	90.7	82.4	75.1	77.8	83.6	77.8
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-05	TP-RD-C11-06	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-10	TP-RD-C11-11	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-12
Sample Date						10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-C11-03(03.0-03.5)	TP-RD-C11-03(05.0-05.5)	TP-RD-C11-03(06.0-06.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04(03.0-03.5)	TP-RD-C11-04(05.0-05.5)	TP-RD-C11-04(06.0-06.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-05(03.0-03.5)	TP-RD-C11-06(01.0-01.5)	TP-RD-C11-06(03.0-03.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-07(03.0-03.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-08(03.0-03.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-09(03.0-03.5)	TP-RD-C11-09(05.0-05.5)	TP-RD-C11-10(03.0-03.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-11(03.0-03.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-12(03.0-03.5)
Parent ID																	TP-RD-C11-07(01.0-01.5)													
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-05	TP-RD-C11-06	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-10	TP-RD-C11-11	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-12
Sample Date						10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
Sample Depths						3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
Sample ID						TP-RD-C11-03(03.0-03.5)	TP-RD-C11-03(05.0-05.5)	TP-RD-C11-03(06.0-06.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04(03.0-03.5)	TP-RD-C11-04(05.0-05.5)	TP-RD-C11-04(06.0-06.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-05(03.0-03.5)	TP-RD-C11-06(01.0-01.5)	TP-RD-C11-06(03.0-03.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-07(03.0-03.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-08(03.0-03.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-09(03.0-03.5)	TP-RD-C11-09(05.0-05.5)	TP-RD-C11-10(03.0-03.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-11(03.0-03.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-12(03.0-03.5)
Parent ID																	TP-RD-C11-07(01.0-01.5)													
Notes																														
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04	TP-RD-C11-04A	TP-RD-C11-05	TP-RD-C11-06	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-09	TP-RD-C11-10	TP-RD-C11-11	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-12
						Sample Date	10/23/2017	10/23/2017	10/23/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
						Sample Depths	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
						Sample ID	TP-RD-C11-03(03.0-03.5)	TP-RD-C11-03(05.0-05.5)	TP-RD-C11-03(06.0-06.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04(03.0-03.5)	TP-RD-C11-04(05.0-05.5)	TP-RD-C11-04(06.0-06.5)	TP-RD-C11-04A(01.0-01.5)	TP-RD-C11-05(03.0-03.5)	TP-RD-C11-06(01.0-01.5)	TP-RD-C11-06(03.0-03.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-07(03.0-03.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-08(03.0-03.5)	TP-RD-C11-09(01.0-01.5)	TP-RD-C11-09(03.0-03.5)	TP-RD-C11-09(05.0-05.5)	TP-RD-C11-10(03.0-03.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-11(03.0-03.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-12(03.0-03.5)
						Parent ID												TP-RD-C11-07(01.0-01.5)													
						Notes																									
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																										
VOCs continued																															
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-C11-13	TP-RD-C11-13	TP-RD-C11-14	TP-RD-C11-14	TP-RD-C13-01A	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D14-01	TP-RD-D14-01	TP-RD-D14-01	UD-06
						Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/8/2017	11/8/2017	11/7/2017	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	9/15/1999
						Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.5-7.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	0.0-0.7 ft
						Sample ID	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-13(03.0-03.5)	TP-RD-C11-14(01.0-01.5)	TP-RD-C11-14(03.0-03.5)	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-01A(03.0-03.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02(03.0-03.5)	TP-RD-C13-02(05.0-05.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-02A(03.0-03.5)	TP-RD-C13-02A(05.0-05.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04(03.0-03.5)	TP-RD-C13-04(05.0-05.5)	TP-RD-C13-04(06.5-07.0)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D13-01(03.0-03.5)	TP-RD-D13-01(05.0-05.5)	TP-RD-D14-01(01.0-01.5)	TP-RD-D14-01(03.0-03.5)	TP-RD-D14-01(05.0-05.5)	UD-060.67N
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
Explosives and Energetics																														
1,2-Dinitrobenzene	528-29-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
1,4-Dinitrobenzene	100-25-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Nitrophthalene	86-57-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 130	< 130	< 120	< 120	13000	6700	15000	810	300	420	< 110	< 120	1100	< 110	< 110	< 120	< 120	< 130	< 160	160	200	< 140	< 120	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 130	< 130	< 120	< 120	< 1200	< 1400	190	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 130	< 130	< 120	< 120	< 1200	< 1400	1000	< 120	< 120	150	< 110	< 120	230	< 110	< 110	< 120	350	< 130	< 160	< 120	< 120	< 140	< 120	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 130	< 130	< 120	< 120	< 1200	< 1400	**8300**	160	< 120	220	< 110	< 120	320	< 110	< 110	< 120	340	< 130	< 160	< 120	< 120	< 140	< 120	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
Nitrocellulose	9004-70-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 130	940	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130 J-	< 120 J-	< 120 J-	< 120 J-	< 110 J-	< 120 J	< 130	< 110	< 110	< 120 J-	< 120	< 130	< 160 J-	< 120	< 120	< 140	< 120	NA
Pentaerythritol Tetranitrate	78-11-5	ug/kg				< 130	840	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
Tetryl	479-45-8	ug/kg		10000000	780000	< 130	< 130	< 120	< 120	< 1200	< 1400	< 130	< 120	< 120	< 120	< 110	< 120	< 130	< 110	< 110	< 120	< 120	< 130	< 160	< 120	< 120	< 140	< 120	NA
Field																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GenChem																														
pH	pH	su				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grain Size																														
Clay	Clay	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gravel	Gravel	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sand	Sand	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silt	Silt	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																														
Aluminum	7429-90-5	mg/kg	6000		78000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	450	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	59000	16000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg			120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	590	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	23000	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	5700	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg		1100	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture																														
Percent Moisture	MOIST	%				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids	SOLID	%				78.1	79.5	85.8	85.8	81.9	72.4	74.8	82.9	80	82.3	88.6	81.5	79.4	88.8	90.7	81.4	82.8	79.2	62.9	81.7	85	69.3	84.6	NA
Percent Solids	SOLID	percent				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-C11-13	TP-RD-C11-13	TP-RD-C11-14	TP-RD-C11-14	TP-RD-C13-01A	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D14-01	TP-RD-D14-01	TP-RD-D14-01	UD-06
						Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/8/2017	11/8/2017	11/7/2017	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	9/15/1999
						Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.5-7.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	0.0-0.7 ft
						Sample ID	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-13(03.0-03.5)	TP-RD-C11-14(01.0-01.5)	TP-RD-C11-14(03.0-03.5)	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-01A(03.0-03.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02(03.0-03.5)	TP-RD-C13-02(05.0-05.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-02A(03.0-03.5)	TP-RD-C13-02A(05.0-05.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04(03.0-03.5)	TP-RD-C13-04(05.0-05.5)	TP-RD-C13-04(06.5-07.0)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D13-01(03.0-03.5)	TP-RD-D13-01(05.0-05.5)	TP-RD-D14-01(01.0-01.5)	TP-RD-D14-01(03.0-03.5)	TP-RD-D14-01(05.0-05.5)	UD-060.67N
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
PCBs																														
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs																														
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
a-BHC	319-84-6	ug/kg	2.00	500	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	ug/kg	200	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
b-BHC	319-85-7	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d-BHC	319-86-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	ug/kg	1000	340000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	ug/kg	500	700	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lindane	58-89-9	ug/kg	2.00	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	ug/kg	300	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																														
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzidine	92-87-5	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-C11-13	TP-RD-C11-13	TP-RD-C11-14	TP-RD-C11-14	TP-RD-C13-01A	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D14-01	TP-RD-D14-01	TP-RD-D14-01	UD-06
						Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/8/2017	11/8/2017	11/7/2017	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	9/15/1999
						Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.5-7.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	0.0-0.7 ft
						Sample ID	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-13(03.0-03.5)	TP-RD-C11-14(01.0-01.5)	TP-RD-C11-14(03.0-03.5)	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-01A(03.0-03.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02(03.0-03.5)	TP-RD-C13-02(05.0-05.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-02A(03.0-03.5)	TP-RD-C13-02A(05.0-05.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04(03.0-03.5)	TP-RD-C13-04(05.0-05.5)	TP-RD-C13-04(06.5-07.0)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D13-01(03.0-03.5)	TP-RD-D13-01(05.0-05.5)	TP-RD-D14-01(01.0-01.5)	TP-RD-D14-01(03.0-03.5)	TP-RD-D14-01(05.0-05.5)	UD-060.67N
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
SVOCs continued																														
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	2000000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg		300000000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	210000000	18000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOC TICs	TIC_SVOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 1	UNK1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 10	UNK10	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 11	UNK11	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 12	UNK12	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 13	UNK13	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 14	UNK14	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 15	UNK15	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 16	UNK16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 17	UNK17	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 18	UNK18	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 19	UNK19	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 2	UNK2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 20	UNK20	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 3	UNK3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 7	UNK7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 8	UNK8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 9	UNK9	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon																														
Total Organic Carbon	TOC	mg/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																														
Amyl alcohol	71-41-0	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethanol	64-17-5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	60-29-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	67-56-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-butyl ether	142-96-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																														
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1250
2-Hexanone	591-78-6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	ug/kg	19000		70000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2500
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1250
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Chloroethane	75-00-3	ug/kg		1100000	220000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1250
Chloroform	67-66-3	ug/kg	400	2000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Chloromethane	74-87-3	ug/kg		12000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1250

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-C11-13	TP-RD-C11-13	TP-RD-C11-14	TP-RD-C11-14	TP-RD-C13-01A	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D13-01	TP-RD-D14-01	TP-RD-D14-01	TP-RD-D14-01	UD-06
						Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/8/2017	11/8/2017	11/7/2017	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	12/4/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	9/15/1999
						Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.5-7.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	0.0-0.7 ft
						Sample ID	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-13(03.0-03.5)	TP-RD-C11-14(01.0-01.5)	TP-RD-C11-14(03.0-03.5)	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-01A(03.0-03.5)	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-02(03.0-03.5)	TP-RD-C13-02(05.0-05.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-C13-02A(03.0-03.5)	TP-RD-C13-02A(05.0-05.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04(03.0-03.5)	TP-RD-C13-04(05.0-05.5)	TP-RD-C13-04(06.5-07.0)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D13-01(03.0-03.5)	TP-RD-D13-01(05.0-05.5)	TP-RD-D14-01(01.0-01.5)	TP-RD-D14-01(03.0-03.5)	TP-RD-D14-01(05.0-05.5)	UD-060.67N
						Parent ID																								
						Notes																								
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS																									
VOCs continued																														
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Cyclohexane	110-82-7	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Isopropylbenzene	98-82-8	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	108-87-2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 430
MTBE	1634-04-4	ug/kg	200	320000	110000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Total VOC TICs	TIC_VOC	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 625
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown	UNKVOA3	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 4	UNK4	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 5	UNK5	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown 6	UNK6	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown alkane	UNKVOA2	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1250
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	UD-06
					Sample Date	9/15/1999
					Sample Depths	0.0-1.0 ft
					Sample ID	UD-061N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives and Energetics						
1,2-Dinitrobenzene	528-29-0	ug/kg				NA
1,3,5-Trinitrobenzene	99-35-4	ug/kg		10000000	2300000	< 190
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 190
1,4-Dinitrobenzene	100-25-4	ug/kg				NA
1-Nitrophthalene	86-57-7	ug/kg				NA
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	95000	21000	< 190
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	61000	4700	< 190
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	< 380
3-Nitrotoluene	99-08-1	ug/kg		10000000	1600000	< 380
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg		61000	4700	< 190
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	< 380
Benzemine, 3,5-dinitro-	618-87-1	ug/kg				NA
Nitrobenzene	98-95-3	ug/kg	200	340000	31000	< 190
Nitrocellulose	9004-70-0	ug/kg				67700
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5000
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	2691-41-0	ug/kg		10000000	3900000	< 380
Pentaerythritol Tetranitrate	78-11-5	ug/kg				NA
RDX (Cyclonite)	121-82-4	ug/kg		26000	5800	< 380
Tetryl	479-45-8	ug/kg		10000000	780000	< 380
Field						
pH	pH	su				NA
GenChem						
pH	pH	su				NA
Grain Size						
Clay	Clay	%				11.4
Gravel	Gravel	%				24.5
Sand	Sand	%				38.2
SIEVE 0.375 inch, % passing	ARC-SIEVE9.5I	%				NA
Sieve Size #10 - Percent Finer	SIEVE_#010	%				NA
Sieve Size #100 - Percent Finer	SIEVE_#100	%				NA
Sieve Size #16 - Percent Finer	SIEVE_#016	%				NA
Sieve Size #20 - Percent Finer	SIEVE_#020	%				NA
Sieve Size #200 - Percent Finer	SIEVE_#200	%				NA
Sieve Size #30 - Percent Finer	SIEVE_#030	%				NA
Sieve Size #4 - Percent Finer	SIEVE_#004	%				NA
Sieve Size #40 - Percent Finer	SIEVE_#040	%				NA
Sieve Size #50 - Percent Finer	SIEVE_#050	%				NA
Sieve Size #60 - Percent Finer	SIEVE_#060	%				NA
Sieve Size 0.75 inch - Percent Finer	SIEVE_0.75 inc	%				NA
Sieve Size 1.5 inch - Percent Finer	SIEVE_1.5 inch	%				NA
Sieve Size 3 inch - Percent Finer	SIEVE_3 inch	%				NA
SIEVE, 6 PHI, % passing	SIEVE_6PHI	%				NA
SIEVE, 8 PHI, % passing	SIEVE_8PHI	%				NA
Silt	Silt	%				25.9
Metals						
Aluminum	7429-90-5	mg/kg	6000		78000	NA
Antimony	7440-36-0	mg/kg	6	450	31	< 1.1
Arsenic	7440-38-2	mg/kg	19	19	19	5.9
Barium	7440-39-3	mg/kg	2100	59000	16000	NA
Beryllium	7440-41-7	mg/kg	1.08	140	16	0.69
Cadmium	7440-43-9	mg/kg	2	78	78	0.17
Calcium	7440-70-2	mg/kg				NA
Chromium	7440-47-3	mg/kg			120000	17.3
Cobalt	7440-48-4	mg/kg	90	590	1600	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	11.7
Iron	7439-89-6	mg/kg				NA
Lead	7439-92-1	mg/kg	90	800	400	37.5
Magnesium	7439-95-4	mg/kg				NA
Manganese	7439-96-5	mg/kg	65	5900	11000	NA
Mercury	7439-97-6	mg/kg	0.32	65	23	0.05
Nickel	7440-02-0	mg/kg	48	23000	1600	7.2
Potassium	7440-09-7	mg/kg				NA
Selenium	7782-49-2	mg/kg	11	5700	390	< 1.5
Silver	7440-22-4	mg/kg	1	5700	390	< 0.66
Sodium	7440-23-5	mg/kg				NA
Thallium	7440-28-0	mg/kg	3			< 2.2
Vanadium	7440-62-2	mg/kg		1100	78	NA
Zinc	7440-66-6	mg/kg	930	110000.0052	23000	41
Moisture						
Percent Moisture	MOIST	%				NA
Percent Solids	SOLID	%				NA
Percent Solids	SOLID	percent				86

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	UD-06
					Sample Date	9/15/1999
					Sample Depths	0.0-1.0 ft
					Sample ID	UD-061N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
PCBs						
Aroclor-1016	12674-11-2	ug/kg	200	1000	200	< 20
Aroclor-1221	11104-28-2	ug/kg	200	1000	200	< 20
Aroclor-1232	11141-16-5	ug/kg	200	1000	200	< 20
Aroclor-1242	53469-21-9	ug/kg	200	1000	200	< 20
Aroclor-1248	12672-29-6	ug/kg	200	1000	200	< 20
Aroclor-1254	11097-69-1	ug/kg	200	1000	200	< 20
Aroclor-1260	11096-82-5	ug/kg	200	1000	200	< 39
Polychlorinated biphenyls	1336-36-3	ug/kg	200	1000	200	< 39
Pest/PCBs						
4-4-DDD	72-54-8	ug/kg	4000	13000	3000	< 3.9
4-4-DDE	72-55-9	ug/kg	18000	9000	2000	< 3.9
4-4-DDT	50-29-3	ug/kg	11000	8000	2000	< 3.9
a-BHC	319-84-6	ug/kg	2.00	500	100	< 1.9
Aldrin	309-00-2	ug/kg	200	200	40.00	< 1.9
alpha-Chlordane	5103-71-9	ug/kg	50.00	1000	200	< 1.9
b-BHC	319-85-7	ug/kg	2.00	2000	400	< 1.9
d-BHC	319-86-8	ug/kg				< 1.9
Dieldrin	60-57-1	ug/kg	3.00	200	40.00	< 3.9
Endosulfan I	959-98-8	ug/kg	4000	6800000	470000	< 1.9
Endosulfan II	33213-65-9	ug/kg	4000	6800000	470000	< 3.9
Endosulfan Sulfate	1031-07-8	ug/kg	2000	6800000	470000	< 3.9
Endrin	72-20-8	ug/kg	1000	340000	23000	< 3.9
Endrin Aldehyde	7421-93-4	ug/kg				< 3.9
Endrin Ketone	53494-70-5	ug/kg				< 3.9
gamma-Chlordane	5103-74-2	ug/kg	50.00	1000	200	< 1.9
Heptachlor	76-44-8	ug/kg	500	700	100	< 1.9
Heptachlor Epoxide	1024-57-3	ug/kg	10.00	300	70.00	< 1.9
Lindane	58-89-9	ug/kg	2.00	2000	400	< 1.9
Methoxychlor	72-43-5	ug/kg	160000	5700000	390000	< 19
Toxaphene	8001-35-2	ug/kg	300	3000	600	< 190
SVOCs						
1,1'-Biphenyl	92-52-4	ug/kg	140000	240000	61000	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	< 390
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	< 390
1,2-Diphenylhydrazine	122-66-7	ug/kg	700	2000	700	< 390
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	< 390
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	< 390
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	68000000	6100000	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	74000	19000	< 390
2,4-Dichlorophenol	120-83-2	ug/kg	200	2100000	180000	< 390
2,4-Dimethylphenol	105-67-9	ug/kg	1000	14000000	1200000	< 390
2,4-Dinitrophenol	51-28-5	ug/kg	300	1400000	120000	< 1900
2,4-Dinitrotoluene	121-14-2	ug/kg	700	3000	700	< 390
2,6-Dinitrotoluene	606-20-2	ug/kg	500	3000	700	< 390
2-Chloronaphthalene	91-58-7	ug/kg				< 390
2-Chlorophenol	95-57-8	ug/kg	800	2200000	310000	< 390
2-Methylnaphthalene	91-57-6	ug/kg	8000	2400000	230000	NA
2-Methylphenol	95-48-7	ug/kg		3400000	310000	NA
2-Nitroaniline	88-74-4	ug/kg		23000000	39000	NA
2-Nitrophenol	88-75-5	ug/kg				< 390
2-Nitrotoluene	88-72-2	ug/kg		10000000	780000	NA
3&4-Methylphenol	106-44-5	ug/kg		340000	31000	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	4000	1000	< 780
3-Nitroaniline	99-09-2	ug/kg				NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	300	68000	6000	< 1900
4-Bromophenyl-phenylether	101-55-3	ug/kg				< 390
4-Chloro-3-methylphenol	59-50-7	ug/kg				< 390
4-Chloroaniline	106-47-8	ug/kg				NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg				< 390
4-Nitroaniline	100-01-6	ug/kg				NA
4-Nitrophenol	100-02-7	ug/kg				< 1900
4-Nitrotoluene	99-99-0	ug/kg		10000000	780000	NA
Acenaphthene	83-32-9	ug/kg	110000	37000000	3400000	< 390
Acenaphthylene	208-96-8	ug/kg		300000000		< 390
Acetophenone	98-86-2	ug/kg	3000	5000	2000	NA
Anthracene	120-12-7	ug/kg	2400000	30000000	17000000	< 390
Atrazine	1912-24-9	ug/kg	200	2400000	210000	NA
Benzaldehyde	100-52-7	ug/kg		68000000	6100000	NA
Benzidine	92-87-5	ug/kg	700	700	700	< 390
Benzo(g,h,i)fluoranthene	203-12-3	ug/kg				NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	17000	5000	< 390
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 390
Benzo(b)fluoranthene	205-99-2	ug/kg	41000	17000	5000	< 390
Benzo[g,h,i]perylene	191-24-2	ug/kg		30000000	380000000	< 390
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	170000	45000	< 390

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	UD-06
					Sample Date	9/15/1999
					Sample Depths	0.0-1.0 ft
					Sample ID	UD-061N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
SVOCs continued						
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg				< 390
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	2000	400	< 390
Bis(2-Chloroisopropyl)ether	108-60-1	ug/kg	5000	67000	23000	< 390
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	140000	35000	100
Butylbenzylphthalate	85-68-7	ug/kg	230000	14000000	1200000	< 390
Caprolactam	105-60-2	ug/kg	12000	340000000	31000000	NA
Carbazole	86-74-8	ug/kg		96000	24000	NA
Chrysene	218-01-9	ug/kg	80000	1700000	450000	< 390
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	2000	500	< 390
Dibenzofuran	132-64-9	ug/kg				NA
Diethylphthalate	84-66-2	ug/kg	88000	550000000	49000000	< 390
Dimethylphthalate	131-11-3	ug/kg				< 390
Di-n-butylphthalate	84-74-2	ug/kg	760000	68000000	6100000	72
Di-n-octylphthalate	117-84-0	ug/kg	3300000	27000000	2400000	< 390
Fluoranthene	206-44-0	ug/kg	1300000	24000000	2300000	< 390
Fluorene	86-73-7	ug/kg	170000	24000000	2300000	< 390
Hexachlorobenzene	118-74-1	ug/kg	200	1000	300	< 390
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	< 390
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	110000	45000	< 390
Hexachloroethane	67-72-1	ug/kg	200	140000	35000	< 390
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	17000	5000	< 390
Isophorone	78-59-1	ug/kg	280	2000000	510000	< 390
Naphthalene	91-20-3	ug/kg	25000	17000	6000	< 390
Nitrobenzene	98-95-3	ug/kg	200	14000	31000	NA
N-Nitrosodimethylamine	62-75-9	ug/kg	700	700	700	< 390
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	300	200	< 390
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	390000	99000	< 390
Pentachlorophenol	87-86-5	ug/kg	300	3000	900	< 1900
Phenanthrene	85-01-8	ug/kg		300000000		< 390
Phenol	108-95-2	ug/kg	8000	210000000	18000000	< 390
Pyrene	129-00-0	ug/kg	840000	18000000	1700000	< 390
Total SVOC TICs	TIC_SVOC	ug/kg				NA
Unknown 1	UNK1	ug/kg				NA
Unknown 10	UNK10	ug/kg				NA
Unknown 11	UNK11	ug/kg				NA
Unknown 12	UNK12	ug/kg				NA
Unknown 13	UNK13	ug/kg				NA
Unknown 14	UNK14	ug/kg				NA
Unknown 15	UNK15	ug/kg				NA
Unknown 16	UNK16	ug/kg				NA
Unknown 17	UNK17	ug/kg				NA
Unknown 18	UNK18	ug/kg				NA
Unknown 19	UNK19	ug/kg				NA
Unknown 2	UNK2	ug/kg				NA
Unknown 20	UNK20	ug/kg				NA
Unknown 3	UNK3	ug/kg				NA
Unknown 4	UNK4	ug/kg				NA
Unknown 5	UNK5	ug/kg				NA
Unknown 6	UNK6	ug/kg				NA
Unknown 7	UNK7	ug/kg				NA
Unknown 8	UNK8	ug/kg				NA
Unknown 9	UNK9	ug/kg				NA
Total Organic Carbon						
Total Organic Carbon	TOC	mg/kg				18100
TPH						
Amyl alcohol	71-41-0	ug/kg				NA
Di-N-Propyl Ether	111-43-3	ug/kg				NA
Ethanol	64-17-5	ug/kg				NA
Ethyl ether	60-29-7	ug/kg				NA
Methanol	67-56-1	ug/kg				NA
N-butyl ether	142-96-1	ug/kg				NA
VOCs						
1,1,1-Trichloroethane	71-55-6	ug/kg	300		160000000	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	7.00	3000	1000	NA
1,1,2-Trichloroethane	79-00-5	ug/kg	20.00	6000	2000	NA
1,1,2-Trichloro-trifluoroethane (Freo	76-13-1	ug/kg				NA
1,1-Dichloroethane	75-34-3	ug/kg	200	24000	8000	NA
1,1-Dichloroethene	75-35-4	ug/kg	8.00	150000	11000	NA
1,2,4-Trichlorobenzene	120-82-1	ug/kg	700	820000	73000	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	5.00	200	80.00	NA
1,2-Dibromoethane	106-93-4	ug/kg	5.00	40.00	8.00	NA
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	59000000	5300000	NA
1,2-Dichloroethane	107-06-2	ug/kg	5.00	3000	900	NA
1,2-Dichloropropane	78-87-5	ug/kg	5.00	5000	2000	NA
1,3-Dichlorobenzene	541-73-1	ug/kg	19000	59000000	5300000	NA
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	13000	5000	NA
2-Butanone	78-93-3	ug/kg	900	44000000	3100000	NA
2-Chloroethylvinylether	110-75-8	ug/kg				NA
2-Hexanone	591-78-6	ug/kg				NA
4-Methyl-2-Pentanone	108-10-1	ug/kg				NA
Acetone	67-64-1	ug/kg	19000		70000000	NA
Acrolein	107-02-8	ug/kg	500	1000	500	NA
Acrylonitrile	107-13-1	ug/kg	500	3000	900	NA
Benzene	71-43-2	ug/kg	5.00	5000	2000	NA
Bromodichloromethane	75-27-4	ug/kg	5.00	3000	1000	NA
Bromoform	75-25-2	ug/kg	30.00	280000	81000	NA
Bromomethane	74-83-9	ug/kg	40.00	59000	25000	NA
Carbon disulfide	75-15-0	ug/kg	6000	110000000	7800000	NA
Carbon Tetrachloride	56-23-5	ug/kg	5.00	4000	2000	NA
Chlorobenzene	108-90-7	ug/kg	600	7400000	510000	NA
Chloroethane	75-00-3	ug/kg		1100000	220000	NA
Chloroform	67-66-3	ug/kg	400	2000	600	NA
Chloromethane	74-87-3	ug/kg		12000	4000	NA

Exhibit 1. Project Area Dataset
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	UD-06
					Sample Date	9/15/1999
					Sample Depths	0.0-1.0 ft
					Sample ID	UD-061N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
VOCs continued						
cis-1,2-Dichloroethene	156-59-2	ug/kg	300	560000	230000	NA
Cis-1,3-Dichloropropene	10061-01-5	ug/kg	5.00	7000	2000	NA
Cyclohexane	110-82-7	ug/kg				NA
Dibromochloromethane	124-48-1	ug/kg	5.00	8000	3000	NA
Dichlorodifluoromethane	75-71-8	ug/kg	39000	230000000	490000	NA
Ethylbenzene	100-41-4	ug/kg	13000	110000000	7800000	NA
Hexachlorobutadiene	87-68-3	ug/kg	900	25000	6000	NA
Isopropylbenzene	98-82-8	ug/kg				NA
Methyl Acetate	79-20-9	ug/kg	22000		78000000	NA
Methylcyclohexane	108-87-2	ug/kg				NA
Methylene Chloride	75-09-2	ug/kg	10.00	230000	46000	NA
MTBE	1634-04-4	ug/kg	200	320000	110000	NA
Naphthalene	91-20-3	ug/kg	25000	17000	6000	NA
Styrene	100-42-5	ug/kg	3000	260000	90000	NA
Tetrachloroethene	127-18-4	ug/kg	5.00	1500000	43000	NA
Toluene	108-88-3	ug/kg	7000	91000000	6300000	NA
Total VOC TICs	TIC_VOC	ug/kg				NA
trans-1,2-Dichloroethene	156-60-5	ug/kg	600	720000	300000	NA
Trans-1,3-Dichloropropene	10061-02-6	ug/kg	5.00	7000	2000	NA
Trichloroethene	79-01-6	ug/kg	10.00	10000	3000	NA
Trichlorofluoromethane	75-69-4	ug/kg	34000	340000000	23000000	NA
Unknown	UNKVOA3	ug/kg				NA
Unknown 4	UNK4	ug/kg				NA
Unknown 5	UNK5	ug/kg				NA
Unknown 6	UNK6	ug/kg				NA
Unknown alkane	UNKVOA2	ug/kg				NA
Unknown C10H16 isomer	UNK_C10H16	ug/kg				NA
Vinyl Chloride	75-01-4	ug/kg	5.00	2000	700	NA
Xylenes (total)	1330-20-7	ug/kg	19000	170000000	12000000	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect value

Exhibit 2

Direct Contact Functional Area Datasets

Exhibit 2-1 Direct Contact Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B9-2-05	C8-1-01	C8-1-01	C8-1-01
						Sample Date	10/15/1999	10/8/1999	11/18/1999	11/18/1999
						Sample Depths	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft
						Sample ID	B9-2-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999
						Parent ID				
						Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		NA	< 240	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000		NA	< 7905.1	NA	NA
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19		**24.1**	NA	14.9	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		171	NA	31.3	NA
Lead	7439-92-1	mg/kg	90	800	400		**2190**	NA	**10200**	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		**3700**	NA	280	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-1 Direct Contact Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C9-01	SB-R-C9-02	SO-R2-B-8-1	SO-R2-C-8-2
					Sample Date	5/16/2006	5/16/2006	11/14/2013	11/14/2013
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.3-0.8 ft	0.5-1.0 ft
					Sample ID	SB-R-C9-011.0N	SB-R-C9-021.0N	SO-R2-B-8-1_20131114	SO-R2-C-8-2_20131114
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 360	< 370	< 330	< 360
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7200	< 7400	< 6700	< 7200
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	5.3	2.84	6.29	5.68
Copper	7440-50-8	mg/kg	11000	45000	3100	7.7	18.4	31.8	14.1
Lead	7439-92-1	mg/kg	90	800	400	4.52	6.27	8.98	15.7
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	< 210	6	72

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-2 Direct Contact Functional Area 1 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C9-01	SB-R-C9-01	SB-R-C9-02	SO-R2-B-9-1	SO-R2-C-8-2
					Sample Date	5/16/2006	8/8/2006	5/16/2006	11/14/2013	11/14/2013
					Sample Depths	2.0-2.5 ft	6.0-6.5 ft	2.5-3.0 ft	9.5-10.0 ft	9.4-9.9 ft
					Sample ID	SB-R-C9-012.5N	SB-R-C9-016.5N	SB-R-C9-023.0N	SO-R2-B-9-1_20131114	SO-R2-C-8-2D_20131114
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	NA	< 360	< 350	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	NA	< 7200	< 6900	< 6900
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	**25.3**	8.72	4.08	5.27	4.92
Copper	7440-50-8	mg/kg	11000	45000	3100	16.3	12.6	20.7	24	15.2
Lead	7439-92-1	mg/kg	90	800	400	6.72	3.13	7.01	5.53	6.34
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	NA	< 200	< 20	< 19

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-3 Direct Contact Functional Area 2 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C9-03	SO-R2-B-9-2
					Sample Date	5/16/2006	11/14/2013
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C9-031.0N	SO-R2-B-9-2_20131114
					Parent ID		
					Notes		
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS		
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 370
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7100	< 7400
Metals							
Arsenic	7440-38-2	mg/kg	19	19	19	2.86	7.31
Copper	7440-50-8	mg/kg	11000	45000	3100	16	25.7
Lead	7439-92-1	mg/kg	90	800	400	6.51	62.9
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	370

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-4 Direct Contact Functional Area 2 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C9-03	SO-R2-B-9-2
					Sample Date	5/16/2006	11/14/2013
					Sample Depths	2.0-2.5 ft	9.5-10.0 ft
					Sample ID	SB-R-C9-032.5N	SO-R2-B-9-2D_20131114
					Parent ID		
					Notes		
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS		
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 7000
Metals							
Arsenic	7440-38-2	mg/kg	19	19	19	3.14	5.28
Copper	7440-50-8	mg/kg	11000	45000	3100	21	27.9
Lead	7439-92-1	mg/kg	90	800	400	6.43	5.4
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 20

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-5 Direct Contact Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-C10-03	SB-R-C9-04	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3
						Sample Date	6/7/2006	5/25/2006	8/11/2006	8/11/2006	8/11/2006
						Sample Depths	0.5-1.0 ft	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
						Sample ID	SB-R-C10-031.0N	SB-R-C9-041.0N	TP-R-C10-439-12.0N	TP-R-C10-439-22.0N	TP-R-C10-439-32.0N
						Parent ID					
						Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS						
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 360	< 350	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 7200	< 6900	NA	NA	NA
Metals											
Arsenic	7440-38-2	mg/kg	19	19	19		3.15	3.64	**47.2**	3.67	4.08
Copper	7440-50-8	mg/kg	11000	45000	3100		7.08	12.5	33.7	12	14.3
Lead	7439-92-1	mg/kg	90	800	400		9.25	5.52	**7510**	160	**1610**
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		< 200	< 190	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-6 Direct Contact Functional Area 3 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-C10-03	SB-R-C9-04	TP-R-C10-439-1	TP-R-C10-439-2	TP-R-C10-439-3
						Sample Date	6/7/2006	5/25/2006	8/11/2006	8/11/2006	8/11/2006
						Sample Depths	2.3-2.8 ft	3.0-3.5 ft	8.0-8.5 ft	10.5-11.0 ft	10.0-10.5 ft
						Sample ID	SB-R-C10-032.83N	SB-R-C9-043.5N	TP-R-C10-439-18.5N	TP-R-C10-439-211.0N	TP-R-C10-439-310.5N
						Parent ID					
						Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS						
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 340	< 350	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 6700	< 6900	NA	NA	NA
Metals											
Arsenic	7440-38-2	mg/kg	19	19	19		2.78	2.41	8.14	4.41	2.64
Copper	7440-50-8	mg/kg	11000	45000	3100		14.6	5.24	15.4	18.4	10.1
Lead	7439-92-1	mg/kg	90	800	400		3.62	3.6	3.92	4.22	3.11
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		< 190	< 190	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-7 Direct Contact Functional Area 4 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B10-03	SO-R2-B-9-3	TP-RD-B10-03
					Sample Date	6/13/2006	11/11/2013	10/2/2017
					Sample Depths	0.5-1.0 ft	0.3-0.8 ft	1.0-1.5 ft
					Sample ID	SB-R-B10-031.0N	SO-R2-B-9-3_20131111	TP-RD-B10-03(01.0-01.5)
					Parent ID			
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 360	< 340	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7200	< 6800	< 110 J+
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	3.27	5.6	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	16.3	14.6	NA
Lead	7439-92-1	mg/kg	90	800	400	5.93	25.3	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	14	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-8 Direct Contact Functional Area 4 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B10-03	SO-R2-B-9-3	TP-RD-B10-03	TP-RD-B10-03
					Sample Date	6/13/2006	11/11/2013	10/2/2017	10/2/2017
					Sample Depths	4.0-4.5 ft	9.5-10.0 ft	3.0-3.5 ft	4.0-5.0 ft
					Sample ID	SB-R-B10-034.5N	SO-R2-B-9-3D_20131111	TP-RD-B10-03(03.0-03.5)	TP-RD-B10-03(04.0-05.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 310	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 6200	< 120 J+	< 120 J+
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.03	1.41	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	14.5	5.41	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	4.26	1.6	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	4	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-9 Direct Contact Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-2/B10-509-3(2017	C10-2176-01	C10-2176-02	C10-2179-03
					Sample Date	10/3/2017	11/19/1999	11/19/1999	11/19/1999
					Depths	1.5-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft
					Sample ID	TP-R-B10-2/B10-509-3(01.5-02.0)	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 250	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120 J+	< 4900	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	**207**	**274**
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	28.5	56
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	377	**603**
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	**1100**	< 4000

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-9 Direct Contact Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C10-432-01	C10-432-02	C10-438-01	C10-438-05
					Sample Date	9/27/2000	7/13/2000	7/21/2000	10/8/1999
					Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 90.9	< 250	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6680	< 5648.084	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	5.16	6.29	4.01	4.2
Copper	7440-50-8	mg/kg	11000	45000	3100	12.7	22.2	10.4	10.2
Lead	7439-92-1	mg/kg	90	800	400	96.8	107	34.4	29.6
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	130	188	< 398	< 390

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-9 Direct Contact Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C10-440-02	C10-466-02	SB-R-C10-01	SB-R-C10-04
					Sample Date	10/8/1999	10/8/1999	5/25/2006	6/12/2006
					Depths	0.0-2.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	C10-440-022N	C10-466-021N	SB-R-C10-011.0N	SB-R-C10-041.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 200	< 210	< 330	< 360
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7177.7	< 5276.5	< 6700	< 7100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	5.4	6.9	2.86	3.2
Copper	7440-50-8	mg/kg	11000	45000	3100	18.8	25	14.5	16.5
Lead	7439-92-1	mg/kg	90	800	400	**1550**	**3070**	26.7	6.4
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 510	360	47	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-9 Direct Contact Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SD-C10-1-01	SD-C10-1-01	SD-C9-1-01	TP-R-B10-2/B10-509-3	TP-R-B10-2/B10-509-4
					Sample Date	4/25/2001	4/25/2001	4/25/2001	8/10/2006	8/10/2006
					Depths	0.5-1.0 ft	1.5-2.0 ft	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	SD-C10-1-011N	SD-C10-1-012N	SD-C9-1-011N	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-42.0N
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 99	< 99	1000	160
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 2000	< 2000	**68000**	< 7200
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	5.7	2.7	5.36	2.99
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	26.7	18.1	31	17.3
Lead	7439-92-1	mg/kg	90	800	400	NA	**840**	68.8	199	209
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 33	150	230	49

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-9 Direct Contact Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-2/B10-509-5	TP-R-B10-2/B10-509-7	TP-R-B10-2/B10-509-8	TP-RD-B10-01	TP-RD-B10-02
					Sample Date	8/10/2006	8/10/2006	8/10/2006	10/2/2017	10/2/2017
					Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-82.0N	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-02(01.0-01.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	840	840	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	8300	**71000**	**71000**	< 110	< 110
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	4.36	3.91	3.1	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	20.7	13.1	16.3	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	137	78.3	337	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	68	< 190	130	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-9 Direct Contact Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-04	TP-RD-B10-05	TP-RD-C10-01	TP-RD-C10-02
					Sample Date	10/2/2017	10/3/2017	10/16/2017	10/17/2017
					Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-05(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-02(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J+	< 110 J+	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-10 Direct Contact Functional Area 5 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-2/B10-509-3(2017	B10-2/B10-509-3(2017	B10-2/B10-509-7(2017	SB-R-C10-01
					Sample Date	10/10/2017	10/10/2017	10/2/2017	5/25/2006
					Depths	2.0-2.5 ft	3.0-3.5 ft	4.5-5.0 ft	4.5-5.0 ft
					Sample ID	TP-R-B10-2/B10-509-3(02.0-02.5)	TP-R-B10-2/B10-509-3(03.0-03.5)	TP-R-B10-2/B10-509-7(04.5-05.0)	SB-R-C10-015.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110 J+	< 6700
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	2.45
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	14.6
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	2.91
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-10 Direct Contact Functional Area 5 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	TP-R-B10-2/B10-509-3
					Sample Date	6/12/2006	6/12/2006	8/17/2006	8/10/2006
					Depths	2.0-2.5 ft	2.0-2.5 ft	6.0-6.5 ft	13.0-13.5 ft
					Sample ID	SB-R-C10-042.5FD	SB-R-C10-042.5N	SB-R-C10-046.5N	TP-R-B10-2/B10-509-313.5N
					Parent ID	SB-R-C10-042.5N			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 350	NA	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 7000	NA	8900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.18	2.02	2.41	3.07
Copper	7440-50-8	mg/kg	11000	45000	3100	27.9	28.8	16.9	29.8
Lead	7439-92-1	mg/kg	90	800	400	5.17	5.36	2.58	4.41
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	NA	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-10 Direct Contact Functional Area 5 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-2/B10-509-4	TP-R-B10-2/B10-509-5	TP-R-B10-2/B10-509-7	TP-R-B10-2/B10-509-7
					Sample Date	8/10/2006	8/10/2006	8/10/2006	8/10/2006
					Depths	14.0-14.5 ft	11.0-11.5 ft	10.5-11.0 ft	4.0-4.5 ft
					Sample ID	TP-R-B10-2/B10-509-414.5N	TP-R-B10-2/B10-509-511.5N	TP-R-B10-2/B10-509-711.0N	TP-R-B10-2/B10-509-74.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	950	280	330	360
Nitroglycerin	55-63-0	ug/kg		200000	46000	11000	21000	7100	**79000**
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.36	3.02	7.08	4.29
Copper	7440-50-8	mg/kg	11000	45000	3100	19	26.1	21.1	19.1
Lead	7439-92-1	mg/kg	90	800	400	2.62	2.95	30.8	201
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	< 180	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-10 Direct Contact Functional Area 5 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-2/B10-509-8	TP-R-B10-2/B10-509-8	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-02
					Sample Date	8/10/2006	8/10/2006	10/2/2017	10/2/2017	10/2/2017
					Depths	10.5-11.0 ft	4.5-5.0 ft	3.0-3.5 ft	4.0-5.0 ft	3.0-3.5 ft
					Sample ID	TP-R-B10-2/B10-509-811.0N	TP-R-B10-2/B10-509-85.0N	TP-RD-B10-01(03.0-03.5)	TP-RD-B10-01(04.0-05.0)	TP-RD-B10-02(03.0-03.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	280	890	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	**64000**	< 6800	< 110 J+	< 110	< 110 J+
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	2.61	3.34	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	17.8	17.8	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	2.16	191	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	65	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-10 Direct Contact Functional Area 5 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-02	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-05	TP-RD-B10-05
					Sample Date	10/2/2017	10/2/2017	10/2/2017	10/3/2017	10/16/2017
					Depths	4.0-5.0 ft	3.0-3.5 ft	4.5-0.5 ft	2.0-2.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B10-02(04.0-05.0)	TP-RD-B10-04(03.0-03.5)	TP-RD-B10-04(04.5-0.50)	TP-RD-B10-05(02.0-02.5)	TP-RD-B10-05(03.0-03.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J+	< 110 J+	< 120 J+	< 110 J+	< 110
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-10 Direct Contact Functional Area 5 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-02	TP-RD-C10-02
					Sample Date	10/16/2017	10/16/2017	10/17/2017	10/17/2017
					Depths	2.5-3.0 ft	3.0-3.5 ft	3.0-3.5 ft	3.5-4.0 ft
					Sample ID	TP-RD-C10-01(02.5-03.0)	TP-RD-C10-01(03.0-03.5)	TP-RD-C10-02(03.0-03.5)	TP-RD-C10-02(03.5-04.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-11 Direct Contact Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A10-3-01	A10-3-01	A10-516-05	A10-516-05
					Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999
					Depths	0.0-0.5 ft	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft
					Sample ID	A10-3-010.5N	A10-3-011.3N	A10-516-051.5N	A10-516-050.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-11 Direct Contact Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A10-516-06	A11-570-01	A11-570-05	SB-R-A11-02
					Sample Date	7/21/2000	6/8/2000	10/14/1999	5/25/2006
					Depths	0.5-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.5-1.0 ft
					Sample ID	A10-516-060.5N	A11-570-012N	A11-570-051N	SB-R-A11-021.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	< 6900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	2.82	4.5	2.73
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	7.98	23.8	11.7
Lead	7439-92-1	mg/kg	90	800	400	NA	36.7	227	4.45
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 427.591	37	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-11 Direct Contact Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-A11-504-3	TP-RD-A11-08	UD-06	UD-06
						Sample Date	8/8/2006	10/19/2017	9/15/1999	9/15/1999
						Depths	1.5-2.0 ft	1.0-1.5 ft	0.0-0.7 ft	0.0-1.0 ft
						Sample ID	TP-R-A11-504-32.0N	TP-RD-A11-08(01.0-01.5)	UD-060.67N	UD-061N
						Parent ID				
						Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 360	< 110	NA	< 190
Nitroglycerin	55-63-0	ug/kg		200000	46000		12000	< 110	NA	< 5000
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19		3.98	NA	NA	5.9
Copper	7440-50-8	mg/kg	11000	45000	3100		15.2	NA	NA	11.7
Lead	7439-92-1	mg/kg	90	800	400		**587**	NA	NA	37.5
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		< 200	NA	NA	< 390

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-12 Direct Contact Functional Area 6 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-A11-02	TP-R-A11-504-3	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08
						Sample Date	5/25/2006	8/8/2006	10/19/2017	10/19/2017	10/19/2017	10/19/2017
						Depths	2.5-3.0 ft	6.0-6.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft
						Sample ID	SB-R-A11-023.0N	TP-R-A11-504-36.5N	TP-RD-A11-08(03.0-03.5)	TP-RD-A11-08(05.0-05.5)	TP-RD-A11-08(07.0-07.5)	TP-RD-A11-08(09.0-09.5)
						Parent ID						
						Notes						
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS							
Explosives												
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 350	< 310	< 110	< 100	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 7100	< 6300	< 110	< 100	< 110	< 110
Metals												
Arsenic	7440-38-2	mg/kg	19	19	19		2.38	< 2.09	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		20.2	3.55	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400		4.67	3.28	NA	NA	NA	NA
SVOCs												
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		< 200	< 170	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-13 Direct Contact Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-20-01	B10-20-01	B10-3-01	B10-3-03	B10-4-01
					Sample Date	10/15/1999	10/15/1999	6/16/2000	10/15/1999	10/15/1999
					Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B10-20-011FD	B10-20-011N	B10-3-011N	B10-3-032N	B10-4-012N
					Parent ID	B10-20-011N				
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA	NA
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	**37.6**	**41**	4.7	4.5	3.6
Copper	7440-50-8	mg/kg	11000	45000	3100	177	128	18.6	18.8	20.6
Lead	7439-92-1	mg/kg	90	800	400	**8400**	**5570**	213	111	41.7
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	390	190	214	59	< 440

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-13 Direct Contact Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-4-02	B10-503-02	B10-506-02	B10-506-04	SB-R-B10-01
					Sample Date	6/16/2000	10/11/1999	10/14/1999	7/21/2000	5/25/2006
					Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.5-1.0 ft
					Sample ID	B10-4-022N	B10-503-021N	B10-506-021N	B10-506-042N	SB-R-B10-011.0FD
					Parent ID					SB-R-B10-011.0N
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 230	< 210	821	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 5386.8	< 5814.1	< 6610	< 7100
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	3.49	2.3	4.8	5.92	3.39
Copper	7440-50-8	mg/kg	11000	45000	3100	14.7	12.2	64.1	20.2	19.9
Lead	7439-92-1	mg/kg	90	800	400	11.6	162	250	21.7	8.99
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 390	< 380	23	< 438	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-13 Direct Contact Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B10-01	SB-R-B10-02	TP-R-B10-2/B10-509-1	TP-R-B10-2/B10-509-2	TP-R-B10-2/B10-509-6
					Sample Date	5/25/2006	5/25/2006	8/10/2006	8/10/2006	8/10/2006
					Depths	0.5-1.0 ft	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	SB-R-B10-011.0N	SB-R-B10-021.0N	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-62.0FD
					Parent ID					TP-R-B10-2/B10-509-62.0N
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 380	< 330	< 340	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 7500	6300	6400	4000
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	3.98	3.89	5.06	6.14	3.62
Copper	7440-50-8	mg/kg	11000	45000	3100	16.3	22.4	15.3	16.4	39.5
Lead	7439-92-1	mg/kg	90	800	400	8.05	234	60.5	**770**	**617**
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	210	< 180	42	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-13 Direct Contact Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-2/B10-509-6	TP-R-B10-505-1	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3
					Sample Date	8/10/2006	8/8/2006	8/8/2006	8/9/2006	8/9/2006
					Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-2/B10-509-62.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	TP-R-B10-505-22.0N	TP-R-B10-505-32.0N
					Parent ID		TP-R-B10-505-12.0N			
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	140	NA	NA	< 340	< 360
Nitroglycerin	55-63-0	ug/kg		200000	46000	5300	NA	NA	< 6800	< 7100
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	3.97	7.01	6.39	3.36	3.37
Copper	7440-50-8	mg/kg	11000	45000	3100	36.4	8.93	7.72	126	11.1
Lead	7439-92-1	mg/kg	90	800	400	**561**	276	232	**802**	69.3
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	**570**	NA	NA	53	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-13 Direct Contact Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-508-1	TP-R-B10-508-3	TP-R-B10-508-4
					Sample Date	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006
					Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B10-505-42.0N	TP-R-B10-505-52.0N	TP-R-B10-508-12.0N	TP-R-B10-508-32.0N	TP-R-B10-508-42.0FD
					Parent ID					TP-R-B10-508-42.0N
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	< 360	330	120	1900
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 7100	**100000**	< 6100	35000
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	3.61	3.62	1.65	3.25	4.67
Copper	7440-50-8	mg/kg	11000	45000	3100	23.2	48.7	12.1	12.7	178
Lead	7439-92-1	mg/kg	90	800	400	**527**	281	269	16.5	**6820**
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	370	< 200	< 180	83	300

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-13 Direct Contact Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-508-4	TP-R-B10-5-1	TP-R-B10-6-1	TP-RD-B10-06
					Sample Date	8/9/2006	8/11/2006	8/11/2006	10/4/2017
					Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft
					Sample ID	TP-R-B10-508-42.0N	TP-R-B10-5-12.0N	TP-R-B10-6-12.0N	TP-RD-B10-06(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	1200	640	< 310	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	25000	28000	< 6100	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.99	NA	2.86	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	116	NA	37	NA
Lead	7439-92-1	mg/kg	90	800	400	**4090**	NA	330	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	140	350	310	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-13 Direct Contact Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-13
					Sample Date	10/3/2017	10/3/2017	10/13/2017
					Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-13(01.0-01.5)
					Parent ID			
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B10-01	SB-R-B10-02	TP-R-B10-2/B10-509-1	TP-R-B10-2/B10-509-2	TP-R-B10-2/B10-509-2
					Sample Date	5/25/2006	5/25/2006	8/10/2006	8/10/2006	8/10/2006
					Sample Depths	4.5-5.0 ft	5.0-5.5 ft	10.5-11.0 ft	8.0-8.5 ft	9.5-10.0 ft
					Sample ID	SB-R-B10-015.0N	SB-R-B10-025.5N	TP-R-B10-2/B10-509-111.0N	TP-R-B10-2/B10-509-28.5N	TP-R-B10-2/B10-509-210.0N
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 340	< 340	< 360	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6600	< 6800	< 6900	3600	3000
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.17	2.78	3.23	3.94	1.64
Copper	7440-50-8	mg/kg	11000	45000	3100	10.6	15.2	21.5	19.2	5.01
Lead	7439-92-1	mg/kg	90	800	400	1.89	4.83	3.61	311	16
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 190	< 190	**3600**	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-2/B10-509-6	TP-R-B10-505-1	TP-R-B10-505-2	TP-R-B10-505-3	TP-R-B10-505-4
					Sample Date	8/10/2006	8/8/2006	8/9/2006	8/9/2006	8/9/2006
					Sample Depths	9.5-10.0 ft	10.5-11.0 ft	8.0-8.5 ft	8.0-8.5 ft	11.5-12.0 ft
					Sample ID	TP-R-B10-2/B10-509-610.0N	TP-R-B10-505-111.0N	TP-R-B10-505-28.5N	TP-R-B10-505-38.5N	TP-R-B10-505-412.0N
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 370	NA	< 340	< 360	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	3000	NA	< 6700	< 7100	< 6400
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	3.62	2.98	2.75	3.89	2.04
Copper	7440-50-8	mg/kg	11000	45000	3100	23.3	24.4	19.8	52.2	8.63
Lead	7439-92-1	mg/kg	90	800	400	5.66	2.16	4.93	5.81	3.33
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	NA	< 190	< 200	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-505-4	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5(2017)	TP-R-B10-505-5(2017)
					Sample Date	8/9/2006	8/9/2006	8/9/2006	10/5/2017	10/5/2017
					Sample Depths	5.5-6.0 ft	10.5-11.0 ft	5.5-6.0 ft	11.0-11.5 ft	11.0-11.5 ft
					Sample ID	TP-R-B10-505-46.0N	TP-R-B10-505-511.0N	TP-R-B10-505-56.0N	BD100517	TP-R-B10-505-5(11.0-11.5)
					Parent ID				TP-R-B10-505-5(11.0-11.5)	
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	< 330	< 360	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900	< 6600	< 7200	< 110	< 110
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	3.54	4.97	3.92	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	19	14.8	44.5	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	195	5.81	**775**	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	260	< 180	< 200	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-508-1	TP-R-B10-508-1	TP-R-B10-508-1(2017)	TP-R-B10-508-2	TP-R-B10-508-2
					Sample Date	8/9/2006	8/9/2006	10/5/2017	8/9/2006	8/9/2006
					Sample Depths	10.0-10.5 ft	14.5-15.0 ft	14.0-14.5 ft	10.5-11.0 ft	2.0-2.5 ft
					Sample ID	TP-R-B10-508-110.5N	TP-R-B10-508-115.0N	TP-R-B10-508-1(14.0-14.5)	TP-R-B10-508-211.0N	TP-R-B10-508-22.5N
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	1100	< 340	< 110	< 320	2300
Nitroglycerin	55-63-0	ug/kg		200000	46000	**160000**	8400	< 110	9700	45000
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	3.62	2.41	NA	1.63	2.09
Copper	7440-50-8	mg/kg	11000	45000	3100	23.8	24	NA	17.5	25.4
Lead	7439-92-1	mg/kg	90	800	400	71.1	3.66	NA	10.5	240
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	65	< 190	NA	< 180	62

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-5-1
					Sample Date	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/11/2006
					Sample Depths	16.5-17.0 ft	5.5-6.0 ft	16.5-17.0 ft	5.5-6.0 ft	12.0-12.5 ft
					Sample ID	TP-R-B10-508-317.0N	TP-R-B10-508-36.0N	TP-R-B10-508-417.0N	TP-R-B10-508-46.0N	TP-R-B10-5-112.5N
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	**40000**	< 320	1500	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6500	7200	11000	**200000**	12000
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.13	4.25	1.71	4.06	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	18	15.5	14.9	17.1	NA
Lead	7439-92-1	mg/kg	90	800	400	3.17	9.78	10.1	**587**	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 200	< 180	< 200	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-5-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-RD-B10-06	TP-RD-B10-06
					Sample Date	8/11/2006	8/11/2006	8/11/2006	10/4/2017	10/4/2017
					Sample Depths	4.5-5.0 ft	12.0-12.5 ft	4.0-4.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-R-B10-5-15.0N	TP-R-B10-6-112.5N	TP-R-B10-6-14.5N	TP-RD-B10-06(03.0-03.5)	TP-RD-B10-06(05.0-05.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	3500	< 350	460	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	**130000**	3100	**51000**	< 110	< 120
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	2.6	4.28	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	35.2	26.2	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	3.04	**990**	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	48	< 980	< 200	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-08	TP-RD-B10-08
					Sample Date	10/4/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017
					Sample Depths	6.0-6.5 ft	2.5-3.0 ft	2.5-3.0 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B10-06(06.0-06.5)	BD100317A	TP-RD-B10-07(02.5-03.0)	TP-RD-B10-08(03.0-03.5)	TP-RD-B10-08(05.0-05.5)
					Parent ID		TP-RD-B10-07(02.5-03.0)			
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 120	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 120	< 120	< 120
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-13
					Sample Date	10/3/2017	10/3/2017	10/3/2017	10/13/2017
					Sample Depths	7.0-7.5 ft	9.0-9.5 ft	10.5-10.8 ft	10.0-10.5 ft
					Sample ID	TP-RD-B10-08(07.0-07.5)	TP-RD-B10-08(09.0-09.5)	TP-RD-B10-08(10.5.0-10.8)	TP-RD-B10-13(10.0-10.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-14 Direct Contact Functional Area 7 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13
					Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft
					Sample ID	TP-RD-B10-13(03.0-03.5)	TP-RD-B10-13(05.0-05.5)	TP-RD-B10-13(07.0-07.5)	TP-RD-B10-13(09.0-09.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 100	< 110	< 100	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 100	< 110	< 100	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-2178-03	B10-2178-05	B10-2178-05	B10-503-01
					Sample Date	11/19/1999	11/19/1999	11/19/1999	10/11/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft
					Sample ID	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-503-012N
					Parent ID		B10-2178-051N		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 230	5200	3700	< 220
Nitroglycerin	55-63-0	ug/kg		200000	46000	2000	4100	3300	< 6016.8
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	14.6	**334**	**274**	4.3
Copper	7440-50-8	mg/kg	11000	45000	3100	186	211	**48500**	15.7
Lead	7439-92-1	mg/kg	90	800	400	**17200**	318	270	25.1
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	73	390	410	< 400

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-503-06	B10-511-03	B10-656-02	B10-656-02
					Sample Date	10/12/1999	11/19/1999	10/12/1999	11/18/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft
					Sample ID	B10-503-062N	B10-511-032N	B10-656-022N	B10-656-021.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 217.4	270	< 208.4	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5763.5	< 4900	< 5705.3	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4	6.2	4	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	18	33.1	16.7	NA
Lead	7439-92-1	mg/kg	90	800	400	244	**1160**	7.3	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 410	< 3900	< 390	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-9-02	B11-9-03	SB-R-B11-02	SB-R-B11-02
					Sample Date	11/5/1999	6/30/2000	5/25/2006	5/25/2006
					Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	B11-9-022N	B11-9-031N	SB-R-B11-021.0FD	SB-R-B11-021.0N
					Parent ID			SB-R-B11-021.0N	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 340	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 6900	< 6900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.8	5.45	3.06	3.15
Copper	7440-50-8	mg/kg	11000	45000	3100	13.5	21.2	16	15.2
Lead	7439-92-1	mg/kg	90	800	400	103	212	183	173
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	320	154	< 190	41

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B11-03	TP-R-A11-504-1	TP-R-B10-501-1	TP-R-B10-502-1
					Sample Date	5/25/2006	8/8/2006	8/8/2006	8/8/2006
					Sample Depths	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	SB-R-B11-031.0N	TP-R-A11-504-12.0N	TP-R-B10-501-12.0N	TP-R-B10-502-12.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 390	720	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7700	7300	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.36	5.62	5.42	2.93
Copper	7440-50-8	mg/kg	11000	45000	3100	11	12.2	18.6	16.5
Lead	7439-92-1	mg/kg	90	800	400	35.7	**1350**	**1040**	8.31
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 210	160	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-502-2	TP-RD-A11-09	TP-RD-A11-09	TP-RD-B10-10
					Sample Date	8/8/2006	10/20/2017	10/20/2017	10/3/2017
					Sample Depths	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B10-502-22.0N	BD102017A	TP-RD-A11-09(01.0-01.5)	BD100317
					Parent ID		TP-RD-A11-09(01.0-01.5)		TP-RD-B10-10(01.0-01.5)
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 110	< 110	< 110 J+
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.54	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	14.2	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	216	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-11	TP-RD-B10-14
					Sample Date	10/3/2017	10/10/2017	10/4/2017	10/12/2017
					Sample Depths	1.0-1.5 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-14(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110 J	< 120	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J+	< 120	< 110	< 120 J+
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-14A	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B11-05A
					Sample Date	10/16/2017	11/6/2017	11/6/2017	10/16/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B10-14A(01.0-01.5)	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-16(01.0-01.5)	TP-RD-B11-05A(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-15 Direct Contact Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-05B	TP-RD-B11-05C	TP-RD-B11-07	TP-RD-B11-20	TP-RD-B11-20
					Sample Date	10/18/2017	10/23/2017	11/6/2017	12/4/2017	12/4/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-07(01.0-01.5)	BD120417	TP-RD-B11-20(01.0-01.5)
					Parent ID				TP-RD-B11-20(01.0-01.5)	
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 110	< 120	< 120 J
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 110	< 120	< 120 J
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-16 Direct Contact Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-503-07	SB-R-B11-02	SB-R-B11-03	TP-R-A11-504-1
					Sample Date	8/11/2006	5/25/2006	5/25/2006	8/8/2006
					Sample Depths	11.5-12.0 ft	6.0-6.5 ft	4.5-5.0 ft	7.0-7.5 ft
					Sample ID	B10-503-0712.0N	SB-R-B11-026.5N	SB-R-B11-035.0N	TP-R-A11-504-17.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 320	< 350	< 330	< 370
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6400	< 7000	< 6500	< 7300
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	2.83	1.87	3.53
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	31.4	7.4	18.2
Lead	7439-92-1	mg/kg	90	800	400	NA	4.55	1.16	7.55
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 190	< 180	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-16 Direct Contact Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A11-504-1(2017)	TP-R-A11-504-1(2017)	TP-R-A11-504-1(2017)	TP-R-A11-504-1(2017)
					Sample Date	10/4/2017	10/10/2017	10/10/2017	10/17/2017
					Sample Depths	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	12.0-12.5 ft
					Sample ID	TP-R-A11-504-1(08.5-09.0)	TP-R-A11-504-1(10.5-11.0)	TP-R-A11-504-1(11.5-12.0)	TP-R-A11-504-1(12.0-12.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-16 Direct Contact Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B10-501-1	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-2
					Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006
					Sample Depths	13.0-13.5 ft	7.5-8.0 ft	9.5-10.0 ft	8.5-9.0 ft
					Sample ID	TP-R-B10-501-113.5N	TP-R-B10-501-18.0N	TP-R-B10-502-110.0N	TP-R-B10-502-29.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.41	2.17	1.24	1.69
Copper	7440-50-8	mg/kg	11000	45000	3100	25.2	19.8	27.4	20.7
Lead	7439-92-1	mg/kg	90	800	400	**1880**	**1300**	3.53	5.75
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-16 Direct Contact Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-B10-10
					Sample Date	10/20/2017	10/20/2017	10/20/2017	10/17/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	3.5-4.0 ft
					Sample ID	TP-RD-A11-09(03.0-03.5)	TP-RD-A11-09(05.0-05.5)	TP-RD-A11-09(07.0-07.5)	TP-RD-B10-10(03.5-04.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-16 Direct Contact Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-14
					Sample Date	10/4/2017	10/4/2017	10/4/2017	10/12/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	2.0-2.5 ft
					Sample ID	TP-RD-B10-11(03.0-03.5)	TP-RD-B10-11(05.0-05.5)	TP-RD-B10-11(06.0-06.5)	TP-RD-B10-14(02.0-02.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 110 J+
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-16 Direct Contact Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B11-05A
					Sample Date	11/6/2017	11/6/2017	11/6/2017	10/16/2017
					Sample Depths	2.0-2.5 ft	2.0-2.5 ft	2.0-2.5 ft	3.0-3.5 ft
					Sample ID	BD110617	TP-RD-B10-15(02.0-02.5)	TP-RD-B10-16(02.0-02.5)	TP-RD-B11-05A(03.0-03.5)
					Parent ID	TP-RD-B10-15(02.0-02.5)			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-16 Direct Contact Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-07
					Sample Date	10/16/2017	10/18/2017	10/18/2017	11/6/2017
					Sample Depths	5.0-5.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B11-05A(05.0-05.5)	TP-RD-B11-05B(03.0-03.5)	TP-RD-B11-05B(05.0-05.5)	TP-RD-B11-07(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-17 Direct Contact Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B10-7-02	B10-7-10	B11-1-08	B11-11-05
					Sample Date	11/18/1999	11/18/1999	11/10/1999	11/10/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft
					Sample ID	B10-7-021N	B10-7-101N	B11-1-081N	B11-11-050.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	< 643468	< 700869	< 250	< 210
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 1400000	< 1300000	< 4500	< 4800
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	6.1	5.4	**64.4**	12.9
Copper	7440-50-8	mg/kg	11000	45000	3100	22.1	37.9	46	12.7
Lead	7439-92-1	mg/kg	90	800	400	**1080**	**658**	**16900**	**7320**
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 380	< 380	390	360

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-17 Direct Contact Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-1-11	C10-1-01	C10-15-02	C10-15-02
					Sample Date	11/10/1999	11/18/1999	11/22/1999	11/22/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-0.5 ft	0.0-1.0 ft
					Sample ID	B11-1-111N	C10-1-011N	C10-15-020.5N	C10-15-021N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	< 220	NA	NA	< 140
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4900	NA	NA	< 5600
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	**53.8**	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	17.8	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	**33800**	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	150	NA	NA	< 400

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-17 Direct Contact Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C10-3-02	C10-3-02	C11-10-01	C11-1-17
					Sample Date	11/22/1999	11/22/1999	11/9/1999	11/18/1999
					Sample Depths	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	C10-3-020.5N	C10-3-021N	C11-10-012N	C11-1-171N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	NA	< 140	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 5400	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	7.8	**69.4**	**38.6**
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	39.7	14.8	26.2
Lead	7439-92-1	mg/kg	90	800	400	NA	**971**	**2090**	**10900**
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	99	99	**8200**

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-17 Direct Contact Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	C11-12-02	C11-8-05	C11-9-04	SB-R-C11-01	SB-R-C11-01
						Sample Date	11/10/1999	11/9/1999	11/18/1999	5/31/2006	5/31/2006
						Sample Depths	0.0-1.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft
						Sample ID	C11-12-021N	C11-8-052N	C11-9-040.5N	SB-R-C11-011.0FD	SB-R-C11-011.0N
						Parent ID				SB-R-C11-011.0N	
						Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS						
Explosives											
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800		< 240	NA	NA	< 390	< 360
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 5000	NA	NA	< 7700	< 7300
Metals											
Arsenic	7440-38-2	mg/kg	19	19	19		**20.2**	**61.4**	**115**	**26.3**	**22.6**
Copper	7440-50-8	mg/kg	11000	45000	3100		16.9	30.3	88.6	18.3	14.8
Lead	7439-92-1	mg/kg	90	800	400		**2470**	**4930**	**11800**	110	102
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		**2100**	**670**	**3200**	**590**	390

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-17 Direct Contact Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C11-03	SD-C10-2-01	TP-RD-B10-09	TP-RD-B10-12	TP-RD-B10-12
					Sample Date	6/1/2006	5/2/2001	10/3/2017	10/3/2017	10/10/2017
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft
					Sample ID	SB-R-C11-031.0N	SD-C10-2-011N	TP-RD-B10-09(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	< 350	NA	< 110	< 110	< 120000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900	NA	< 110 J+	< 110 J+	< 120000
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	6.27	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	18.4	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	**473**	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	**970**	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-17 Direct Contact Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09
					Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)
					Parent ID		TP-RD-C11-07(01.0-01.5)			
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	< 130	< 120	< 120 J	< 130	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 130	< 120	< 120 J	< 130	< 120
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-18 Direct Contact Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C11-01	SB-R-C11-03	SD-C10-2-01	TP-RD-B10-09	TP-RD-B10-09
					Sample Date	5/31/2006	6/1/2006	5/2/2001	10/17/2017	10/17/2017
					Sample Depths	6.5-7.0 ft	4.5-5.0 ft	2.0-2.5 ft	2.0-2.5 ft	3.0-3.5 ft
					Sample ID	SB-R-C11-017.0N	SB-R-C11-035.0N	SD-C10-2-012.5N	TP-RD-B10-09(02.0-02.5)	TP-RD-B10-09(03.0-03.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	< 330	< 350	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 7100	< 2200	< 110	< 110
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	2.14	3.12	3.8	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	17.5	15.7	18.9	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	3.54	6.81	57	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 200	< 36	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-18 Direct Contact Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B10-09	TP-RD-B10-12	TP-RD-B10-12	TP-RD-C11-05	TP-RD-C11-06
					Sample Date	10/17/2017	10/10/2017	10/16/2017	11/30/2017	11/30/2017
					Sample Depths	3.5-4.0 ft	2.5-3.0 ft	3.5-4.0 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B10-09(03.5-04.0)	TP-RD-B10-12(02.5-03.0)	TP-RD-B10-12(03.5-04.0)	TP-RD-C11-05(03.0-03.5)	TP-RD-C11-06(03.0-03.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 120	< 130	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 120	< 130	< 120
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-18 Direct Contact Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-07	TP-RD-C11-08	TP-RD-C11-09	TP-RD-C11-09
					Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-C11-07(03.0-03.5)	TP-RD-C11-08(03.0-03.5)	TP-RD-C11-09(03.0-03.5)	TP-RD-C11-09(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenze	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A11-1-01	A11-1-04	A11-1-04	A11-3-03
					Sample Date	10/8/1999	10/8/1999	6/8/2000	10/8/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	A11-1-011N	A11-1-041N	A11-1-042N	A11-3-031N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 240	< 200	NA	< 240
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5368.6	< 6354	< 6000	< 7080
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	10.1	4.3	NA	3.2
Copper	7440-50-8	mg/kg	11000	45000	3100	19.8	13.1	NA	56
Lead	7439-92-1	mg/kg	90	800	400	**1250**	**679**	NA	305
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	35	< 460	NA	28

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A11-3-05	A11-3-05	A11-8-03	SB-R-A11-01
					Sample Date	10/8/1999	6/8/2000	10/14/1999	5/23/2006
					Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.5-1.0 ft
					Sample ID	A11-3-051N	A11-3-051.5N	A11-8-032N	SB-R-A11-011.0FD
					Parent ID				SB-R-A11-011.0N
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 220	NA	< 240	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5183	< 5690	< 5537.1	< 6300
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.1	NA	2.4	< 2.07
Copper	7440-50-8	mg/kg	11000	45000	3100	7	NA	27.6	3.31
Lead	7439-92-1	mg/kg	90	800	400	136	NA	14.1	28.9
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 380	NA	< 400	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A11-01	SB-R-A11-02	TP-R-A11-2-1	TP-R-A11-2-1
					Sample Date	5/23/2006	5/25/2006	8/8/2006	8/8/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	SB-R-A11-011.0N	SB-R-A11-021.0N	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N
					Parent ID			TP-R-A11-2-12.0N	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 310	< 350	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6300	< 6900	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.09	2.73	2.23	3.4
Copper	7440-50-8	mg/kg	11000	45000	3100	3.2	11.7	12.3	17.3
Lead	7439-92-1	mg/kg	90	800	400	26.7	4.45	16.5	15.4
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 170	< 190	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A11-2-2	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-504-2
					Sample Date	8/8/2006	8/7/2006	8/7/2006	8/8/2006
					Sample Depths	2.0-2.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-A11-2-22.5N	TP-R-A11-4-12.0N	TP-R-A11-4-22.0N	TP-R-A11-504-22.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	1300	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 6700	< 6900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.63	2.17	2.29	3.14
Copper	7440-50-8	mg/kg	11000	45000	3100	10.2	14.1	13.2	13.1
Lead	7439-92-1	mg/kg	90	800	400	184	6.68	**3790**	88.1
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2	TP-RD-A11-02A
					Sample Date	8/7/2006	8/7/2006	8/7/2006	10/20/2017
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft
					Sample ID	TP-R-A11-5-22.0N	TP-R-A11-7-12.0N	TP-R-A11-7-22.0N	TP-RD-A11-02A(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	520	< 330	NA	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6600	< 6700	NA	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.13	3.3	3.77	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	3.09	40	7.74	NA
Lead	7439-92-1	mg/kg	90	800	400	77.9	**13300**	**1510**	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-03	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-10
					Sample Date	10/6/2017	10/12/2017	10/12/2017	10/20/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-03(01.0-01.5)	BD10122017	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-10(01.0-01.5)
					Parent ID		TP-RD-A11-06(01.0-01.5)		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120000	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120000	< 120 J+	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-14	TP-RD-A11-15
					Sample Date	10/20/2017	10/20/2017	10/19/2017	10/25/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-15(01.0-01.5)
					Parent ID	TP-RD-A11-11(01.0-01.5)			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-17	TP-RD-A11-19	TP-RD-A11-19A
					Sample Date	10/27/2017	10/26/2017	10/26/2017	11/3/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-17(01.0-01.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19A(01.0-01.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 1200	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 1200	< 110	< 110
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-19 Direct Contact Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-3A	TP-RD-A11-7A
					Sample Date	11/3/2017	11/29/2017	11/29/2017	10/13/2017	10/13/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-7A(01.0-01.5)
					Parent ID					
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 120	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 120	< 110	< 120
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A11-01	SB-R-A11-02	TP-R-A11-2-1	TP-R-A11-2-2
					Sample Date	8/10/2006	5/25/2006	8/8/2006	8/8/2006
					Sample Depths	4.5-5.0 ft	2.5-3.0 ft	6.5-7.0 ft	2.0-2.5 ft
					Sample ID	SB-R-A11-015.0N	SB-R-A11-023.0N	TP-R-A11-2-17.0N	TP-R-A11-2-22.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 310	< 350	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6200	< 7100	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.02	2.38	1.55	1.63
Copper	7440-50-8	mg/kg	11000	45000	3100	1.64	20.2	11.4	10.2
Lead	7439-92-1	mg/kg	90	800	400	2.25	4.67	1.68	184
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 170	< 200	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A11-2-2	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-4-2(2017)
					Sample Date	8/8/2006	8/7/2006	8/7/2006	10/5/2017
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	8.0-8.5 ft	8.5-9.0 ft
					Sample ID	TP-R-A11-2-27.5N	TP-R-A11-4-18.5N	TP-R-A11-4-28.5N	TP-R-A11-4-2(08.5-09.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 330	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 6500	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.85	< 2.11	1.77	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	14.4	4.32	8.85	NA
Lead	7439-92-1	mg/kg	90	800	400	34.8	4.74	104	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A11-504-2	TP-R-A11-5-2	TP-R-A11-7-1	TP-R-A11-7-2
					Sample Date	8/8/2006	8/7/2006	8/7/2006	8/7/2006
					Sample Depths	10.0-10.5 ft	7.5-8.0 ft	6.5-7.0 ft	6.5-7.0 ft
					Sample ID	TP-R-A11-504-210.5N	TP-R-A11-5-28.0N	TP-R-A11-7-17.0N	TP-R-A11-7-27.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	1400	< 320	< 330	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	9100	< 6400	< 6700	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.95	< 2.13	1.95	1.98
Copper	7440-50-8	mg/kg	11000	45000	3100	2.6	0.874	8.06	17.7
Lead	7439-92-1	mg/kg	90	800	400	76.1	2.9	396	**576**
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 1100	< 180	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-02	TP-RD-A11-02	TP-RD-A11-02A	TP-RD-A11-02A
					Sample Date	10/5/2017	10/10/2017	10/20/2017	10/20/2017
					Sample Depths	6.0-6.5 ft	7.0-7.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-02(06.0-06.5)	TP-RD-A11-02(07.0-07.5)	TP-RD-A11-02A(03.0-03.5)	TP-RD-A11-02A(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 100	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 100	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-02A	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03
					Sample Date	10/20/2017	10/6/2017	10/6/2017	10/6/2017
					Sample Depths	7.0-7.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-A11-02A(07.0-07.5)	TP-RD-A11-03(03.0-03.5)	TP-RD-A11-03(05.0-05.5)	TP-RD-A11-03(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03
					Sample Date	10/6/2017	10/16/2017	10/16/2017	10/16/2017
					Sample Depths	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	9.5-10.0 ft
					Sample ID	TP-RD-A11-03(08.5-09.0)	TP-RD-A11-03(10.5-11.0)	TP-RD-A11-03(11.5-12.0)	TP-RD-A11-03(09.5-10.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	910	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06
					Sample Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-9.0 ft
					Sample ID	TP-RD-A11-06(03.0-03.5)	TP-RD-A11-06(05.0-05.5)	TP-RD-A11-06(07.0-07.5)	TP-RD-A11-06(08.0-09.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 100	< 110	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 100	< 110	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10
					Sample Date	10/20/2017	10/20/2017	10/20/2017	10/20/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
					Sample ID	TP-RD-A11-10(03.0-03.5)	TP-RD-A11-10(05.0-05.5)	TP-RD-A11-10(07.0-07.5)	TP-RD-A11-10(08.0-08.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11
					Sample Date	10/20/2017	10/20/2017	10/20/2017	10/20/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft
					Sample ID	TP-RD-A11-11(03.0-03.5)	TP-RD-A11-11(05.0-05.5)	TP-RD-A11-11(07.0-07.5)	TP-RD-A11-11(08.0-08.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14
					Sample Date	10/19/2017	10/19/2017	10/25/2017	10/25/2017
					Sample Depths	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	6.0-6.5 ft
					Sample ID	TP-RD-A11-14(03.0-03.5)	TP-RD-A11-14(05.0-05.5)	BD102517	TP-RD-A11-14(06.0-06.5)
					Parent ID			TP-RD-A11-14(06.0-06.5)	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-15	TP-RD-A11-15
					Sample Date	10/25/2017	10/25/2017	10/25/2017	10/25/2017
					Sample Depths	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-14(07.0-07.5)	TP-RD-A11-14(08.5-09.0)	TP-RD-A11-15(03.0-03.5)	TP-RD-A11-15(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-15	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-16
					Sample Date	10/25/2017	10/27/2017	10/27/2017	10/26/2017
					Sample Depths	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-15(08.0-08.5)	TP-RD-A11-15A(03.0-03.5)	TP-RD-A11-15A(05.0-05.5)	TP-RD-A11-16(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 100	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 100	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-17
					Sample Date	10/26/2017	10/26/2017	10/26/2017	10/26/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-16(05.0-05.5)	TP-RD-A11-16(07.0-07.5)	TP-RD-A11-16(08.0-08.5)	TP-RD-A11-17(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 130
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-19	TP-RD-A11-19
					Sample Date	10/26/2017	10/26/2017	11/3/2017	11/3/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-17(05.0-05.5)	TP-RD-A11-17(07.0-07.5)	TP-RD-A11-19(03.0-03.5)	TP-RD-A11-19(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19A	TP-RD-A11-19A
					Sample Date	11/3/2017	11/6/2017	11/6/2017	11/6/2017
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-19(07.0-07.5)	TP-RD-A11-19(08.0-08.5)	TP-RD-A11-19A(03.0-03.5)	TP-RD-A11-19A(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 100	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 100	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-21	TP-RD-A11-21
					Sample Date	11/6/2017	11/6/2017	11/3/2017	11/3/2017
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-19A(07.0-07.5)	TP-RD-A11-19A(08.0-08.5)	TP-RD-A11-21(03.0-03.5)	TP-RD-A11-21(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 100	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 100	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-22	TP-RD-A11-22
					Sample Date	11/3/2017	11/3/2017	11/29/2017	11/29/2017
					Sample Depths	7.0-7.5 ft	9.0-9.5 ft	2.0-2.5 ft	4.0-4.5 ft
					Sample ID	TP-RD-A11-21(07.0-07.5)	TP-RD-A11-21(09.0-09.5)	TP-RD-A11-22(02.0-02.5)	TP-RD-A11-22(04.0-04.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-3A	TP-RD-A11-3A
					Sample Date	11/29/2017	11/29/2017	10/13/2017	10/13/2017
					Sample Depths	2.0-2.5 ft	4.0-4.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-23(02.0-02.5)	TP-RD-A11-23(04.0-04.5)	TP-RD-A11-3A(03.0-03.5)	TP-RD-A11-3A(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A11-7A
					Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017
					Sample Depths	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-3A(07.0-07.5)	TP-RD-A11-3A(08.5-09.0)	BD101317	TP-RD-A11-7A(03.0-03.5)
					Parent ID			TP-RD-A11-7A(03.0-03.5)	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-20 Direct Contact Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A
					Sample Date	10/13/2017	10/13/2017	10/13/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft
					Sample ID	TP-RD-A11-7A(05.0-05.5)	TP-RD-A11-7A(07.0-07.5)	TP-RD-A11-7A(08.5-09.0)
					Parent ID			
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-21 Direct Contact Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B11-663-04	B11-2-03	B11-523-01	B11-523-03	B11-663-06
						Sample Date	10/15/1999	10/12/1999	6/8/2000	10/12/1999	6/8/2000
						Sample Depths	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-4.0 ft
						Sample ID	B11-663-041N	B11-2-032N	B11-523-012N	B11-523-032N	B11-663-064N
						Parent ID					
						Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS						
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 220	NA	NA	NA	945
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 621.9	NA	NA	NA	< 5940
Metals											
Arsenic	7440-38-2	mg/kg	19	19	19		3.8	3.5	3	5.8	3.52
Copper	7440-50-8	mg/kg	11000	45000	3100		21.4	13.6	10.3	35.5	99.1
Lead	7439-92-1	mg/kg	90	800	400		176	26.6	72.4	279	128
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		**580**	< 410	**1160**	< 410	< 401.268

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-21 Direct Contact Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	SB-R-B11-01	SB-R-B12-02	TP-RD-A11-01	TP-RD-A11-22	TP-RD-B11-01
						Sample Date	5/23/2006	5/23/2006	10/4/2017	11/29/2017	10/6/2017
						Sample Depths	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	SB-R-B11-011.0N	SB-R-B12-021.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-B11-01(01.0-01.5)
						Parent ID					
						Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS						
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		220	< 350	< 120	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 7000	< 6900	< 120	< 120	< 120
Metals											
Arsenic	7440-38-2	mg/kg	19	19	19		3.09	1.74	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		8.01	3.71	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400		242	2.61	NA	NA	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		< 190	< 190	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-21 Direct Contact Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-01A	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-02	TP-RD-B11-03
						Sample Date	10/12/2017	10/16/2017	10/25/2017	10/12/2017	10/12/2017
						Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B11-01A(01.0-01.5)	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)
						Parent ID					
						Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS						
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 120	< 110	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 120 J+	< 110	< 120	< 120	< 110
Metals											
Arsenic	7440-38-2	mg/kg	19	19	19		NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400		NA	NA	NA	NA	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		NA	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-21 Direct Contact Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-04	TP-RD-B11-06	TP-RD-B11-08	TP-RD-B11-09
						Sample Date	10/12/2017	11/3/2017	11/7/2017	11/29/2017
						Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-08(01.0-01.5)	TP-RD-B11-09(01.0-01.5)
						Parent ID				
						Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 120	< 110	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 120 J+	< 110	< 120	< 120
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19		NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400		NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-21 Direct Contact Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-RD-B11-10	TP-RD-B11-12	TP-RD-B11-13
						Sample Date	11/29/2017	11/29/2017	11/29/2017
						Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-13(01.0-01.5)
						Parent ID			
						Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000		< 110	180	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19		NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400		NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-01	TP-RD-A11-22	TP-RD-B11-01B	TP-RD-B11-09
					Sample Date	10/4/2017	11/29/2017	10/16/2017	11/29/2017
					Sample Depths	10.5-11.0 ft	2.0-2.5 ft	2.0-2.5 ft	2.0-2.5 ft
					Sample ID	TP-RD-A11-01(10.5-11.0)	TP-RD-A11-22(02.0-02.5)	TP-RD-B11-01B(02.0-02.5)	TP-RD-B11-09(02.0-02.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-10	TP-RD-B11-10	SB-R-B12-02	TP-RD-A11-01
					Sample Date	11/29/2017	11/29/2017	5/23/2006	10/4/2017
					Sample Depths	2.0-2.5 ft	2.0-2.5 ft	2.5-3.0 ft	3.0-3.5 ft
					Sample ID	BD112917A	TP-RD-B11-10(02.0-02.5)	SB-R-B12-023.0N	TP-RD-A11-01(03.0-03.5)
					Parent ID	TP-RD-B11-10(02.0-02.5)			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120 J	< 340	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120 J	< 6700	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	3.02	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	12.8	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	2.85	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 190	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-01	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-03
					Sample Date	10/6/2017	10/25/2017	10/25/2017	10/12/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B11-01(03.0-03.5)	TP-RD-B11-01B(03.0-03.5)	TP-RD-B11-01C(03.0-03.5)	TP-RD-B11-03(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-04	TP-RD-B11-06	TP-RD-B11-08	TP-RD-B11-12
					Sample Date	10/12/2017	11/3/2017	11/7/2017	11/29/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B11-04(03.0-03.5)	TP-RD-B11-06(03.0-03.5)	TP-RD-B11-08(03.0-03.5)	BD112917B
					Parent ID				TP-RD-B11-12(03.0-03.5)
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J+	< 110	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-12	TP-RD-B11-13	SB-R-B11-01	TP-RD-A11-22
					Sample Date	11/29/2017	11/29/2017	5/23/2006	11/29/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	4.0-4.5 ft	4.0-4.5 ft
					Sample ID	TP-RD-B11-12(03.0-03.5)	TP-RD-B11-13(03.0-03.5)	SB-R-B11-014.5N	TP-RD-A11-22(04.0-04.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110 J	< 110	< 330	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J	< 110	< 6700	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	1.5	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	8.44	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	4.86	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 180	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-09	TP-RD-B11-10
					Sample Date	10/6/2017	10/6/2017	11/29/2017	11/29/2017
					Sample Depths	4.0-4.5 ft	4.0-4.5 ft	4.0-4.5 ft	4.0-4.5 ft
					Sample ID	BD100617	TP-RD-B11-01(04.0-04.5)	TP-RD-B11-09(04.0-04.5)	TP-RD-B11-10(04.0-04.5)
					Parent ID	TP-RD-B11-01(04.0-04.5)			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-01	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-03
					Sample Date	10/4/2017	10/25/2017	10/25/2017	10/12/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-01(05.0-05.5)	TP-RD-B11-01B(05.0-05.5)	TP-RD-B11-01C(05.0-05.5)	TP-RD-B11-03(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-04	TP-RD-B11-06	TP-RD-B11-08	TP-RD-A11-01
					Sample Date	10/12/2017	11/3/2017	11/7/2017	10/4/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B11-04(05.0-05.5)	TP-RD-B11-06(05.0-05.5)	TP-RD-B11-08(05.0-05.5)	TP-RD-A11-01(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J+	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-06	TP-RD-B11-08
					Sample Date	10/12/2017	10/12/2017	11/3/2017	11/7/2017
					Sample Depths	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B11-03(07.0-07.5)	TP-RD-B11-04(07.0-07.5)	TP-RD-B11-06(07.0-07.5)	TP-RD-B11-08(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110 J+	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-663-06	B11-663-06(2017)	TP-RD-B11-03	TP-RD-B11-04
					Sample Date	8/10/2006	10/6/2017	10/12/2017	10/12/2017
					Sample Depths	8.0-8.5 ft	8.5-9.0 ft	8.5-9.0 ft	8.5-9.0 ft
					Sample ID	B11-663-068.5N	B11-663-06(08.5-09.0)	TP-RD-B11-03(08.5-09.0)	TP-RD-B11-04(08.5-09.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6800	< 110	< 110	< 120 J
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-22 Direct Contact Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-01	TP-RD-B11-06	TP-RD-B11-08	TP-RD-B11-08
					Sample Date	10/4/2017	11/3/2017	11/7/2017	11/7/2017
					Sample Depths	9.0-9.5 ft	9.0-9.5 ft	9.0-9.5 ft	9.0-9.5 ft
					Sample ID	TP-RD-A11-01(09.0-09.5)	TP-RD-B11-06(09.0-09.5)	BD110717A	TP-RD-B11-08(09.0-09.5)
					Parent ID			TP-RD-B11-08(09.0-09.5)	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-2044-03	B11-2044-05	B11-2044-06	B11-2044-08
					Sample Date	11/9/1999	11/9/1999	11/9/1999	11/9/1999
					Sample Depths	0.0-0.5 ft	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft
					Sample ID	B11-2044-030.5N	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 150	< 130	< 140	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	2800	< 4900	13000	< 4900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	**20**	3.7	10.4	3.4
Copper	7440-50-8	mg/kg	11000	45000	3100	19.9	16.2	36	17.2
Lead	7439-92-1	mg/kg	90	800	400	63.8	74.5	**489**	37.5
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 410	< 370	< 400	< 360

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-3-01	B11-4-02	B11-513-05	B11-602C-07
					Sample Date	11/30/1999	11/9/1999	10/14/1999	10/14/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft
					Sample ID	B11-3-011N	B11-4-021N	B11-513-051N	B11-602C-071N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 210	< 240
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 5967.3	< 5224.7
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 560	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	B11-602C-08	B11-6-03	B11-2044-04	B11-2044-04
						Sample Date	10/14/1999	11/9/1999	11/9/1999	11/9/1999
						Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-1.3 ft
						Sample ID	B11-602C-081N	B11-6-031N	B11-2044-041.3FD	B11-2044-041.3N
						Parent ID			B11-2044-041.3N	
						Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		NA	NA	< 160	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000		NA	NA	< 4500	< 4800
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19		7	5.1	7	5
Copper	7440-50-8	mg/kg	11000	45000	3100		34.7	24.5	16.4	13.5
Lead	7439-92-1	mg/kg	90	800	400		**858**	**450**	39.4	27.3
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		**520**	45	< 440	< 370

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-3-01	B11-4-01	B11-513-02	B11-4-01
					Sample Date	11/18/1999	11/9/1999	10/14/1999	11/9/1999
					Sample Depths	0.0-1.5 ft	0.0-1.7 ft	0.0-2.0 ft	0.5-1.0 ft
					Sample ID	B11-3-011.5N	B11-4-011.7N	B11-513-022N	B11-4-010.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	4.3	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	25.4	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	90.3	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 460	< 390	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B11-4-02	B11-6-03	SB-R-B11-04	TP-RD-B11-11
					Sample Date	11/9/1999	11/9/1999	5/31/2006	11/29/2017
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	B11-4-020.5N	B11-6-030.5N	SB-R-B11-041.0N	TP-RD-B11-11(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 350	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 7000	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	4.41	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	10.3	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	61	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 200	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-16	TP-RD-B11-17
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-17(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-18	TP-RD-B11-19	TP-RD-B11-21	TP-RD-B11-22
					Sample Date	11/29/2017	11/29/2017	12/4/2017	12/4/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-18(01.0-01.5)	TP-RD-B11-19(01.0-01.5)	TP-RD-B11-21(01.0-01.5)	TP-RD-B11-22(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-23 Direct Contact Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-23	TP-RD-B11-24	TP-RD-B11-26
					Sample Date	12/4/2017	12/4/2017	12/5/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B11-23(01.0-01.5)	TP-RD-B11-24(01.0-01.5)	TP-RD-B11-26(01.0-01.5)
					Parent ID			
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-24 Direct Contact Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-11	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-15
					Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B11-11(03.0-03.5)	TP-RD-B11-13(03.0-03.5)	TP-RD-B11-14(03.0-03.5)	TP-RD-B11-15(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-24 Direct Contact Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

TP-RD-B11-16 11/29/2017 3.0-3.5 ft TP-RD-B11-16(03.0-03.5)	TP-RD-B11-17 11/29/2017 3.0-3.5 ft TP-RD-B11-17(03.0-03.5)	TP-RD-B11-18 11/29/2017 3.0-3.5 ft TP-RD-B11-18(03.0-03.5)	TP-RD-B11-19 11/29/2017 3.0-3.5 ft TP-RD-B11-19(03.0-03.5)	SB-R-B11-04 5/31/2006 3.5-4.0 ft SB-R-B11-044.0N
< 120	< 120	< 120	< 120	< 350
< 120	< 120	< 120	< 120	< 7000
NA	NA	NA	NA	3.71
NA	NA	NA	NA	18.5
NA	NA	NA	NA	5.91
NA	NA	NA	NA	< 190

Exhibit 2-25 Direct Contact Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	A11-9-03	A11-9-04	SB-R-A12-03	SO-R2-A-11-1	TP-RD-A11-04
						Sample Date	10/14/1999	10/14/1999	5/24/2006	11/14/2013	10/6/2017
						Sample Depths	0.0-1.3 ft	0.0-1.0 ft	0.5-1.0 ft	0.2-0.7 ft	1.0-1.5 ft
						Sample ID	A11-9-031.3N	A11-9-041N	SB-R-A12-031.0N	SO-R2-A-11-1_20131114	TP-RD-A11-04(01.0-01.5)
						Parent ID					
						Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS						
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		NA	NA	< 320	< 340	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000		NA	NA	< 6400	< 6900	< 100
Metals											
Arsenic	7440-38-2	mg/kg	19	19	19		5.5	3	2.25	5.98	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		22	27.8	9.34	45	NA
Lead	7439-92-1	mg/kg	90	800	400		**1700**	**577**	5.74	5.48	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		98	< 400	< 180	< 19	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-26 Direct Contact Functional Area 13 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A12-03	SO-R2-A-11-1	TP-RD-A11-04	TP-RD-A11-04
					Sample Date	5/25/2006	11/14/2013	10/6/2017	10/6/2017
					Sample Depths	4.5-5.0 ft	9.5-10.0 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	SB-R-A12-035.0N	SO-R2-A-11-1D_20131114	TP-RD-A11-04(03.0-03.5)	TP-RD-A11-04(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 310	< 320	< 100	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6300	< 6400	< 100	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.66	< 2.12	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	17.7	1.25	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	< 2.04	0.868	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 170	< 18	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-26 Direct Contact Functional Area 13 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-04
					Sample Date	10/6/2017
					Sample Depths	7.0-7.5 ft
					Sample ID	TP-RD-A11-04(07.0-07.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 100
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C11-27-03	C11-27-02	C11-30-01	C11-30-05
					Sample Date	11/12/1999	11/12/1999	11/5/1999	11/5/1999
					Sample Depths	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft
					Sample ID	C11-27-030.5N	C11-27-021N	C11-30-011N	C11-30-051N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	240	NA	< 150	< 150
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4700	NA	< 4700	< 4900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	7.3	9.4	**56.8**
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	13.7	18.6	20.7
Lead	7439-92-1	mg/kg	90	800	400	NA	319	126	176
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	80	95	< 410

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C11-30-06	C11-4-13	C11-4-20	C11-7-02
					Sample Date	11/12/1999	11/11/1999	11/11/1999	11/12/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft
					Sample ID	C11-30-061N	C11-4-131N	C11-4-201N	C11-7-021N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 220	< 240	< 190	< 2500
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4900	< 4900	< 4900	< 4500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	**104**	11.9	10.8	6.9
Copper	7440-50-8	mg/kg	11000	45000	3100	38.9	17.4	17.1	9.3
Lead	7439-92-1	mg/kg	90	800	400	159	**492**	380	57.2
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	47	130	170	< 370

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C11-4-09	C11-4-19	C11-4A-01	C11-4A-02
					Sample Date	11/11/1999	11/11/1999	11/5/1999	6/30/2000
					Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-4-091.5N	C11-4-192N	C11-4A-012N	C11-4A-022N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 230	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4800	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	11.5	11.8	2.9	7.96
Copper	7440-50-8	mg/kg	11000	45000	3100	109	52.1	12.2	11.8
Lead	7439-92-1	mg/kg	90	800	400	**662**	**2070**	53.9	52
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	56	43	< 390	< 391

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C11-4B-01	TP-RD-C11-01	TP-RD-C11-02	TP-RD-C11-03
					Sample Date	11/5/1999	10/11/2017	10/11/2017	10/11/2017
					Sample Depths	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	C11-4B-012N	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-02(00.5-01.0)	TP-RD-C11-03(00.5-01.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 12000	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 12000	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	8.8	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	39.2	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	379	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 410	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C11-7-02(2017)	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B
					Sample Date	10/23/2017	10/11/2017	10/17/2017	10/23/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	C11-7-02(01.0-01.5)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 11000	280	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 11000	< 130	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01C	TP-RD-C11-01C	TP-RD-C11-01D	TP-RD-C11-02
					Sample Date	10/27/2017	10/27/2017	11/6/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	BD102717	TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02(01.0-01.5)
					Parent ID	TP-RD-C11-01C(01.0-01.5)			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-02A	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-04A
					Sample Date	10/27/2017	10/11/2017	10/27/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 100	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 100	120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-27 Direct Contact Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 130	< 120	< 130	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	210	< 120	< 130	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01	TP-RD-C11-01A	C11-7-02(2017)	TP-RD-C11-01
					Sample Date	10/17/2017	10/17/2017	10/23/2017	10/17/2017
					Sample Depths	2.0-2.5 ft	2.0-2.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-C11-01(02.0-02.5)	TP-RD-C11-01A(02.0-02.5)	C11-7-02(03.0-03.5)	TP-RD-C11-01(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01A	TP-RD-C11-01B	TP-RD-C11-01C	TP-RD-C11-02
					Sample Date	10/17/2017	10/23/2017	10/27/2017	10/23/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-C11-01A(03.0-03.5)	TP-RD-C11-01B(03.0-03.5)	TP-RD-C11-01C(03.0-03.5)	TP-RD-C11-02(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-02A	TP-RD-C11-03	TP-RD-C11-04	TP-RD-C11-10
					Sample Date	10/27/2017	10/23/2017	10/27/2017	11/30/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-C11-02A(03.0-03.5)	TP-RD-C11-03(03.0-03.5)	TP-RD-C11-04(03.0-03.5)	TP-RD-C11-10(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	990
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-11	TP-RD-C11-12	TP-RD-C11-13	TP-RD-C11-14
					Sample Date	11/30/2017	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-C11-11(03.0-03.5)	TP-RD-C11-12(03.0-03.5)	TP-RD-C11-13(03.0-03.5)	TP-RD-C11-14(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 130	< 130	< 130	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	190	< 130	940	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01	C11-7-02(2017)	TP-RD-C11-01	TP-RD-C11-01B
					Sample Date	10/23/2017	10/23/2017	10/23/2017	10/23/2017
					Sample Depths	4.0-4.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-C11-01(04.0-04.5)	C11-7-02(05.0-05.5)	TP-RD-C11-01(05.0-05.5)	TP-RD-C11-01B(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01C	TP-RD-C11-02	TP-RD-C11-02	TP-RD-C11-02A
					Sample Date	10/27/2017	10/23/2017	10/23/2017	10/27/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-C11-01C(05.0-05.5)	BD102317	TP-RD-C11-02(05.0-05.5)	TP-RD-C11-02A(05.0-05.5)
					Parent ID		TP-RD-C11-02(05.0-05.5)		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-03	TP-RD-C11-04	C11-7-02(2017)	TP-RD-C11-01
					Sample Date	10/23/2017	10/27/2017	10/23/2017	10/23/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	6.0-6.5 ft	6.0-6.5 ft
					Sample ID	TP-RD-C11-03(05.0-05.5)	TP-RD-C11-04(05.0-05.5)	C11-7-02(06.0-06.5)	TP-RD-C11-01(06.0-06.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 100	< 100	< 110	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 100	< 100	< 110	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01B
					Sample Date	10/23/2017
					Sample Depths	6.0-6.5 ft
					Sample ID	TP-RD-C11-01B(06.0-06.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-01C	TP-RD-C11-02	TP-RD-C11-02A	TP-RD-C11-03
					Sample Date	10/27/2017	10/23/2017	10/27/2017	10/23/2017
					Sample Depths	6.0-6.5 ft	6.0-6.5 ft	6.0-6.5 ft	6.0-6.5 ft
					Sample ID	TP-RD-C11-01C(06.0-06.5)	TP-RD-C11-02(06.0-06.5)	TP-RD-C11-02A(06.0-06.5)	TP-RD-C11-03(06.0-06.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-28 Direct Contact Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C11-04
					Sample Date	10/27/2017
					Sample Depths	6.0-6.5 ft
					Sample ID	TP-RD-C11-04(06.0-06.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A12-7-03	A12-7-03	A11-8-02	A12-6-01
					Sample Date	10/14/1999	10/14/1999	6/8/2000	10/14/1999
					Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft
					Sample ID	A12-7-031FD	A12-7-031N	A11-8-021.5N	A12-6-012N
					Parent ID	A12-7-031N			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	100	< 220	< 250	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5279.4	< 5714.3	< 5840	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2	2.7	2.06	3.2
Copper	7440-50-8	mg/kg	11000	45000	3100	7.2	8	5.41	7.2
Lead	7439-92-1	mg/kg	90	800	400	33.9	75.7	13.9	91.1
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	75	63	< 390.411	170

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A12-6-02	A12-6-02	A12-7-04	A12-7-04
					Sample Date	6/8/2000	6/8/2000	10/14/1999	10/14/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	A12-6-022FD	A12-6-022N	A12-7-042N	A12-7-042N10/14/1999
					Parent ID	A12-6-022N			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 217	< 227	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6010	< 5980	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.03	1.79	NA	5.2
Copper	7440-50-8	mg/kg	11000	45000	3100	5.5	5.27	NA	16.8
Lead	7439-92-1	mg/kg	90	800	400	11.3	4.94	NA	26.9
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 402	148	NA	200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A12-7-04	A12-8-05	SB-R-A12-04	TP-R-A12-1-1
					Sample Date	11/19/1999	10/14/1999	5/24/2006	8/14/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	A12-7-042N11/19/1999	A12-8-052N	SB-R-A12-041.0N	TP-R-A12-1-11.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 240	3100	< 340	**9000**
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 6376.5	< 6800	< 670000
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	6.3	2.63	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	874	5.98	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	**1290**	22	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 880000	< 190	< 19000

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-02A	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-18
					Sample Date	10/11/2017	10/19/2017	10/19/2017	11/3/2017
					Sample Depths	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A12-02A(00.5-01.0)	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-13(01.0-01.5)	BD110317
					Parent ID				TP-RD-A11-18(01.0-01.5)
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-20A	TP-RD-A11-20C
					Sample Date	11/3/2017	11/6/2017	11/3/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20C(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-24	TP-RD-A12-01	TP-RD-A12-02	TP-RD-A12-02A
					Sample Date	12/4/2017	10/11/2017	10/6/2017	10/11/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-A11-24(01.0-01.5)	TP-RD-A12-01(01.0-01.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02A(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-03
					Sample Date	10/18/2017
					Sample Depths	1.0-1.5 ft
					Sample ID	TP-RD-A12-03(01.0-01.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-29 Direct Contact Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-B11-04A	TP-R-A11-5-1
					Sample Date	10/26/2017	10/26/2017	10/16/2017	8/7/2006
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft
					Sample ID	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-04(01.0-01.5)	TP-RD-B11-04A(01.0-01.5)	TP-R-A11-5-12.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 6500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	1.8
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	13.7
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	**411**
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A12-1-1(2017)	TP-R-A12-1-1	TP-RD-A12-02	TP-RD-B11-04A
					Sample Date	10/17/2017	8/14/2006	10/6/2017	10/16/2017
					Sample Depths	10.5-11.0 ft	2.0-2.5 ft	2.0-2.5 ft	2.0-2.5 ft
					Sample ID	TP-R-A12-1-1(10.5-11.0)	TP-R-A12-1-12.5N	TP-RD-A12-02(02.0-02.5)	TP-RD-B11-04A(02.0-02.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	**9300**	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 6000	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 1700	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-12	TP-RD-A11-13	TP-RD-A11-18	TP-RD-A11-18A
					Sample Date	10/19/2017	10/19/2017	11/3/2017	11/6/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-12(03.0-03.5)	TP-RD-A11-13(03.0-03.5)	TP-RD-A11-18(03.0-03.5)	TP-RD-A11-18A(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A12-01	TP-RD-A12-01
					Sample Date	11/3/2017	11/6/2017	10/11/2017	10/11/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A11-20A(03.0-03.5)	TP-RD-A11-20C(03.0-03.5)	BD101117	TP-RD-A12-01(03.0-03.5)
					Parent ID			TP-RD-A12-01(03.0-03.5)	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-03	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-06
					Sample Date	10/18/2017	10/26/2017	10/26/2017	11/2/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A12-03(03.0-03.5)	TP-RD-A12-03A(03.0-03.5)	TP-RD-A12-04(03.0-03.5)	TP-RD-A12-06(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-04A	TP-RD-B11-04A	SB-R-A12-04	TP-R-A11-5-1
					Sample Date	10/19/2017	10/19/2017	5/24/2006	8/7/2006
					Sample Depths	3.0-3.5 ft	4.0-4.5 ft	4.5-5.0 ft	5.0-5.5 ft
					Sample ID	TP-RD-B11-04A(03.0-03.5)	TP-RD-B11-04A(04.0-04.5)	SB-R-A12-045.0N	TP-R-A11-5-15.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 330	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 6500	< 6500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	2.84	< 2.16
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	7.85	7.31
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	1.76	7.02
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 180	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-18	TP-RD-A11-20A	TP-RD-A12-01	TP-RD-A12-03
					Sample Date	11/3/2017	11/3/2017	10/11/2017	10/18/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A11-18(05.0-05.5)	TP-RD-A11-20A(05.0-05.5)	TP-RD-A12-01(05.0-05.5)	TP-RD-A12-03(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-03A	TP-RD-A12-04	TP-RD-A12-06	TP-RD-B11-04A
					Sample Date	10/26/2017	10/26/2017	11/2/2017	10/19/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A12-03A(05.0-05.5)	TP-RD-A12-04(05.0-05.5)	TP-RD-A12-06(05.0-05.5)	TP-RD-B11-04A(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 110	< 120000
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 110	< 120000
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A11-18	TP-RD-A11-20A	TP-RD-A12-01	TP-RD-A12-03
					Sample Date	11/3/2017	11/3/2017	10/11/2017	10/18/2017
					Sample Depths	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-A11-18(07.0-07.5)	TP-RD-A11-20A(07.0-07.5)	TP-RD-A12-01(07.0-07.5)	TP-RD-A12-03(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B11-04A	TP-RD-A11-18	TP-RD-A11-20A	TP-R-A12-1-1
					Sample Date	10/25/2017	11/3/2017	11/3/2017	8/14/2006
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	8.0-8.5 ft	8.5-9.0 ft
					Sample ID	TP-RD-B11-04A(07.0-07.5)	TP-RD-A11-18(08.0-08.5)	TP-RD-A11-20A(08.0-08.5)	TP-R-A12-1-19.0FD
					Parent ID				TP-R-A12-1-19.0N
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 360
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 7100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A12-1-1	TP-RD-B11-04A	TP-R-A12-1-1(2017)	TP-RD-A12-01
					Sample Date	8/14/2006	10/25/2017	10/11/2017	10/11/2017
					Sample Depths	8.5-9.0 ft	8.5-9.0 ft	9.0-9.5 ft	9.0-9.5 ft
					Sample ID	TP-R-A12-1-19.0N	TP-RD-B11-04A(08.5-09.0)	TP-R-A12-1-1(09.0-09.5)	TP-RD-A12-01(09.0-09.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900	< 120	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-30 Direct Contact Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-03
					Sample Date	10/18/2017
					Sample Depths	9.0-9.5 ft
					Sample ID	TP-RD-A12-03(09.0-09.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-31 Direct Contact Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C11-4-02	C12-418-04	B11-2044C-01	B11-2044C-05
					Sample Date	11/11/1999	7/12/2000	11/5/1999	11/5/1999
					Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C11-4-021N	C12-418-041.5N	B11-2044C-012N	B11-2044C-052N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	510	< 192.3	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4500	< 5294.479	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	5.1	6.1	4.5
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	12.1	18.1	15.3
Lead	7439-92-1	mg/kg	90	800	400	NA	17.3	30.6	24.5
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 379.055	< 370	40

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-31 Direct Contact Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C12-418-01
					Sample Date	9/27/2000
					Sample Depths	0.0-2.0 ft
					Sample ID	C12-418-012N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5700
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	5.63
Copper	7440-50-8	mg/kg	11000	45000	3100	16.6
Lead	7439-92-1	mg/kg	90	800	400	56.1
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 396

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-31 Direct Contact Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B12-04	SB-R-C12-02	TP-RD-B11-25	TP-RD-B12-01
					Sample Date	5/24/2006	5/31/2006	12/4/2017	10/18/2017
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	SB-R-B12-041.0N	SB-R-C12-021.0N	TP-RD-B11-25(01.0-01.5)	TP-RD-B12-01(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 320	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 6400	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.25	3.71	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	15.3	14.3	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	19.7	16.1	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 180	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-31 Direct Contact Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-09
					Sample Date	11/30/2017
					Sample Depths	1.0-1.5 ft
					Sample ID	TP-RD-B12-09(01.0-01.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-31 Direct Contact Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-14	TP-RD-B12-14	TP-RD-B12-15	TP-RD-C11-02B
					Sample Date	12/5/2017	12/5/2017	12/5/2017	11/6/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	BD120517	TP-RD-B12-14(01.0-01.5)	TP-RD-B12-15(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)
					Parent ID	TP-RD-B12-14(01.0-01.5)			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120 J	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	1000	650 J	< 110	130
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-32 Direct Contact Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-01	TP-RD-B12-09	TP-RD-C11-02B	SB-R-B12-04
					Sample Date	10/18/2017	11/30/2017	11/6/2017	5/24/2006
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	4.0-4.5 ft
					Sample ID	TP-RD-B12-01(03.0-03.5)	TP-RD-B12-09(03.0-03.5)	TP-RD-C11-02B(03.0-03.5)	SB-R-B12-044.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 110	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 110	< 6800
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	2.28
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	10
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	3.56
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-32 Direct Contact Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-01
					Sample Date	10/18/2017
					Sample Depths	5.0-5.5 ft
					Sample ID	TP-RD-B12-01(05.0-05.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-32 Direct Contact Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-09	TP-RD-C11-02B	SB-R-C12-02	TP-RD-C11-02B
					Sample Date	11/30/2017	11/6/2017	5/31/2006	11/6/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.5-6.0 ft	7.0-7.5 ft
					Sample ID	TP-RD-B12-09(05.0-05.5)	TP-RD-C11-02B(05.0-05.5)	SB-R-C12-026.0N	TP-RD-C11-02B(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 330	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 6700	< 130
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	< 2.23	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	10.4	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	1.85	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 190	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-3317 Direct Contact Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B12-3-01	A12-3-03	A12-3-03	A12-3-03
					Sample Date	10/13/1999	10/15/1999	10/15/1999	11/18/1999
					Sample Depths	0.0-0.3 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft
					Sample ID	B12-3-010.25N	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 192.3	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6822.4	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	3
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	14.5
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	77	NA	< 450	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-3317 Direct Contact Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A12-3-03	B12-237-01	B12-3-02	B12-450-03
					Sample Date	11/18/1999	10/14/1999	10/13/1999	10/15/1999
					Sample Depths	0.0-1.5 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	A12-3-0311/18/1999	B12-237-011.5N	B12-3-022N	B12-450-032N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	870	< 227.2	< 250
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 6973.5	< 5967.3	2298.1
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	**28.3**	NA	5.4
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	644	NA	23.5
Lead	7439-92-1	mg/kg	90	800	400	5.4	**1540**	NA	158
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	**1500**	< 420	< 480

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-3317 Direct Contact Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SO-R2-B-12-1	SB-R-B12-01
					Sample Date	11/14/2013	5/23/2006
					Sample Depths	0.2-0.7 ft	0.5-1.0 ft
					Sample ID	SO-R2-B-12-1_20131114	SB-R-B12-011.0N
					Parent ID		
					Notes		
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS		
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 360	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7100	< 6400
Metals							
Arsenic	7440-38-2	mg/kg	19	19	19	7.58	1.87
Copper	7440-50-8	mg/kg	11000	45000	3100	11.5	14.6
Lead	7439-92-1	mg/kg	90	800	400	11.7	4.37
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 20	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-3317 Direct Contact Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B12-03	TP-R-B12-1-1	TP-R-B12-1-2	TP-R-B12-1-3
					Sample Date	5/24/2006	8/14/2006	8/14/2006	8/14/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-B12-031.0N	TP-R-B12-1-11.0N	TP-R-B12-1-21.0N	TP-R-B12-1-31.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 340	< 330	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 6800	< 6600	< 6900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	7.27	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	3.55	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	**2000**	**2000**	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-3317 Direct Contact Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B12-234-1	TP-R-B12-234-2	TP-RD-B12-02A	TP-RD-B12-04
					Sample Date	8/11/2006	8/11/2006	10/18/2017	11/2/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-04(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 340	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7000	< 6800	< 110	550
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-3317 Direct Contact Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-05	TP-RD-B12-07	TP-RD-B12-08	TP-RD-B12-12
					Sample Date	11/2/2017	11/2/2017	11/7/2017	12/5/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B12-05(01.0-01.5)	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-12(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 120	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	150	< 110	< 120	< 130
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-03	TP-RD-B12-07	TP-R-B12-234-1	TP-RD-B12-03
					Sample Date	10/23/2017	11/2/2017	8/11/2006	10/23/2017
					Sample Depths	10.0-10.5 ft	10.0-10.5 ft	11.0-11.5 ft	12.0-12.5 ft
					Sample ID	TP-RD-B12-03(10.0-10.5)	TP-RD-B12-07(10.0-10.5)	TP-R-B12-234-111.5N	TP-RD-B12-03(12.0-12.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 350	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 6900	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 190	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03	TP-RD-B12-03
					Sample Date	10/26/2017	10/26/2017	10/26/2017	11/2/2017
					Sample Depths	13.0-13.5 ft	14.0-14.5 ft	15.0-15.5 ft	16.5-17.0 ft
					Sample ID	TP-RD-B12-03(13.0-13.5)	TP-RD-B12-03(14.0-14.5)	TP-RD-B12-03(15.0-15.5)	TP-RD-B12-03(16.5-17.0)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-03	TP-RD-B12-03	SB-R-B12-03	TP-R-B12-1-2
					Sample Date	11/2/2017	11/2/2017	5/24/2006	8/14/2006
					Sample Depths	17.5-18.0 ft	18.5-19.0 ft	2.5-3.0 ft	2.8-3.3 ft
					Sample ID	TP-RD-B12-03(17.5-18.0)	TP-RD-B12-03(18.5-19.0)	SB-R-B12-033.0N	TP-R-B12-1-23.25N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 340	5100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 6800	< 7100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	2.88	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	12.8	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	2.28	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 190	**570**

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05
					Sample Date	10/18/2017	10/18/2017	11/2/2017	11/2/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	BD101817	TP-RD-B12-02A(03.0-03.5)	TP-RD-B12-04(03.0-03.5)	TP-RD-B12-05(03.0-03.5)
					Parent ID	TP-RD-B12-02A(03.0-03.5)			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-07	TP-RD-B12-08	SB-R-B12-01	TP-R-B12-234-2
					Sample Date	11/2/2017	11/7/2017	5/23/2006	8/11/2006
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B12-07(03.0-03.5)	TP-RD-B12-08(03.0-03.5)	SB-R-B12-014.5N	TP-R-B12-234-25.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 330	**120000**
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 6500	9000
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	1.61	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	10.7	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	1.68	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 180	< 1800

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-02A	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-07
					Sample Date	10/18/2017	11/2/2017	11/2/2017	11/2/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B12-02A(05.0-05.5)	TP-RD-B12-04(05.0-05.5)	TP-RD-B12-05(05.0-05.5)	TP-RD-B12-07(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-08	TP-R-B12-1-3	TP-RD-B12-02A	TP-RD-B12-04
					Sample Date	11/7/2017	8/14/2006	10/18/2017	11/2/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B12-08(05.0-05.5)	TP-R-B12-1-37.5N	TP-RD-B12-02A(07.0-07.5)	TP-RD-B12-04(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 310	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 6300	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 170	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-05	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07
					Sample Date	11/2/2017	11/2/2017	11/2/2017	11/7/2017
					Sample Depths	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B12-05(07.0-07.5)	BD110217A	TP-RD-B12-07(07.0-07.5)	BD110717B
					Parent ID		TP-RD-B12-07(07.0-07.5)		TP-RD-B12-07(07.0-07.5)
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 100	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 100	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-08	TP-R-B12-234-1	TP-R-B12-234-2	TP-R-B12-1-1
					Sample Date	11/7/2017	8/11/2006	8/11/2006	8/14/2006
					Sample Depths	7.0-7.5 ft	7.5-8.0 ft	8.0-8.5 ft	9.0-9.5 ft
					Sample ID	TP-RD-B12-08(07.0-07.5)	TP-R-B12-234-18.0N	TP-R-B12-234-28.5N	TP-R-B12-1-19.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 310	< 320	< 310
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 6300	< 6400	< 6200
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 170	< 180	< 170

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B12-1-2	TP-RD-B12-02	TP-RD-B12-02A	TP-RD-B12-03
					Sample Date	8/14/2006	10/18/2017	10/18/2017	10/23/2017
					Sample Depths	9.0-9.5 ft	9.0-9.5 ft	9.0-9.5 ft	9.0-9.5 ft
					Sample ID	TP-R-B12-1-29.5N	TP-RD-B12-02(09.0-09.5)	TP-RD-B12-02A(09.0-09.5)	TP-RD-B12-03(09.0-09.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 310	< 120	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6300	< 120	< 120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 170	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B12-04	TP-RD-B12-05	TP-RD-B12-07	TP-RD-B12-08
					Sample Date	11/2/2017	11/2/2017	11/2/2017	11/7/2017
					Sample Depths	9.0-9.5 ft	9.0-9.5 ft	9.0-9.5 ft	9.0-9.5 ft
					Sample ID	TP-RD-B12-04(09.0-09.5)	TP-RD-B12-05(09.0-09.5)	TP-RD-B12-07(09.0-09.5)	TP-RD-B12-08(09.0-09.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 100	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 100	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-34 Direct Contact Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SO-R2-B-12-1
					Sample Date	11/14/2013
					Sample Depths	9.4-10.0 ft
					Sample ID	SO-R2-B-12-1D_20131114
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 310
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6200
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	1.27
Copper	7440-50-8	mg/kg	11000	45000	3100	11.1
Lead	7439-92-1	mg/kg	90	800	400	2.26
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 17

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-35 Direct Contact Functional Area 18 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B12-422-04	B12-422-06	C12-275-01	C12-275-02
					Sample Date	6/22/2000	11/3/1999	6/22/2000	10/20/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	B12-422-042N	B12-422-062N	C12-275-012N	C12-275-022FD
					Parent ID				C12-275-022N
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 250	< 230	< 238.1	< 230
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5527.06	< 5000	< 6000.798	< 4444.4
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.01	3.8	3.51	4.5
Copper	7440-50-8	mg/kg	11000	45000	3100	14.6	14.3	23.2	17
Lead	7439-92-1	mg/kg	90	800	400	13.5	8.5	61.2	70.5
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 405.317	< 390	< 410.054	< 420

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-35 Direct Contact Functional Area 18 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C12-275-02
					Sample Date	10/20/1999
					Sample Depths	0.0-2.0 ft
					Sample ID	C12-275-022N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 220
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4651.2
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	4
Copper	7440-50-8	mg/kg	11000	45000	3100	16.6
Lead	7439-92-1	mg/kg	90	800	400	42.8
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 440

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-35 Direct Contact Functional Area 18 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C12-01	SB-R-C12-01	SO-R2-C-12-1	TP-RD-B12-06
					Sample Date	5/31/2006	5/31/2006	11/14/2013	11/30/2017
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	SB-R-C12-011.0FD	SB-R-C12-011.0N	SO-R2-C-12-1_20131114	TP-RD-B12-06(01.0-01.5)
					Parent ID	SB-R-C12-011.0N			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 330	< 360	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6600	< 6500	< 7300	< 130
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.65	2.83	6.6	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	16.8	14.7	12.5	NA
Lead	7439-92-1	mg/kg	90	800	400	6.12	5.48	19.1	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 20	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-36 Direct Contact Functional Area 18 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C12-01	SO-R2-C-12-1	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-06
					Sample Date	5/31/2006	11/14/2013	11/30/2017	11/30/2017	11/30/2017
					Sample Depths	4.5-5.0 ft	7.0-7.5 ft	5.0-5.5 ft	3.0-3.5 ft	5.0-5.5 ft
					Sample ID	SB-R-C12-015.0N	SO-R2-C-12-1D_20131114	BD113017A	TP-RD-B12-06(03.0-03.5)	TP-RD-B12-06(05.0-05.5)
					Parent ID			TP-RD-B12-06(05.0-05.5)		
					Notes					
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 320	< 110	< 110	< 110 J
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 6400	< 110	< 110	< 110 J
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19	1.88	3.39	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	12.1	16.7	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	1.74	4.63	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 18	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-37 Direct Contact Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C12-1-03	C12-1-04	C12-274-01	C12-274-05
					Sample Date	10/19/1999	10/19/1999	10/21/1999	10/21/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	C12-1-032N	C12-1-042N	C12-274-012N	C12-274-051N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 220	< 200
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 4545.5	< 4878
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.8	8.9	3.5	4
Copper	7440-50-8	mg/kg	11000	45000	3100	12.2	79.2	1930	19.3
Lead	7439-92-1	mg/kg	90	800	400	10.4	43.9	50.1	**3770**
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 370	< 420	55	120

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-37 Direct Contact Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C12-3-03
					Sample Date	10/19/1999
					Sample Depths	0.0-2.0 ft
					Sample ID	C12-3-032N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	< 28.8
Copper	7440-50-8	mg/kg	11000	45000	3100	130
Lead	7439-92-1	mg/kg	90	800	400	**93300**
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	380

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-37 Direct Contact Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C12-4-01	C12-8229-01	C12-8229-03	SB-R-C12-04
					Sample Date	10/19/1999	6/22/2000	10/20/1999	6/6/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft
					Sample ID	C12-4-012N	C12-8229-012N	C12-8229-032N	SB-R-C12-041.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	< 6900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.4	4.68	3.3	**133**
Copper	7440-50-8	mg/kg	11000	45000	3100	10.3	16.4	10.9	15.5
Lead	7439-92-1	mg/kg	90	800	400	**1360**	20.7	11.5	15.5
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 390	243	< 400	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-38 Direct Contact Functional Area 19 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C12-04
					Sample Date	6/6/2006
					Sample Depths	4.0-4.5 ft
					Sample ID	SB-R-C12-044.5N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	2.04
Copper	7440-50-8	mg/kg	11000	45000	3100	9.05
Lead	7439-92-1	mg/kg	90	800	400	1.64
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	61

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-39 Direct Contact Functional Area 20 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A12-5-03	A12-5-05	A12-4-01	A12-5-05
					Sample Date	10/15/1999	10/15/1999	10/15/1999	10/15/1999
					Sample Depths	0.0-0.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft
					Sample ID	A12-5-030.5N	A12-5-050.5N	A12-4-011N	A12-5-051N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	4	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	9.2	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	57.9	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	80	46

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-39 Direct Contact Functional Area 20 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A12-4-02	A12-5-03	SB-R-A12-01	SB-R-A12-02
					Sample Date	6/8/2000	10/15/1999	5/24/2006	5/24/2006
					Sample Depths	0.0-1.3 ft	0.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	A12-4-021.25N	A12-5-031.5N	SB-R-A12-011.0N	SB-R-A12-021.0FD
					Parent ID				SB-R-A12-021.0N
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 250	NA	< 330	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	26200	NA	< 6600	< 6600
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.43	NA	1.74	3.32
Copper	7440-50-8	mg/kg	11000	45000	3100	7.65	NA	7.45	7.47
Lead	7439-92-1	mg/kg	90	800	400	37.8	NA	1.9	3.74
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	71.1	< 380	< 180	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-39 Direct Contact Functional Area 20 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A12-02	TP-R-A12-426-1	TP-R-A12-426-2
					Sample Date	5/24/2006	8/15/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-A12-021.0N	TP-R-A12-426-11.0N	TP-R-A12-426-21.0N
					Parent ID			
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 350	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6600	< 6900	< 7000
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	2.98	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	8.09	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	3.36	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 190	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-40 Direct Contact Functional Area 20 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A12-01	SB-R-A12-02	TP-R-A12-426-1	TP-R-A12-426-2
					Sample Date	5/24/2006	5/24/2006	8/15/2006	8/16/2006
					Sample Depths	4.0-4.5 ft	4.0-4.5 ft	6.5-7.0 ft	7.0-7.5 ft
					Sample ID	SB-R-A12-014.5N	SB-R-A12-024.5N	TP-R-A12-426-17.0N	TP-R-A12-426-27.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 320	< 320	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6500	< 6400	< 6500	< 6800
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.51	2.25	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	4.95	6.04	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	1.82	1.91	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 180	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SD-B13-3-01	B13-8-04	B13-8-05	SB-R-B13-04
					Sample Date	5/1/2001	10/8/1999	7/21/2000	5/23/2006
					Sample Depths	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft
					Sample ID	SD-B13-3-010.5N	B13-8-042N	B13-8-052N	SB-R-B13-041.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 1000000	< 230	< 227	< 370
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 20000000	< 5016.3	21700	< 7500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.9	3.8	4.16	**23.1**
Copper	7440-50-8	mg/kg	11000	45000	3100	9.3	12	57.4	28.5
Lead	7439-92-1	mg/kg	90	800	400	**3260**	21.7	75.1	38.4
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 330	< 370	124	190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SD-B13-1-01
					Sample Date	5/1/2001
					Sample Depths	0.5-1.0 ft
					Sample ID	SD-B13-1-011N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SD-B13-3-01	SD-B13-1-01	TP-RD-A12-05	TP-RD-B12-10
					Sample Date	5/1/2001	5/1/2001	11/1/2017	12/5/2017
					Sample Depths	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	SD-B13-3-011N	SD-B13-1-011.5N	TP-RD-A12-05(01.0-01.5)	TP-RD-B12-10(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 120	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 2400	< 120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	5.7	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	21.7	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	44.4	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 40	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-01
					Sample Date	10/30/2017
					Sample Depths	1.0-1.5 ft
					Sample ID	TP-RD-B13-01(01.0-01.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 130
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-08
					Sample Date	10/30/2017	10/30/2017	10/30/2017	11/1/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-08(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 130	< 120	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 130	< 120	< 120	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-13	TP-RD-B13-14
					Sample Date	11/1/2017	11/1/2017	12/1/2017	12/1/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 120	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	160	630
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B13-02	TP-R-B13-1-1	TP-R-B13-1-3	TP-R-B13-1-4
					Sample Date	5/18/2006	8/4/2006	8/4/2006	8/4/2006
					Sample Depths	1.2-1.7 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	SB-R-B13-021.67N	TP-R-B13-1-12.0N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	180	220	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6800	13000	17000	< 6400
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.46	1.9	4.21	3.93
Copper	7440-50-8	mg/kg	11000	45000	3100	12	5.24	9.55	20.5
Lead	7439-92-1	mg/kg	90	800	400	74.2	352	243	47.4
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 180	< 180	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-41 Direct Contact Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-2-7	TP-R-B13-2-8
					Sample Date	8/2/2006	8/2/2006	8/3/2006	8/2/2006
					Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-R-B13-2-32.0N	TP-R-B13-2-42.0N	TP-R-B13-2-72.0N	TP-R-B13-2-82.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	< 330	< 340	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900	< 6600	16000	7400
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.6	2.65	**20.8**	**36.1**
Copper	7440-50-8	mg/kg	11000	45000	3100	14.4	16	36	33.9
Lead	7439-92-1	mg/kg	90	800	400	8.49	6.15	121	104
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 180	470	**620**

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-1-5	TP-R-B13-2-7
					Sample Date	8/4/2006	8/4/2006	8/7/2006	8/3/2006
					Sample Depths	11.5-12.0 ft	11.5-12.0 ft	11.5-12.0 ft	11.5-12.0 ft
					Sample ID	TP-R-B13-1-312.0N	TP-R-B13-1-412.0N	TP-R-B13-1-512.0N	TP-R-B13-2-712.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 360	< 320	< 330	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	4300	6300	< 6700	9300
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.21	2.46	1.08	6.08
Copper	7440-50-8	mg/kg	11000	45000	3100	13.8	16.8	9.21	12.5
Lead	7439-92-1	mg/kg	90	800	400	8.94	2.13	29.6	5.84
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	< 180	< 190	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-1-1(2017)	TP-R-B13-1-1	TP-R-B13-1-2	TP-R-B13-1-2
					Sample Date	11/1/2017	8/4/2006	8/4/2006	8/4/2006
					Sample Depths	12.0-12.5 ft	12.5-13.0 ft	13.5-14.0 ft	2.0-2.5 ft
					Sample ID	TP-R-B13-1-1(12.0-12.5)	TP-R-B13-1-113.0N	TP-R-B13-1-214.0N	TP-R-B13-1-22.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 360	< 330	160
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	20000	5900	18000
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	2.53	4.49	2.28
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	9.31	10.9	5.37
Lead	7439-92-1	mg/kg	90	800	400	NA	6.24	17	247
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 200	< 190	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-1-5	SB-R-B13-04	TP-RD-A12-05	TP-RD-B13-01
					Sample Date	8/7/2006	5/23/2006	11/1/2017	10/30/2017
					Sample Depths	2.0-2.5 ft	2.5-3.0 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-R-B13-1-52.5N	SB-R-B13-043.0N	TP-RD-A12-05(03.0-03.5)	TP-RD-B13-01(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 320	< 330	< 120	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6500	< 6700	< 120	< 130
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.06	4.28	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	6.89	19.9	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	**658**	7.64	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 190	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-08
					Sample Date	10/30/2017	10/30/2017	10/30/2017	11/1/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B13-02(03.0-03.5)	TP-RD-B13-03(03.0-03.5)	TP-RD-B13-04(03.0-03.5)	TP-RD-B13-08(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-13	TP-RD-B13-14
					Sample Date	11/1/2017	11/1/2017	12/1/2017	12/1/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B13-09(03.0-03.5)	TP-RD-B13-10(03.0-03.5)	TP-RD-B13-13(03.0-03.5)	TP-RD-B13-14(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	1200	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 1200	< 110	1500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

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Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B13-02	TP-R-B13-2-8	TP-RD-A12-05	TP-RD-B13-01
					Sample Date	5/18/2006	8/2/2006	11/1/2017	10/30/2017
					Sample Depths	4.0-4.5 ft	4.5-5.0 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	SB-R-B13-024.5N	TP-R-B13-2-85.0N	TP-RD-A12-05(05.0-05.5)	TP-RD-B13-01(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900	< 6600	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.13	9.51	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	13.9	15.7	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	14.6	102	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	130	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

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Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-02	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-08
					Sample Date	10/30/2017	10/30/2017	10/30/2017	11/1/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-02(05.0-05.5)	TP-RD-B13-03(05.0-05.5)	TP-RD-B13-04(05.0-05.5)	TP-RD-B13-08(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

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Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-09	TP-RD-B13-10	TP-RD-B13-13	TP-RD-B13-14
					Sample Date	11/1/2017	11/1/2017	12/1/2017	12/1/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-09(05.0-05.5)	TP-RD-B13-10(05.0-05.5)	TP-RD-B13-13(05.0-05.5)	TP-RD-B13-14(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 100	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 100	< 130
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

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Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-1-1	TP-R-B13-2-3	TP-R-B13-2-4	TP-R-B13-1-2
					Sample Date	8/4/2006	8/2/2006	8/2/2006	8/4/2006
					Sample Depths	5.5-6.0 ft	5.5-6.0 ft	5.5-6.0 ft	6.0-6.5 ft
					Sample ID	TP-R-B13-1-16.0N	TP-R-B13-2-36.0N	TP-R-B13-2-46.0N	TP-R-B13-1-26.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	210	< 310	< 310	160
Nitroglycerin	55-63-0	ug/kg		200000	46000	17000	< 6300	< 6200	11000
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.29	1.81	1.82	1.38
Copper	7440-50-8	mg/kg	11000	45000	3100	10.7	13.8	14.4	5.78
Lead	7439-92-1	mg/kg	90	800	400	251	3.65	2.67	61.2
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 170	< 170	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

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Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-1-4	TP-R-B13-1-4	TP-R-B13-2-7	SB-R-B13-04
					Sample Date	8/4/2006	8/4/2006	8/3/2006	8/10/2006
					Sample Depths	6.0-6.5 ft	6.0-6.5 ft	6.0-6.5 ft	6.5-7.0 ft
					Sample ID	TP-R-B13-1-46.5FD	TP-R-B13-1-46.5N	TP-R-B13-2-76.5N	SB-R-B13-047.0FD
					Parent ID	TP-R-B13-1-46.5N			SB-R-B13-047.0N
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	210	230	< 310	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	25000	28000	< 6300	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.12	1.62	3.33	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	4.21	5.57	14	NA
Lead	7439-92-1	mg/kg	90	800	400	12.1	16.6	2.39	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 170	< 170

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B13-04	TP-R-B13-1-3	TP-R-B13-1-5	TP-RD-A12-05
					Sample Date	8/10/2006	8/4/2006	8/7/2006	11/1/2017
					Sample Depths	6.5-7.0 ft	6.5-7.0 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	SB-R-B13-047.0N	TP-R-B13-1-37.0N	TP-R-B13-1-57.5N	TP-RD-A12-05(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 310	< 340	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	2800	< 6800	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	1.02	1.05	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	13.7	9.02	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	1.45	144	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 170	< 190	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

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SVOCs = semivolatile organic compounds

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-01	TP-RD-B13-02	TP-RD-B13-02	TP-RD-B13-03
					Sample Date	10/30/2017	10/30/2017	10/30/2017	10/30/2017
					Sample Depths	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B13-01(07.0-07.5)	BD103017	TP-RD-B13-02(07.0-07.5)	TP-RD-B13-03(07.0-07.5)
					Parent ID		TP-RD-B13-02(07.0-07.5)		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-04	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-10
					Sample Date	10/30/2017	11/1/2017	11/1/2017	11/1/2017
					Sample Depths	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B13-04(07.0-07.5)	TP-RD-B13-08(07.0-07.5)	TP-RD-B13-09(07.0-07.5)	TP-RD-B13-10(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 120	< 100	< 100
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 120	< 100	< 100
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-8	TP-R-B13-2-8	TP-RD-A12-05	TP-RD-B13-10
					Sample Date	8/2/2006	8/2/2006	11/1/2017	11/1/2017
					Sample Depths	7.5-8.0 ft	7.5-8.0 ft	8.0-8.5 ft	8.0-8.5 ft
					Sample ID	TP-R-B13-2-88.0FD	TP-R-B13-2-88.0N	TP-RD-A12-05(08.0-08.5)	TP-RD-B13-10(08.0-08.5)
					Parent ID	TP-R-B13-2-88.0N			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	130	< 100	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	7400	14000	< 100	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.1	1.28	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	7.04	12.2	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	17.6	18.9	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-42 Direct Contact Functional Area 21 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-10	TP-R-B13-2-3	TP-R-B13-2-4
					Sample Date	11/7/2017	8/2/2006	8/2/2006
					Sample Depths	9.0-9.5 ft	9.5-10.0 ft	9.5-10.0 ft
					Sample ID	TP-RD-B13-10(09.0-09.5)	TP-R-B13-2-310.0N	TP-R-B13-2-410.0N
					Parent ID			
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 320	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 6400	4200
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	NA	2.54	4.2
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	13.7	18
Lead	7439-92-1	mg/kg	90	800	400	NA	3.32	5.16
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 180	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-43 Direct Contact Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B13-262A-01	B13-262A-05	B13-7-01	B13-7-06
					Sample Date	11/2/1999	11/2/1999	11/2/1999	11/2/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
					Sample ID	B13-262A-012N	B13-262A-052N	B13-7-012N	B13-7-061N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 250	< 230	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4700	< 4500	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.7	17	5	8.8
Copper	7440-50-8	mg/kg	11000	45000	3100	12.7	19.3	10.6	34.2
Lead	7439-92-1	mg/kg	90	800	400	3.6	47.3	13.7	355
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 350	34	< 410	110

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-43 Direct Contact Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-262B-01	C13-262B-05	SB-R-B13-03	SB-R-C13-04
					Sample Date	11/1/1999	11/1/1999	5/19/2006	6/2/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	C13-262B-012N	C13-262B-052N	SB-R-B13-031.0N	SB-R-C13-041.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 220	< 240	< 350	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 4878	< 4651.2	< 6900	< 6800
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	**22.7**	2	3.75	4.19
Copper	7440-50-8	mg/kg	11000	45000	3100	24.8	24.6	15.2	13.9
Lead	7439-92-1	mg/kg	90	800	400	51.9	13.2	12	6.06
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 350	< 350	41	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-44 Direct Contact Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B13-03	SB-R-B13-03	SB-R-C13-04
					Sample Date	5/19/2006	5/19/2006	6/2/2006
					Sample Depths	2.0-2.5 ft	2.0-2.5 ft	4.5-5.0 ft
					Sample ID	SB-R-B13-032.5FD	SB-R-B13-032.5N	SB-R-C13-045.0N
					Parent ID	SB-R-B13-032.5N		
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	< 340	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6800	< 6700	< 6500
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	2.44	4.86	3.2
Copper	7440-50-8	mg/kg	11000	45000	3100	14.5	14.6	12.6
Lead	7439-92-1	mg/kg	90	800	400	6	6.18	2.02
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-45 Direct Contact Functional Area 23 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A13-03	SB-R-A13-04	SB-R-A13-04	TP-R-A13-625-1
					Sample Date	5/19/2006	5/23/2006	5/23/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-A13-031.0N	SB-R-A13-041.0FD	SB-R-A13-041.0N	TP-R-A13-625-11.0N
					Parent ID		SB-R-A13-041.0N		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 340	< 340	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900	< 6700	< 6700	3300
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.22	2.69	3.25	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	21.4	9.96	11.1	NA
Lead	7439-92-1	mg/kg	90	800	400	3.51	4.75	4.34	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	< 190	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-45 Direct Contact Functional Area 23 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-5	TP-R-A13-625-4
					Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft
					Sample ID	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-51.0N	TP-R-A13-625-41.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350	< 350	< 330	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7100	< 7000	< 6600	5400
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	< 200	48	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-45 Direct Contact Functional Area 23 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A13-625-6	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-02
					Sample Date	8/16/2006	11/1/2017	11/1/2017	11/2/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-R-A13-625-61.5N	TP-RD-A12-05(01.0-01.5)	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-02(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	4800	< 120	< 140	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	**69000**	< 120	< 140	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	49	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-46 Direct Contact Functional Area 23 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-02
					Sample Date	11/1/2017	11/1/2017	11/1/2017	11/2/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A12-05(03.0-03.5)	BD110117	TP-RD-A13-01A(03.0-03.5)	TP-RD-A13-02(03.0-03.5)
					Parent ID		TP-RD-A13-01A(03.0-03.5)		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 130	< 130	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 130	< 130	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-46 Direct Contact Functional Area 23 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A13-03	SB-R-A13-04	TP-RD-A12-05	TP-RD-A13-01A
					Sample Date	5/19/2006	5/23/2006	11/1/2017	11/1/2017
					Sample Depths	4.0-4.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	SB-R-A13-034.5N	SB-R-A13-045.5N	TP-RD-A12-05(05.0-05.5)	TP-RD-A13-01A(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 330	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 6600	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.13	1.13	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	8.4	2.92	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	1.74	1.96	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-46 Direct Contact Functional Area 23 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-02	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-02
					Sample Date	11/2/2017	11/1/2017	11/1/2017	11/2/2017
					Sample Depths	5.0-5.5 ft	7.0-7.5 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-A13-02(05.0-05.5)	TP-RD-A12-05(07.0-07.5)	TP-RD-A13-01A(07.0-07.5)	BD110217
					Parent ID				TP-RD-A13-02(07.0-07.5)
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 100	< 100	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 100	< 100	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-46 Direct Contact Functional Area 23 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-02	TP-R-A13-625-4	TP-R-A13-625-4(2017)	TP-R-A13-625-6
					Sample Date	11/2/2017	8/16/2006	11/2/2017	8/16/2006
					Sample Depths	7.0-7.5 ft	8.0-8.5 ft	8.0-8.5 ft	8.0-8.5 ft
					Sample ID	TP-RD-A13-02(07.0-07.5)	TP-R-A13-625-48.5N	TP-R-A13-625-4(08.0-08.5)	TP-R-A13-625-68.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 310	< 110	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 6300	< 110	< 6400
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 170	NA	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-46 Direct Contact Functional Area 23 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A12-05	TP-RD-A13-01A	TP-RD-A13-02	TP-R-A13-625-1
					Sample Date	11/1/2017	11/1/2017	11/2/2017	8/16/2006
					Sample Depths	8.0-8.5 ft	8.0-8.5 ft	8.0-8.5 ft	8.5-9.0 ft
					Sample ID	TP-RD-A12-05(08.0-08.5)	TP-RD-A13-01A(08.0-08.5)	TP-RD-A13-02(08.0-08.5)	TP-R-A13-625-19.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 100	< 100	< 110	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 100	< 100	< 110	< 6300
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-46 Direct Contact Functional Area 23 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-A13-625-5	TP-R-A13-625-2	TP-R-A13-625-2	TP-R-A13-625-3
					Sample Date	8/16/2006	8/16/2006	8/16/2006	8/16/2006
					Sample Depths	8.5-9.0 ft	9.0-9.5 ft	9.0-9.5 ft	9.0-9.5 ft
					Sample ID	TP-R-A13-625-59.0N	TP-R-A13-625-29.5FD	TP-R-A13-625-29.5N	TP-R-A13-625-39.5N
					Parent ID		TP-R-A13-625-29.5N		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 320	< 320	< 320	< 310
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6300	< 6300	< 6300	< 6300
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 180	< 170

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-47 Direct Contact Functional Area 24 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-19	C13-2-15	C13-2-03	C13-2-04
					Sample Date	4/18/2000	4/18/2000	10/29/1999	4/18/2000
					Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C13-2-191N	C13-2-151.5N	C13-2-032N	C13-2-042N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.9	4.5	4.1	4.7
Copper	7440-50-8	mg/kg	11000	45000	3100	12.5	14.1	11.6	17.2
Lead	7439-92-1	mg/kg	90	800	400	126	23.7	24.4	14.8
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	31	61	< 510	< 40

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-47 Direct Contact Functional Area 24 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-05
					Sample Date	4/18/2000
					Sample Depths	0.0-2.0 ft
					Sample ID	C13-2-052N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	4.7
Copper	7440-50-8	mg/kg	11000	45000	3100	18.2
Lead	7439-92-1	mg/kg	90	800	400	10.1
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 40

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-47 Direct Contact Functional Area 24 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-08	C13-2-09	C13-2-10	C13-2-13
					Sample Date	4/18/2000	10/29/1999	10/29/1999	4/18/2000
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C13-2-082N	C13-2-092N	C13-2-102N	C13-2-132N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 240	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	12000	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.3	3.8	3.7	3.5
Copper	7440-50-8	mg/kg	11000	45000	3100	10.8	14.7	18	12.4
Lead	7439-92-1	mg/kg	90	800	400	8.1	13	28.2	11
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 41	< 400	< 4000	< 42

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-47 Direct Contact Functional Area 24 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-14
					Sample Date	10/29/1999
					Sample Depths	0.0-2.0 ft
					Sample ID	C13-2-142N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 220
Nitroglycerin	55-63-0	ug/kg		200000	46000	15000
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	4.5
Copper	7440-50-8	mg/kg	11000	45000	3100	18.1
Lead	7439-92-1	mg/kg	90	800	400	29.5
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 4100

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-47 Direct Contact Functional Area 24 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-18	C13-2-20	SB-R-B13-01	SB-R-C13-02
					Sample Date	4/18/2000	4/18/2000	5/18/2006	5/19/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	C13-2-182N	C13-2-202N	SB-R-B13-011.0N	SB-R-C13-021.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 360	< 380
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 7200	< 7600
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.9	4.3	3.21	3.52
Copper	7440-50-8	mg/kg	11000	45000	3100	14.3	11.1	10.3	9.5
Lead	7439-92-1	mg/kg	90	800	400	13.7	11.3	8.86	17.7
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 41	< 40	< 200	< 210

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-48 Direct Contact Functional Area 24 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B13-01	SB-R-B13-01	SB-R-C13-02
					Sample Date	5/18/2006	5/18/2006	5/19/2006
					Sample Depths	2.0-2.5 ft	2.0-2.5 ft	2.5-3.0 ft
					Sample ID	SB-R-B13-012.5FD	SB-R-B13-012.5N	SB-R-C13-023.0N
					Parent ID	SB-R-B13-012.5N		
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 340	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 6700	< 6400
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	2.04	2.61	1.47
Copper	7440-50-8	mg/kg	11000	45000	3100	12.3	13.5	10
Lead	7439-92-1	mg/kg	90	800	400	3.47	3.9	2.21
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-49 Direct Contact Functional Area 25 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-06	C13-2-07	C13-2-11	C13-2-12
					Sample Date	4/18/2000	4/18/2000	4/18/2000	4/18/2000
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C13-2-062N	C13-2-072N	C13-2-112N	C13-2-122N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.1	4.4	4.3	4.2
Copper	7440-50-8	mg/kg	11000	45000	3100	10.9	11.5	18.7	16.5
Lead	7439-92-1	mg/kg	90	800	400	8.9	12.4	11.2	23.8
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 41	< 42	< 40	< 41

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-49 Direct Contact Functional Area 25 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-16	C13-2-17	C13-3-02	SB-R-C13-01
					Sample Date	4/18/2000	4/18/2000	11/4/1999	5/18/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.8-1.3 ft
					Sample ID	C13-2-162N	C13-2-172N	C13-3-022N	SB-R-C13-011.33N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	< 250	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	< 4900	< 6700
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.6	4.5	3.8	2.62
Copper	7440-50-8	mg/kg	11000	45000	3100	11.5	14.3	11.2	12.7
Lead	7439-92-1	mg/kg	90	800	400	14.1	13.2	14.5	9.43
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 40	< 41	< 450	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-50 Direct Contact Functional Area 25 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C13-01	SB-R-C13-01
					Sample Date	5/18/2006	8/9/2006
					Sample Depths	4.3-4.8 ft	8.3-8.8 ft
					Sample ID	SB-R-C13-014.75N	SB-R-C13-018.75N
					Parent ID		
					Notes		
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS		
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 470	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 9500	NA
Metals							
Arsenic	7440-38-2	mg/kg	19	19	19	3.8	1.85
Copper	7440-50-8	mg/kg	11000	45000	3100	15.6	17.3
Lead	7439-92-1	mg/kg	90	800	400	6.61	2.2
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 260	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-51 Direct Contact Functional Area 26 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A13-1-01	A13-753-01	A13-753-01	A13-753-01
					Sample Date	10/14/1999	10/15/1999	10/15/1999	11/18/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	A13-1-012N	A13-753-0110/15/1999	A13-753-012N10/15/1999	A13-753-0111/18/1999
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 250	< 240	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5463.3	< 543.1	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	5.9	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	23.3	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	**417**	NA	NA	334
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	**580**	NA	300	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-51 Direct Contact Functional Area 26 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	A13-753-01
					Sample Date	11/18/1999
					Sample Depths	0.0-2.0 ft
					Sample ID	A13-753-012N11/18/1999
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	4.3
Copper	7440-50-8	mg/kg	11000	45000	3100	17.3
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-51 Direct Contact Functional Area 26 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-A13-02	SB-R-A13-01	TP-RD-A13-04	TP-RD-A13-05
					Sample Date	5/19/2006	5/19/2006	12/1/2017	12/1/2017
					Sample Depths	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	SB-R-A13-021.0N	SB-R-A13-011.5N	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 360	< 350	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7300	< 7000	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	3.24	3.18	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	6.51	10.2	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	5.82	8.81	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	< 200	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-51 Direct Contact Functional Area 26 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-06
					Sample Date	12/1/2017
					Sample Depths	1.0-1.5 ft
					Sample ID	TP-RD-A13-06(01.0-01.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-51 Direct Contact Functional Area 26 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-07	TP-R-B13-2-1	TP-R-B13-2-2	TP-R-B13-2-9
					Sample Date	12/1/2017	8/2/2006	8/2/2006	8/2/2006
					Sample Depths	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-RD-A13-07(01.0-01.5)	TP-R-B13-2-12.0N	TP-R-B13-2-22.0N	TP-R-B13-2-92.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 320	< 340	< 330
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 6300	< 6800	< 6600
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	1.57	5.5	11.1
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	15.1	18.6	24.9
Lead	7439-92-1	mg/kg	90	800	400	NA	4.7	42.9	59.4
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 180	280	400

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-52 Direct Contact Functional Area 26 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-1	TP-R-B13-2-1	TP-R-B13-2-2	SB-R-A13-02
					Sample Date	8/2/2006	8/2/2006	8/2/2006	5/19/2006
					Sample Depths	11.5-12.0 ft	11.5-12.0 ft	12.5-13.0 ft	2.0-2.5 ft
					Sample ID	TP-R-B13-2-112.0FD	TP-R-B13-2-112.0N	TP-R-B13-2-213.0N	SB-R-A13-022.5N
					Parent ID	TP-R-B13-2-112.0N			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 330	< 350	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6600	< 6600	15000	< 6900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.91	1.74	2.2	4.17
Copper	7440-50-8	mg/kg	11000	45000	3100	14.6	12.5	8.98	11
Lead	7439-92-1	mg/kg	90	800	400	2.86	2.55	26.7	5.17
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 190	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-52 Direct Contact Functional Area 26 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-03	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-06
					Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-A13-03(03.0-03.5)	TP-RD-A13-04(03.0-03.5)	TP-RD-A13-05(03.0-03.5)	TP-RD-A13-06(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-52 Direct Contact Functional Area 26 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-A13-07	SB-R-A13-01	TP-R-B13-2-1	TP-RD-A13-03
					Sample Date	12/1/2017	5/19/2006	8/2/2006	12/1/2017
					Sample Depths	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-A13-07(03.0-03.5)	SB-R-A13-014.5N	TP-R-B13-2-15.5N	TP-RD-A13-03(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 330	< 320	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 6500	< 6300	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	2.43	1.48	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	12.5	15.4	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	2.27	2.48	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 180	< 180	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-52 Direct Contact Functional Area 26 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-2	TP-R-B13-2-9	TP-R-B13-2-9
					Sample Date	8/2/2006	8/2/2006	8/2/2006
					Sample Depths	5.5-6.0 ft	6.0-6.5 ft	9.5-10.0 ft
					Sample ID	TP-R-B13-2-26.0N	TP-R-B13-2-96.5N	TP-R-B13-2-910.0N
					Parent ID			
					Notes			
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS			
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340	440	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6800	< 7300	11000
Metals								
Arsenic	7440-38-2	mg/kg	19	19	19	4.95	4.22	2.45
Copper	7440-50-8	mg/kg	11000	45000	3100	15.2	264	22.6
Lead	7439-92-1	mg/kg	90	800	400	30.8	171	52.3
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	72	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B13-682-03	B13-682-06	B13-682-04	B13-724-01
					Sample Date	10/8/1999	10/8/1999	10/8/1999	7/21/2000
					Sample Depths	0.0-0.8 ft	0.0-1.0 ft	0.0-1.3 ft	0.0-2.0 ft
					Sample ID	B13-682-030.8N	B13-682-061N	B13-682-041.3N	B13-724-012FD
					Parent ID				B13-724-012N
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 230	1000	3900	**9850**
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5655.5	< 6709.8	< 7739	**410000000**
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	5.2	2.7	17	3.83
Copper	7440-50-8	mg/kg	11000	45000	3100	33.6	122	43.1	17.9
Lead	7439-92-1	mg/kg	90	800	400	156	74.5	82.5	43.9
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	150	< 460	57	< 40100

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B13-724-01
					Sample Date	7/21/2000
					Sample Depths	0.0-2.0 ft
					Sample ID	B13-724-012N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	**9110**
Nitroglycerin	55-63-0	ug/kg		200000	46000	**476000000**
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	4.31
Copper	7440-50-8	mg/kg	11000	45000	3100	31.3
Lead	7439-92-1	mg/kg	90	800	400	67
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 4100

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	B13-724-05	B13-724-05	C13-1-17	SB-R-B14-01
					Sample Date	10/8/1999	10/8/1999	11/2/1999	5/18/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.8-1.3 ft
					Sample ID	B13-724-052FD	B13-724-052N	C13-1-172N	SB-R-B14-011.33N
					Parent ID	B13-724-052N			
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 240	< 250	< 4200	< 360
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 5530.7	< 5328.8	< 5000	< 7200
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	5.3	5.3	4.8	4.52
Copper	7440-50-8	mg/kg	11000	45000	3100	15.9	17.4	13.2	13.1
Lead	7439-92-1	mg/kg	90	800	400	24.4	21.4	21.4	8.53
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	25	< 390	NA	< 200

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-05
					Sample Date	12/1/2017
					Sample Depths	1.0-1.5 ft
					Sample ID	TP-RD-B13-05(01.0-01.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-11	TP-RD-B13-12
					Sample Date	11/8/2017	11/8/2017	12/1/2017	12/1/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-07(01.0-01.5)	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B14-01
					Sample Date	11/8/2017
					Sample Depths	1.0-1.5 ft
					Sample ID	TP-RD-B14-01(01.0-01.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B14-02	TP-RD-B14-03	SD-B13-2-01	TP-R-B13-2-5
					Sample Date	11/8/2017	11/30/2017	5/1/2001	8/2/2006
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	1.5-2.0 ft
					Sample ID	TP-RD-B14-02(01.0-01.5)	TP-RD-B14-03(01.0-01.5)	SD-B13-2-012N	TP-R-B13-2-52.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 130	< 11000	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 130	< 230000	< 6800
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	4.3	3.52
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	17.5	15.1
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	12.4	6.99
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 38	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-6
					Sample Date	8/2/2006
					Sample Depths	1.5-2.0 ft
					Sample ID	TP-R-B13-2-62.0N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	5400
Nitroglycerin	55-63-0	ug/kg		200000	46000	**130000**
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	2.39
Copper	7440-50-8	mg/kg	11000	45000	3100	46.8
Lead	7439-92-1	mg/kg	90	800	400	16.1
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 960

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-6	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07
					Sample Date	8/2/2006	12/1/2017	11/8/2017	11/8/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-R-B13-2-63.5N	TP-RD-B13-05(03.0-03.5)	TP-RD-B13-06(03.0-03.5)	TP-RD-B13-07(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	**9200**	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	**110000**	< 120	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.62	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	35.1	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	15.3	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 940	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-11
					Sample Date	12/1/2017
					Sample Depths	3.0-3.5 ft
					Sample ID	TP-RD-B13-11(03.0-03.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-12	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B13-12(03.0-03.5)	TP-RD-B14-01(03.0-03.5)	TP-RD-B14-02(03.0-03.5)	TP-RD-B14-03(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B14-04
					Sample Date	11/30/2017
					Sample Depths	3.0-3.5 ft
					Sample ID	TP-RD-B14-04(03.0-03.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-B14-01	TP-R-B13-2-5	TP-R-B13-2-6	B13-682-03(2017)
					Sample Date	5/18/2006	8/2/2006	8/2/2006	11/8/2017
					Sample Depths	4.0-4.5 ft	4.0-4.5 ft	4.5-5.0 ft	5.0-5.5 ft
					Sample ID	SB-R-B14-014.5N	TP-R-B13-2-54.5N	TP-R-B13-2-65.0N	B13-682-03(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 320	< 320	**18000**	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6500	< 6500	**120000**	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.39	1.84	1.26	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	13.5	12.8	20.5	NA
Lead	7439-92-1	mg/kg	90	800	400	1.53	2.81	15.8	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	< 180	< 950	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-05
					Sample Date	12/1/2017
					Sample Depths	5.0-5.5 ft
					Sample ID	BD120117B
					Parent ID	TP-RD-B13-05(05.0-05.5)
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

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J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-11
					Sample Date	12/1/2017	11/8/2017	11/8/2017	12/1/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-05(05.0-05.5)	TP-RD-B13-06(05.0-05.5)	TP-RD-B13-07(05.0-05.5)	BD120117A
					Parent ID				TP-RD-B13-11(05.0-05.5)
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110 J	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-11
					Sample Date	12/1/2017
					Sample Depths	5.0-5.5 ft
					Sample ID	TP-RD-B13-11(05.0-05.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110 J
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110 J
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-12	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03
					Sample Date	12/1/2017	11/8/2017	11/8/2017	11/30/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-12(05.0-05.5)	TP-RD-B14-01(05.0-05.5)	TP-RD-B14-02(05.0-05.5)	TP-RD-B14-03(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 100	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 100	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-53 Direct Contact Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-06	TP-R-B13-2-5
					Sample Date	11/8/2017	8/2/2006
					Sample Depths	7.0-7.5 ft	8.5-9.0 ft
					Sample ID	TP-RD-B13-06(07.0-07.5)	TP-R-B13-2-59.0N
					Parent ID		
					Notes		
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS		
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	5200
Metals							
Arsenic	7440-38-2	mg/kg	19	19	19	NA	< 2.2
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	16
Lead	7439-92-1	mg/kg	90	800	400	NA	2.77
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-6	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-07
					Sample Date	8/2/2006	12/1/2017	11/8/2017	11/8/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-R-B13-2-63.5N	TP-RD-B13-05(03.0-03.5)	TP-RD-B13-06(03.0-03.5)	TP-RD-B13-07(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	**9200**	< 120	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	**110000**	< 120	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.62	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	35.1	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	15.3	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 940	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B14-01	TP-RD-B14-02
					Sample Date	12/1/2017	12/1/2017	11/8/2017	11/8/2017
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	TP-RD-B13-11(03.0-03.5)	TP-RD-B13-12(03.0-03.5)	TP-RD-B14-01(03.0-03.5)	TP-RD-B14-02(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B14-03	TP-RD-B14-04	SB-R-B14-01	TP-R-B13-2-5
					Sample Date	11/30/2017	11/30/2017	5/18/2006	8/2/2006
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	4.0-4.5 ft	4.0-4.5 ft
					Sample ID	TP-RD-B14-03(03.0-03.5)	TP-RD-B14-04(03.0-03.5)	SB-R-B14-014.5N	TP-R-B13-2-54.5N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 320	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 6500	< 6500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	1.39	1.84
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	13.5	12.8
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	1.53	2.81
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	< 180	< 180

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-6	B13-682-03(2017)	TP-RD-B13-05	TP-RD-B13-05
					Sample Date	8/2/2006	11/8/2017	12/1/2017	12/1/2017
					Sample Depths	4.5-5.0 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-R-B13-2-65.0N	B13-682-03(05.0-05.5)	BD120117B	TP-RD-B13-05(05.0-05.5)
					Parent ID			TP-RD-B13-05(05.0-05.5)	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	**18000**	< 120	< 110	< 110 J
Nitroglycerin	55-63-0	ug/kg		200000	46000	**120000**	< 120	< 110	< 110 J
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.26	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	20.5	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	15.8	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 950	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-06	TP-RD-B13-07	TP-RD-B13-11	TP-RD-B13-11
					Sample Date	11/8/2017	11/8/2017	12/1/2017	12/1/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-B13-06(05.0-05.5)	TP-RD-B13-07(05.0-05.5)	BD120117A	TP-RD-B13-11(05.0-05.5)
					Parent ID			TP-RD-B13-11(05.0-05.5)	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 110	< 110	< 110 J
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 110	< 110	< 110 J
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B13-12
					Sample Date	12/1/2017
					Sample Depths	5.0-5.5 ft
					Sample ID	TP-RD-B13-12(05.0-05.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-B14-01	TP-RD-B14-02	TP-RD-B14-03	TP-RD-B13-06
					Sample Date	11/8/2017	11/8/2017	11/30/2017	11/8/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	7.0-7.5 ft
					Sample ID	TP-RD-B14-01(05.0-05.5)	TP-RD-B14-02(05.0-05.5)	TP-RD-B14-03(05.0-05.5)	TP-RD-B13-06(07.0-07.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 100	< 110	< 110	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 100	< 110	< 110	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-54 Direct Contact Functional Area 27 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-B13-2-5
					Sample Date	8/2/2006
					Sample Depths	8.5-9.0 ft
					Sample ID	TP-R-B13-2-59.0N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	5200
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	< 2.2
Copper	7440-50-8	mg/kg	11000	45000	3100	16
Lead	7439-92-1	mg/kg	90	800	400	2.77
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-55 Direct Contact Functional Area 28 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-1-08	C13-1-11	C13-2-02	SB-R-C14-02
					Sample Date	11/2/1999	11/2/1999	4/18/2000	5/18/2006
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.8-1.3 ft
					Sample ID	C13-1-082N	C13-1-112N	C13-2-022N	SB-R-C14-021.25N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	< 360
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	NA	NA	< 7200
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	5.1	5	3.7	3.68
Copper	7440-50-8	mg/kg	11000	45000	3100	54.3	13.3	9.9	10.9
Lead	7439-92-1	mg/kg	90	800	400	13.6	24	12.1	6.15
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 400	< 410	< 41	< 200

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-56 Direct Contact Functional Area 28 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C14-02
					Sample Date	5/18/2006
					Sample Depths	4.0-4.5 ft
					Sample ID	SB-R-C14-024.5N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 320
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6400
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	1.53
Copper	7440-50-8	mg/kg	11000	45000	3100	12.6
Lead	7439-92-1	mg/kg	90	800	400	2.61
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-57 Direct Contact Functional Area 29 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-1-01	C13-133-03	C13-133-05	C13-2-01
					Sample Date	11/2/1999	7/6/2000	11/4/1999	10/29/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C13-1-012N	C13-133-032N	C13-133-052N	C13-2-012FD
					Parent ID				C13-2-012N
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	NA	NA	NA
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 442.204	NA	NA
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.9	4.39	3.3	4
Copper	7440-50-8	mg/kg	11000	45000	3100	438	16.1	12	17.1
Lead	7439-92-1	mg/kg	90	800	400	51.7	23	9.3	144
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 390	136	98	120

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-57 Direct Contact Functional Area 29 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	C13-2-01	C13-742-01	C13-742-01	C13-742-05
					Sample Date	10/29/1999	10/29/1999	10/29/1999	10/29/1999
					Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
					Sample ID	C13-2-012N	C13-742-012FD	C13-742-012N	C13-742-052N
					Parent ID		C13-742-012N		
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	NA	< 220	< 230	< 200
Nitroglycerin	55-63-0	ug/kg		200000	46000	NA	< 4800	< 5000	< 5000
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	4.1	4.3	4.3	3.8
Copper	7440-50-8	mg/kg	11000	45000	3100	19.7	11.2	10.7	11.7
Lead	7439-92-1	mg/kg	90	800	400	159	16.1	11.2	18.2
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	130	< 410	< 400	< 390

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-57 Direct Contact Functional Area 29 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C14-01	TP-R-C13-666-3	TP-R-C13-666-4	TP-R-C13-666-5
					Sample Date	5/18/2006	8/16/2006	8/17/2006	8/17/2006
					Sample Depths	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft
					Sample ID	SB-R-C14-011.0N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N	TP-R-C13-666-51.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 330	< 340	180	2300
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6700	< 6700	11000	**48000**
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	2.66	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	14.2	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	4.87	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190	< 190	< 180	420

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-57 Direct Contact Functional Area 29 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

						Location	TP-R-C13-666-1	TP-R-C13-666-2	TP-RD-C13-01A	TP-RD-C13-02
						Sample Date	8/17/2006	8/17/2006	11/8/2017	11/7/2017
						Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
						Sample ID	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02(01.0-01.5)
						Parent ID				
						Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS					
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800		980	< 300	< 1200	< 130
Nitroglycerin	55-63-0	ug/kg		200000	46000		**130000**	10000	< 1200	< 130
Metals										
Arsenic	7440-38-2	mg/kg	19	19	19		NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100		NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400		NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500		300	< 42000	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-57 Direct Contact Functional Area 29 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C13-02A
					Sample Date	11/8/2017
					Sample Depths	1.0-1.5 ft
					Sample ID	TP-RD-C13-02A(01.0-01.5)
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-57 Direct Contact Functional Area 29 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C13-04	TP-RD-C13-04A	TP-RD-D13-01	TP-RD-D14-01
					Sample Date	11/8/2017	12/4/2017	12/1/2017	12/1/2017
					Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
					Sample ID	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 130	< 120	< 130	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 130	< 120	< 130	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-57 Direct Contact Functional Area 29 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-D14-01
					Sample Date	8/8/2006
					Sample Depths	1.5-2.0 ft
					Sample ID	SB-R-D14-012.0N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 370
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7500
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	3.64
Copper	7440-50-8	mg/kg	11000	45000	3100	59.9
Lead	7439-92-1	mg/kg	90	800	400	59.4
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	240

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-58 Direct Contact Functional Area 29 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	SB-R-C14-01	TP-RD-C13-01A	TP-RD-C13-02	TP-RD-C13-02A
					Sample Date	5/18/2006	11/8/2017	11/7/2017	11/8/2017
					Sample Depths	2.0-2.5 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
					Sample ID	SB-R-C14-012.5N	TP-RD-C13-01A(03.0-03.5)	TP-RD-C13-02(03.0-03.5)	TP-RD-C13-02A(03.0-03.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 320	< 1400	< 120	< 110
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6400	< 1400	< 120	< 110
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	1.72	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	15.2	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	2.91	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 180	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-58 Direct Contact Functional Area 29 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C13-04	TP-RD-D13-01	TP-RD-D14-01	SB-R-D14-01
					Sample Date	11/8/2017	12/1/2017	12/1/2017	8/8/2006
					Sample Depths	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft	4.5-5.0 ft
					Sample ID	TP-RD-C13-04(03.0-03.5)	TP-RD-D13-01(03.0-03.5)	TP-RD-D14-01(03.0-03.5)	SB-R-D14-015.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 110	< 160	< 140	< 370
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 110	< 160	< 140	< 7500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	< 2.42
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	10.5
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	1.48
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	< 210

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-58 Direct Contact Functional Area 29 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-C13-02	TP-RD-C13-02A	TP-RD-C13-04	TP-RD-D13-01
					Sample Date	11/7/2017	11/8/2017	11/8/2017	12/1/2017
					Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
					Sample ID	TP-RD-C13-02(05.0-05.5)	TP-RD-C13-02A(05.0-05.5)	TP-RD-C13-04(05.0-05.5)	TP-RD-D13-01(05.0-05.5)
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 120	< 110	< 120
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	< 120	< 110	< 120
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	NA	NA	NA

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-58 Direct Contact Functional Area 29 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-RD-D14-01	TP-R-C13-666-1	TP-R-C13-666-1(2017)	TP-R-C13-666-2
					Sample Date	12/1/2017	8/17/2006	11/7/2017	8/17/2006
					Sample Depths	5.0-5.5 ft	6.5-7.0 ft	6.5-7.0 ft	6.5-7.0 ft
					Sample ID	TP-RD-D14-01(05.0-05.5)	TP-R-C13-666-17.0N	TP-R-C13-666-1(06.5-07.0)	TP-R-C13-666-27.0N
					Parent ID				
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 120	< 350	< 130	< 380
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 120	3300	< 130	< 7500
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	NA	< 200	NA	< 210

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-58 Direct Contact Functional Area 29 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-C13-666-3	TP-RD-C13-04	TP-R-C13-666-4	TP-R-C13-666-4
					Sample Date	8/16/2006	11/8/2017	8/17/2006	8/17/2006
					Sample Depths	6.5-7.0 ft	6.5-7.0 ft	7.0-7.5 ft	7.0-7.5 ft
					Sample ID	TP-R-C13-666-37.0N	TP-RD-C13-04(06.5-07.0)	TP-R-C13-666-47.5FD	TP-R-C13-666-47.5N
					Parent ID			TP-R-C13-666-47.5N	
					Notes				
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS				
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 360	< 120	< 360	< 340
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 7200	< 120	< 7200	< 6900
Metals									
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	800	400	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 200	NA	< 200	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 2-58 Direct Contact Functional Area 29 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TP-R-C13-666-5
					Sample Date	8/17/2006
					Sample Depths	7.5-8.0 ft
					Sample ID	TP-R-C13-666-58.0N
					Parent ID	
					Notes	
Chemical	CAS Number	Units	IGWSRS	NRDCSRS	RDCSRS	
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100000	7800	< 350
Nitroglycerin	55-63-0	ug/kg		200000	46000	< 6900
Metals						
Arsenic	7440-38-2	mg/kg	19	19	19	NA
Copper	7440-50-8	mg/kg	11000	45000	3100	NA
Lead	7439-92-1	mg/kg	90	800	400	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	2000	500	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3

Impact to Groundwater Functional Area Datasets

Exhibit 3-1 Impact to Groundwater Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B9-2-05	C8-1-01	C8-1-01	C8-1-01	SB-R-C9-02	SB-R-C9-02	SO-R2-B-8-1
			Sample Date	10/15/1999	10/8/1999	11/18/1999	11/18/1999	5/16/2006	5/16/2006	11/14/2013
			Sample Depths	0.0-2.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.3-0.8 ft
			Sample ID	B9-2-052N	C8-1-010.5N10/8/1999	C8-1-010.5N	C8-1-010.5N11/18/1999	SB-R-C9-021.0N	SB-R-C9-023.0N	SO-R2-B-8-1_20131114
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 240	NA	NA	< 370	< 360	< 330
Nitrobenzene	98-95-3	ug/kg	200	< 480	< 240	< 550	NA	NA	NA	< 330
Metals										
Antimony	7440-36-0	mg/kg	6	14.5	NA	1.3	NA	< 2.44	< 2.36	< 2.23
Arsenic	7440-38-2	mg/kg	19	24.1	NA	14.9	NA	2.84	4.08	6.29
Beryllium	7440-41-7	mg/kg	1.08	0.88	NA	0.23	NA	0.585	0.944	0.833
Cadmium	7440-43-9	mg/kg	2	0.59	NA	0.41	NA	1.07	1.19	< 2.79
Copper	7440-50-8	mg/kg	11000	171	NA	31.3	NA	18.4	20.7	31.8
Lead	7439-92-1	mg/kg	90	2190	NA	10200	NA	6.27	7.01	8.98
Mercury	7439-97-6	mg/kg	0.32	0.72	NA	1.1	NA	0.0079	0.0097	0.0545
Nickel	7440-02-0	mg/kg	48	25.9	NA	7.2	NA	15.3	16.6	19.3
Selenium	7782-49-2	mg/kg	11	3	NA	2.8	NA	< 2.44	1.24	1.43
Thallium	7440-28-0	mg/kg	3	< 12.8	NA	< 1.5	NA	< 2.44	< 2.36	0.761
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	3700	NA	280	NA	< 210	< 200	6
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 480	NA	< 550	NA	< 210	< 200	< 37

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-1 Impact to Groundwater Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SO-R2-B-9-1	SO-R2-B-9-2	SO-R2-B-9-2	SO-R2-C-8-2	SO-R2-C-8-2
			Sample Date	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013
			Sample Depths	9.5-10.0 ft	0.5-1.0 ft	9.5-10.0 ft	0.5-1.0 ft	9.4-9.9 ft
			Sample ID	SO-R2-B-9-1_20131114	SO-R2-B-9-2_20131114	SO-R2-B-9-2D_20131114	SO-R2-C-8-2_20131114	SO-R2-C-8-2D_20131114
			Parent ID					
			Notes					
Chemical	CAS Number	Units	IGWSRS					
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 350	< 370	< 350	< 360	< 340
Nitrobenzene	98-95-3	ug/kg	200	< 350	< 370	< 350	< 360	< 340
Metals								
Antimony	7440-36-0	mg/kg	6	< 2.29	< 2.47	< 2.26	< 2.4	< 2.24
Arsenic	7440-38-2	mg/kg	19	5.27	7.31	5.28	5.68	4.92
Beryllium	7440-41-7	mg/kg	1.08	1.38	1.04	1.59	0.812	0.839
Cadmium	7440-43-9	mg/kg	2	< 0.572	0.326	< 0.565	< 0.6	< 0.561
Copper	7440-50-8	mg/kg	11000	24	25.7	27.9	14.1	15.2
Lead	7439-92-1	mg/kg	90	5.53	62.9	5.4	15.7	6.34
Mercury	7439-97-6	mg/kg	0.32	0.0615	0.0723	0.0204	0.0285	0.0124
Nickel	7440-02-0	mg/kg	48	14.2	15.5	14.6	11.8	13.3
Selenium	7782-49-2	mg/kg	11	1.11	1.12	1.55	1.24	1.08
Thallium	7440-28-0	mg/kg	3	0.796	< 3.71	0.618	< 3.6	< 3.37
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 20	370	< 20	72	< 19
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 38	< 410	< 38	< 40	< 38

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-2 Impact to Groundwater Functional Area 2 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-C9-01	SB-R-C9-01	SB-R-C9-01	SB-R-C9-03	SB-R-C9-03
			Sample Date	5/16/2006	5/16/2006	8/8/2006	5/16/2006	5/16/2006
			Sample Depths	0.5-1.0 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	2.0-2.5 ft
			Sample ID	SB-R-C9-011.0N	SB-R-C9-012.5N	SB-R-C9-016.5N	SB-R-C9-031.0N	SB-R-C9-032.5N
			Parent ID					
			Notes					
Chemical	CAS Number	Units	IGWSRS					
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 360	< 330	NA	< 350	< 350
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA
Metals								
Antimony	7440-36-0	mg/kg	6	< 2.35	< 2.23	< 2.13	< 2.31	< 2.25
Arsenic	7440-38-2	mg/kg	19	5.3	25.3	8.72	2.86	3.14
Beryllium	7440-41-7	mg/kg	1.08	0.359	0.484	0.43	0.857	1
Cadmium	7440-43-9	mg/kg	2	0.515	0.862	< 2.66	0.891	0.98
Copper	7440-50-8	mg/kg	11000	7.7	16.3	12.6	16	21
Lead	7439-92-1	mg/kg	90	4.52	6.72	3.13	6.51	6.43
Mercury	7439-97-6	mg/kg	0.32	0.0176	< 0.107	< 0.102	0.0229	0.0252
Nickel	7440-02-0	mg/kg	48	4.93	7.42	4.88	14.1	17.2
Selenium	7782-49-2	mg/kg	11	< 2.35	< 2.23	< 2.13	< 2.31	< 2.25
Thallium	7440-28-0	mg/kg	3	< 2.35	< 2.23	< 2.13	< 2.31	1.15
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 200	< 190	NA	< 200	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 200	< 190	NA	< 200	< 190

Notes:

Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)

Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)

Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

SVOCs = semivolatile organic compounds

NA = not analyzed

< = non-detect. The value presented is the reporting limit

J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-3 Impact to Groundwater Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-01	TP-RD-B10-03	TP-RD-B10-03	TP-RD-B10-03	SB-R-B10-03
			Sample Date	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	6/13/2006
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	0.5-1.0 ft
			Sample ID	TP-RD-B10-01(01.0-01.5)	TP-RD-B10-01(03.0-03.5)	TP-RD-B10-01(04.0-05.0)	TP-RD-B10-03(01.0-01.5)	TP-RD-B10-03(03.0-03.5)	TP-RD-B10-03(04.0-05.0)	SB-R-B10-031.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 120	< 120	< 360
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 120	< 120	NA
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	1.16
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	3.27
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	0.8
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	< 2.87
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	16.3
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	5.93
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	0.0319
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	11.2
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	< 2.29
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	< 2.29
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	< 200
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	< 200

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-3 Impact to Groundwater Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-B10-03	SB-R-C9-04	SB-R-C9-04	SO-R2-B-9-3	SO-R2-B-9-3	P-R-B10-2/B10-509-	P-R-B10-2/B10-509-
			Sample Date	6/13/2006	5/25/2006	5/25/2006	11/11/2013	11/11/2013	8/10/2006	8/10/2006
			Sample Depths	4.0-4.5 ft	0.5-1.0 ft	3.0-3.5 ft	0.3-0.8 ft	9.5-10.0 ft	1.5-2.0 ft	10.5-11.0 ft
			Sample ID	SB-R-B10-034.5N	SB-R-C9-041.0N	SB-R-C9-043.5N	SO-R2-B-9-3_20131111	SO-R2-B-9-3D_20131111	TP-R-B10-2/B10-509-72.0N	TP-R-B10-2/B10-509-711.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 330	< 350	< 350	< 340	< 310	840	330
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	< 340	< 310	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.23	< 2.31	< 2.31	< 2.22	< 2.06	< 2.25	< 2.11
Arsenic	7440-38-2	mg/kg	19	3.03	3.64	2.41	5.6	1.41	3.91	7.08
Beryllium	7440-41-7	mg/kg	1.08	0.619	0.724	0.405	1.01	0.121	0.664	0.853
Cadmium	7440-43-9	mg/kg	2	< 0.557	< 2.89	< 0.579	< 0.554	< 0.515	< 0.562	< 0.528
Copper	7440-50-8	mg/kg	11000	14.5	12.5	5.24	14.6	5.41	13.1	21.1
Lead	7439-92-1	mg/kg	90	4.26	5.52	3.6	25.3	1.6	78.3	30.8
Mercury	7439-97-6	mg/kg	0.32	0.0186	0.0205	0.0125	0.0227	< 0.0958	0.0425	< 0.106
Nickel	7440-02-0	mg/kg	48	7.31	10.9	4.87	10.3	0.796	8.77	5.82
Selenium	7782-49-2	mg/kg	11	< 2.23	< 2.31	< 2.31	< 2.22	< 2.06	< 2.25	< 2.11
Thallium	7440-28-0	mg/kg	3	< 2.23	< 2.31	< 2.31	< 3.32	< 3.09	< 2.25	< 2.11
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 190	< 190	< 190	14	4	< 190	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 190	< 190	< 38	< 34	< 190	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-3 Impact to Groundwater Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	P-R-B10-2/B10-509-
			Sample Date	8/10/2006
			Sample Depths	4.0-4.5 ft
			Sample ID	TP-R-B10-2/B10-509-74.5N
			Parent ID	
			Notes	
Chemical	CAS Number	Units	IGWSRS	
Explosives				
1,3-Dinitrobenzene	99-65-0	ug/kg	500	360
Nitrobenzene	98-95-3	ug/kg	200	NA
Metals				
Antimony	7440-36-0	mg/kg	6	1.24
Arsenic	7440-38-2	mg/kg	19	4.29
Beryllium	7440-41-7	mg/kg	1.08	0.713
Cadmium	7440-43-9	mg/kg	2	< 0.579
Copper	7440-50-8	mg/kg	11000	19.1
Lead	7439-92-1	mg/kg	90	201
Mercury	7439-97-6	mg/kg	0.32	0.0314
Nickel	7440-02-0	mg/kg	48	10.3
Selenium	7782-49-2	mg/kg	11	< 2.31
Thallium	7440-28-0	mg/kg	3	< 2.31
SVOCs				
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 200
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 200

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-4 Impact to Groundwater Functional Area 4 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-02	TP-RD-B10-04	TP-RD-B10-04	TP-RD-B10-04	UD-06
			Sample Date	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	10/2/2017	9/15/1999
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	4.0-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	4.5-0.5 ft	0.0-0.7 ft
			Sample ID	TP-RD-B10-02(01.0-01.5)	TP-RD-B10-02(03.0-03.5)	TP-RD-B10-02(04.0-05.0)	TP-RD-B10-04(01.0-01.5)	TP-RD-B10-04(03.0-03.5)	TP-RD-B10-04(04.5-0.50)	UD-060.67N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 110	< 120	NA
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 120	NA
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-4 Impact to Groundwater Functional Area 4 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	UD-06	SB-R-A11-02	SB-R-A11-02	SB-R-B10-01	SB-R-B10-01	SB-R-B10-01	SB-R-C10-04
			Sample Date	9/15/1999	5/25/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	6/12/2006
			Sample Depths	0.0-1.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft
			Sample ID	UD-061N	SB-R-A11-021.0N	SB-R-A11-023.0N	SB-R-B10-011.0FD	SB-R-B10-011.0N	SB-R-B10-015.0N	SB-R-C10-041.0N
			Parent ID				SB-R-B10-011.0N			
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 190	< 350	< 350	< 350	< 350	< 330	< 360
Nitrobenzene	98-95-3	ug/kg	200	< 190	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 1.1	< 2.26	< 2.29	< 2.29	< 2.32	< 2.17	< 2.28
Arsenic	7440-38-2	mg/kg	19	5.9	2.73	2.38	3.39	3.98	< 2.17	3.2
Beryllium	7440-41-7	mg/kg	1.08	0.69	0.681	0.989	0.967	0.902	0.368	0.93
Cadmium	7440-43-9	mg/kg	2	0.17	< 0.564	< 2.86	< 2.86	< 2.9	< 0.543	< 2.85
Copper	7440-50-8	mg/kg	11000	11.7	11.7	20.2	19.9	16.3	10.6	16.5
Lead	7439-92-1	mg/kg	90	37.5	4.45	4.67	8.99	8.05	1.89	6.4
Mercury	7439-97-6	mg/kg	0.32	0.05	< 0.112	0.0753	0.0343	0.0352	< 0.106	0.029
Nickel	7440-02-0	mg/kg	48	7.2	9.51	12.7	13.4	13.3	5.76	12.4
Selenium	7782-49-2	mg/kg	11	< 1.5	< 2.26	< 2.29	< 2.29	< 2.32	< 2.17	< 2.28
Thallium	7440-28-0	mg/kg	3	< 2.2	< 2.26	< 2.29	< 2.29	< 2.32	< 2.17	1.66
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 390	< 190	< 200	< 200	< 200	< 180	< 200
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 390	< 190	< 200	< 200	< 200	< 180	< 200

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-4 Impact to Groundwater Functional Area 4 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-C10-04	SB-R-C10-04	SB-R-C10-04	SD-C9-1-01	B10-2/B10-509-7(2017
			Sample Date	6/12/2006	6/12/2006	8/17/2006	4/25/2001	10/2/2017
			Sample Depths	2.0-2.5 ft	2.0-2.5 ft	6.0-6.5 ft	0.5-1.0 ft	4.5-5.0 ft
			Sample ID	SB-R-C10-042.5FD	SB-R-C10-042.5N	SB-R-C10-046.5N	SD-C9-1-011N	TP-R-B10-2/B10-509-7(04.5-05.0)
			Parent ID	SB-R-C10-042.5N				
			Notes					
Chemical	CAS Number	Units	IGWSRS					
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 350	< 350	NA	< 99	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	< 99	< 110
Metals								
Antimony	7440-36-0	mg/kg	6	< 2.26	< 2.29	1.51	< 0.91	NA
Arsenic	7440-38-2	mg/kg	19	2.18	2.02	2.41	2.7	NA
Beryllium	7440-41-7	mg/kg	1.08	1.42	1.45	0.75	0.52	NA
Cadmium	7440-43-9	mg/kg	2	< 2.83	< 2.87	< 2.72	< 0.077	NA
Copper	7440-50-8	mg/kg	11000	27.9	28.8	16.9	18.1	NA
Lead	7439-92-1	mg/kg	90	5.17	5.36	2.58	68.8	NA
Mercury	7439-97-6	mg/kg	0.32	0.0293	0.0233	0.0157	0.029	NA
Nickel	7440-02-0	mg/kg	48	17.9	19.1	8.96	8.8	NA
Selenium	7782-49-2	mg/kg	11	1.34	1.82	< 2.18	< 0.67	NA
Thallium	7440-28-0	mg/kg	3	2.14	2.01	2.32	< 1.2	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 190	< 190	NA	150	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 190	NA	< 33	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-06	TP-RD-B10-07	TP-RD-B10-07	TP-RD-B10-07
			Sample Date	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/3/2017	10/3/2017	10/3/2017
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	2.5-3.0 ft	1.0-1.5 ft	2.5-3.0 ft
			Sample ID	TP-RD-B10-06(01.0-01.5)	TP-RD-B10-06(03.0-03.5)	TP-RD-B10-06(05.0-05.5)	TP-RD-B10-06(06.0-06.5)	BD100317A	TP-RD-B10-07(01.0-01.5)	TP-RD-B10-07(02.5-03.0)
			Parent ID					TP-RD-B10-07(02.5-03.0)		
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 120	< 110	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 120	< 110	< 120	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-13	TP-RD-B10-14
			Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/12/2017
			Sample Depths	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-B10-13(01.0-01.5)	TP-RD-B10-13(10.0-10.5)	TP-RD-B10-13(03.0-03.5)	TP-RD-B10-13(05.0-05.5)	TP-RD-B10-13(07.0-07.5)	TP-RD-B10-13(09.0-09.5)	TP-RD-B10-14(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 100	< 100	< 110	< 100	< 100	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 100	< 100	< 110	< 100	< 100	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-RD-B10-14	TP-RD-B10-14A	A11-570-05	B10-20-01	B10-20-01	B10-3-01	B10-3-03
				Sample Date	10/12/2017	10/16/2017	10/14/1999	10/15/1999	10/15/1999	6/16/2000	10/15/1999
				Sample Depths	2.0-2.5 ft	1.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft
				Sample ID	TP-RD-B10-14(02.0-02.5)	TP-RD-B10-14A(01.0-01.5)	A11-570-051N	B10-20-011FD	B10-20-011N	B10-3-011N	B10-3-032N
				Parent ID				B10-20-011N			
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 400	< 550	< 460	< 410	< 490
Metals											
Antimony	7440-36-0	mg/kg	6	NA	NA	0.52	7.7	< 11.6	< 0.697	< 0.64
Arsenic	7440-38-2	mg/kg	19	NA	NA	4.5	37.6	41	4.7	4.5
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	0.61	0.51	0.54	0.642	0.77
Cadmium	7440-43-9	mg/kg	2	NA	NA	< 0.28	8.8	6.1	0.246	0.05
Copper	7440-50-8	mg/kg	11000	NA	NA	23.8	177	128	18.6	18.8
Lead	7439-92-1	mg/kg	90	NA	NA	227	8400	5570	213	111
Mercury	7439-97-6	mg/kg	0.32	NA	NA	0.37	0.53	0.49	0.097	0.05
Nickel	7440-02-0	mg/kg	48	NA	NA	10.8	34.3	21.3	8.5	11.3
Selenium	7782-49-2	mg/kg	11	NA	NA	1	< 12.5	< 11.6	1.23	0.57
Thallium	7440-28-0	mg/kg	3	NA	NA	< 0.94	< 25	< 23.2	< 1.16	< 1.3
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	37	390	190	214	59
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	24000	< 550	< 460	< 410	< 490

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B10-503-02	B10-503-06	B10-503-07	B10-506-02	B10-506-04	C10-440-02	SB-R-B10-02
			Sample Date	10/11/1999	10/12/1999	8/11/2006	10/14/1999	7/21/2000	10/8/1999	5/25/2006
			Sample Depths	0.0-1.0 ft	0.0-2.0 ft	11.5-12.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft
			Sample ID	B10-503-021N	B10-503-062N	B10-503-0712.0N	B10-506-021N	B10-506-042N	C10-440-022N	SB-R-B10-021.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 230	< 217.4	< 320	< 210	821	< 200	< 380
Nitrobenzene	98-95-3	ug/kg	200	< 230	< 217.4	NA	< 210	244	< 200	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.51	< 0.47	NA	< 0.51	< 0.496	< 0.47	< 2.48
Arsenic	7440-38-2	mg/kg	19	2.3	4	NA	4.8	5.92	5.4	3.89
Beryllium	7440-41-7	mg/kg	1.08	0.54	0.4	NA	0.5	0.735	0.85	0.688
Cadmium	7440-43-9	mg/kg	2	0.7	< 0.28	NA	< 0.31	0.739	< 0.28	< 0.621
Copper	7440-50-8	mg/kg	11000	12.2	18	NA	64.1	20.2	18.8	22.4
Lead	7439-92-1	mg/kg	90	162	244	NA	250	21.7	1550	234
Mercury	7439-97-6	mg/kg	0.32	0.03	0.11	NA	0.09	0.436	0.07	0.0963
Nickel	7440-02-0	mg/kg	48	6.7	6.5	NA	10.3	11.8	11	14.3
Selenium	7782-49-2	mg/kg	11	< 0.51	1.1	NA	1.2	1.12	1.1	< 2.48
Thallium	7440-28-0	mg/kg	3	< 1	< 0.93	NA	< 1	< 0.827	< 0.95	< 2.48
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 380	< 410	< 180	23	< 438	< 510	210
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 380	< 410	< 180	< 400	< 438	< 510	< 210

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-B10-02	TP-R-B10-505-2	TP-R-B10-505-2	TP-R-B10-508-1	TP-R-B10-508-1	TP-R-B10-508-1	TP-R-B10-508-2
			Sample Date	5/25/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006
			Sample Depths	5.0-5.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	10.0-10.5 ft	14.5-15.0 ft	10.5-11.0 ft
			Sample ID	SB-R-B10-025.5N	TP-R-B10-505-22.0N	TP-R-B10-505-28.5N	TP-R-B10-508-12.0N	TP-R-B10-508-110.5N	TP-R-B10-508-115.0N	TP-R-B10-508-211.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 340	< 340	< 340	330	1100	< 340	< 320
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.21	1.21	1.31	< 2.12	< 2.32	1.71	< 2.08
Arsenic	7440-38-2	mg/kg	19	2.78	3.36	2.75	1.65	3.62	2.41	1.63
Beryllium	7440-41-7	mg/kg	1.08	0.671	0.408	0.759	0.345	1.1	0.972	0.523
Cadmium	7440-43-9	mg/kg	2	< 2.77	< 0.57	< 2.75	0.0924	0.106	< 0.54	< 0.519
Copper	7440-50-8	mg/kg	11000	15.2	126	19.8	12.1	23.8	24	17.5
Lead	7439-92-1	mg/kg	90	4.83	802	4.93	269	71.1	3.66	10.5
Mercury	7439-97-6	mg/kg	0.32	0.0178	0.0717	< 0.108	0.135	0.123	< 0.106	< 0.105
Nickel	7440-02-0	mg/kg	48	9.99	8.42	10.4	3.24	11.3	9.93	7.05
Selenium	7782-49-2	mg/kg	11	< 2.21	< 2.28	< 2.2	< 2.12	< 2.32	< 2.16	< 2.08
Thallium	7440-28-0	mg/kg	3	< 2.21	2.16	2.74	< 2.12	< 2.32	< 2.16	< 2.08
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 190	53	< 190	< 180	65	< 190	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 190	< 190	< 180	< 200	< 190	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-R-B10-508-2	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-3	TP-R-B10-508-4	TP-R-B10-508-4	TP-R-B10-508-4
				Sample Date	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006
				Sample Depths	2.0-2.5 ft	1.5-2.0 ft	16.5-17.0 ft	5.5-6.0 ft	1.5-2.0 ft	1.5-2.0 ft	16.5-17.0 ft
				Sample ID	TP-R-B10-508-22.5N	TP-R-B10-508-32.0N	TP-R-B10-508-317.0N	TP-R-B10-508-36.0N	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	TP-R-B10-508-417.0N
				Parent ID					TP-R-B10-508-42.0N		
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	2300	120	< 330	40000	1900	1200	< 320
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	7440-36-0	mg/kg	6	< 2.13	< 1.98	< 2.13	1.12	1.52	1.27	< 2.07
Arsenic	7440-38-2	mg/kg	19	2.09	3.25	< 2.13	4.25	4.67	3.99	1.71
Beryllium	7440-41-7	mg/kg	1.08	0.134	0.804	0.812	0.189	0.785	0.781	0.757
Cadmium	7440-43-9	mg/kg	2	< 0.532	< 0.496	< 0.532	< 0.576	0.139	0.148	< 0.518
Copper	7440-50-8	mg/kg	11000	25.4	12.7	18	15.5	178	116	14.9
Lead	7439-92-1	mg/kg	90	240	16.5	3.17	9.78	6820	4090	10.1
Mercury	7439-97-6	mg/kg	0.32	0.0922	0.0347	< 0.106	< 0.115	0.362	0.41	< 0.103
Nickel	7440-02-0	mg/kg	48	3.25	10.1	9.04	3.21	12.2	13.7	6.94
Selenium	7782-49-2	mg/kg	11	< 2.13	< 1.98	< 2.13	< 2.3	< 2.28	< 2.25	< 2.07
Thallium	7440-28-0	mg/kg	3	< 2.13	< 1.98	< 2.13	< 2.3	< 2.28	< 2.25	< 2.07
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	62	83	< 180	< 200	300	140	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 180	< 170	< 180	< 200	< 200	< 190	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-508-4	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-B10-6-1	TP-R-C10-439-1	TP-R-C10-439-1	TP-R-C10-439-2
			Sample Date	8/9/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006	8/11/2006
			Sample Depths	5.5-6.0 ft	1.5-2.0 ft	12.0-12.5 ft	4.0-4.5 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft
			Sample ID	TP-R-B10-508-46.0N	TP-R-B10-6-12.0N	TP-R-B10-6-112.5N	TP-R-B10-6-14.5N	TP-R-C10-439-12.0N	TP-R-C10-439-18.5N	TP-R-C10-439-22.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	1500	< 310	< 350	460	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.44	1.18	2.75	2.49	4.36	1.1	1.14
Arsenic	7440-38-2	mg/kg	19	4.06	2.86	2.6	4.28	47.2	8.14	3.67
Beryllium	7440-41-7	mg/kg	1.08	0.594	0.388	1.38	0.466	0.23	0.559	0.347
Cadmium	7440-43-9	mg/kg	2	< 0.609	< 0.502	< 2.88	< 0.602	< 0.526	< 2.71	< 0.528
Copper	7440-50-8	mg/kg	11000	17.1	37	35.2	26.2	33.7	15.4	12
Lead	7439-92-1	mg/kg	90	587	330	3.04	990	7510	3.92	160
Mercury	7439-97-6	mg/kg	0.32	0.0622	0.0574	< 0.112	0.136	0.103	< 0.105	0.0463
Nickel	7440-02-0	mg/kg	48	7.56	5.51	15.3	8.92	4.63	7.98	5.31
Selenium	7782-49-2	mg/kg	11	< 2.44	< 2.01	< 2.31	< 2.41	< 2.1	< 2.16	< 2.11
Thallium	7440-28-0	mg/kg	3	< 2.44	1.39	2.97	1.73	2.58	< 2.16	< 2.11
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 200	310	< 980	< 200	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 200	< 170	< 980	< 200	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-5 Impact to Groundwater Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-C10-439-2
			Sample Date	8/11/2006
			Sample Depths	10.5-11.0 ft
			Sample ID	TP-R-C10-439-211.0N
			Parent ID	
			Notes	
Chemical	CAS Number	Units	IGWSRS	
Explosives				
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA
Nitrobenzene	98-95-3	ug/kg	200	NA
Metals				
Antimony	7440-36-0	mg/kg	6	1.69
Arsenic	7440-38-2	mg/kg	19	4.41
Beryllium	7440-41-7	mg/kg	1.08	0.657
Cadmium	7440-43-9	mg/kg	2	< 2.74
Copper	7440-50-8	mg/kg	11000	18.4
Lead	7439-92-1	mg/kg	90	4.22
Mercury	7439-97-6	mg/kg	0.32	0.0299
Nickel	7440-02-0	mg/kg	48	9.45
Selenium	7782-49-2	mg/kg	11	< 2.19
Thallium	7440-28-0	mg/kg	3	2.15
SVOCs				
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-05	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-08
			Sample Date	10/3/2017	10/3/2017	10/16/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017
			Sample Depths	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-B10-05(01.0-01.5)	TP-RD-B10-05(02.0-02.5)	TP-RD-B10-05(03.0-03.5)	TP-RD-B10-08(01.0-01.5)	TP-RD-B10-08(03.0-03.5)	TP-RD-B10-08(05.0-05.5)	TP-RD-B10-08(07.0-07.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 120	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 120	< 120	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-RD-B10-08	TP-RD-B10-08	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-11	TP-RD-B10-15
				Sample Date	10/3/2017	10/3/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	11/6/2017
				Sample Depths	9.0-9.5 ft	10.5-10.8 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft	2.0-2.5 ft
				Sample ID	TP-RD-B10-08(09.0-09.5)	TP-RD-B10-08(10.5.0-10.8)	TP-RD-B10-11(01.0-01.5)	TP-RD-B10-11(03.0-03.5)	TP-RD-B10-11(05.0-05.5)	TP-RD-B10-11(06.0-06.5)	BD110617
				Parent ID							TP-RD-B10-15(02.0-02.5)
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500		< 110	< 110	< 110	< 120	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200		< 110	< 110	< 110	< 120	< 110	< 110	< 120
Metals											
Antimony	7440-36-0	mg/kg	6		NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19		NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08		NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2		NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000		NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90		NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32		NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48		NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11		NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3		NA	NA	NA	NA	NA	NA	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000		NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000		NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-15	TP-RD-B10-15	TP-RD-B10-16	TP-RD-B10-16	A11-1-04	A11-1-04	A11-570-01
			Sample Date	11/6/2017	11/6/2017	11/6/2017	11/6/2017	10/8/1999	6/8/2000	6/8/2000
			Sample Depths	1.0-1.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
			Sample ID	TP-RD-B10-15(01.0-01.5)	TP-RD-B10-15(02.0-02.5)	TP-RD-B10-16(01.0-01.5)	TP-RD-B10-16(02.0-02.5)	A11-1-041N	A11-1-042N	A11-570-012N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 120	< 120	< 200	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 120	< 120	< 200	NA	< 427.591
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	< 0.43	NA	< 0.658053
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	4.3	NA	2.82
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	0.63	NA	0.93
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	< 0.26	NA	0.693
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	13.1	NA	7.98
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	679	NA	36.7
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	0.06	NA	0.037
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	9.3	NA	4.69
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	1	NA	1.65
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	< 0.86	NA	< 1.096755
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	< 460	NA	< 427.591
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	< 460	NA	< 427.591

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B10-2/B10-509-3(2017	B10-2/B10-509-3(2017	B10-2/B10-509-3(2017	B10-4-01	B10-4-02	B10-503-01	B10-656-02
			Sample Date	10/3/2017	10/10/2017	10/10/2017	10/15/1999	6/16/2000	10/11/1999	10/12/1999
			Sample Depths	1.5-2.0 ft	2.0-2.5 ft	3.0-3.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
			Sample ID	TP-R-B10-2/B10-509-3(01.5-02.0)	TP-R-B10-2/B10-509-3(02.0-02.5)	TP-R-B10-2/B10-509-3(03.0-03.5)	B10-4-012N	B10-4-022N	B10-503-012N	B10-656-022N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 120	NA	NA	< 220	< 208.4
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 120	< 440	< 390	< 220	< 208.4
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	< 0.55	< 0.682	< 0.47	< 0.5
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	3.6	3.49	4.3	4
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	0.69	0.314	0.84	0.64
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	< 0.33	0.123	0.03	< 0.3
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	20.6	14.7	15.7	16.7
Lead	7439-92-1	mg/kg	90	NA	NA	NA	41.7	11.6	25.1	7.3
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	0.04	0.034	0.03	0.02
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	12.7	7.86	11.5	11.3
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	< 0.55	1.07	0.41	0.74
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	< 1.1	< 1.14	< 0.93	< 1
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	< 440	< 390	< 400	< 390
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	< 440	< 390	< 400	< 390

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B10-656-02	C10-12-03	C10-12-03	C10-466-02	SB-R-B11-03	SB-R-B11-03	SB-R-C10-01
			Sample Date	11/18/1999	11/16/1999	11/16/1999	10/8/1999	5/25/2006	5/25/2006	5/25/2006
			Sample Depths	0.0-1.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft
			Sample ID	B10-656-021.5N	C10-12-031FD	C10-12-031N	C10-466-021N	SB-R-B11-031.0N	SB-R-B11-035.0N	SB-R-C10-011.0N
			Parent ID		C10-12-031N					
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 200	< 220	< 210	< 390	< 330	< 330
Nitrobenzene	98-95-3	ug/kg	200	NA	< 200	< 220	< 210	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	NA	0.36	0.59	1	< 2.55	< 2.11	< 2.17
Arsenic	7440-38-2	mg/kg	19	NA	11.4	15	6.9	4.36	1.87	2.86
Beryllium	7440-41-7	mg/kg	1.08	NA	0.46	0.43	0.3	0.69	0.132	0.569
Cadmium	7440-43-9	mg/kg	2	NA	< 0.13	< 0.26	< 0.28	< 0.636	< 0.528	< 0.542
Copper	7440-50-8	mg/kg	11000	NA	23	20.5	25	11	7.4	14.5
Lead	7439-92-1	mg/kg	90	NA	884	1110	3070	35.7	1.16	26.7
Mercury	7439-97-6	mg/kg	0.32	NA	0.2	0.18	0.26	0.0724	< 0.105	0.0208
Nickel	7440-02-0	mg/kg	48	NA	8.4	8	8.1	9.44	1.96	9.66
Selenium	7782-49-2	mg/kg	11	NA	1.3	1.3	0.73	1.29	< 2.11	< 2.17
Thallium	7440-28-0	mg/kg	3	NA	< 1.1	< 0.86	< 0.93	< 2.55	< 2.11	1.67
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	110	55	360	< 210	< 180	47
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 410	< 420	< 410	< 210	< 180	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-C10-01	SB-R-C10-03	SB-R-C10-03	SD-C10-1-01	SD-C10-1-01	SO-R2-A-11-1	SO-R2-A-11-1
			Sample Date	5/25/2006	6/7/2006	6/7/2006	4/25/2001	4/25/2001	11/14/2013	11/14/2013
			Sample Depths	4.5-5.0 ft	0.5-1.0 ft	2.3-2.8 ft	0.5-1.0 ft	1.5-2.0 ft	0.2-0.7 ft	9.5-10.0 ft
			Sample ID	SB-R-C10-015.0N	SB-R-C10-031.0N	SB-R-C10-032.83N	SD-C10-1-011N	SD-C10-1-012N	SO-R2-A-11-1_20131114	SO-R2-A-11-1D_20131114
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 340	< 360	< 340	NA	< 99	< 340	< 320
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	< 99	< 340	< 320
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.25	< 2.37	0.998	NA	< 0.77	< 2.25	< 2.12
Arsenic	7440-38-2	mg/kg	19	2.45	3.15	2.78	NA	5.7	5.98	< 2.12
Beryllium	7440-41-7	mg/kg	1.08	0.791	0.521	0.492	NA	0.47	1.85	< 0.531
Cadmium	7440-43-9	mg/kg	2	< 0.562	< 0.592	< 2.69	NA	< 0.065	< 0.563	< 0.531
Copper	7440-50-8	mg/kg	11000	14.6	7.08	14.6	NA	26.7	45	1.25
Lead	7439-92-1	mg/kg	90	2.91	9.25	3.62	NA	840	5.48	0.868
Mercury	7439-97-6	mg/kg	0.32	< 0.106	0.0391	0.0362	NA	0.35	0.034	< 0.104
Nickel	7440-02-0	mg/kg	48	8.44	5.77	8.51	NA	10.9	19	0.658
Selenium	7782-49-2	mg/kg	11	< 2.25	< 2.37	< 2.16	NA	1.4	1.14	< 2.12
Thallium	7440-28-0	mg/kg	3	< 2.25	< 2.37	< 2.16	NA	< 1	0.805	< 3.18
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 190	< 200	< 190	NA	< 33	< 19	< 18
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 200	< 190	NA	< 67	< 38	< 35

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-A11-504-1	TP-R-A11-504-1	TP-R-A11-504-3	TP-R-A11-504-3	TP-R-B10-2/B10-509-2	TP-R-B10-2/B10-509-2	TP-R-B10-2/B10-509-2
			Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/10/2006	8/10/2006	8/10/2006
			Sample Depths	1.5-2.0 ft	7.0-7.5 ft	1.5-2.0 ft	6.0-6.5 ft	1.5-2.0 ft	8.0-8.5 ft	9.5-10.0 ft
			Sample ID	TP-R-A11-504-12.0N	TP-R-A11-504-17.5N	TP-R-A11-504-32.0N	TP-R-A11-504-36.5N	TP-R-B10-2/B10-509-22.0N	TP-R-B10-2/B10-509-28.5N	TP-R-B10-2/B10-509-210.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	720	< 370	< 360	< 310	< 340	< 360	< 340
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	1.74	1.97	< 2.32	< 2.09	3.61	1.25	< 2.19
Arsenic	7440-38-2	mg/kg	19	5.62	3.53	3.98	< 2.09	6.14	3.94	1.64
Beryllium	7440-41-7	mg/kg	1.08	0.328	0.606	0.636	< 0.521	0.714	0.473	0.34
Cadmium	7440-43-9	mg/kg	2	< 0.543	< 0.6	< 0.58	< 0.521	< 0.547	< 0.578	< 0.549
Copper	7440-50-8	mg/kg	11000	12.2	18.2	15.2	3.55	16.4	19.2	5.01
Lead	7439-92-1	mg/kg	90	1350	7.55	587	3.28	770	311	16
Mercury	7439-97-6	mg/kg	0.32	0.177	0.0166	0.0537	< 0.102	0.0511	0.0381	< 0.106
Nickel	7440-02-0	mg/kg	48	8.72	9.44	10.3	0.813	10.4	8.19	3.78
Selenium	7782-49-2	mg/kg	11	1.24	< 2.4	< 2.32	< 2.09	< 2.19	< 2.31	< 2.19
Thallium	7440-28-0	mg/kg	3	< 2.17	< 2.4	< 2.32	< 2.09	< 2.19	< 2.31	< 2.19
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	160	< 200	< 200	< 170	42	3600	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	210	< 200	< 200	< 170	410	< 200	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-2/B10-509-3	TP-R-B10-2/B10-509-3	TP-R-B10-2/B10-509-8	TP-R-B10-2/B10-509-8	TP-R-B10-2/B10-509-8	TP-R-B10-501-1	TP-R-B10-501-1
			Sample Date	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/8/2006	8/8/2006
			Sample Depths	1.5-2.0 ft	13.0-13.5 ft	1.5-2.0 ft	10.5-11.0 ft	4.5-5.0 ft	1.5-2.0 ft	13.0-13.5 ft
			Sample ID	TP-R-B10-2/B10-509-32.0N	TP-R-B10-2/B10-509-313.5N	TP-R-B10-2/B10-509-82.0N	TP-R-B10-2/B10-509-811.0N	TP-R-B10-2/B10-509-85.0N	TP-R-B10-501-12.0N	TP-R-B10-501-113.5N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	1000	< 350	840	280	890	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	1.25	1.73	< 2.21	< 2.22	1.35	< 2.22	1.01
Arsenic	7440-38-2	mg/kg	19	5.36	3.07	3.1	2.61	3.34	5.42	1.41
Beryllium	7440-41-7	mg/kg	1.08	0.73	1.49	0.584	0.776	0.759	0.527	0.745
Cadmium	7440-43-9	mg/kg	2	< 0.542	0.0911	< 0.554	< 0.556	< 0.561	< 2.78	< 2.78
Copper	7440-50-8	mg/kg	11000	31	29.8	16.3	17.8	17.8	18.6	25.2
Lead	7439-92-1	mg/kg	90	199	4.41	337	2.16	191	1040	1880
Mercury	7439-97-6	mg/kg	0.32	0.497	< 0.11	0.229	< 0.105	0.0257	0.0665	< 0.108
Nickel	7440-02-0	mg/kg	48	11.5	14	7.88	6.69	8.42	8.71	10.7
Selenium	7782-49-2	mg/kg	11	< 2.17	< 2.31	< 2.21	< 2.22	< 2.24	< 2.22	< 2.22
Thallium	7440-28-0	mg/kg	3	1.55	1.87	< 2.21	< 2.22	< 2.24	< 2.22	< 2.22
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	230	< 200	130	< 190	65	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 200	< 190	< 190	< 190	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
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Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-501-1	TP-R-B10-502-1	TP-R-B10-502-1	TP-R-B10-502-2	TP-R-B10-502-2	TP-R-B10-505-1	TP-R-B10-505-1
			Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006	8/8/2006
			Sample Depths	7.5-8.0 ft	1.5-2.0 ft	9.5-10.0 ft	1.5-2.0 ft	8.5-9.0 ft	1.5-2.0 ft	1.5-2.0 ft
			Sample ID	TP-R-B10-501-18.0N	TP-R-B10-502-12.0N	TP-R-B10-502-110.0N	TP-R-B10-502-22.0N	TP-R-B10-502-29.0N	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N
			Parent ID						TP-R-B10-505-12.0N	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.24	< 2.15	< 2.09	< 2.24	< 2.12	2.02	1.05
Arsenic	7440-38-2	mg/kg	19	2.17	2.93	1.24	3.54	1.69	7.01	6.39
Beryllium	7440-41-7	mg/kg	1.08	0.56	0.427	0.836	0.184	0.545	0.273	0.242
Cadmium	7440-43-9	mg/kg	2	< 0.559	< 2.69	< 0.524	< 0.56	< 2.64	< 0.582	< 0.565
Copper	7440-50-8	mg/kg	11000	19.8	16.5	27.4	14.2	20.7	8.93	7.72
Lead	7439-92-1	mg/kg	90	1300	8.31	3.53	216	5.75	276	232
Mercury	7439-97-6	mg/kg	0.32	0.0135	0.0296	< 0.103	0.0606	< 0.108	0.0584	0.064
Nickel	7440-02-0	mg/kg	48	8.38	9	8.66	4.55	7.59	6.2	5.41
Selenium	7782-49-2	mg/kg	11	< 2.24	< 2.15	< 2.09	< 2.24	< 2.12	< 2.33	< 2.26
Thallium	7440-28-0	mg/kg	3	< 2.24	< 2.15	< 2.09	< 2.24	< 2.12	< 2.33	< 2.26
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
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SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-505-1	TP-R-B10-505-3	TP-R-B10-505-3	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-4	TP-R-B10-505-5
			Sample Date	8/8/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006	8/9/2006
			Sample Depths	10.5-11.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	11.5-12.0 ft	5.5-6.0 ft	1.5-2.0 ft
			Sample ID	TP-R-B10-505-111.0N	TP-R-B10-505-32.0N	TP-R-B10-505-38.5N	TP-R-B10-505-42.0N	TP-R-B10-505-412.0N	TP-R-B10-505-46.0N	TP-R-B10-505-52.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 360	< 360	< 340	< 320	< 340	< 360
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.16	< 2.31	4.06	1.19	< 2.05	1.4	< 2.35
Arsenic	7440-38-2	mg/kg	19	2.98	3.37	3.89	3.61	2.04	3.54	3.62
Beryllium	7440-41-7	mg/kg	1.08	0.779	0.934	1.62	0.484	0.152	0.546	0.455
Cadmium	7440-43-9	mg/kg	2	0.316	< 0.577	< 2.94	< 0.557	< 0.511	< 2.86	< 0.588
Copper	7440-50-8	mg/kg	11000	24.4	11.1	52.2	23.2	8.63	19	48.7
Lead	7439-92-1	mg/kg	90	2.16	69.3	5.81	527	3.33	195	281
Mercury	7439-97-6	mg/kg	0.32	< 0.101	0.0643	0.0377	0.058	< 0.101	0.012	0.053
Nickel	7440-02-0	mg/kg	48	11.4	8.31	19.5	8.12	1.61	9.2	7.26
Selenium	7782-49-2	mg/kg	11	< 2.16	< 2.31	< 2.35	< 2.23	< 2.05	< 2.29	< 2.35
Thallium	7440-28-0	mg/kg	3	1.63	< 2.31	2.71	< 2.23	< 2.05	< 2.29	< 2.35
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	< 200	< 200	370	< 180	260	< 200
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 200	< 200	< 190	< 180	< 190	< 200

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-505-5	TP-R-B10-505-5	TP-R-B10-505-5(2017	TP-R-B10-505-5(2017	TP-R-B10-508-1(2017	TP-R-B10-5-1	TP-R-B10-5-1
			Sample Date	8/9/2006	8/9/2006	10/5/2017	10/5/2017	10/5/2017	8/11/2006	8/11/2006
			Sample Depths	10.5-11.0 ft	5.5-6.0 ft	11.0-11.5 ft	11.0-11.5 ft	14.0-14.5 ft	1.5-2.0 ft	12.0-12.5 ft
			Sample ID	TP-R-B10-505-511.0N	TP-R-B10-505-56.0N	BD100517	TP-R-B10-505-5(11.0-11.5)	TP-R-B10-508-1(14.0-14.5)	TP-R-B10-5-12.0N	TP-R-B10-5-112.5N
			Parent ID			TP-R-B10-505-5(11.0-11.5)				
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 330	< 360	< 110	< 110	< 110	640	< 330
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	< 110	< 110	< 110	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.12	2.12	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	4.97	3.92	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.419	0.571	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 2.66	< 0.59	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	14.8	44.5	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	5.81	775	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	< 0.109	0.126	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	6.61	10.3	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	< 2.12	< 2.36	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 2.12	< 2.36	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 180	< 200	NA	NA	NA	350	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 180	< 200	NA	NA	NA	< 190	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-R-B10-5-1	TP-R-C10-439-3	TP-R-C10-439-3	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08	TP-RD-A11-08
				Sample Date	8/11/2006	8/11/2006	8/11/2006	10/19/2017	10/19/2017	10/19/2017	10/19/2017
				Sample Depths	4.5-5.0 ft	1.5-2.0 ft	10.0-10.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
				Sample ID	TP-R-B10-5-15.0N	TP-R-C10-439-32.0N	TP-R-C10-439-310.5N	TP-RD-A11-08(01.0-01.5)	TP-RD-A11-08(03.0-03.5)	TP-RD-A11-08(05.0-05.5)	TP-RD-A11-08(07.0-07.5)
				Parent ID							
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	3500	NA	NA	< 110	< 110	< 100	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	< 110	< 110	< 100	< 110
Metals											
Antimony	7440-36-0	mg/kg	6	NA	1.32	1.2	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	4.08	2.64	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	0.456	0.375	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	< 0.567	< 0.528	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	14.3	10.1	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	1610	3.11	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	0.112	< 0.105	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	7.24	4.44	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	< 2.27	< 2.11	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	2.21	< 2.11	NA	NA	NA	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	48	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 210	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-6 Impact to Groundwater Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-08	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09	TP-RD-A11-09
			Sample Date	10/19/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
			Sample Depths	9.0-9.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-A11-08(09.0-09.5)	BD102017A	TP-RD-A11-09(01.0-01.5)	TP-RD-A11-09(03.0-03.5)	TP-RD-A11-09(05.0-05.5)	TP-RD-A11-09(07.0-07.5)
			Parent ID		TP-RD-A11-09(01.0-01.5)				
			Notes						
Chemical	CAS Number	Units	IGWSRS						
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 110
Metals									
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B10-10	TP-RD-B11-07	TP-RD-B11-07	TP-RD-B11-20
			Sample Date	10/3/2017	10/3/2017	10/10/2017	10/17/2017	11/6/2017	11/6/2017	12/4/2017
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	3.5-4.0 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	BD100317	TP-RD-B10-10(01.0-01.5)	TP-RD-B10-10(01.5-02.0)	TP-RD-B10-10(03.5-04.0)	TP-RD-B11-07(03.0-03.5)	TP-RD-B11-07(01.0-01.5)	BD120417
			Parent ID	TP-RD-B10-10(01.0-01.5)						TP-RD-B11-20(01.0-01.5)
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110 J	< 120	< 110	< 120	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 120	< 110	< 120	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-20	TP-RD-C10-01	TP-RD-C10-01	TP-RD-C10-01	A11-1-01	A11-3-03	A11-3-05
			Sample Date	12/4/2017	10/16/2017	10/16/2017	10/16/2017	10/8/1999	10/8/1999	10/8/1999
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft	2.5-3.0 ft	3.0-3.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft
			Sample ID	TP-RD-B11-20(01.0-01.5)	TP-RD-C10-01(01.0-01.5)	TP-RD-C10-01(02.5-03.0)	TP-RD-C10-01(03.0-03.5)	A11-1-011N	A11-3-031N	A11-3-051N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120 J	< 110	< 110	< 110	< 240	< 240	< 220
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 110	< 110	< 110	< 240	< 240	< 220
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	< 1	< 0.52	< 0.54
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	10.1	3.2	2.1
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	0.38	0.36	0.39
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	0.34	< 0.31	< 0.32
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	19.8	56	7
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	1250	305	136
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	0.15	0.05	0.03
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	10	6.2	5.7
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	1.8	0.67	0.59
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	< 2	< 1	0.68
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	35	28	< 380
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	< 370	< 490	< 380

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	A11-3-05	A11-9-03	A11-9-04	B10-2178-03	B10-2178-05	B10-2178-05	B10-7-02
			Sample Date	6/8/2000	10/14/1999	10/14/1999	11/19/1999	11/19/1999	11/19/1999	11/18/1999
			Sample Depths	0.0-1.5 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft
			Sample ID	A11-3-051.5N	A11-9-031.3N	A11-9-041N	B10-2178-031N	B10-2178-051FD	B10-2178-051N	B10-7-021N
			Parent ID					B10-2178-051N		
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	NA	< 230	5200	3700	< 643468
Nitrobenzene	98-95-3	ug/kg	200	NA	< 420	< 400	< 230	410	250	< 643468
Metals										
Antimony	7440-36-0	mg/kg	6	NA	< 0.59	< 0.46	3.4	2.2	21.8	0.51
Arsenic	7440-38-2	mg/kg	19	NA	5.5	3	14.6	334	274	6.1
Beryllium	7440-41-7	mg/kg	1.08	NA	0.72	0.49	0.57	0.33	< 30	0.76
Cadmium	7440-43-9	mg/kg	2	NA	0.04	0.53	1.3	1	< 30	0.44
Copper	7440-50-8	mg/kg	11000	NA	22	27.8	186	211	48500	22.1
Lead	7439-92-1	mg/kg	90	NA	1700	577	17200	318	270	1080
Mercury	7439-97-6	mg/kg	0.32	NA	0.06	0.07	2.3	0.15	0.13	0.07
Nickel	7440-02-0	mg/kg	48	NA	10.2	8.4	25.8	10.7	71.4	10
Selenium	7782-49-2	mg/kg	11	NA	1.3	0.79	0.85	1	15.8	0.85
Thallium	7440-28-0	mg/kg	3	NA	< 1.2	< 0.92	< 0.97	< 0.82	< 100	< 0.98
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	98	< 400	73	390	410	< 380
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 420	500	< 380	< 380	< 420	< 380

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-2-03	C10-432-01	C10-432-02	C10-438-01	C10-438-05	SB-R-A11-01	SB-R-A11-01
			Sample Date	10/12/1999	9/27/2000	7/13/2000	7/21/2000	10/8/1999	5/23/2006	5/23/2006
			Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft
			Sample ID	B11-2-032N	C10-432-011N	C10-432-021N	C10-438-012N	C10-438-052N	SB-R-A11-011.0FD	SB-R-A11-011.0N
			Parent ID						SB-R-A11-011.0N	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 90.9	< 250	NA	NA	< 320	< 310
Nitrobenzene	98-95-3	ug/kg	200	< 410	< 90.9	< 250	< 398	< 390	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.45	0.91	< 0.684288	< 0.607	0.21	< 2.07	< 2.09
Arsenic	7440-38-2	mg/kg	19	3.5	5.16	6.29	4.01	4.2	< 2.07	< 2.09
Beryllium	7440-41-7	mg/kg	1.08	0.44	0.791	0.685	0.933	0.92	< 0.518	< 0.522
Cadmium	7440-43-9	mg/kg	2	< 0.27	0.204	0.3	0.632	< 0.32	< 0.518	< 0.522
Copper	7440-50-8	mg/kg	11000	13.6	12.7	22.2	10.4	10.2	3.31	3.2
Lead	7439-92-1	mg/kg	90	26.6	96.8	107	34.4	29.6	28.9	26.7
Mercury	7439-97-6	mg/kg	0.32	0.05	0.1	0.097	0.047	0.04	< 0.101	< 0.102
Nickel	7440-02-0	mg/kg	48	5.9	7.75	10.4	8.28	8.4	1.14	1.09
Selenium	7782-49-2	mg/kg	11	0.74	0.487	1.37	1.04	0.75	< 2.07	< 2.09
Thallium	7440-28-0	mg/kg	3	0.53	< 1.29	< 1.14048	< 1.01	0.58	< 2.07	< 2.09
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 410	130	188	< 398	< 390	< 180	< 170
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 410	< 446	< 394.971	< 398	< 390	< 180	< 170

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-A11-01	SB-R-A12-03	SB-R-A12-03	SB-R-B11-02	SB-R-B11-02	SB-R-B11-02	TP-R-A11-2-1
			Sample Date	8/10/2006	5/24/2006	5/25/2006	5/25/2006	5/25/2006	5/25/2006	8/8/2006
			Sample Depths	4.5-5.0 ft	0.5-1.0 ft	4.5-5.0 ft	0.5-1.0 ft	0.5-1.0 ft	6.0-6.5 ft	1.5-2.0 ft
			Sample ID	SB-R-A11-015.0N	SB-R-A12-031.0N	SB-R-A12-035.0N	SB-R-B11-021.0FD	SB-R-B11-021.0N	SB-R-B11-026.5N	TP-R-A11-2-12.0FD
			Parent ID				SB-R-B11-021.0N			TP-R-A11-2-12.0N
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 310	< 320	< 310	< 340	< 350	< 350	NA
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.02	< 2.1	< 2.04	< 2.23	< 2.28	2.5	< 2.09
Arsenic	7440-38-2	mg/kg	19	< 2.02	2.25	4.66	3.06	3.15	2.83	2.23
Beryllium	7440-41-7	mg/kg	1.08	< 0.506	0.197	0.121	0.455	0.407	1.2	0.292
Cadmium	7440-43-9	mg/kg	2	< 0.506	< 0.524	< 0.511	< 0.557	< 0.57	< 2.9	0.411
Copper	7440-50-8	mg/kg	11000	1.64	9.34	17.7	16	15.2	31.4	12.3
Lead	7439-92-1	mg/kg	90	2.25	5.74	< 2.04	183	173	4.55	16.5
Mercury	7439-97-6	mg/kg	0.32	< 0.102	< 0.105	< 0.104	0.05	0.0523	< 0.112	0.0688
Nickel	7440-02-0	mg/kg	48	0.754	3.23	< 1.02	6.89	7.04	15	5.21
Selenium	7782-49-2	mg/kg	11	< 2.02	< 2.1	< 2.04	< 2.23	< 2.28	< 2.32	1.49
Thallium	7440-28-0	mg/kg	3	< 2.02	< 2.1	< 2.04	< 2.23	< 2.28	< 2.32	< 10.5
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 170	< 180	< 170	< 190	41	< 190	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 170	< 180	< 170	< 190	< 190	< 190	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-A11-2-1	TP-R-A11-2-1	TP-R-A11-2-2	TP-R-A11-2-2	TP-R-A11-504-1(2017	TP-R-A11-504-1(2017	TP-R-A11-504-1(2017
			Sample Date	8/8/2006	8/8/2006	8/8/2006	8/8/2006	10/4/2017	10/10/2017	10/10/2017
			Sample Depths	1.5-2.0 ft	6.5-7.0 ft	2.0-2.5 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft
			Sample ID	TP-R-A11-2-12.0N	TP-R-A11-2-17.0N	TP-R-A11-2-22.5N	TP-R-A11-2-27.5N	TP-R-A11-504-1(08.5-09.0)	TP-R-A11-504-1(10.5-11.0)	TP-R-A11-504-1(11.5-12.0)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	NA	NA	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	1.9	< 2.22	< 2.15	< 2.11	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	3.4	1.55	1.63	1.85	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.233	0.133	0.144	0.183	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	0.328	0.189	0.324	0.182	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	17.3	11.4	10.2	14.4	NA	NA	NA
Lead	7439-92-1	mg/kg	90	15.4	1.68	184	34.8	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.0773	< 0.111	0.0168	< 0.106	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	4.19	1.44	2.64	2.68	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	< 2.24	1.51	< 2.15	< 2.11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 11.2	< 2.22	< 2.15	< 2.11	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-A11-504-1(2017	TP-R-A11-504-2	TP-R-A11-504-2	TP-R-A11-7-1	TP-R-A11-7-1	TP-R-A11-7-2	TP-R-A11-7-2
			Sample Date	10/17/2017	8/8/2006	8/8/2006	8/7/2006	8/7/2006	8/7/2006	8/7/2006
			Sample Depths	12.0-12.5 ft	1.5-2.0 ft	10.0-10.5 ft	1.5-2.0 ft	6.5-7.0 ft	1.5-2.0 ft	6.5-7.0 ft
			Sample ID	TP-R-A11-504-1(12.0-12.5)	TP-R-A11-504-22.0N	TP-R-A11-504-210.5N	TP-R-A11-7-12.0N	TP-R-A11-7-17.0N	TP-R-A11-7-22.0N	TP-R-A11-7-27.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 350	1400	< 330	< 330	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 110	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	NA	< 2.23	1.31	< 2.19	< 2.23	< 2.23	< 2.29
Arsenic	7440-38-2	mg/kg	19	NA	3.14	2.95	3.3	1.95	3.77	1.98
Beryllium	7440-41-7	mg/kg	1.08	NA	0.18	0.193	0.174	0.0949	0.186	0.47
Cadmium	7440-43-9	mg/kg	2	NA	< 0.559	< 0.669	0.319	0.223	0.163	0.41
Copper	7440-50-8	mg/kg	11000	NA	13.1	2.6	40	8.06	7.74	17.7
Lead	7439-92-1	mg/kg	90	NA	88.1	76.1	13300	396	1510	576
Mercury	7439-97-6	mg/kg	0.32	NA	0.0459	< 0.132	0.0723	< 0.107	0.0875	< 0.112
Nickel	7440-02-0	mg/kg	48	NA	3.14	2.04	4.66	1.04	4.2	9.54
Selenium	7782-49-2	mg/kg	11	NA	< 2.23	< 2.68	< 2.19	< 2.23	< 2.23	< 2.29
Thallium	7440-28-0	mg/kg	3	NA	< 2.23	< 2.68	< 10.9	< 2.23	< 11.2	< 2.29
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	< 190	< 1100	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 190	< 1100	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-2/B10-509-1	TP-R-B10-2/B10-509-1	TP-R-B10-2/B10-509-4	TP-R-B10-2/B10-509-5	TP-R-B10-2/B10-509-5	TP-R-B10-2/B10-509-6	TP-R-B10-2/B10-509-6
			Sample Date	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006	8/10/2006
			Sample Depths	1.5-2.0 ft	10.5-11.0 ft	1.5-2.0 ft	1.5-2.0 ft	11.0-11.5 ft	1.5-2.0 ft	1.5-2.0 ft
			Sample ID	TP-R-B10-2/B10-509-12.0N	TP-R-B10-2/B10-509-111.0N	TP-R-B10-2/B10-509-42.0N	TP-R-B10-2/B10-509-52.0N	TP-R-B10-2/B10-509-511.5N	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N
			Parent ID						TP-R-B10-2/B10-509-62.0N	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 330	< 340	160	< 330	280	< 330	140
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.15	< 2.23	< 2.39	< 2.16	1.29	2.69	2.23
Arsenic	7440-38-2	mg/kg	19	5.06	3.23	2.99	4.36	3.02	3.62	3.97
Beryllium	7440-41-7	mg/kg	1.08	0.45	1.14	0.557	0.759	1.37	1.22	1.05
Cadmium	7440-43-9	mg/kg	2	< 0.538	< 0.557	< 0.597	< 0.54	< 0.571	< 0.539	< 0.536
Copper	7440-50-8	mg/kg	11000	15.3	21.5	17.3	20.7	26.1	39.5	36.4
Lead	7439-92-1	mg/kg	90	60.5	3.61	209	137	2.95	617	561
Mercury	7439-97-6	mg/kg	0.32	0.0416	< 0.107	0.051	0.0553	< 0.113	0.0245	0.0238
Nickel	7440-02-0	mg/kg	48	9.12	9.46	8.38	12.1	11.7	9.98	11
Selenium	7782-49-2	mg/kg	11	< 2.15	< 2.23	< 2.39	< 2.16	< 2.28	< 2.16	< 2.14
Thallium	7440-28-0	mg/kg	3	< 2.15	< 2.23	< 2.39	< 2.16	2.5	1.45	< 2.14
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 180	< 190	49	68	< 190	< 180	570
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 180	< 190	< 200	< 190	< 190	< 180	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B10-2/B10-509-6	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01	TP-RD-A11-01
			Sample Date	8/10/2006	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017
			Sample Depths	9.5-10.0 ft	1.0-1.5 ft	10.5-11.0 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft
			Sample ID	TP-R-B10-2/B10-509-610.0N	TP-RD-A11-01(01.0-01.5)	TP-RD-A11-01(10.5-11.0)	TP-RD-A11-01(03.0-03.5)	TP-RD-A11-01(05.0-05.5)	TP-RD-A11-01(07.0-07.5)	TP-RD-A11-01(09.0-09.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 370	< 120	< 110	< 120	< 120	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	< 120	< 110	< 120	< 120	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	1.94	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	3.62	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	1.17	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 0.609	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	23.3	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	5.66	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.0407	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	12.1	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	< 2.44	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	1.92	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 200	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 200	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-02	TP-RD-A11-02	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-02A	TP-RD-A11-10
			Sample Date	10/5/2017	10/10/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
			Sample Depths	6.0-6.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-A11-02(06.0-06.5)	TP-RD-A11-02(07.0-07.5)	TP-RD-A11-02A(01.0-01.5)	TP-RD-A11-02A(03.0-03.5)	TP-RD-A11-02A(05.0-05.5)	TP-RD-A11-02A(07.0-07.5)	TP-RD-A11-10(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 100	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 100	< 110	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-10	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11
			Sample Date	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017	10/20/2017
			Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-A11-10(03.0-03.5)	TP-RD-A11-10(05.0-05.5)	TP-RD-A11-10(07.0-07.5)	TP-RD-A11-10(08.0-08.5)	BD102017B	TP-RD-A11-11(01.0-01.5)	TP-RD-A11-11(03.0-03.5)
			Parent ID					TP-RD-A11-11(01.0-01.5)		
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-11	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15	TP-RD-A11-15
			Sample Date	10/20/2017	10/20/2017	10/20/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017
			Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	8.0-8.5 ft
			Sample ID	TP-RD-A11-11(05.0-05.5)	TP-RD-A11-11(07.0-07.5)	TP-RD-A11-11(08.0-08.5)	TP-RD-A11-15(01.0-01.5)	TP-RD-A11-15(03.0-03.5)	TP-RD-A11-15(05.0-05.5)	TP-RD-A11-15(08.0-08.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 120	< 110	< 100	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 120	< 110	< 100	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-15A	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16	TP-RD-A11-16
			Sample Date	10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-A11-15A(01.0-01.5)	TP-RD-A11-15A(03.0-03.5)	TP-RD-A11-15A(05.0-05.5)	TP-RD-A11-16(01.0-01.5)	TP-RD-A11-16(03.0-03.5)	TP-RD-A11-16(05.0-05.5)	TP-RD-A11-16(07.0-07.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 100	< 120	< 120	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 100	< 120	< 120	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-7 Impact to Groundwater Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-16
			Sample Date	10/26/2017
			Sample Depths	8.0-8.5 ft
			Sample ID	TP-RD-A11-16(08.0-08.5)
			Parent ID	
			Notes	
Chemical	CAS Number	Units	IGWSRS	
Explosives				
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110
Metals				
Antimony	7440-36-0	mg/kg	6	NA
Arsenic	7440-38-2	mg/kg	19	NA
Beryllium	7440-41-7	mg/kg	1.08	NA
Cadmium	7440-43-9	mg/kg	2	NA
Copper	7440-50-8	mg/kg	11000	NA
Lead	7439-92-1	mg/kg	90	NA
Mercury	7439-97-6	mg/kg	0.32	NA
Nickel	7440-02-0	mg/kg	48	NA
Selenium	7782-49-2	mg/kg	11	NA
Thallium	7440-28-0	mg/kg	3	NA
SVOCs				
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-19A	TP-RD-A11-20A	TP-RD-A11-20A
			Sample Date	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-A11-19A(01.0-01.5)	TP-RD-A11-19A(03.0-03.5)	TP-RD-A11-19A(05.0-05.5)	TP-RD-A11-19A(07.0-07.5)	TP-RD-A11-19A(08.0-08.5)	TP-RD-A11-20A(01.0-01.5)	TP-RD-A11-20A(03.0-03.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 100	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20A	TP-RD-A11-20C	TP-RD-A11-20C	TP-RD-A11-22	TP-RD-A11-22
			Sample Date	11/3/2017	11/3/2017	11/3/2017	11/6/2017	11/6/2017	11/29/2017	11/29/2017
			Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	2.0-2.5 ft
			Sample ID	TP-RD-A11-20A(05.0-05.5)	TP-RD-A11-20A(07.0-07.5)	TP-RD-A11-20A(08.0-08.5)	TP-RD-A11-20C(01.0-01.5)	TP-RD-A11-20C(03.0-03.5)	TP-RD-A11-22(01.0-01.5)	TP-RD-A11-22(02.0-02.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 110	< 110	< 110	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 110	< 110	< 110	< 120	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-22	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-23	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-3A
			Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	10/13/2017	10/13/2017	10/13/2017
			Sample Depths	4.0-4.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
			Sample ID	TP-RD-A11-22(04.0-04.5)	TP-RD-A11-23(01.0-01.5)	TP-RD-A11-23(02.0-02.5)	TP-RD-A11-23(04.0-04.5)	TP-RD-A11-3A(01.0-01.5)	TP-RD-A11-3A(03.0-03.5)	TP-RD-A11-3A(05.0-05.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 120	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 120	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-3A	TP-RD-A11-3A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A	TP-RD-A11-7A
			Sample Date	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017	10/13/2017
			Sample Depths	7.0-7.5 ft	8.5-9.0 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-A11-3A(07.0-07.5)	TP-RD-A11-3A(08.5-09.0)	BD101317	TP-RD-A11-7A(01.0-01.5)	TP-RD-A11-7A(03.0-03.5)	TP-RD-A11-7A(05.0-05.5)	TP-RD-A11-7A(07.0-07.5)
			Parent ID			TP-RD-A11-7A(03.0-03.5)				
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 120	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-7A	TP-RD-B10-09	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B10-12	TP-RD-B11-05A
			Sample Date	10/13/2017	10/3/2017	10/3/2017	10/10/2017	10/10/2017	10/16/2017	10/16/2017
			Sample Depths	8.5-9.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.5-2.0 ft	2.5-3.0 ft	3.5-4.0 ft	1.0-1.5 ft
			Sample ID	TP-RD-A11-7A(08.5-09.0)	TP-RD-B10-09(01.0-01.5)	TP-RD-B10-12(01.0-01.5)	TP-RD-B10-12(01.5-02.0)	TP-RD-B10-12(02.5-03.0)	TP-RD-B10-12(03.5-04.0)	TP-RD-B11-05A(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 120000	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 120000	< 120	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-05A	TP-RD-B11-05A	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-05B	TP-RD-B11-09	TP-RD-B11-09
			Sample Date	10/16/2017	10/16/2017	10/18/2017	10/18/2017	10/18/2017	11/29/2017	11/29/2017
			Sample Depths	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	2.0-2.5 ft
			Sample ID	TP-RD-B11-05A(03.0-03.5)	TP-RD-B11-05A(05.0-05.5)	TP-RD-B11-05B(01.0-01.5)	TP-RD-B11-05B(03.0-03.5)	TP-RD-B11-05B(05.0-05.5)	TP-RD-B11-09(01.0-01.5)	TP-RD-B11-09(02.0-02.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 110	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-09	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-10	TP-RD-B11-11	TP-RD-B11-11
			Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
			Sample Depths	4.0-4.5 ft	2.0-2.5 ft	1.0-1.5 ft	2.0-2.5 ft	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-B11-09(04.0-04.5)	BD112917A	TP-RD-B11-10(01.0-01.5)	TP-RD-B11-10(02.0-02.5)	TP-RD-B11-10(04.0-04.5)	TP-RD-B11-11(01.0-01.5)	TP-RD-B11-11(03.0-03.5)
			Parent ID		TP-RD-B11-10(02.0-02.5)					
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 120	< 110	< 120 J	< 120	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 120	< 110	< 120	< 120	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-12	TP-RD-B11-13	TP-RD-B11-13	TP-RD-B11-14	TP-RD-B11-14
			Sample Date	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017	11/29/2017
			Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	BD112917B	TP-RD-B11-12(01.0-01.5)	TP-RD-B11-12(03.0-03.5)	TP-RD-B11-13(01.0-01.5)	TP-RD-B11-13(03.0-03.5)	TP-RD-B11-14(01.0-01.5)	TP-RD-B11-14(03.0-03.5)
			Parent ID	TP-RD-B11-12(03.0-03.5)						
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110 J	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-C10-02	TP-RD-C10-02	TP-RD-C10-02	B10-511-03	B10-7-10	B11-523-01	B11-523-03
			Sample Date	10/17/2017	10/17/2017	10/17/2017	11/19/1999	11/18/1999	6/8/2000	10/12/1999
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	3.5-4.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft
			Sample ID	TP-RD-C10-02(01.0-01.5)	TP-RD-C10-02(03.0-03.5)	TP-RD-C10-02(03.5-04.0)	B10-511-032N	B10-7-101N	B11-523-012N	B11-523-032N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	270	< 700869	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 240	< 700869	< 421.82	< 410
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	< 0.44	0.57	< 0.633152	0.29
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	6.2	5.4	3	5.8
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	0.8	0.45	0.527	0.47
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	< 0.26	0.05	0.283	< 0.31
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	33.1	37.9	10.3	35.5
Lead	7439-92-1	mg/kg	90	NA	NA	NA	1160	658	72.4	279
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	0.17	0.06	0.143	3.1
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	10.6	7.5	5.99	9.1
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	0.72	0.64	0.717	0.72
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	< 0.87	< 0.82	< 1.055253	< 1
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	< 3900	< 380	1160	< 410
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	< 3900	< 380	< 421.82	< 410

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-602C-07	B11-602C-08	B11-9-02	B11-9-03	C10-2176-01	C10-2176-02	C10-2179-03
			Sample Date	10/14/1999	10/14/1999	11/5/1999	6/30/2000	11/19/1999	11/19/1999	11/19/1999
			Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-0.5 ft
			Sample ID	B11-602C-071N	B11-602C-081N	B11-9-022N	B11-9-031N	C10-2176-011.5N	C10-2176-021N	C10-2179-030.5N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 240	NA	NA	NA	< 250	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 240	< 390	< 460	< 409	< 250	< 400	< 4000
Metals										
Antimony	7440-36-0	mg/kg	6	NA	< 2.3	0.23	< 0.478	NA	< 0.49	< 0.49
Arsenic	7440-38-2	mg/kg	19	NA	7	4.8	5.45	NA	207	274
Beryllium	7440-41-7	mg/kg	1.08	NA	0.5	0.68	0.536	NA	0.37	0.5
Cadmium	7440-43-9	mg/kg	2	NA	13.1	0.07	2	NA	< 0.3	< 0.29
Copper	7440-50-8	mg/kg	11000	NA	34.7	13.5	21.2	NA	28.5	56
Lead	7439-92-1	mg/kg	90	NA	858	103	212	NA	377	603
Mercury	7439-97-6	mg/kg	0.32	NA	0.11	0.14	0.111	NA	0.31	0.12
Nickel	7440-02-0	mg/kg	48	NA	10.5	18.2	9.47	NA	8.9	11.1
Selenium	7782-49-2	mg/kg	11	NA	1.3	1	1.1	NA	0.85	0.9
Thallium	7440-28-0	mg/kg	3	NA	< 4.5	< 0.9	< 0.797	NA	< 0.99	< 0.98
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	520	320	154	NA	1100	< 4000
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	78	< 460	< 409	NA	100	< 4000

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-B11-01	SB-R-B11-01	SD-C10-2-01	TP-R-A11-4-1	TP-R-A11-4-1	TP-R-A11-4-2	TP-R-A11-4-2
			Sample Date	5/23/2006	5/23/2006	5/2/2001	8/7/2006	8/7/2006	8/7/2006	8/7/2006
			Sample Depths	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	1.5-2.0 ft	8.0-8.5 ft	1.5-2.0 ft	8.0-8.5 ft
			Sample ID	SB-R-B11-011.0N	SB-R-B11-014.5N	SD-C10-2-011N	TP-R-A11-4-12.0N	TP-R-A11-4-18.5N	TP-R-A11-4-22.0N	TP-R-A11-4-28.5N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	220	< 330	NA	NA	NA	1300	< 330
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.22	< 2.15	NA	< 2.28	< 2.11	< 2.13	< 2.07
Arsenic	7440-38-2	mg/kg	19	3.09	1.5	NA	2.17	< 2.11	2.29	1.77
Beryllium	7440-41-7	mg/kg	1.08	0.318	0.21	NA	0.598	< 0.527	0.352	0.126
Cadmium	7440-43-9	mg/kg	2	< 0.554	< 0.538	NA	0.541	0.11	0.49	0.251
Copper	7440-50-8	mg/kg	11000	8.01	8.44	NA	14.1	4.32	13.2	8.85
Lead	7439-92-1	mg/kg	90	242	4.86	NA	6.68	4.74	3790	104
Mercury	7439-97-6	mg/kg	0.32	0.036	0.0125	NA	0.0159	< 0.0996	0.046	< 0.107
Nickel	7440-02-0	mg/kg	48	5.22	2.89	NA	10.4	< 1.05	4.85	1.19
Selenium	7782-49-2	mg/kg	11	< 2.22	< 2.15	NA	< 2.28	< 2.11	< 2.13	< 2.07
Thallium	7440-28-0	mg/kg	3	< 2.22	< 2.15	NA	< 11.4	< 10.5	< 10.7	< 10.4
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 190	< 180	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 180	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-A11-4-2(2017)	TP-R-A11-5-1	TP-R-A11-5-1	TP-R-A11-5-2	TP-R-A11-5-2	TP-RD-A11-03	TP-RD-A11-03
			Sample Date	10/5/2017	8/7/2006	8/7/2006	8/7/2006	8/7/2006	10/6/2017	10/6/2017
			Sample Depths	8.5-9.0 ft	1.5-2.0 ft	5.0-5.5 ft	1.5-2.0 ft	7.5-8.0 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-R-A11-4-2(08.5-09.0)	TP-R-A11-5-12.0N	TP-R-A11-5-15.5N	TP-R-A11-5-22.0N	TP-R-A11-5-28.0N	TP-RD-A11-03(01.0-01.5)	TP-RD-A11-03(03.0-03.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 330	< 320	520	< 320	< 120000	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	NA	NA	NA	NA	< 120000	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	1.16	< 2.16	< 2.13	1.09	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	1.8	< 2.16	< 2.13	< 2.13	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	0.703	< 0.54	0.0736	< 0.534	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	0.585	0.203	0.214	< 0.534	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	13.7	7.31	3.09	0.874	NA	NA
Lead	7439-92-1	mg/kg	90	NA	411	7.02	77.9	2.9	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	0.0313	< 0.101	< 0.106	< 0.106	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	8.92	0.83	0.971	< 1.07	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	1.72	< 2.16	< 2.13	< 2.13	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	< 10.8	< 2.16	< 2.13	< 10.7	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	< 180	< 180	< 180	< 180	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 180	< 180	< 180	< 180	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-03	TP-RD-A11-04
			Sample Date	10/6/2017	10/6/2017	10/6/2017	10/16/2017	10/16/2017	10/16/2017	10/6/2017
			Sample Depths	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft	10.5-11.0 ft	11.5-12.0 ft	9.5-10.0 ft	1.0-1.5 ft
			Sample ID	TP-RD-A11-03(05.0-05.5)	TP-RD-A11-03(07.0-07.5)	TP-RD-A11-03(08.5-09.0)	TP-RD-A11-03(10.5-11.0)	TP-RD-A11-03(11.5-12.0)	TP-RD-A11-03(09.5-10.0)	TP-RD-A11-04(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	910	< 110	< 110	< 110	< 100
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 110	< 100
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-04	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-06
			Sample Date	10/6/2017	10/6/2017	10/6/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017
			Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
			Sample ID	TP-RD-A11-04(03.0-03.5)	TP-RD-A11-04(05.0-05.5)	TP-RD-A11-04(07.0-07.5)	BD10122017	TP-RD-A11-06(01.0-01.5)	TP-RD-A11-06(03.0-03.5)	TP-RD-A11-06(05.0-05.5)
			Parent ID				TP-RD-A11-06(01.0-01.5)			
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 100	< 100	< 100	< 120	< 120	< 120	< 100
Nitrobenzene	98-95-3	ug/kg	200	< 100	< 100	< 100	< 120	< 120	< 120	< 100
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-06	TP-RD-A11-06	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18	TP-RD-A11-18
			Sample Date	10/12/2017	10/12/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017
			Sample Depths	7.0-7.5 ft	8.0-9.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-A11-06(07.0-07.5)	TP-RD-A11-06(08.0-09.0)	BD110317	TP-RD-A11-18(01.0-01.5)	TP-RD-A11-18(03.0-03.5)	TP-RD-A11-18(05.0-05.5)	TP-RD-A11-18(07.0-07.5)
			Parent ID			TP-RD-A11-18(01.0-01.5)				
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 100	< 110	< 110	< 120	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 100	< 110	< 110	< 120	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-18	TP-RD-A11-18A	TP-RD-A11-18A	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19	TP-RD-A11-19
			Sample Date	11/3/2017	11/6/2017	11/6/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017
			Sample Depths	8.0-8.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-A11-18(08.0-08.5)	TP-RD-A11-18A(01.0-01.5)	TP-RD-A11-18A(03.0-03.5)	TP-RD-A11-19(01.0-01.5)	TP-RD-A11-19(03.0-03.5)	TP-RD-A11-19(05.0-05.5)	TP-RD-A11-19(07.0-07.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-8 Impact to Groundwater Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-19
			Sample Date	11/6/2017
			Sample Depths	8.0-8.5 ft
			Sample ID	TP-RD-A11-19(08.0-08.5)
			Parent ID	
			Notes	
Chemical	CAS Number	Units	IGWSRS	
Explosives				
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 100
Nitrobenzene	98-95-3	ug/kg	200	< 100
Metals				
Antimony	7440-36-0	mg/kg	6	NA
Arsenic	7440-38-2	mg/kg	19	NA
Beryllium	7440-41-7	mg/kg	1.08	NA
Cadmium	7440-43-9	mg/kg	2	NA
Copper	7440-50-8	mg/kg	11000	NA
Lead	7439-92-1	mg/kg	90	NA
Mercury	7439-97-6	mg/kg	0.32	NA
Nickel	7440-02-0	mg/kg	48	NA
Selenium	7782-49-2	mg/kg	11	NA
Thallium	7440-28-0	mg/kg	3	NA
SVOCs				
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-9 Impact to Groundwater Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B10-09	TP-RD-B10-09	TP-RD-B10-09
			Sample Date	10/17/2017	10/17/2017	10/17/2017
			Sample Depths	2.0-2.5 ft	3.0-3.5 ft	3.5-4.0 ft
			Sample ID	TP-RD-B10-09(02.0-02.5)	TP-RD-B10-09(03.0-03.5)	TP-RD-B10-09(03.5-04.0)
			Parent ID			
			Notes			
Chemical	CAS Number	Units	IGWSRS			
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110
Metals						
Antimony	7440-36-0	mg/kg	6	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	A11-8-02	A11-8-03	B11-4-01	B11-4-01	B11-4-02	B11-4-02	B11-513-02
			Sample Date	6/8/2000	10/14/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	10/14/1999
			Sample Depths	0.0-1.5 ft	0.0-2.0 ft	0.0-1.7 ft	0.5-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	0.0-2.0 ft
			Sample ID	A11-8-021.5N	A11-8-032N	B11-4-011.7N	B11-4-010.5N	B11-4-021N	B11-4-020.5N	B11-513-022N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 250	< 240	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 250	< 240	< 460	NA	< 560	NA	< 390
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.6331	< 0.43	NA	NA	NA	NA	< 0.53
Arsenic	7440-38-2	mg/kg	19	2.06	2.4	NA	NA	NA	NA	4.3
Beryllium	7440-41-7	mg/kg	1.08	0.126	0.25	NA	NA	NA	NA	0.48
Cadmium	7440-43-9	mg/kg	2	< 0.31655	< 0.26	NA	NA	NA	NA	0.15
Copper	7440-50-8	mg/kg	11000	5.41	27.6	NA	NA	NA	NA	25.4
Lead	7439-92-1	mg/kg	90	13.9	14.1	NA	NA	NA	NA	90.3
Mercury	7439-97-6	mg/kg	0.32	< 0.0376	0.04	NA	NA	NA	NA	0.11
Nickel	7440-02-0	mg/kg	48	2.49	4.3	NA	NA	NA	NA	8.3
Selenium	7782-49-2	mg/kg	11	0.606	0.83	NA	NA	NA	NA	1.2
Thallium	7440-28-0	mg/kg	3	< 1.055166	< 0.87	NA	NA	NA	NA	< 1.1
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 390.411	< 400	< 460	NA	< 560	NA	< 390
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 390.411	2200	< 460	NA	< 560	NA	< 390

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-513-05	C10-15-02	C10-3-02	SB-R-A12-02	SB-R-A12-02	SB-R-A12-02	SB-R-A12-04
			Sample Date	10/14/1999	11/22/1999	11/22/1999	5/24/2006	5/24/2006	5/24/2006	5/24/2006
			Sample Depths	0.0-1.0 ft	0.0-0.5 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft
			Sample ID	B11-513-051N	C10-15-020.5N	C10-3-020.5N	SB-R-A12-021.0FD	SB-R-A12-021.0N	SB-R-A12-024.5N	SB-R-A12-041.0N
			Parent ID				SB-R-A12-021.0N			
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 210	NA	NA	< 330	< 330	< 320	< 340
Nitrobenzene	98-95-3	ug/kg	200	< 210	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	< 2.12	< 2.12	< 2.13	0.935
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	3.32	2.98	2.25	2.63
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	0.22	0.218	0.175	0.194
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	< 0.531	< 0.53	< 0.531	< 0.557
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	7.47	8.09	6.04	5.98
Lead	7439-92-1	mg/kg	90	NA	NA	NA	3.74	3.36	1.91	22
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	< 0.106	< 0.106	< 0.105	0.0473
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	3.85	4.18	2.51	3
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	< 2.12	< 2.12	< 2.13	< 2.23
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	< 2.12	1.66	< 2.13	< 2.23
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	< 180	< 180	< 180	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	< 180	< 180	< 180	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-A12-04	TP-RD-A11-13	TP-RD-A11-13	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14
			Sample Date	5/24/2006	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017
			Sample Depths	4.5-5.0 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	6.0-6.5 ft
			Sample ID	SB-R-A12-045.0N	TP-RD-A11-13(01.0-01.5)	TP-RD-A11-13(03.0-03.5)	TP-RD-A11-14(01.0-01.5)	TP-RD-A11-14(03.0-03.5)	TP-RD-A11-14(05.0-05.5)	BD102517
			Parent ID							TP-RD-A11-14(06.0-06.5)
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 330	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	< 110	< 110	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.14	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	2.84	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.195	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 0.534	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	7.85	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	1.76	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	< 0.106	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	2.37	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	< 2.14	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 2.14	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 180	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 180	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-14	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17	TP-RD-A11-17
			Sample Date	10/25/2017	10/25/2017	10/25/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
			Sample Depths	6.0-6.5 ft	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-A11-14(06.0-06.5)	TP-RD-A11-14(07.0-07.5)	TP-RD-A11-14(08.5-09.0)	TP-RD-A11-17(01.0-01.5)	TP-RD-A11-17(03.0-03.5)	TP-RD-A11-17(05.0-05.5)	TP-RD-A11-17(07.0-07.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 1200	< 130	< 120	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 1200	< 130	< 120	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-21	TP-RD-A11-24	TP-RD-A12-04
			Sample Date	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	12/4/2017	10/26/2017
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-A11-21(01.0-01.5)	TP-RD-A11-21(03.0-03.5)	TP-RD-A11-21(05.0-05.5)	TP-RD-A11-21(07.0-07.5)	TP-RD-A11-21(09.0-09.5)	TP-RD-A11-24(01.0-01.5)	TP-RD-A12-04(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 110	< 110	< 110	< 120	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 110	< 110	< 110	< 120	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A12-04	TP-RD-A12-04	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01	TP-RD-B11-01A
			Sample Date	10/26/2017	10/26/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/12/2017
			Sample Depths	3.0-3.5 ft	5.0-5.5 ft	4.0-4.5 ft	1.0-1.5 ft	3.0-3.5 ft	4.0-4.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-A12-04(03.0-03.5)	TP-RD-A12-04(05.0-05.5)	BD100617	TP-RD-B11-01(01.0-01.5)	TP-RD-B11-01(03.0-03.5)	TP-RD-B11-01(04.0-04.5)	TP-RD-B11-01A(01.0-01.5)
			Parent ID			TP-RD-B11-01(04.0-04.5)				
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 120	< 120	< 120	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 120	< 120	< 120	< 110	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01B	TP-RD-B11-01C	TP-RD-B11-01C	TP-RD-B11-01C
			Sample Date	10/16/2017	10/16/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017
			Sample Depths	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
			Sample ID	TP-RD-B11-01B(01.0-01.5)	TP-RD-B11-01B(02.0-02.5)	TP-RD-B11-01B(03.0-03.5)	TP-RD-B11-01B(05.0-05.5)	TP-RD-B11-01C(01.0-01.5)	TP-RD-B11-01C(03.0-03.5)	TP-RD-B11-01C(05.0-05.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 120	< 120	< 120	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110 J	< 120	< 120	< 120	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A	TP-RD-B11-04A
			Sample Date	10/16/2017	10/16/2017	10/19/2017	10/19/2017	10/19/2017	10/25/2017	10/25/2017
			Sample Depths	1.0-1.5 ft	2.0-2.5 ft	3.0-3.5 ft	4.0-4.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft
			Sample ID	TP-RD-B11-04A(01.0-01.5)	TP-RD-B11-04A(02.0-02.5)	TP-RD-B11-04A(03.0-03.5)	TP-RD-B11-04A(04.0-04.5)	TP-RD-B11-04A(05.0-05.5)	TP-RD-B11-04A(07.0-07.5)	TP-RD-B11-04A(08.5-09.0)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 120	< 120000	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 120	< 120000	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-05C	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-06	TP-RD-B11-08	TP-RD-B11-08
			Sample Date	10/23/2017	11/3/2017	11/3/2017	11/3/2017	11/3/2017	11/7/2017	11/7/2017
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-B11-05C(01.0-01.5)	TP-RD-B11-06(01.0-01.5)	TP-RD-B11-06(03.0-03.5)	TP-RD-B11-06(05.0-05.5)	TP-RD-B11-06(07.0-07.5)	BD110717A	TP-RD-B11-08(01.0-01.5)
			Parent ID						TP-RD-B11-08(09.0-09.5)	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 110	< 110	< 110	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 110	< 110	< 110	< 110	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-08	TP-RD-B11-15	TP-RD-B11-16	TP-RD-B11-16
			Sample Date	11/7/2017	11/7/2017	11/7/2017	11/7/2017	11/29/2017	11/29/2017	11/29/2017
			Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-B11-08(03.0-03.5)	TP-RD-B11-08(05.0-05.5)	TP-RD-B11-08(07.0-07.5)	TP-RD-B11-08(09.0-09.5)	TP-RD-B11-15(03.0-03.5)	TP-RD-B11-16(01.0-01.5)	TP-RD-B11-16(03.0-03.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 110	< 110	< 110	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 110	< 110	< 110	< 110	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-10 Impact to Groundwater Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-17	TP-RD-B11-17	TP-RD-B11-21
			Sample Date	11/29/2017	11/29/2017	12/4/2017
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-B11-17(01.0-01.5)	TP-RD-B11-17(03.0-03.5)	TP-RD-B11-21(01.0-01.5)
			Parent ID			
			Notes			
Chemical	CAS Number	Units	IGWSRS			
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 120
Metals						
Antimony	7440-36-0	mg/kg	6	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-11 Impact to Groundwater Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-11-05	B11-513-05	C10-15-02	C10-3-02	C11-12-02	SB-R-C11-03	TP-RD-B11-06
			Sample Date	11/10/1999	10/14/1999	11/22/1999	11/22/1999	11/10/1999	6/1/2006	11/3/2017
			Sample Depths	0.0-0.5 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft	0.5-1.0 ft	9.0-9.5 ft
			Sample ID	B11-11-050.5N	B11-513-051N	C10-15-021N	C10-3-021N	C11-12-021N	SB-R-C11-031.0N	TP-RD-B11-06(09.0-09.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 210	< 210	< 140	< 140	< 240	< 350	< 110
Nitrobenzene	98-95-3	ug/kg	200	120	< 210	< 140	130	< 240	NA	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	1.3	NA	NA	0.29	1.4	1.18	NA
Arsenic	7440-38-2	mg/kg	19	12.9	NA	NA	7.8	20.2	6.27	NA
Beryllium	7440-41-7	mg/kg	1.08	0.21	NA	NA	0.26	0.14	0.749	NA
Cadmium	7440-43-9	mg/kg	2	0.08	NA	NA	0.13	0.11	< 0.571	NA
Copper	7440-50-8	mg/kg	11000	12.7	NA	NA	39.7	16.9	18.4	NA
Lead	7439-92-1	mg/kg	90	7320	NA	NA	971	2470	473	NA
Mercury	7439-97-6	mg/kg	0.32	0.24	NA	NA	0.32	0.61	0.137	NA
Nickel	7440-02-0	mg/kg	48	3.8	NA	NA	5.8	3.1	8.23	NA
Selenium	7782-49-2	mg/kg	11	1.2	NA	NA	< 0.45	5	1.57	NA
Thallium	7440-28-0	mg/kg	3	< 1.2	NA	NA	< 0.9	< 1.1	< 2.28	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	360	NA	< 400	99	2100	970	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 430	NA	< 400	< 390	< 460	< 190	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-11 Impact to Groundwater Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-19
			Sample Date	11/29/2017
			Sample Depths	1.0-1.5 ft
			Sample ID	TP-RD-B11-19(01.0-01.5)
			Parent ID	
			Notes	
Chemical	CAS Number	Units	IGWSRS	
Explosives				
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120
Metals				
Antimony	7440-36-0	mg/kg	6	NA
Arsenic	7440-38-2	mg/kg	19	NA
Beryllium	7440-41-7	mg/kg	1.08	NA
Cadmium	7440-43-9	mg/kg	2	NA
Copper	7440-50-8	mg/kg	11000	NA
Lead	7439-92-1	mg/kg	90	NA
Mercury	7439-97-6	mg/kg	0.32	NA
Nickel	7440-02-0	mg/kg	48	NA
Selenium	7782-49-2	mg/kg	11	NA
Thallium	7440-28-0	mg/kg	3	NA
SVOCs				
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-12 Impact to Groundwater Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	A12-7-03	A12-7-03	A12-7-04	A12-7-04	A12-7-04	A12-8-05	B11-663-04
			Sample Date	10/14/1999	10/14/1999	10/14/1999	10/14/1999	11/19/1999	10/14/1999	10/15/1999
			Sample Depths	0.0-1.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-1.0 ft
			Sample ID	A12-7-031FD	A12-7-031N	A12-7-042N	A12-7-042N10/14/1999	A12-7-042N11/19/1999	A12-8-052N	B11-663-041N
			Parent ID	A12-7-031N						
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	100	< 220	NA	NA	< 240	3100	< 220
Nitrobenzene	98-95-3	ug/kg	200	< 200	< 220	NA	< 400	< 240	< 220	< 220
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.47	< 0.51	NA	< 0.58	NA	< 0.56	< 0.52
Arsenic	7440-38-2	mg/kg	19	2	2.7	NA	5.2	NA	6.3	3.8
Beryllium	7440-41-7	mg/kg	1.08	0.11	0.1	NA	0.85	NA	0.67	0.24
Cadmium	7440-43-9	mg/kg	2	< 0.28	< 0.31	NA	< 0.35	NA	< 0.34	0.08
Copper	7440-50-8	mg/kg	11000	7.2	8	NA	16.8	NA	874	21.4
Lead	7439-92-1	mg/kg	90	33.9	75.7	NA	26.9	NA	1290	176
Mercury	7439-97-6	mg/kg	0.32	0.05	0.03	0.08	NA	NA	0.21	0.08
Nickel	7440-02-0	mg/kg	48	3	2.2	NA	14.7	NA	17.2	6.2
Selenium	7782-49-2	mg/kg	11	0.62	1	NA	0.93	NA	1.1	0.64
Thallium	7440-28-0	mg/kg	3	< 0.93	< 1	NA	< 1.2	NA	< 1.1	< 1
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	75	63	NA	200	NA	< 880000	580
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	19	< 380	NA	< 400	NA	< 880000	< 420

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-12 Impact to Groundwater Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	B11-663-06	B11-663-06	B11-663-06(2017)	SB-R-B11-04	SB-R-B12-02	SB-R-B12-02	TP-R-A12-1-1
				Sample Date	6/8/2000	8/10/2006	10/6/2017	5/31/2006	5/23/2006	5/23/2006	8/14/2006
				Sample Depths	0.0-4.0 ft	8.0-8.5 ft	8.5-9.0 ft	0.5-1.0 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft
				Sample ID	B11-663-064N	B11-663-068.5N	B11-663-06(08.5-09.0)	SB-R-B11-041.0N	SB-R-B12-021.0N	SB-R-B12-023.0N	TP-R-A12-1-11.0N
				Parent ID							
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	945	< 340	< 110	< 350	< 350	< 340	9000
Nitrobenzene	98-95-3	ug/kg	200	184	NA	< 110	NA	NA	NA	NA
Metals											
Antimony	7440-36-0	mg/kg	6	< 0.612104	NA	NA	< 2.3	< 2.29	1.05	NA
Arsenic	7440-38-2	mg/kg	19	3.52	NA	NA	4.41	1.74	3.02	NA
Beryllium	7440-41-7	mg/kg	1.08	0.254	NA	NA	0.593	0.169	0.671	NA
Cadmium	7440-43-9	mg/kg	2	0.343	NA	NA	< 0.575	< 0.572	< 2.78	NA
Copper	7440-50-8	mg/kg	11000	99.1	NA	NA	10.3	3.71	12.8	NA
Lead	7439-92-1	mg/kg	90	128	NA	NA	61	2.61	2.85	NA
Mercury	7439-97-6	mg/kg	0.32	0.036	NA	NA	0.0544	0.0174	< 0.109	NA
Nickel	7440-02-0	mg/kg	48	4.96	NA	NA	6.43	2.56	8.36	NA
Selenium	7782-49-2	mg/kg	11	0.754	NA	NA	< 2.3	< 2.29	< 2.22	NA
Thallium	7440-28-0	mg/kg	3	< 1.020173	NA	NA	< 2.3	< 2.29	< 2.22	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 401.268	< 190	NA	< 200	< 190	< 190	< 19000
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 401.268	< 190	NA	< 200	< 190	< 190	< 19000

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-12 Impact to Groundwater Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-A12-1-1	TP-R-A12-1-1	TP-R-A12-1-1	TP-RD-A11-12	TP-RD-A11-12	TP-RD-A12-02	TP-RD-A12-02
			Sample Date	8/14/2006	8/14/2006	8/14/2006	10/19/2017	10/19/2017	10/6/2017	10/6/2017
			Sample Depths	2.0-2.5 ft	8.5-9.0 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	2.0-2.5 ft
			Sample ID	TP-R-A12-1-12.5N	TP-R-A12-1-19.0FD	TP-R-A12-1-19.0N	TP-RD-A11-12(01.0-01.5)	TP-RD-A11-12(03.0-03.5)	TP-RD-A12-02(01.0-01.5)	TP-RD-A12-02(02.0-02.5)
			Parent ID		TP-R-A12-1-19.0N					
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	9300	< 360	< 350	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 1700	< 200	< 190	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 1700	< 200	< 190	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-12 Impact to Groundwater Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A12-02A	TP-RD-A12-02A	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03	TP-RD-A12-03
			Sample Date	10/11/2017	10/11/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017
			Sample Depths	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft
			Sample ID	TP-RD-A12-02A(00.5-01.0)	TP-RD-A12-02A(01.0-01.5)	TP-RD-A12-03(01.0-01.5)	TP-RD-A12-03(03.0-03.5)	TP-RD-A12-03(05.0-05.5)	TP-RD-A12-03(07.0-07.5)	TP-RD-A12-03(09.0-09.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 120	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 120	< 110	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-12 Impact to Groundwater Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-A12-03A	TP-RD-B11-02	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-03
			Sample Date	10/26/2017	10/26/2017	10/26/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft
			Sample ID	TP-RD-A12-03A(01.0-01.5)	TP-RD-A12-03A(03.0-03.5)	TP-RD-A12-03A(05.0-05.5)	TP-RD-B11-02(01.0-01.5)	TP-RD-B11-03(01.0-01.5)	TP-RD-B11-03(03.0-03.5)	TP-RD-B11-03(05.0-05.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 110	< 110	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 110	< 110	< 120	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-12 Impact to Groundwater Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-03	TP-RD-B11-03	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04	TP-RD-B11-04
			Sample Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017
			Sample Depths	7.0-7.5 ft	8.5-9.0 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	8.5-9.0 ft
			Sample ID	TP-RD-B11-03(07.0-07.5)	TP-RD-B11-03(08.5-09.0)	TP-RD-B11-04(01.0-01.5)	TP-RD-B11-04(03.0-03.5)	TP-RD-B11-04(05.0-05.5)	TP-RD-B11-04(07.0-07.5)	TP-RD-B11-04(08.5-09.0)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 120	< 110	< 110	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 120	< 110	< 110	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-12 Impact to Groundwater Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B11-22	TP-RD-B11-23
			Sample Date	12/4/2017	12/4/2017
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-B11-22(01.0-01.5)	TP-RD-B11-23(01.0-01.5)
			Parent ID		
			Notes		
Chemical	CAS Number	Units	IGWSRS		
Explosives					
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110
Metals					
Antimony	7440-36-0	mg/kg	6	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA
SVOCs					
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-13 Impact to Groundwater Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-1-08	B11-2044-04	B11-2044-04	C11-10-01	C11-1-17	SB-R-B11-04	TP-RD-B11-18
			Sample Date	11/10/1999	11/9/1999	11/9/1999	11/9/1999	11/18/1999	5/31/2006	11/29/2017
			Sample Depths	0.0-1.0 ft	0.0-1.3 ft	0.0-1.3 ft	0.0-2.0 ft	0.0-1.0 ft	3.5-4.0 ft	1.0-1.5 ft
			Sample ID	B11-1-081N	B11-2044-041.3FD	B11-2044-041.3N	C11-10-012N	C11-1-171N	SB-R-B11-044.0N	TP-RD-B11-18(01.0-01.5)
			Parent ID		B11-2044-041.3N					
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 250	< 160	< 130	NA	NA	< 350	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 250	< 160	< 130	< 390	< 1900	NA	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	2	< 0.47	< 0.47	< 0.5	1.6	1.33	NA
Arsenic	7440-38-2	mg/kg	19	64.4	7	5	69.4	38.6	3.71	NA
Beryllium	7440-41-7	mg/kg	1.08	0.51	0.69	0.6	0.38	0.49	0.748	NA
Cadmium	7440-43-9	mg/kg	2	< 0.25	< 0.28	< 0.28	< 0.3	< 0.26	< 2.79	NA
Copper	7440-50-8	mg/kg	11000	46	16.4	13.5	14.8	26.2	18.5	NA
Lead	7439-92-1	mg/kg	90	16900	39.4	27.3	2090	10900	5.91	NA
Mercury	7439-97-6	mg/kg	0.32	0.96	0.03	0.03	0.21	0.34	0.0306	NA
Nickel	7440-02-0	mg/kg	48	7.8	7.7	6	3.3	5.7	14.4	NA
Selenium	7782-49-2	mg/kg	11	4.6	0.11	0.42	3.8	3	< 2.23	NA
Thallium	7440-28-0	mg/kg	3	3	< 0.94	< 0.93	< 0.99	< 0.86	< 2.23	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	390	< 440	< 370	99	8200	< 190	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 480	< 440	< 370	< 390	< 1900	< 190	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-14 Impact to Groundwater Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	A12-3-03	A12-3-03	A12-3-03	A12-3-03	A12-6-01	A12-6-02	A12-6-02
			Sample Date	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/14/1999	6/8/2000	6/8/2000
			Sample Depths	0.0-0.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
			Sample ID	A12-3-030.5N	A12-3-0310/15/1999	A12-3-031.5N	A12-3-0311/18/1999	A12-6-012N	A12-6-022FD	A12-6-022N
			Parent ID						A12-6-022N	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	NA	NA	NA	< 217	< 227
Nitrobenzene	98-95-3	ug/kg	200	NA	< 450	NA	NA	< 440	< 217	< 227
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	< 0.5	NA	< 0.58	< 0.651	< 0.640577
Arsenic	7440-38-2	mg/kg	19	NA	NA	3	NA	3.2	2.03	1.79
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	1	0.13	0.119	0.117
Cadmium	7440-43-9	mg/kg	2	NA	NA	0.18	NA	< 0.35	< 0.325548	< 0.320288
Copper	7440-50-8	mg/kg	11000	NA	NA	14.5	NA	7.2	5.5	5.27
Lead	7439-92-1	mg/kg	90	NA	NA	NA	5.4	91.1	11.3	4.94
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	< 0.03	1.8	1.32	0.849
Nickel	7440-02-0	mg/kg	48	NA	NA	6.6	NA	2.1	3.6	2.97
Selenium	7782-49-2	mg/kg	11	NA	NA	< 0.5	NA	0.73	0.447	0.383
Thallium	7440-28-0	mg/kg	3	NA	NA	< 0.99	NA	< 1.2	< 1.09	< 1.067628
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	< 450	NA	NA	170	< 402	148
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 450	NA	NA	< 440	< 402	< 398.581

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-14 Impact to Groundwater Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-6-03	SB-R-A12-01	SB-R-A12-01	TP-R-A12-1-1(2017)	TP-R-A12-1-1(2017)	TP-RD-A12-01	TP-RD-A12-01
			Sample Date	11/9/1999	5/24/2006	5/24/2006	10/11/2017	10/17/2017	10/11/2017	10/11/2017
			Sample Depths	0.5-1.0 ft	0.5-1.0 ft	4.0-4.5 ft	9.0-9.5 ft	10.5-11.0 ft	3.0-3.5 ft	1.0-1.5 ft
			Sample ID	B11-6-030.5N	SB-R-A12-011.0N	SB-R-A12-014.5N	TP-R-A12-1-1(09.0-09.5)	TP-R-A12-1-1(10.5-11.0)	BD101117	TP-RD-A12-01(01.0-01.5)
			Parent ID						TP-RD-A12-01(03.0-03.5)	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 330	< 330	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	< 120	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	< 2.19	1.11	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	1.74	1.51	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	0.203	0.125	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	< 0.548	< 0.54	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	7.45	4.95	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	1.9	1.82	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	< 0.103	< 0.106	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	3.42	1.65	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	< 2.19	< 2.16	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	< 2.19	1.31	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	< 180	< 180	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 180	< 180	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-14 Impact to Groundwater Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-01	TP-RD-A12-06	TP-RD-A12-06	TP-RD-B11-24
			Sample Date	10/11/2017	10/11/2017	10/11/2017	10/11/2017	11/2/2017	11/2/2017	12/4/2017
			Sample Depths	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-A12-01(03.0-03.5)	TP-RD-A12-01(05.0-05.5)	TP-RD-A12-01(07.0-07.5)	TP-RD-A12-01(09.0-09.5)	TP-RD-A12-06(03.0-03.5)	TP-RD-A12-06(05.0-05.5)	TP-RD-B11-24(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-14 Impact to Groundwater Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-RD-B11-25	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-07
				Sample Date	12/4/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
				Sample Depths	1.0-1.5 ft	7.0-7.5 ft	1.0-1.5 ft	10.0-10.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
				Sample ID	TP-RD-B11-25(01.0-01.5)	BD110217A	TP-RD-B12-07(01.0-01.5)	TP-RD-B12-07(10.0-10.5)	TP-RD-B12-07(03.0-03.5)	TP-RD-B12-07(05.0-05.5)	TP-RD-B12-07(07.0-07.5)
				Parent ID		TP-RD-B12-07(07.0-07.5)					
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 110	< 110	< 110	< 110	< 110	< 110
Metals											
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-14 Impact to Groundwater Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B12-07	TP-RD-B12-07	TP-RD-B12-13	TP-RD-B12-14	TP-RD-B12-14
			Sample Date	11/2/2017	11/7/2017	12/4/2017	12/5/2017	12/5/2017
			Sample Depths	9.0-9.5 ft	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-B12-07(09.0-09.5)	BD110717B	TP-RD-B12-13(01.0-01.5)	BD120517	TP-RD-B12-14(01.0-01.5)
			Parent ID		TP-RD-B12-07(07.0-07.5)		TP-RD-B12-14(01.0-01.5)	
			Notes					
Chemical	CAS Number	Units	IGWSRS					
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 120	< 120	< 120 J
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 120	< 120	< 120
Metals								
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-15 Impact to Groundwater Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-2044-03	B11-2044-05	B11-2044-06	B11-2044-08	B11-6-03	C11-30-01	C11-30-05
			Sample Date	11/9/1999	11/9/1999	11/9/1999	11/9/1999	11/9/1999	11/5/1999	11/5/1999
			Sample Depths	0.0-0.5 ft	0.0-0.5 ft	0.0-0.7 ft	0.0-0.8 ft	0.0-1.0 ft	0.0-1.0 ft	0.0-1.0 ft
			Sample ID	B11-2044-030.5N	B11-2044-050.5N	B11-2044-060.7N	B11-2044-080.8N	B11-6-031N	C11-30-011N	C11-30-051N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 150	< 130	< 140	< 130	NA	< 150	< 150
Nitrobenzene	98-95-3	ug/kg	200	< 150	< 130	< 140	< 130	< 390	< 150	< 150
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.54	< 0.32	< 0.48	< 0.39	< 0.52	< 0.48	< 0.49
Arsenic	7440-38-2	mg/kg	19	20	3.7	10.4	3.4	5.1	9.4	56.8
Beryllium	7440-41-7	mg/kg	1.08	0.68	0.41	0.81	0.51	0.53	0.5	0.42
Cadmium	7440-43-9	mg/kg	2	< 0.33	< 0.19	1	0.29	< 0.31	< 0.29	< 0.29
Copper	7440-50-8	mg/kg	11000	19.9	16.2	36	17.2	24.5	18.6	20.7
Lead	7439-92-1	mg/kg	90	63.8	74.5	489	37.5	450	126	176
Mercury	7439-97-6	mg/kg	0.32	0.04	0.06	0.47	0.07	0.05	0.12	0.05
Nickel	7440-02-0	mg/kg	48	7.8	5	9.1	7.5	8.3	7.9	5.9
Selenium	7782-49-2	mg/kg	11	0.24	0.38	0.26	0.17	0.95	1.8	17.3
Thallium	7440-28-0	mg/kg	3	< 1.1	< 0.65	< 0.97	< 0.78	< 1	< 0.96	< 0.98
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 410	< 370	< 400	< 360	45	95	< 410
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 410	< 370	380	< 360	< 390	< 400	< 410

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-15 Impact to Groundwater Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C11-8-05	C11-9-04	SB-R-C11-01	SB-R-C11-01	TP-RD-C11-06	TP-RD-C11-07	TP-RD-C11-07
			Sample Date	11/9/1999	11/18/1999	5/31/2006	5/31/2006	11/30/2017	11/30/2017	11/30/2017
			Sample Depths	0.0-2.0 ft	0.0-0.5 ft	0.5-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	C11-8-052N	C11-9-040.5N	SB-R-C11-011.0FD	SB-R-C11-011.0N	TP-RD-C11-06(01.0-01.5)	BD113017B	TP-RD-C11-07(01.0-01.5)
			Parent ID			SB-R-C11-011.0N			TP-RD-C11-07(01.0-01.5)	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	< 390	< 360	< 130	< 120	< 120 J
Nitrobenzene	98-95-3	ug/kg	200	< 420	5500	NA	NA	< 130	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	3.2	27	< 2.57	< 2.35	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	61.4	115	26.3	22.6	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.12	0.45	0.349	0.361	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 0.32	0.1	< 3.21	< 2.94	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	30.3	88.6	18.3	14.8	NA	NA	NA
Lead	7439-92-1	mg/kg	90	4930	11800	110	102	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	1.5	10.3	0.119	0.098	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	2.6	6.3	7.41	7.05	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	9.2	5.9	2.02	1.73	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 1.1	< 0.97	< 2.57	1.63	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	670	3200	590	390	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 420	< 440	< 210	< 200	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-15 Impact to Groundwater Functional Area 11 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-C11-08	TP-RD-C11-09
			Sample Date	11/30/2017	11/30/2017
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-C11-08(01.0-01.5)	TP-RD-C11-09(01.0-01.5)
			Parent ID		
			Notes		
Chemical	CAS Number	Units	IGWSRS		
Explosives					
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 130	< 120
Nitrobenzene	98-95-3	ug/kg	200	240	< 120
Metals					
Antimony	7440-36-0	mg/kg	6	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA
SVOCs					
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-16 Impact to Groundwater Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	A12-4-01	A12-4-02	A12-5-03	A12-5-03	A12-5-05	A12-5-05	B12-237-01
			Sample Date	10/15/1999	6/8/2000	10/15/1999	10/15/1999	10/15/1999	10/15/1999	10/14/1999
			Sample Depths	0.0-1.0 ft	0.0-1.3 ft	0.0-0.5 ft	0.0-1.5 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-1.5 ft
			Sample ID	A12-4-011N	A12-4-021.25N	A12-5-030.5N	A12-5-031.5N	A12-5-050.5N	A12-5-051N	B12-237-011.5N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 250	NA	NA	NA	NA	870
Nitrobenzene	98-95-3	ug/kg	200	< 430	< 250	NA	< 380	NA	< 400	< 230
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.62	< 0.773616	NA	NA	NA	NA	< 5.7
Arsenic	7440-38-2	mg/kg	19	4	3.43	NA	NA	NA	NA	28.3
Beryllium	7440-41-7	mg/kg	1.08	0.22	0.189	NA	NA	NA	NA	0.46
Cadmium	7440-43-9	mg/kg	2	0.22	0.252	NA	NA	NA	NA	1.6
Copper	7440-50-8	mg/kg	11000	9.2	7.65	NA	NA	NA	NA	644
Lead	7439-92-1	mg/kg	90	57.9	37.8	NA	NA	NA	NA	1540
Mercury	7439-97-6	mg/kg	0.32	0.11	0.035	NA	NA	NA	NA	0.08
Nickel	7440-02-0	mg/kg	48	4.6	4.23	NA	NA	NA	NA	50.2
Selenium	7782-49-2	mg/kg	11	0.57	0.767	NA	NA	NA	NA	6.3
Thallium	7440-28-0	mg/kg	3	< 1.2	< 1.289359	NA	NA	NA	NA	< 11.4
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	80	71.1	NA	< 380	NA	46	1500
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 430	< 433.362	NA	< 380	NA	< 400	< 460

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-16 Impact to Groundwater Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-A13-03	SB-R-A13-03	SB-R-B12-03	SB-R-B12-03	SB-R-B12-04	SB-R-B12-04	TP-R-B12-1-1
			Sample Date	5/19/2006	5/19/2006	5/24/2006	5/24/2006	5/24/2006	5/24/2006	8/14/2006
			Sample Depths	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft	2.5-3.0 ft	0.5-1.0 ft	4.0-4.5 ft	0.5-1.0 ft
			Sample ID	SB-R-A13-031.0N	SB-R-A13-034.5N	SB-R-B12-031.0N	SB-R-B12-033.0N	SB-R-B12-041.0N	SB-R-B12-044.5N	TP-R-B12-1-11.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 350	< 330	< 350	< 340	< 350	< 340	< 340
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.22	< 2.13	< 2.34	1.09	1.07	< 2.24	NA
Arsenic	7440-38-2	mg/kg	19	4.22	1.13	3	2.88	4.25	2.28	NA
Beryllium	7440-41-7	mg/kg	1.08	0.443	0.192	0.247	0.279	0.384	0.416	NA
Cadmium	7440-43-9	mg/kg	2	< 2.77	< 2.67	< 0.586	< 0.559	< 0.579	< 0.56	NA
Copper	7440-50-8	mg/kg	11000	21.4	8.4	7.27	12.8	15.3	10	NA
Lead	7439-92-1	mg/kg	90	3.51	1.74	3.55	2.28	19.7	3.56	NA
Mercury	7439-97-6	mg/kg	0.32	0.0148	< 0.106	< 0.114	< 0.108	0.0384	< 0.106	NA
Nickel	7440-02-0	mg/kg	48	9.73	3.05	3.94	3.92	5.12	4.75	NA
Selenium	7782-49-2	mg/kg	11	< 2.22	< 2.13	< 2.34	< 2.24	< 2.32	< 2.24	NA
Thallium	7440-28-0	mg/kg	3	1.61	< 2.13	< 2.34	1.09	< 2.32	< 2.24	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 190	< 180	< 200	< 190	< 190	< 190	2000
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 180	< 200	< 190	< 190	< 190	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-16 Impact to Groundwater Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B12-1-1	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-01	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A
			Sample Date	8/14/2006	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017
			Sample Depths	9.0-9.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-R-B12-1-19.5N	TP-RD-B12-01(01.0-01.5)	TP-RD-B12-01(03.0-03.5)	TP-RD-B12-01(05.0-05.5)	BD101817	TP-RD-B12-02A(01.0-01.5)	TP-RD-B12-02A(03.0-03.5)
			Parent ID					TP-RD-B12-02A(03.0-03.5)		
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 310	< 110	< 110	< 110	< 120	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	NA	< 110	< 110	< 110	< 120	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 170	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 170	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-16 Impact to Groundwater Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-02A	TP-RD-B12-03
			Sample Date	10/18/2017	10/18/2017	10/18/2017	10/23/2017
			Sample Depths	5.0-5.5 ft	7.0-7.5 ft	9.0-9.5 ft	9.0-9.5 ft
			Sample ID	TP-RD-B12-02A(05.0-05.5)	TP-RD-B12-02A(07.0-07.5)	TP-RD-B12-02A(09.0-09.5)	TP-RD-B12-03(09.0-09.5)
			Parent ID				
			Notes				
Chemical	CAS Number	Units	IGWSRS				
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 120	< 120
Metals							
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-17 Impact to Groundwater Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C11-7-02	C11-7-02(2017)	C11-30-06	TP-RD-C11-01	TP-RD-C11-01	TP-RD-C11-01A	TP-RD-C11-01B
			Sample Date	11/12/1999	10/23/2017	11/12/1999	10/11/2017	10/11/2017	10/17/2017	10/23/2017
			Sample Depths	0.0-1.0 ft	1.0-1.5 ft	0.0-1.0 ft	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	C11-7-021N	C11-7-02(01.0-01.5)	C11-30-061N	TP-RD-C11-01(00.5-01.0)	TP-RD-C11-01(01.0-01.5)	TP-RD-C11-01A(01.0-01.5)	TP-RD-C11-01B(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 2500	< 110	< 220	< 12000	< 11000	280	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 2500	< 110	< 220	< 12000	< 11000	< 130	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.45	NA	< 0.52	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	6.9	NA	104	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.26	NA	1.7	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 0.27	NA	1.4	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	9.3	NA	38.9	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	57.2	NA	159	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.03	NA	0.26	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	2.1	NA	13.6	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	< 0.45	NA	9.5	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 0.91	NA	3.4	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 370	NA	47	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 370	NA	< 420	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-17 Impact to Groundwater Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

TP-RD-C11-01C 10/27/2017 1.0-1.5 ft BD102717 TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01C 10/27/2017 1.0-1.5 ft TP-RD-C11-01C(01.0-01.5)	TP-RD-C11-01D 11/6/2017 1.0-1.5 ft TP-RD-C11-01D(01.0-01.5)	TP-RD-C11-02 10/11/2017 0.5-1.0 ft TP-RD-C11-02(00.5-01.0)	TP-RD-C11-02 10/11/2017 1.0-1.5 ft TP-RD-C11-02(01.0-01.5)	TP-RD-C11-03 10/11/2017 0.5-1.0 ft TP-RD-C11-03(00.5-01.0)	TP-RD-C11-03 10/11/2017 1.0-1.5 ft TP-RD-C11-03(01.0-01.5)	TP-RD-C11-04 10/27/2017 1.0-1.5 ft TP-RD-C11-04(01.0-01.5)	TP-RD-C11-04A 11/6/2017 1.0-1.5 ft TP-RD-C11-04A(01.0-01.5)	TP-RD-B12-02 10/18/2017 9.0-9.5 ft TP-RD-B12-02(09.0-09.5)	TP-RD-B11-26 12/5/2017 1.0-1.5 ft TP-RD-B11-26(01.0-01.5)
< 120	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 120	< 120	< 120
< 120	< 120	< 120	< 110	< 110	< 110	< 100	< 110	< 120	< 120	< 120
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Exhibit 3-17 Impact to Groundwater Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

TP-RD-B12-03 10/23/2017 10.0-10.5 ft TP-RD-B12-03(10.0-10.5)
< 110
< 110
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA
NA

Exhibit 3-18 Impact to Groundwater Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B12-3-01	B12-3-02	B12-450-03	SB-R-A13-04	SB-R-A13-04	SB-R-A13-04	TP-R-A12-426-1
			Sample Date	10/13/1999	10/13/1999	10/15/1999	5/23/2006	5/23/2006	5/23/2006	8/15/2006
			Sample Depths	0.0-0.3 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft	5.0-5.5 ft	0.5-1.0 ft
			Sample ID	B12-3-010.25N	B12-3-022N	B12-450-032N	SB-R-A13-041.0FD	SB-R-A13-041.0N	SB-R-A13-045.5N	TP-R-A12-426-11.0N
			Parent ID				SB-R-A13-041.0N			
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 192.3	< 227.2	< 250	< 340	< 340	< 330	< 350
Nitrobenzene	98-95-3	ug/kg	200	< 192.3	< 227.2	< 250	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	< 0.64	1.01	1.06	< 2.17	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	5.4	2.69	3.25	1.13	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	0.8	0.378	0.423	0.198	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	0.11	< 0.534	< 2.72	< 0.543	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	23.5	9.96	11.1	2.92	NA
Lead	7439-92-1	mg/kg	90	NA	NA	158	4.75	4.34	1.96	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	0.06	0.0192	0.0152	< 0.107	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	10.2	7.19	17.4	2.53	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	0.5	< 2.14	< 2.18	< 2.17	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	< 1.3	1.45	1.29	1.67	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	77	< 420	< 480	< 190	< 190	< 180	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 460	< 420	< 480	< 190	< 190	< 180	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-18 Impact to Groundwater Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-R-A12-426-1	TP-R-A12-426-2	TP-R-A12-426-2	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-2	TP-R-B12-1-3
				Sample Date	8/15/2006	8/16/2006	8/16/2006	8/14/2006	8/14/2006	8/14/2006	8/14/2006
				Sample Depths	6.5-7.0 ft	0.5-1.0 ft	7.0-7.5 ft	0.5-1.0 ft	2.8-3.3 ft	9.0-9.5 ft	0.5-1.0 ft
				Sample ID	TP-R-A12-426-17.0N	TP-R-A12-426-21.0N	TP-R-A12-426-27.5N	TP-R-B12-1-21.0N	TP-R-B12-1-23.25N	TP-R-B12-1-29.5N	TP-R-B12-1-31.0N
				Parent ID							
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 320	< 350	< 340	< 330	5100	< 310	< 340	
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	NA	NA	
Metals											
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA	
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA	
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA	
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA	
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA	
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA	
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA	
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA	
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA	
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA	
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 180	< 190	< 190	2000	570	< 170	< 190	
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 180	< 190	< 190	< 180	< 2000	< 170	< 190	

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-18 Impact to Groundwater Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-B12-1-3	TP-R-B12-234-1	TP-R-B12-234-2	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-04	TP-RD-B12-05
			Sample Date	8/14/2006	8/11/2006	8/11/2006	11/2/2017	11/2/2017	11/2/2017	11/2/2017
			Sample Depths	7.0-7.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	1.0-1.5 ft
			Sample ID	TP-R-B12-1-37.5N	TP-R-B12-234-11.5N	TP-R-B12-234-21.5N	TP-RD-B12-04(01.0-01.5)	TP-RD-B12-04(03.0-03.5)	TP-RD-B12-04(05.0-05.5)	TP-RD-B12-05(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 310	< 350	< 340	< 120	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	< 120	< 120	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 170	< 190	< 190	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 170	< 190	< 190	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-18 Impact to Groundwater Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08	TP-RD-B12-08
			Sample Date	11/2/2017	11/30/2017	11/30/2017	11/7/2017	11/7/2017	11/7/2017	11/7/2017
			Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	TP-RD-B12-05(03.0-03.5)	TP-RD-B12-06(01.0-01.5)	TP-RD-B12-06(03.0-03.5)	TP-RD-B12-08(01.0-01.5)	TP-RD-B12-08(03.0-03.5)	TP-RD-B12-08(05.0-05.5)	TP-RD-B12-08(07.0-07.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 130	< 110	< 120	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 130	< 110	< 120	< 110	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-18 Impact to Groundwater Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B12-09
			Sample Date	11/30/2017
			Sample Depths	1.0-1.5 ft
			Sample ID	TP-RD-B12-09(01.0-01.5)
			Parent ID	
			Notes	
Chemical	CAS Number	Units	IGWSRS	
Explosives				
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120
Metals				
Antimony	7440-36-0	mg/kg	6	NA
Arsenic	7440-38-2	mg/kg	19	NA
Beryllium	7440-41-7	mg/kg	1.08	NA
Cadmium	7440-43-9	mg/kg	2	NA
Copper	7440-50-8	mg/kg	11000	NA
Lead	7439-92-1	mg/kg	90	NA
Mercury	7439-97-6	mg/kg	0.32	NA
Nickel	7440-02-0	mg/kg	48	NA
Selenium	7782-49-2	mg/kg	11	NA
Thallium	7440-28-0	mg/kg	3	NA
SVOCs				
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-19 Impact to Groundwater Functional Area 13 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B11-2044C-01	B11-2044C-05	C11-27-03	C11-4-13	C11-4-19	C11-4-20	C12-418-01
			Sample Date	11/5/1999	11/5/1999	11/12/1999	11/11/1999	11/11/1999	11/11/1999	9/27/2000
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-0.5 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft
			Sample ID	B11-2044C-012N	B11-2044C-052N	C11-27-030.5N	C11-4-131N	C11-4-192N	C11-4-201N	C12-418-012N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	240	< 240	NA	< 190	< 100
Nitrobenzene	98-95-3	ug/kg	200	< 370	< 390	570	< 240	< 440	< 190	< 100
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.53	< 0.54	NA	0.55	1.8	0.58	< 0.704
Arsenic	7440-38-2	mg/kg	19	6.1	4.5	NA	11.9	11.8	10.8	5.63
Beryllium	7440-41-7	mg/kg	1.08	0.63	0.79	NA	0.21	0.32	0.28	0.79
Cadmium	7440-43-9	mg/kg	2	0.04	< 0.32	NA	0.09	0.27	0.13	0.155
Copper	7440-50-8	mg/kg	11000	18.1	15.3	NA	17.4	52.1	17.1	16.6
Lead	7439-92-1	mg/kg	90	30.6	24.5	NA	492	2070	380	56.1
Mercury	7439-97-6	mg/kg	0.32	0.03	0.05	NA	0.47	0.24	0.21	0.046
Nickel	7440-02-0	mg/kg	48	7.6	6.7	NA	4.1	36.7	6.9	7.73
Selenium	7782-49-2	mg/kg	11	0.82	0.95	NA	1.2	1.4	1.1	< 0.586
Thallium	7440-28-0	mg/kg	3	< 1.1	< 1.1	NA	< 1.1	< 1.1	< 1.2	< 1.17
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 370	40	NA	130	43	170	< 396
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 370	< 390	NA	< 430	< 440	< 390	< 396

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-19 Impact to Groundwater Functional Area 13 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C12-418-04	C11-27-02	SB-R-C12-02	TP-RD-B12-05	TP-RD-B12-06	TP-RD-B12-06	TP-RD-B12-04
			Sample Date	7/12/2000	11/12/1999	5/31/2006	11/2/2017	11/30/2017	11/30/2017	11/2/2017
			Sample Depths	0.0-1.5 ft	0.0-1.0 ft	0.5-1.0 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	C12-418-041.5N	C11-27-021N	SB-R-C12-021.0N	TP-RD-B12-05(05.0-05.5)	BD113017A	TP-RD-B12-06(05.0-05.5)	TP-RD-B12-04(07.0-07.5)
			Parent ID					TP-RD-B12-06(05.0-05.5)		
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 192.3	NA	< 320	< 120	< 110	< 110 J	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 192.3	85	NA	< 120	< 110	< 110	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.650459	0.3	1.09	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	5.1	7.3	3.71	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.614	0.27	0.472	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	0.293	< 0.35	< 0.513	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	12.1	13.7	14.3	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	17.3	319	16.1	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.032	0.22	< 0.104	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	7.83	3.3	6.48	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	1.42	1	< 2.05	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 1.084099	< 1.2	< 2.05	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 379.055	80	< 180	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 379.055	< 410	< 180	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-19 Impact to Groundwater Functional Area 13 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B12-08	TP-RD-B12-09	TP-RD-B12-15	TP-RD-C11-02A	TP-RD-C11-02B	TP-RD-C11-11	TP-RD-C11-12
			Sample Date	11/7/2017	11/30/2017	12/5/2017	10/27/2017	11/6/2017	11/30/2017	11/30/2017
			Sample Depths	9.0-9.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-B12-08(09.0-09.5)	TP-RD-B12-09(03.0-03.5)	TP-RD-B12-15(01.0-01.5)	TP-RD-C11-02A(01.0-01.5)	TP-RD-C11-02B(01.0-01.5)	TP-RD-C11-11(01.0-01.5)	TP-RD-C11-12(01.0-01.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 120	< 110	< 120	< 110	< 130	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 120	< 110	< 120	< 110	< 130	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-19 Impact to Groundwater Functional Area 13 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-C11-13	TP-RD-C11-14
			Sample Date	11/30/2017	11/30/2017
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-C11-13(01.0-01.5)	TP-RD-C11-14(01.0-01.5)
			Parent ID		
			Notes		
Chemical	CAS Number	Units	IGWSRS		
Explosives					
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 130	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 130	< 120
Metals					
Antimony	7440-36-0	mg/kg	6	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA
SVOCs					
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-20 Impact to Groundwater Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B12-422-04	B12-422-06	SB-R-A13-02	SB-R-A13-02	SB-R-B12-01	SB-R-B13-04	SB-R-B13-04
			Sample Date	6/22/2000	11/3/1999	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/23/2006
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	2.0-2.5 ft	0.5-1.0 ft	0.5-1.0 ft	2.5-3.0 ft
			Sample ID	B12-422-042N	B12-422-062N	SB-R-A13-021.0N	SB-R-A13-022.5N	SB-R-B12-011.0N	SB-R-B13-041.0N	SB-R-B13-043.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 250	< 230	< 360	< 350	< 320	< 370	< 330
Nitrobenzene	98-95-3	ug/kg	200	< 250	< 230	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.588365	< 0.5	< 2.33	1.06	1.54	1.26	1.52
Arsenic	7440-38-2	mg/kg	19	3.01	3.8	3.24	4.17	1.87	23.1	4.28
Beryllium	7440-41-7	mg/kg	1.08	0.574	0.75	0.613	0.611	0.484	0.648	0.62
Cadmium	7440-43-9	mg/kg	2	< 0.294182	0.23	< 0.581	< 2.88	< 0.511	< 0.616	< 2.71
Copper	7440-50-8	mg/kg	11000	14.6	14.3	6.51	11	14.6	28.5	19.9
Lead	7439-92-1	mg/kg	90	13.5	8.5	5.82	5.17	4.37	38.4	7.64
Mercury	7439-97-6	mg/kg	0.32	0.076	0.03	0.0203	0.029	< 0.104	0.123	0.0147
Nickel	7440-02-0	mg/kg	48	9.43	7	8.32	8.62	8.09	11.4	12.7
Selenium	7782-49-2	mg/kg	11	0.334	0.95	< 2.33	< 2.3	< 2.05	< 2.46	< 2.17
Thallium	7440-28-0	mg/kg	3	< 0.980608	< 1	< 2.33	< 2.3	1.79	< 2.46	1.25
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 405.317	< 390	< 200	< 190	< 180	190	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 405.317	< 390	< 200	< 190	< 180	< 210	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-20 Impact to Groundwater Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	SO-R2-B-12-1	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-3	TP-R-A13-625-3	TP-R-A13-625-5	TP-R-A13-625-5
				Sample Date	11/14/2013	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006	8/16/2006
				Sample Depths	0.2-0.7 ft	0.5-1.0 ft	0.5-1.0 ft	0.5-1.0 ft	9.0-9.5 ft	0.5-1.0 ft	8.5-9.0 ft
				Sample ID	O-R2-B-12-1_201311	TP-R-A13-625-11.0N	TP-R-A13-625-21.0N	TP-R-A13-625-31.0N	TP-R-A13-625-39.5N	TP-R-A13-625-51.0N	TP-R-A13-625-59.0N
				Parent ID							
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500		< 360	< 340	< 350	< 350	< 310	< 330	< 320
Nitrobenzene	98-95-3	ug/kg	200		< 360	NA	NA	NA	NA	NA	NA
Metals											
Antimony	7440-36-0	mg/kg	6		< 2.3	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19		7.58	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08		0.801	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2		< 0.575	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000		11.5	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90		11.7	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32		0.0264	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48		11.3	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11		1.37	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3		< 3.45	NA	NA	NA	NA	NA	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000		< 20	< 190	< 200	< 200	< 170	48	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000		< 39	< 190	< 200	< 200	< 170	< 180	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-20 Impact to Groundwater Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A12-05	TP-RD-A12-05	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02	TP-RD-A13-02
			Sample Date	11/1/2017	11/1/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017	11/2/2017
			Sample Depths	1.0-1.5 ft	3.0-3.5 ft	7.0-7.5 ft	1.0-1.5 ft	3.0-3.5 ft	5.0-5.5 ft	7.0-7.5 ft
			Sample ID	P-RD-A12-05(01.0-01.	P-RD-A12-05(03.0-03.	BD110217	P-RD-A13-02(01.0-01.	P-RD-A13-02(03.0-03.	P-RD-A13-02(05.0-05.	P-RD-A13-02(07.0-07.
			Parent ID			TP-RD-A13-02(07.0-07.5)				
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 110	< 120	< 120	< 120	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 110	< 120	< 120	< 120	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-20 Impact to Groundwater Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B12-12
			Sample Date	12/5/2017
			Sample Depths	1.0-1.5 ft
			Sample ID	P-RD-B12-12(01.0-01.
			Parent ID	
			Notes	
Chemical	CAS Number	Units	IGWSRS	
Explosives				
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 130
Nitrobenzene	98-95-3	ug/kg	200	< 130
Metals				
Antimony	7440-36-0	mg/kg	6	NA
Arsenic	7440-38-2	mg/kg	19	NA
Beryllium	7440-41-7	mg/kg	1.08	NA
Cadmium	7440-43-9	mg/kg	2	NA
Copper	7440-50-8	mg/kg	11000	NA
Lead	7439-92-1	mg/kg	90	NA
Mercury	7439-97-6	mg/kg	0.32	NA
Nickel	7440-02-0	mg/kg	48	NA
Selenium	7782-49-2	mg/kg	11	NA
Thallium	7440-28-0	mg/kg	3	NA
SVOCs				
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-21 Impact to Groundwater Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C11-4-02	C11-4-09	C11-4A-01	C11-4A-02	C11-4B-01	SB-R-B12-01	SB-R-B13-04
			Sample Date	11/11/1999	11/11/1999	11/5/1999	6/30/2000	11/5/1999	5/23/2006	8/10/2006
			Sample Depths	0.0-1.0 ft	0.0-1.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	4.0-4.5 ft	6.5-7.0 ft
			Sample ID	C11-4-021N	C11-4-091.5N	C11-4A-012N	C11-4A-022N	C11-4B-012N	SB-R-B12-014.5N	SB-R-B13-047.0FD
			Parent ID							SB-R-B13-047.0N
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	510	< 230	NA	NA	NA	< 330	NA
Nitrobenzene	98-95-3	ug/kg	200	< 240	< 230	< 390	< 391	< 410	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	NA	1.8	< 0.47	< 0.697	0.85	< 2.09	NA
Arsenic	7440-38-2	mg/kg	19	NA	11.5	2.9	7.96	8.8	1.61	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	0.49	0.2	0.104	0.24	0.369	NA
Cadmium	7440-43-9	mg/kg	2	NA	0.43	0.43	0.377	0.2	< 0.522	NA
Copper	7440-50-8	mg/kg	11000	NA	109	12.2	11.8	39.2	10.7	NA
Lead	7439-92-1	mg/kg	90	NA	662	53.9	52	379	1.68	NA
Mercury	7439-97-6	mg/kg	0.32	NA	0.99	0.03	0.323	0.17	< 0.105	NA
Nickel	7440-02-0	mg/kg	48	NA	31.2	8.4	9.68	11.9	3.62	NA
Selenium	7782-49-2	mg/kg	11	NA	2.4	0.64	0.767	1.7	< 2.09	NA
Thallium	7440-28-0	mg/kg	3	NA	< 1.2	< 0.94	< 1.16	< 1.1	< 2.09	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	56	< 390	< 391	< 410	< 180	< 170
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 490	< 390	< 391	< 410	< 180	< 170

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-21 Impact to Groundwater Functional Area 14 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-B13-04	SB-R-C12-03	TP-R-A13-625-1	TP-R-A13-625-2	TP-R-A13-625-2	TP-RD-A12-05	TP-RD-A13-02
			Sample Date	8/10/2006	6/6/2006	8/16/2006	8/16/2006	8/16/2006	11/1/2017	11/2/2017
			Sample Depths	6.5-7.0 ft	1.0-1.5 ft	8.5-9.0 ft	9.0-9.5 ft	9.0-9.5 ft	5.0-5.5 ft	8.0-8.5 ft
			Sample ID	SB-R-B13-047.0N	SB-R-C12-031.5N	TP-R-A13-625-19.0N	TP-R-A13-625-29.5FD	TP-R-A13-625-29.5N	TP-RD-A12-05(05.0-05.5)	TP-RD-A13-02(08.0-08.5)
			Parent ID				TP-R-A13-625-29.5N			
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 360	< 320	< 320	< 320	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	NA	NA	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	NA	< 2.29	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	2.42	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	0.369	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	0.375	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	10.2	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	50.5	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	0.0273	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	5.59	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	< 2.29	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	< 2.29	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 180	< 200	< 180	< 180	< 180	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 180	NA	< 180	< 180	< 180	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-22 Impact to Groundwater Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	A13-1-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	A13-753-01	B13-8-04
			Sample Date	10/14/1999	10/15/1999	10/15/1999	10/15/1999	11/18/1999	11/18/1999	10/8/1999
			Sample Depths	0.0-2.0 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
			Sample ID	A13-1-012N	A13-753-010.5N	A13-753-0110/15/1999	A13-753-012N10/15/1999	A13-753-0111/18/1999	A13-753-012N11/18/1999	B13-8-042N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 250	NA	< 240	NA	NA	NA	< 230
Nitrobenzene	98-95-3	ug/kg	200	< 250	NA	< 240	< 400	NA	NA	< 230
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.52	NA	NA	NA	NA	< 0.54	< 0.48
Arsenic	7440-38-2	mg/kg	19	5.9	NA	NA	NA	NA	4.3	3.8
Beryllium	7440-41-7	mg/kg	1.08	0.71	NA	NA	NA	0.73	NA	0.61
Cadmium	7440-43-9	mg/kg	2	< 0.31	NA	NA	NA	NA	0.32	0.06
Copper	7440-50-8	mg/kg	11000	23.3	NA	NA	NA	NA	17.3	12
Lead	7439-92-1	mg/kg	90	417	NA	NA	NA	334	NA	21.7
Mercury	7439-97-6	mg/kg	0.32	0.06	NA	NA	NA	NA	0.11	0.04
Nickel	7440-02-0	mg/kg	48	10.7	NA	NA	NA	NA	9	7.9
Selenium	7782-49-2	mg/kg	11	1	NA	NA	NA	NA	1.1	0.78
Thallium	7440-28-0	mg/kg	3	< 1	NA	NA	NA	NA	< 1.1	< 0.96
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	580	NA	NA	300	NA	NA	< 370
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 400	NA	NA	< 400	NA	NA	< 370

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-22 Impact to Groundwater Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B13-8-05	C12-275-02	C12-275-02	SB-R-A13-01	SB-R-A13-01	SB-R-C12-01	SB-R-C12-01
			Sample Date	7/21/2000	10/20/1999	10/20/1999	5/19/2006	5/19/2006	5/31/2006	5/31/2006
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.0-1.5 ft	4.0-4.5 ft	0.5-1.0 ft	0.5-1.0 ft
			Sample ID	B13-8-052N	C12-275-022FD	C12-275-022N	SB-R-A13-011.5N	SB-R-A13-014.5N	SB-R-C12-011.0FD	SB-R-C12-011.0N
			Parent ID		C12-275-022N				SB-R-C12-011.0N	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 227	< 230	< 220	< 350	< 330	< 330	< 330
Nitrobenzene	98-95-3	ug/kg	200	< 227	< 230	< 220	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.584	< 0.53	< 0.57	< 2.28	1.05	1.4	1.22
Arsenic	7440-38-2	mg/kg	19	4.16	4.5	4	3.18	2.43	4.65	2.83
Beryllium	7440-41-7	mg/kg	1.08	0.652	0.85	0.73	0.857	0.461	0.68	0.626
Cadmium	7440-43-9	mg/kg	2	0.702	1.7	1.8	< 2.85	< 2.61	< 2.64	< 2.67
Copper	7440-50-8	mg/kg	11000	57.4	17	16.6	10.2	12.5	16.8	14.7
Lead	7439-92-1	mg/kg	90	75.1	70.5	42.8	8.81	2.27	6.12	5.48
Mercury	7439-97-6	mg/kg	0.32	0.084	0.06	0.03	0.0263	< 0.105	0.0228	0.0273
Nickel	7440-02-0	mg/kg	48	9.94	6.3	8.1	8.5	6.66	8.06	7.6
Selenium	7782-49-2	mg/kg	11	1.08	0.96	< 0.57	< 2.28	< 2.09	< 2.11	< 2.13
Thallium	7440-28-0	mg/kg	3	< 0.973	< 1.1	< 1.1	< 2.28	< 2.09	< 2.11	< 2.13
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	124	< 420	< 440	< 200	< 180	< 180	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 403	< 420	< 440	< 200	< 180	< 180	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-22 Impact to Groundwater Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SD-B13-1-01	SD-B13-1-01	TP-R-A13-625-4	TP-R-A13-625-6	TP-RD-A13-01A	TP-RD-A13-01A	TP-RD-A13-01A
			Sample Date	5/1/2001	5/1/2001	8/16/2006	8/16/2006	11/1/2017	11/1/2017	11/1/2017
			Sample Depths	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	SD-B13-1-011N	SD-B13-1-011.5N	TP-R-A13-625-41.5N	TP-R-A13-625-61.5N	BD110117	TP-RD-A13-01A(01.0-01.5)	TP-RD-A13-01A(03.0-03.5)
			Parent ID					TP-RD-A13-01A(03.0-03.5)		
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 120	< 350	4800	< 130	< 140	< 130
Nitrobenzene	98-95-3	ug/kg	200	NA	< 120	NA	NA	< 130	< 140	< 130
Metals										
Antimony	7440-36-0	mg/kg	6	NA	< 0.76	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	5.7	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	0.65	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	< 0.064	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	21.7	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	44.4	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	0.03	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	11.8	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	2.1	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	2	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	< 40	< 190	49	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 40	< 190	< 180	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-22 Impact to Groundwater Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A13-03	TP-RD-A13-04	TP-RD-A13-05	TP-RD-A13-05	TP-RD-B12-10	TP-RD-B13-01	TP-RD-B13-01
			Sample Date	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/5/2017	10/30/2017	10/30/2017
			Sample Depths	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-A13-03(03.0-03.5)	TP-RD-A13-04(01.0-01.5)	TP-RD-A13-05(01.0-01.5)	TP-RD-A13-05(03.0-03.5)	TP-RD-B12-10(01.0-01.5)	TP-RD-B13-01(01.0-01.5)	TP-RD-B13-01(03.0-03.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110	< 120	< 130	< 130
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110	< 120	< 130	< 130
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-22 Impact to Groundwater Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B13-02	TP-RD-B13-10	TP-RD-B13-10
			Sample Date	10/30/2017	11/1/2017	11/1/2017
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-B13-02(01.0-01.5)	TP-RD-B13-10(01.0-01.5)	TP-RD-B13-10(03.0-03.5)
			Parent ID			
			Notes			
Chemical	CAS Number	Units	IGWSRS			
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 130	< 110	1200
Nitrobenzene	98-95-3	ug/kg	200	< 130	< 110	< 1200
Metals						
Antimony	7440-36-0	mg/kg	6	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-23 Impact to Groundwater Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C12-274-01	C12-274-05	C12-275-01	C12-4-01	TP-RD-A13-04	TP-RD-B13-02	TP-RD-A13-03
			Sample Date	10/21/1999	10/21/1999	6/22/2000	10/19/1999	12/1/2017	10/30/2017	12/1/2017
			Sample Depths	0.0-2.0 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	3.0-3.5 ft	3.0-3.5 ft	5.0-5.5 ft
			Sample ID	C12-274-012N	C12-274-051N	C12-275-012N	C12-4-012N	TP-RD-A13-04(03.0-03.5)	TP-RD-B13-02(03.0-03.5)	TP-RD-A13-03(05.0-05.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 220	< 200	< 238.1	NA	< 110	< 120	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 220	< 200	< 238.1	< 390	< 110	< 120	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.46	< 0.43	< 0.488807	< 0.52	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	3.5	4	3.51	2.4	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.58	0.58	0.617	0.45	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	0.04	0.11	0.318	< 0.31	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	1930	19.3	23.2	10.3	NA	NA	NA
Lead	7439-92-1	mg/kg	90	50.1	3770	61.2	1360	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.13	0.09	0.091	0.08	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	7.7	15.7	7.51	5.4	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	0.16	0.48	0.626	< 0.52	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 0.92	< 0.85	< 0.814678	< 1	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	55	120	< 410.054	< 390	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 450	< 430	< 410.054	< 390	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-23 Impact to Groundwater Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-A13-01A	TP-RD-B13-01	TP-RD-B13-10
			Sample Date	11/1/2017	10/30/2017	11/1/2017
			Sample Depths	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
			Sample ID	TP-RD-A13-01A(05.0-05.5)	TP-RD-B13-01(05.0-05.5)	TP-RD-B13-10(05.0-05.5)
			Parent ID			
			Notes			
Chemical	CAS Number	Units	IGWSRS			
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 110
Metals						
Antimony	7440-36-0	mg/kg	6	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-24 Impact to Groundwater Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B13-7-01	B13-7-06	SB-R-B13-02	SB-R-B13-03	SB-R-B13-03	SB-R-B13-03	SD-B13-3-01
			Sample Date	11/2/1999	11/2/1999	5/18/2006	5/19/2006	5/19/2006	5/19/2006	5/1/2001
			Sample Depths	0.0-2.0 ft	0.0-1.0 ft	1.2-1.7 ft	0.5-1.0 ft	2.0-2.5 ft	2.0-2.5 ft	0.0-0.5 ft
			Sample ID	B13-7-012N	B13-7-061N	SB-R-B13-021.67N	SB-R-B13-031.0N	SB-R-B13-032.5FD	SB-R-B13-032.5N	SD-B13-3-010.5N
			Parent ID					SB-R-B13-032.5N		
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	< 340	< 350	< 340	< 340	< 1000000
Nitrobenzene	98-95-3	ug/kg	200	< 410	< 500	NA	NA	NA	NA	< 1000000
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.44	1.5	< 2.19	1.08	< 2.24	< 2.16	0.94
Arsenic	7440-38-2	mg/kg	19	5	8.8	3.46	3.75	2.44	4.86	4.9
Beryllium	7440-41-7	mg/kg	1.08	0.76	0.78	0.51	0.759	0.703	0.716	0.21
Cadmium	7440-43-9	mg/kg	2	< 0.26	2.5	< 2.74	< 2.83	< 2.8	0.393	< 0.055
Copper	7440-50-8	mg/kg	11000	10.6	34.2	12	15.2	14.5	14.6	9.3
Lead	7439-92-1	mg/kg	90	13.7	355	74.2	12	6	6.18	3260
Mercury	7439-97-6	mg/kg	0.32	0.04	0.14	0.064	0.0404	0.0123	0.0222	0.13
Nickel	7440-02-0	mg/kg	48	9.9	12.2	6.96	9.28	8.09	8.86	3
Selenium	7782-49-2	mg/kg	11	0.44	1.2	< 2.19	< 2.27	< 2.24	< 2.16	< 0.48
Thallium	7440-28-0	mg/kg	3	< 0.87	< 1.3	< 2.19	< 2.27	< 2.24	< 2.16	< 0.85
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 410	110	< 190	41	< 190	< 190	< 330
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 410	< 500	< 190	< 190	< 190	< 190	< 330

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-24 Impact to Groundwater Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	SD-B13-3-01	SO-R2-C-12-1	TP-R-B13-1-1	TP-R-B13-1-2	TP-R-B13-1-3	TP-R-B13-1-4	TP-R-B13-2-2
				Sample Date	5/1/2001	11/14/2013	8/4/2006	8/4/2006	8/4/2006	8/4/2006	8/2/2006
				Sample Depths	0.5-1.0 ft	0.5-1.0 ft	1.5-2.0 ft	2.0-2.5 ft	1.5-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
				Sample ID	SD-B13-3-011N	SO-R2-C-12-1_20131114	TP-R-B13-1-12.0N	TP-R-B13-1-22.5N	TP-R-B13-1-32.0N	TP-R-B13-1-42.0N	TP-R-B13-2-22.0N
				Parent ID							
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 360	180	160	220	< 320	< 340
Nitrobenzene	98-95-3	ug/kg	200	NA	< 360	NA	NA	NA	NA	NA
Metals											
Antimony	7440-36-0	mg/kg	6	NA	< 2.39	1.57	1.12	1.27	1.59	< 2.25
Arsenic	7440-38-2	mg/kg	19	NA	6.6	1.9	2.28	4.21	3.93	5.5
Beryllium	7440-41-7	mg/kg	1.08	NA	0.709	0.293	0.163	0.236	0.71	0.755
Cadmium	7440-43-9	mg/kg	2	NA	< 0.599	< 0.513	< 0.531	< 0.542	< 0.525	< 0.563
Copper	7440-50-8	mg/kg	11000	NA	12.5	5.24	5.37	9.55	20.5	18.6
Lead	7439-92-1	mg/kg	90	NA	19.1	352	247	243	47.4	42.9
Mercury	7439-97-6	mg/kg	0.32	NA	0.0399	0.0305	0.0138	0.013	0.0312	2.44
Nickel	7440-02-0	mg/kg	48	NA	7.02	2.32	2.36	3.97	9.65	10.9
Selenium	7782-49-2	mg/kg	11	NA	1.24	< 2.05	< 2.12	< 2.17	< 2.1	< 2.25
Thallium	7440-28-0	mg/kg	3	NA	< 3.59	< 2.05	< 2.12	< 2.17	1.42	< 2.25
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	< 20	< 180	< 180	< 180	< 180	280
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 40	< 180	< 180	< 180	< 180	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-24 Impact to Groundwater Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-RD-A13-06	TP-RD-A13-06	TP-RD-A13-07	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-04	TP-RD-B13-08
				Sample Date	12/1/2017	12/1/2017	12/1/2017	10/30/2017	10/30/2017	10/30/2017	11/1/2017
				Sample Depths	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft
				Sample ID	TP-RD-A13-06(01.0-01.5)	TP-RD-A13-06(03.0-03.5)	TP-RD-A13-07(01.0-01.5)	TP-RD-B13-03(01.0-01.5)	TP-RD-B13-04(01.0-01.5)	TP-RD-B13-04(03.0-03.5)	TP-RD-B13-08(01.0-01.5)
				Parent ID							
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 110	< 110	< 120	< 120	< 110	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 110	< 110	< 120	< 120	< 110	< 120
Metals											
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA	NA	NA	NA
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-24 Impact to Groundwater Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B13-08	TP-RD-B13-09	TP-RD-B13-09
			Sample Date	11/1/2017	11/1/2017	11/1/2017
			Sample Depths	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-B13-08(03.0-03.5)	TP-RD-B13-09(01.0-01.5)	TP-RD-B13-09(03.0-03.5)
			Parent ID			
			Notes			
Chemical	CAS Number	Units	IGWSRS			
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120	< 120
Metals						
Antimony	7440-36-0	mg/kg	6	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-25 Impact to Groundwater Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C12-1-03	C12-1-04	C12-3-03	C12-5-02	SB-R-C12-04	TP-R-B13-1-5	TP-RD-A13-07
			Sample Date	10/19/1999	10/19/1999	10/19/1999	10/20/1999	6/6/2006	8/7/2006	12/1/2017
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	2.0-2.5 ft	3.0-3.5 ft
			Sample ID	C12-1-032N	C12-1-042N	C12-3-032N	C12-5-022N	SB-R-C12-041.0N	TP-R-B13-1-52.5N	TP-RD-A13-07(03.0-03.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	NA	NA	< 350	< 320	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 370	< 420	< 430	< 390	NA	NA	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.43	2.3	< 28.8	< 23.6	1.88	1.16	NA
Arsenic	7440-38-2	mg/kg	19	1.8	8.9	< 28.8	< 23.6	133	1.06	NA
Beryllium	7440-41-7	mg/kg	1.08	0.6	0.65	< 17.3	0.86	0.542	0.253	NA
Cadmium	7440-43-9	mg/kg	2	< 0.26	< 0.3	2.2	1.9	< 2.85	0.398	NA
Copper	7440-50-8	mg/kg	11000	12.2	79.2	130	47000	15.5	6.89	NA
Lead	7439-92-1	mg/kg	90	10.4	43.9	93300	1630	15.5	658	NA
Mercury	7439-97-6	mg/kg	0.32	< 0.03	0.08	2.1	0.04	0.0459	0.0278	NA
Nickel	7440-02-0	mg/kg	48	7.3	12.5	11.3	205	8.71	2.57	NA
Selenium	7782-49-2	mg/kg	11	< 0.43	< 0.5	< 28.8	7	< 2.28	< 2.14	NA
Thallium	7440-28-0	mg/kg	3	< 0.87	< 1	< 57.7	< 47.2	< 2.28	< 2.14	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 370	< 420	380	< 390	< 190	< 180	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 370	< 420	< 430	< 390	< 190	< 180	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-25 Impact to Groundwater Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B13-03	TP-RD-B13-04	TP-RD-B13-08	TP-RD-B13-09
			Sample Date	10/30/2017	10/30/2017	11/1/2017	11/1/2017
			Sample Depths	3.0-3.5 ft	5.0-5.5 ft	5.0-5.5 ft	5.0-5.5 ft
			Sample ID	TP-RD-B13-03(03.0-03.5)	TP-RD-B13-04(05.0-05.5)	TP-RD-B13-08(05.0-05.5)	TP-RD-B13-09(05.0-05.5)
			Parent ID				
			Notes				
Chemical	CAS Number	Units	IGWSRS				
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110	< 110
Metals							
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-26 Impact to Groundwater Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B13-262A-05	C13-2-10	C13-2-15	C13-2-19	C13-2-20	TP-R-B13-2-1	TP-R-B13-2-3
			Sample Date	11/2/1999	10/29/1999	4/18/2000	4/18/2000	4/18/2000	8/2/2006	8/2/2006
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-1.5 ft	0.0-1.0 ft	0.0-2.0 ft	1.5-2.0 ft	1.5-2.0 ft
			Sample ID	B13-262A-052N	C13-2-102N	C13-2-151.5N	C13-2-191N	C13-2-202N	TP-R-B13-2-12.0N	TP-R-B13-2-32.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 230	< 240	NA	NA	NA	< 320	< 340
Nitrobenzene	98-95-3	ug/kg	200	< 230	< 240	< 41	< 39	< 40	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.5	< 0.51	< 0.6	< 0.6	< 0.7	1.35	1.58
Arsenic	7440-38-2	mg/kg	19	17	3.7	4.5	3.9	4.3	1.57	4.6
Beryllium	7440-41-7	mg/kg	1.08	0.55	0.81	0.71	0.68	0.73	0.681	0.852
Cadmium	7440-43-9	mg/kg	2	0.49	0.5	0.74	0.7	0.56	< 0.522	< 0.556
Copper	7440-50-8	mg/kg	11000	19.3	18	14.1	12.5	11.1	15.1	14.4
Lead	7439-92-1	mg/kg	90	47.3	28.2	23.7	126	11.3	4.7	8.49
Mercury	7439-97-6	mg/kg	0.32	0.09	0.06	< 0	< 0	< 0	0.0126	0.0307
Nickel	7440-02-0	mg/kg	48	10.1	7.7	9.8	6.6	7.9	9.47	11.1
Selenium	7782-49-2	mg/kg	11	1.2	< 0.51	0.84	1.1	0.95	< 2.09	< 2.22
Thallium	7440-28-0	mg/kg	3	< 0.99	< 1	< 1	< 1	< 1	< 2.09	1.52
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	34	< 4000	61	31	< 40	< 180	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 390	910	100	< 39	< 40	< 180	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-26 Impact to Groundwater Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	TP-R-B13-2-7	TP-R-B13-2-9	TP-RD-B13-13	TP-RD-B13-14
				Sample Date	8/3/2006	8/2/2006	12/1/2017	12/1/2017
				Sample Depths	1.5-2.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	TP-R-B13-2-72.0N	TP-R-B13-2-92.0N	TP-RD-B13-13(01.0-01.5)	TP-RD-B13-14(01.0-01.5)
				Parent ID				
				Notes				
Chemical	CAS Number	Units	IGWSRS					
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 340	< 330	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	< 120	< 120
Metals								
Antimony	7440-36-0	mg/kg	6	1.35	1.17	NA	NA
Arsenic	7440-38-2	mg/kg	19	20.8	11.1	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.832	0.608	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 0.548	< 0.542	NA	NA
Copper	7440-50-8	mg/kg	11000	36	24.9	NA	NA
Lead	7439-92-1	mg/kg	90	121	59.4	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.303	0.744	NA	NA
Nickel	7440-02-0	mg/kg	48	12.1	32.1	NA	NA
Selenium	7782-49-2	mg/kg	11	< 2.19	< 2.17	NA	NA
Thallium	7440-28-0	mg/kg	3	< 2.19	< 2.17	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	470	400	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	530	< 180	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-27 Impact to Groundwater Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B13-262A-01	C12-8229-01	C12-8229-03	SB-R-C13-04	TP-R-B13-2-3	TP-R-B13-2-8	TP-RD-B13-13
			Sample Date	11/2/1999	6/22/2000	10/20/1999	6/2/2006	8/2/2006	8/2/2006	12/1/2017
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	5.5-6.0 ft	1.5-2.0 ft	3.0-3.5 ft
			Sample ID	B13-262A-012N	C12-8229-012N	C12-8229-032N	SB-R-C13-041.0N	TP-R-B13-2-36.0N	TP-R-B13-2-82.0N	TP-RD-B13-13(03.0-03.5)
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 250	NA	NA	< 340	< 310	< 350	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 250	< 383.229	< 400	NA	NA	NA	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.38	< 0.615905	< 0.52	1.56	0.966	2.09	NA
Arsenic	7440-38-2	mg/kg	19	1.7	4.68	3.3	4.19	1.81	36.1	NA
Beryllium	7440-41-7	mg/kg	1.08	0.52	0.513	0.62	0.704	0.639	0.65	NA
Cadmium	7440-43-9	mg/kg	2	< 0.23	< 0.307953	< 0.31	< 2.77	< 0.521	0.0787	NA
Copper	7440-50-8	mg/kg	11000	12.7	16.4	10.9	13.9	13.8	33.9	NA
Lead	7439-92-1	mg/kg	90	3.6	20.7	11.5	6.06	3.65	104	NA
Mercury	7439-97-6	mg/kg	0.32	< 0.03	0.113	0.06	0.0315	0.012	1.47	NA
Nickel	7440-02-0	mg/kg	48	6.7	6.06	7.4	8	6.19	9.38	NA
Selenium	7782-49-2	mg/kg	11	< 0.38	< 0.513254	< 0.52	< 2.21	< 2.08	< 2.25	NA
Thallium	7440-28-0	mg/kg	3	< 0.75	< 1.026509	< 1	< 2.21	< 2.08	< 2.25	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 350	243	< 400	< 190	< 170	620	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 350	< 383.229	< 400	< 190	< 170	220	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-27 Impact to Groundwater Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B13-14	TP-RD-B13-15
			Sample Date	12/1/2017	12/1/2017
			Sample Depths	3.0-3.5 ft	1.0-1.5 ft
			Sample ID	TP-RD-B13-14(03.0-03.5)	TP-RD-B13-15(01.0-01.5)
			Parent ID		
			Notes		
Chemical	CAS Number	Units	IGWSRS		
Explosives					
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 120	< 120
Metals					
Antimony	7440-36-0	mg/kg	6	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA
SVOCs					
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-28 Impact to Groundwater Functional Area 18 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	B13-757-04	B13-757-04	C13-2-04	C13-2-05	C13-2-09	C13-2-14	SB-R-B13-01
				Sample Date	10/8/1999	10/8/1999	4/18/2000	4/18/2000	10/29/1999	10/29/1999	5/18/2006
				Sample Depths	0.0-0.2 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft
				Sample ID	B13-757-040.2N	B13-757-042FD	C13-2-042N	C13-2-052N	C13-2-092N	C13-2-142N	SB-R-B13-011.0N
				Parent ID		B13-757-040.2N					
				Notes							
Chemical	CAS Number	Units	IGWSRS								
Explosives											
1,3-Dinitrobenzene	99-65-0	ug/kg	500	1500	1700	NA	NA	NA	< 220	< 360
Nitrobenzene	98-95-3	ug/kg	200	< 210	< 200	< 40	< 40	< 400	< 220	NA
Metals											
Antimony	7440-36-0	mg/kg	6	< 0.4	< 0.45	< 0.6	< 0.6	< 0.51	< 0.52	< 2.33
Arsenic	7440-38-2	mg/kg	19	8.2	5.1	4.7	4.7	3.8	4.5	3.21
Beryllium	7440-41-7	mg/kg	1.08	0.74	0.48	0.8	0.81	0.78	0.75	0.729
Cadmium	7440-43-9	mg/kg	2	< 0.24	< 0.27	0.91	0.9	0.47	0.29	< 2.92
Copper	7440-50-8	mg/kg	11000	14.6	14.9	17.2	18.2	14.7	18.1	10.3
Lead	7439-92-1	mg/kg	90	69.2	110	14.8	10.1	13	29.5	8.86
Mercury	7439-97-6	mg/kg	0.32	0.03	0.03	< 0	< 0	0.04	0.07	0.0453
Nickel	7440-02-0	mg/kg	48	9.1	8.8	7.5	9.3	7	7.9	9.59
Selenium	7782-49-2	mg/kg	11	1.2	0.8	1.4	1.2	0.48	0.72	< 2.33
Thallium	7440-28-0	mg/kg	3	< 0.8	< 0.89	< 1	< 1	< 1	< 1	< 2.33
SVOCs											
Benzo[a]pyrene	50-32-8	ug/kg	3000	170	110	< 40	< 40	< 400	< 4100	< 200
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 450	< 370	< 40	< 40	< 400	890	< 200

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-28 Impact to Groundwater Functional Area 18 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-B13-01	SB-R-B13-01	TP-R-B13-2-4	TP-RD-B13-05	TP-RD-B13-05	TP-RD-B13-06	TP-RD-B13-06
			Sample Date	5/18/2006	5/18/2006	8/2/2006	12/1/2017	12/1/2017	11/8/2017	11/8/2017
			Sample Depths	2.0-2.5 ft	2.0-2.5 ft	1.5-2.0 ft	1.0-1.5 ft	3.0-3.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	SB-R-B13-012.5FD	SB-R-B13-012.5N	TP-R-B13-2-42.0N	TP-RD-B13-05(01.0-01.5)	TP-RD-B13-05(03.0-03.5)	TP-RD-B13-06(01.0-01.5)	TP-RD-B13-06(03.0-03.5)
			Parent ID	SB-R-B13-012.5N						
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 330	< 340	< 330	< 120	< 120	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	NA	< 120	< 120	< 120	< 120
Metals										
Antimony	7440-36-0	mg/kg	6	< 2.18	< 2.17	< 2.15	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	2.04	2.61	2.65	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.651	0.684	0.802	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 2.73	< 2.71	< 0.537	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	12.3	13.5	16	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	3.47	3.9	6.15	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.0258	0.0156	0.0354	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	9.14	8.11	10.4	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	< 2.18	< 2.17	< 2.15	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 2.18	< 2.17	1.92	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 190	< 190	< 180	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 190	< 190	< 180	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-28 Impact to Groundwater Functional Area 18 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B13-11	TP-RD-B13-12	TP-RD-B13-12
			Sample Date	12/1/2017	12/1/2017	12/1/2017
			Sample Depths	1.0-1.5 ft	1.0-1.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-B13-11(01.0-01.5)	TP-RD-B13-12(01.0-01.5)	TP-RD-B13-12(03.0-03.5)
			Parent ID			
			Notes			
Chemical	CAS Number	Units	IGWSRS			
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110
Metals						
Antimony	7440-36-0	mg/kg	6	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-29 Impact to Groundwater Functional Area 18 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C13-262B-01	C13-2-18	C13-262B-05	TP-R-B13-2-6	TP-R-B13-2-4	TP-RD-B13-05	TP-RD-B13-05
			Sample Date	11/1/1999	4/18/2000	11/1/1999	8/2/2006	8/2/2006	12/1/2017	12/1/2017
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	1.5-2.0 ft	5.5-6.0 ft	5.0-5.5 ft	5.0-5.5 ft
			Sample ID	C13-262B-012N	C13-2-182N	C13-262B-052N	TP-R-B13-2-62.0N	TP-R-B13-2-46.0N	BD120117B	TP-RD-B13-05(05.0-05.5)
			Parent ID						TP-RD-B13-05(05.0-05.5)	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 220	NA	< 240	5400	< 310	< 110	< 110 J
Nitrobenzene	98-95-3	ug/kg	200	< 220	< 41	< 240	NA	NA	< 110	< 110
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.42	< 0.7	< 0.49	1.02	< 2.08	NA	NA
Arsenic	7440-38-2	mg/kg	19	22.7	2.9	2	2.39	1.82	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.39	0.76	0.77	0.537	0.648	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 0.25	0.69	< 0.29	< 0.563	< 0.52	NA	NA
Copper	7440-50-8	mg/kg	11000	24.8	14.3	24.6	46.8	14.4	NA	NA
Lead	7439-92-1	mg/kg	90	51.9	13.7	13.2	16.1	2.67	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.08	< 0	0.03	0.0328	0.0148	NA	NA
Nickel	7440-02-0	mg/kg	48	4.8	7.8	10.5	7.16	5.86	NA	NA
Selenium	7782-49-2	mg/kg	11	0.36	0.79	0.46	< 2.25	< 2.08	NA	NA
Thallium	7440-28-0	mg/kg	3	< 0.84	< 1	< 0.97	< 2.25	< 2.08	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 350	< 41	< 350	< 960	< 170	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 350	210	< 350	< 960	< 170	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-29 Impact to Groundwater Functional Area 18 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B13-06	TP-RD-B13-11	TP-RD-B13-12
			Sample Date	11/8/2017	12/1/2017	12/1/2017
			Sample Depths	5.0-5.5 ft	3.0-3.5 ft	5.0-5.5 ft
			Sample ID	TP-RD-B13-06(05.0-05.5)	TP-RD-B13-11(03.0-03.5)	TP-RD-B13-12(05.0-05.5)
			Parent ID			
			Notes			
Chemical	CAS Number	Units	IGWSRS			
Explosives						
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110	< 110
Metals						
Antimony	7440-36-0	mg/kg	6	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA
SVOCs						
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-30 Impact to Groundwater Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B13-682-03	B13-682-04	B13-682-06	B13-724-01	B13-724-01	B13-724-01	B13-724-01
			Sample Date	10/8/1999	10/8/1999	10/8/1999	7/21/2000	7/21/2000	7/21/2000	7/21/2000
			Sample Depths	0.0-0.8 ft	0.0-1.3 ft	0.0-1.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.5-1.0 ft	0.5-1.0 ft
			Sample ID	B13-682-030.8N	B13-682-041.3N	B13-682-061N	B13-724-012FD	B13-724-012N	B13-724-010.5FD	B13-724-010.5N
			Parent ID				B13-724-012N		B13-724-010.5N	
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 230	3900	1000	9850	9110	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 230	< 210	< 250	< 238	< 250	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.53	< 0.69	< 0.38	< 0.493	< 0.671	NA	NA
Arsenic	7440-38-2	mg/kg	19	5.2	17	2.7	3.83	4.31	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.63	0.88	0.64	0.697	0.761	NA	NA
Cadmium	7440-43-9	mg/kg	2	0.99	< 0.41	< 0.23	1.13	1.36	NA	NA
Copper	7440-50-8	mg/kg	11000	33.6	43.1	122	17.9	31.3	NA	NA
Lead	7439-92-1	mg/kg	90	156	82.5	74.5	43.9	67	NA	NA
Mercury	7439-97-6	mg/kg	0.32	3.8	0.49	0.02	0.158	0.21	NA	NA
Nickel	7440-02-0	mg/kg	48	11.7	15.5	7.5	7.11	7.97	NA	NA
Selenium	7782-49-2	mg/kg	11	1.1	1.7	0.53	1.1	1.07	NA	NA
Thallium	7440-28-0	mg/kg	3	< 1.1	< 1.4	0.5	< 0.821	< 1.12	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	150	57	< 460	< 40100	< 4100	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 400	< 560	< 460	< 40100	< 4100	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-30 Impact to Groundwater Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	B13-724-05	B13-724-05	B13-724-05	B13-724-05	C13-2-03	C13-2-08	C13-2-13
			Sample Date	10/8/1999	10/8/1999	10/8/1999	10/8/1999	10/29/1999	4/18/2000	4/18/2000
			Sample Depths	0.0-0.5 ft	0.0-0.5 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
			Sample ID	B13-724-050.5FD	B13-724-050.5N	B13-724-052FD	B13-724-052N	C13-2-032N	C13-2-082N	C13-2-132N
			Parent ID	B13-724-050.5N		B13-724-052N				
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	< 240	< 250	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	NA	NA	< 240	< 250	< 510	< 41	< 42
Metals										
Antimony	7440-36-0	mg/kg	6	NA	NA	< 0.48	< 0.54	< 0.41	< 0.6	< 0.7
Arsenic	7440-38-2	mg/kg	19	NA	NA	5.3	5.3	4.1	4.3	3.5
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	0.79	0.82	0.89	0.63	0.79
Cadmium	7440-43-9	mg/kg	2	NA	NA	< 0.29	< 0.32	0.44	0.71	0.79
Copper	7440-50-8	mg/kg	11000	NA	NA	15.9	17.4	11.6	10.8	12.4
Lead	7439-92-1	mg/kg	90	NA	NA	24.4	21.4	24.4	8.1	11
Mercury	7439-97-6	mg/kg	0.32	NA	NA	0.05	0.06	0.04	< 0	< 0
Nickel	7440-02-0	mg/kg	48	NA	NA	9.2	9.1	7.1	6.2	6.3
Selenium	7782-49-2	mg/kg	11	NA	NA	1.1	1.5	0.69	1.1	0.73
Thallium	7440-28-0	mg/kg	3	NA	NA	< 0.95	< 1.1	< 0.83	< 1	< 1
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA	25	< 390	< 510	< 41	< 42
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA	< 390	< 390	< 510	< 41	< 42

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-30 Impact to Groundwater Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C13-2-17	SB-R-C13-02	SB-R-C13-02	TP-R-B13-2-5	TP-RD-B13-07	TP-RD-B14-02
			Sample Date	4/18/2000	5/19/2006	5/19/2006	8/2/2006	11/8/2017	11/8/2017
			Sample Depths	0.0-2.0 ft	0.5-1.0 ft	2.5-3.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	C13-2-172N	SB-R-C13-021.0N	SB-R-C13-023.0N	TP-R-B13-2-52.0N	TP-RD-B13-07(01.0-01.5)	TP-RD-B14-02(01.0-01.5)
			Parent ID						
			Notes						
Chemical	CAS Number	Units	IGWSRS						
Explosives									
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 380	< 320	< 340	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 41	NA	NA	NA	< 120	< 120
Metals									
Antimony	7440-36-0	mg/kg	6	< 0.7	< 2.47	0.991	1.19	NA	NA
Arsenic	7440-38-2	mg/kg	19	4.5	3.52	1.47	3.52	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.81	0.81	0.442	0.853	NA	NA
Cadmium	7440-43-9	mg/kg	2	0.84	0.643	< 2.61	< 0.541	NA	NA
Copper	7440-50-8	mg/kg	11000	14.3	9.5	10	15.1	NA	NA
Lead	7439-92-1	mg/kg	90	13.2	17.7	2.21	6.99	NA	NA
Mercury	7439-97-6	mg/kg	0.32	< 0	0.0319	< 0.0994	0.0669	NA	NA
Nickel	7440-02-0	mg/kg	48	9.4	7.03	5.99	9.51	NA	NA
Selenium	7782-49-2	mg/kg	11	1	< 2.47	< 2.09	< 2.17	NA	NA
Thallium	7440-28-0	mg/kg	3	< 1	< 2.47	< 2.09	< 2.17	NA	NA
SVOCs									
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 41	< 210	< 180	< 190	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 41	< 210	< 180	< 190	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-31 Impact to Groundwater Functional Area 19 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-RD-B13-07	TP-RD-B14-02
			Sample Date	11/8/2017	11/8/2017
			Sample Depths	3.0-3.5 ft	3.0-3.5 ft
			Sample ID	TP-RD-B13-07(03.0-03.5)	TP-RD-B14-02(03.0-03.5)
			Parent ID		
			Notes		
Chemical	CAS Number	Units	IGWSRS		
Explosives					
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 110	< 110
Nitrobenzene	98-95-3	ug/kg	200	< 110	< 110
Metals					
Antimony	7440-36-0	mg/kg	6	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA
SVOCs					
Benzo[a]pyrene	50-32-8	ug/kg	3000	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-32 Impact to Groundwater Functional Area 20 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C13-1-11	C13-1-17	C13-2-02	C13-2-06	C13-2-07	C13-2-11	C13-2-12
			Sample Date	11/2/1999	11/2/1999	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft
			Sample ID	C13-1-112N	C13-1-172N	C13-2-022N	C13-2-062N	C13-2-072N	C13-2-112N	C13-2-122N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 4200	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	< 410	< 4200	< 41	< 41	< 42	< 40	< 41
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.5	< 0.43	< 0.6	< 0.6	< 0.7	< 0.6	< 0.6
Arsenic	7440-38-2	mg/kg	19	5	4.8	3.7	3.1	4.4	4.3	4.2
Beryllium	7440-41-7	mg/kg	1.08	0.81	0.86	0.89	0.59	0.79	0.89	0.81
Cadmium	7440-43-9	mg/kg	2	1	0.56	0.7	0.58	0.77	0.91	0.81
Copper	7440-50-8	mg/kg	11000	13.3	13.2	9.9	10.9	11.5	18.7	16.5
Lead	7439-92-1	mg/kg	90	24	21.4	12.1	8.9	12.4	11.2	23.8
Mercury	7439-97-6	mg/kg	0.32	0.06	0.08	< 0	< 0	< 0	< 0	< 0
Nickel	7440-02-0	mg/kg	48	8	7.7	7.2	7.2	8.6	11.7	9.8
Selenium	7782-49-2	mg/kg	11	0.52	0.82	1	0.85	1.3	1.2	0.86
Thallium	7440-28-0	mg/kg	3	< 1	< 0.85	< 1	< 1	< 1	< 1	< 1
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 410	NA	< 41	< 41	< 42	< 40	< 41
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 410	NA	< 41	< 41	< 42	< 40	220

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-32 Impact to Groundwater Functional Area 20 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

				Location	C13-2-16	SB-R-B14-01	SD-B13-2-01	SD-B13-2-01	TP-RD-B14-01	TP-RD-B14-03
				Sample Date	4/18/2000	5/18/2006	5/1/2001	5/1/2001	11/8/2017	11/30/2017
				Sample Depths	0.0-2.0 ft	0.8-1.3 ft	0.5-1.0 ft	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft
				Sample ID	C13-2-162N	SB-R-B14-011.33N	SD-B13-2-011N	SD-B13-2-012N	TP-RD-B14-01(01.0-01.5)	TP-RD-B14-03(01.0-01.5)
				Parent ID						
				Notes						
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 360	NA	< 11000	< 120	< 130
Nitrobenzene	98-95-3	ug/kg	200	< 40	NA	NA	< 11000	< 120	< 130
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.6	1.45	NA	1	NA	NA
Arsenic	7440-38-2	mg/kg	19	3.6	4.52	NA	4.3	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.7	0.803	NA	0.89	NA	NA
Cadmium	7440-43-9	mg/kg	2	0.75	< 3.02	NA	< 0.063	NA	NA
Copper	7440-50-8	mg/kg	11000	11.5	13.1	NA	17.5	NA	NA
Lead	7439-92-1	mg/kg	90	14.1	8.53	NA	12.4	NA	NA
Mercury	7439-97-6	mg/kg	0.32	< 0	0.0363	NA	0.052	NA	NA
Nickel	7440-02-0	mg/kg	48	8.7	9.32	NA	10.1	NA	NA
Selenium	7782-49-2	mg/kg	11	0.84	< 2.42	NA	< 0.55	NA	NA
Thallium	7440-28-0	mg/kg	3	< 1	< 2.42	NA	< 0.97	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 40	< 200	NA	< 38	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 40	< 200	NA	< 38	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-33 Impact to Groundwater Functional Area 20 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C13-3-02	SB-R-C13-01	TP-RD-B14-01	TP-RD-B14-03	TP-RD-B14-04
			Sample Date	11/4/1999	5/18/2006	11/8/2017	11/30/2017	11/30/2017
			Sample Depths	0.0-2.0 ft	0.8-1.3 ft	3.0-3.5 ft	3.0-3.5 ft	3.0-3.5 ft
			Sample ID	C13-3-022N	SB-R-C13-011.33N	TP-RD-B14-01(03.0-03.5)	TP-RD-B14-03(03.0-03.5)	TP-RD-B14-04(03.0-03.5)
			Parent ID					
			Notes					
Chemical	CAS Number	Units	IGWSRS					
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 250	< 340	< 110	< 120	< 120
Nitrobenzene	98-95-3	ug/kg	200	< 250	NA	< 110	< 120	< 120
Metals								
Antimony	7440-36-0	mg/kg	6	< 0.36	1.02	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	3.8	2.62	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.69	0.631	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 0.21	< 0.542	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	11.2	12.7	NA	NA	NA
Lead	7439-92-1	mg/kg	90	14.5	9.43	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.07	0.0213	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	7.3	8.14	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	0.97	< 2.17	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 0.71	< 2.17	NA	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 450	< 190	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 450	100	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-34 Impact to Groundwater Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C13-1-08	C13-2-01	C13-2-01	C13-742-01	C13-742-01	C13-742-05	SB-R-C14-02
			Sample Date	11/2/1999	10/29/1999	10/29/1999	10/29/1999	10/29/1999	10/29/1999	5/18/2006
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.0-2.0 ft	0.8-1.3 ft
			Sample ID	C13-1-082N	C13-2-012FD	C13-2-012N	C13-742-012FD	C13-742-012N	C13-742-052N	SB-R-C14-021.25N
			Parent ID		C13-2-012N		C13-742-012N			
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	NA	< 220	< 230	< 200	< 360
Nitrobenzene	98-95-3	ug/kg	200	< 400	< 400	< 390	< 220	< 230	< 200	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.51	< 0.51	< 0.44	< 0.47	< 0.46	< 0.5	1.11
Arsenic	7440-38-2	mg/kg	19	5.1	4	4.1	4.3	4.3	3.8	3.68
Beryllium	7440-41-7	mg/kg	1.08	0.84	0.83	0.79	0.81	0.8	0.78	0.698
Cadmium	7440-43-9	mg/kg	2	0.56	0.38	0.4	0.42	0.38	0.39	< 2.87
Copper	7440-50-8	mg/kg	11000	54.3	17.1	19.7	11.2	10.7	11.7	10.9
Lead	7439-92-1	mg/kg	90	13.6	144	159	16.1	11.2	18.2	6.15
Mercury	7439-97-6	mg/kg	0.32	0.04	0.29	0.28	0.05	0.05	0.04	0.026
Nickel	7440-02-0	mg/kg	48	9.5	8.4	8.9	7.9	8.6	8.9	9.12
Selenium	7782-49-2	mg/kg	11	0.88	0.63	0.46	0.62	0.77	0.66	< 2.29
Thallium	7440-28-0	mg/kg	3	< 1	< 1	< 0.88	< 0.93	< 0.91	< 0.99	< 2.29
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 400	120	130	< 410	< 400	< 390	< 200
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 400	< 400	< 390	< 410	< 400	< 390	< 200

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-35 Impact to Groundwater Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C13-1-01	SB-R-C14-01
			Sample Date	11/2/1999	5/18/2006
			Sample Depths	0.0-2.0 ft	0.5-1.0 ft
			Sample ID	C13-1-012N	SB-R-C14-011.0N
			Parent ID		
			Notes		
Chemical	CAS Number	Units	IGWSRS		
Explosives					
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	< 330
Nitrobenzene	98-95-3	ug/kg	200	< 390	NA
Metals					
Antimony	7440-36-0	mg/kg	6	< 0.46	1.54
Arsenic	7440-38-2	mg/kg	19	4.9	2.66
Beryllium	7440-41-7	mg/kg	1.08	0.68	0.654
Cadmium	7440-43-9	mg/kg	2	1	< 2.79
Copper	7440-50-8	mg/kg	11000	438	14.2
Lead	7439-92-1	mg/kg	90	51.7	4.87
Mercury	7439-97-6	mg/kg	0.32	0.03	0.0175
Nickel	7440-02-0	mg/kg	48	9.7	11.7
Selenium	7782-49-2	mg/kg	11	0.7	< 2.23
Thallium	7440-28-0	mg/kg	3	< 0.93	< 2.23
SVOCs					
Benzo[a]pyrene	50-32-8	ug/kg	3000	< 390	< 190
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 390	< 190

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-36 Impact to Groundwater Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	C13-133-03	C13-133-05	SB-R-C14-01	TP-R-C13-666-1	TP-R-C13-666-2	TP-R-C13-666-3	TP-R-C13-666-4
			Sample Date	7/6/2000	11/4/1999	5/18/2006	8/17/2006	8/17/2006	8/16/2006	8/17/2006
			Sample Depths	0.0-2.0 ft	0.0-2.0 ft	2.0-2.5 ft	1.0-1.5 ft	1.0-1.5 ft	0.5-1.0 ft	0.5-1.0 ft
			Sample ID	C13-133-032N	C13-133-052N	SB-R-C14-012.5N	TP-R-C13-666-11.5N	TP-R-C13-666-21.5N	TP-R-C13-666-31.0N	TP-R-C13-666-41.0N
			Parent ID							
			Notes							
Chemical	CAS Number	Units	IGWSRS							
Explosives										
1,3-Dinitrobenzene	99-65-0	ug/kg	500	NA	NA	< 320	980	< 300	< 340	180
Nitrobenzene	98-95-3	ug/kg	200	< 442.204	< 390	NA	NA	NA	NA	NA
Metals										
Antimony	7440-36-0	mg/kg	6	< 0.737007	< 0.52	1.08	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	4.39	3.3	1.72	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.571	0.74	0.645	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	0.902	< 0.31	< 2.6	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	16.1	12	15.2	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	23	9.3	2.91	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.107	0.04	0.005	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	8.13	8.1	8.42	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	1.19	1	< 2.08	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 1.228344	< 1	< 2.08	NA	NA	NA	NA
SVOCs										
Benzo[a]pyrene	50-32-8	ug/kg	3000	136	98	< 180	300	< 42000	< 190	< 180
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	NA	< 390	< 180	< 200	< 42000	< 190	< 180

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-36 Impact to Groundwater Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	TP-R-C13-666-5	TP-RD-C13-02	TP-RD-C13-04	TP-RD-C13-04A
			Sample Date	8/17/2006	11/7/2017	11/8/2017	12/4/2017
			Sample Depths	0.5-1.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	TP-R-C13-666-51.0N	TP-RD-C13-02(01.0-01.5)	TP-RD-C13-04(01.0-01.5)	TP-RD-C13-04A(01.0-01.5)
			Parent ID				
			Notes				
Chemical	CAS Number	Units	IGWSRS				
Explosives							
1,3-Dinitrobenzene	99-65-0	ug/kg	500	2300	< 130	< 130	< 120
Nitrobenzene	98-95-3	ug/kg	200	NA	< 130	< 130	< 120
Metals							
Antimony	7440-36-0	mg/kg	6	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NA	NA	NA	NA
SVOCs							
Benzo[a]pyrene	50-32-8	ug/kg	3000	420	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 170	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 3-37 Impact to Groundwater Functional Area 23 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

			Location	SB-R-D14-01	TP-RD-C13-01A	TP-RD-C13-02A	TP-RD-D13-01	TP-RD-D14-01
			Sample Date	8/8/2006	11/8/2017	11/8/2017	12/1/2017	12/1/2017
			Sample Depths	1.5-2.0 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft	1.0-1.5 ft
			Sample ID	SB-R-D14-012.0N	TP-RD-C13-01A(01.0-01.5)	TP-RD-C13-02A(01.0-01.5)	TP-RD-D13-01(01.0-01.5)	TP-RD-D14-01(01.0-01.5)
			Parent ID					
			Notes					
Chemical	CAS Number	Units	IGWSRS					
Explosives								
1,3-Dinitrobenzene	99-65-0	ug/kg	500	< 370	< 1200	< 120	< 130	< 120
Nitrobenzene	98-95-3	ug/kg	200	NA	< 1200	< 120	< 130	< 120
Metals								
Antimony	7440-36-0	mg/kg	6	1.31	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	3.64	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	0.681	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	< 3.08	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	59.9	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	59.4	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	0.0499	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	8.59	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	< 2.46	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	< 2.46	NA	NA	NA	NA
SVOCs								
Benzo[a]pyrene	50-32-8	ug/kg	3000	240	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	< 210	NA	NA	NA	NA

Notes:
Exceeds Impact to Groundwater Soil Remediation Standard (IGWSRS)
Exceeds Residential Direct Contact Soil Remediation Standard (RDCSRS)
Exceeds Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS)
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SVOCs = semivolatile organic compounds
NA = not analyzed
< = non-detect. The value presented is the reporting limit
J = The analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.

Exhibit 4

95UCL Outputs – Direct Contact

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:47:25 PM
From File	5_shallow_lead_noND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead

General Statistics

Total Number of Observations	17	Number of Distinct Observations	17
		Number of Missing Observations	3
Minimum	6.4	Mean	457.1
Maximum	3070	Median	137
SD	780.1	Std. Error of Mean	189.2
Coefficient of Variation	1.707	Skewness	2.776

Normal GOF Test

Shapiro Wilk Test Statistic	0.605	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.306	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.207	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	787.4	95% Adjusted-CLT UCL (Chen-1995)	904.4
		95% Modified-t UCL (Johnson-1978)	808.6

Gamma GOF Test

A-D Test Statistic	0.536	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.792	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.172	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.22	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.575	k star (bias corrected MLE)	0.512
Theta hat (MLE)	795.5	Theta star (bias corrected MLE)	892
nu hat (MLE)	19.54	nu star (bias corrected)	17.42
MLE Mean (bias corrected)	457.1	MLE Sd (bias corrected)	638.5
		Approximate Chi Square Value (0.05)	8.974
Adjusted Level of Significance	0.0346	Adjusted Chi Square Value	8.344

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	887.3	95% Adjusted Gamma UCL (use when n<50)	954.3

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.991	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.075	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.207	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.856	Mean of logged Data	5.043
Maximum of Logged Data	8.029	SD of logged Data	1.586

Assuming Lognormal Distribution

95% H-UCL	2299	90% Chebyshev (MVUE) UCL	1111
95% Chebyshev (MVUE) UCL	1401	97.5% Chebyshev (MVUE) UCL	1803
99% Chebyshev (MVUE) UCL	2592		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	768.3	95% Jackknife UCL	787.4
95% Standard Bootstrap UCL	765.6	95% Bootstrap-t UCL	1406
95% Hall's Bootstrap UCL	1997	95% Percentile Bootstrap UCL	781
95% BCA Bootstrap UCL	932.1		
90% Chebyshev(Mean, Sd) UCL	1025	95% Chebyshev(Mean, Sd) UCL	1282
97.5% Chebyshev(Mean, Sd) UCL	1639	99% Chebyshev(Mean, Sd) UCL	2340

Suggested UCL to Use

95% Adjusted Gamma UCL	954.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:48:09 PM
From File	7_deep_benzo_wND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo[a]pyrene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	9
		Number of Missing Observations	4
Number of Detects	5	Number of Non-Detects	19
Number of Distinct Detects	5	Number of Distinct Non-Detects	4
Minimum Detect	48	Minimum Non-Detect	90
Maximum Detect	3600	Maximum Non-Detect	490
Variance Detects	2445432	Percent Non-Detects	79.17%
Mean Detects	807	SD Detects	1564
Median Detects	65	CV Detects	1.938
Skewness Detects	2.219	Kurtosis Detects	4.936
Mean of Logged Detects	5.184	SD of Logged Detects	1.805

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.593	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.437	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	214.7	KM Standard Error of Mean	161.4
KM SD	707.1	95% KM (BCA) UCL	528.8
95% KM (t) UCL	491.4	95% KM (Percentile Bootstrap) UCL	506
95% KM (z) UCL	480.2	95% KM Bootstrap t UCL	6385
90% KM Chebyshev UCL	699	95% KM Chebyshev UCL	918.4
97.5% KM Chebyshev UCL	1223	99% KM Chebyshev UCL	1821

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.807	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.721	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.338	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.374	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.431	k star (bias corrected MLE)	0.306
Theta hat (MLE)	1873	Theta star (bias corrected MLE)	2640
nu hat (MLE)	4.309	nu star (bias corrected)	3.057
Mean (detects)	807		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	239.1
Maximum	3600	Median	0.01
SD	732.8	CV	3.065
k hat (MLE)	0.14	k star (bias corrected MLE)	0.15
Theta hat (MLE)	1709	Theta star (bias corrected MLE)	1592
nu hat (MLE)	6.717	nu star (bias corrected)	7.211
Adjusted Level of Significance (β)	0.0392		
Approximate Chi Square Value (7.21, α)	2.287	Adjusted Chi Square Value (7.21, β)	2.097
95% Gamma Approximate UCL (use when n>=50)	753.9	95% Gamma Adjusted UCL (use when n<50)	822.2

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	214.7	SD (KM)	707.1
Variance (KM)	500017	SE of Mean (KM)	161.4
k hat (KM)	0.0922	k star (KM)	0.108
nu hat (KM)	4.425	nu star (KM)	5.205
theta hat (KM)	2329	theta star (KM)	1980
80% gamma percentile (KM)	166.5	90% gamma percentile (KM)	589.3
95% gamma percentile (KM)	1239	99% gamma percentile (KM)	3274

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (5.20, α)	1.248	Adjusted Chi Square Value (5.20, β)	1.119
95% Gamma Approximate KM-UCL (use when n>=50)	895.4	95% Gamma Adjusted KM-UCL (use when n<50)	998.7

95% Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50)

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.793	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	236	Mean in Log Scale	4.336
SD in Original Scale	720.1	SD in Log Scale	1.173
95% t UCL (assumes normality of ROS data)	487.9	95% Percentile Bootstrap UCL	527.7
95% BCA Bootstrap UCL	701.7	95% Bootstrap t UCL	2223

95% H-UCL (Log ROS)	300.4

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.295	KM Geo Mean	73.35
KM SD (logged)	0.877	95% Critical H Value (KM-Log)	2.384
KM Standard Error of Mean (logged)	0.214	95% H-UCL (KM -Log)	166.6
KM SD (logged)	0.877	95% Critical H Value (KM-Log)	2.384
KM Standard Error of Mean (logged)	0.214		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	214	Mean in Log Scale	4.204
SD in Original Scale	723.5	SD in Log Scale	0.971
95% t UCL (Assumes normality)	467.1	95% H-Stat UCL	178.1

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)	998.7

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:48:58 PM
From File	7_deep_lead_noND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead

General Statistics

Total Number of Observations	23	Number of Distinct Observations	22
		Number of Missing Observations	5
Minimum	1.89	Mean	141.9
Maximum	990	Median	5.81
SD	274.7	Std. Error of Mean	57.28
Coefficient of Variation	1.936	Skewness	2.202

Normal GOF Test

Shapiro Wilk Test Statistic	0.586	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.372	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.18	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	240.3	95% Adjusted-CLT UCL (Chen-1995)	264.2
		95% Modified-t UCL (Johnson-1978)	244.6

Gamma GOF Test

A-D Test Statistic	2.533	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.843	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.323	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.196	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.328	k star (bias corrected MLE)	0.314
Theta hat (MLE)	432.8	Theta star (bias corrected MLE)	451.8
nu hat (MLE)	15.08	nu star (bias corrected)	14.45
MLE Mean (bias corrected)	141.9	MLE Sd (bias corrected)	253.2
		Approximate Chi Square Value (0.05)	6.878
Adjusted Level of Significance	0.0389	Adjusted Chi Square Value	6.501

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	298	95% Adjusted Gamma UCL (use when n<50)	315.3

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.824	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.252	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.18	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.637	Mean of logged Data	2.882
Maximum of Logged Data	6.898	SD of logged Data	2.097

Assuming Lognormal Distribution

95% H-UCL	1060	90% Chebyshev (MVUE) UCL	335.9
95% Chebyshev (MVUE) UCL	431.3	97.5% Chebyshev (MVUE) UCL	563.5
99% Chebyshev (MVUE) UCL	823.4		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	236.1	95% Jackknife UCL	240.3
95% Standard Bootstrap UCL	231.9	95% Bootstrap-t UCL	320.7
95% Hall's Bootstrap UCL	262	95% Percentile Bootstrap UCL	240.2
95% BCA Bootstrap UCL	270.6		
90% Chebyshev(Mean, Sd) UCL	313.7	95% Chebyshev(Mean, Sd) UCL	391.6
97.5% Chebyshev(Mean, Sd) UCL	499.6	99% Chebyshev(Mean, Sd) UCL	711.9

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	499.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:49:41 PM
From File	7_shallow_arsenic_noND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	22	Number of Distinct Observations	22
		Number of Missing Observations	6
Minimum	1.65	Mean	5.761
Maximum	41	Median	3.93
SD	7.967	Std. Error of Mean	1.699
Coefficient of Variation	1.383	Skewness	4.508

Normal GOF Test

Shapiro Wilk Test Statistic	0.356	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.392	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.184	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.684	95% Adjusted-CLT UCL (Chen-1995)	10.3
		95% Modified-t UCL (Johnson-1978)	8.956

Gamma GOF Test

A-D Test Statistic	3.101	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.757	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.29	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.188	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.901	k star (bias corrected MLE)	1.672
Theta hat (MLE)	3.03	Theta star (bias corrected MLE)	3.445
nu hat (MLE)	83.66	nu star (bias corrected)	73.59
MLE Mean (bias corrected)	5.761	MLE Sd (bias corrected)	4.455
		Approximate Chi Square Value (0.05)	54.83
Adjusted Level of Significance	0.0386	Adjusted Chi Square Value	53.63

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	7.732	95% Adjusted Gamma UCL (use when n<50)	7.906

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.741	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.215	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.184	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.501	Mean of logged Data	1.466
Maximum of Logged Data	3.714	SD of logged Data	0.595

Assuming Lognormal Distribution

95% H-UCL	6.782	90% Chebyshev (MVUE) UCL	7.176
95% Chebyshev (MVUE) UCL	8.106	97.5% Chebyshev (MVUE) UCL	9.397
99% Chebyshev (MVUE) UCL	11.93		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	8.555	95% Jackknife UCL	8.684
95% Standard Bootstrap UCL	8.495	95% Bootstrap-t UCL	20.24
95% Hall's Bootstrap UCL	20.79	95% Percentile Bootstrap UCL	9.118
95% BCA Bootstrap UCL	11.15		
90% Chebyshev(Mean, Sd) UCL	10.86	95% Chebyshev(Mean, Sd) UCL	13.16
97.5% Chebyshev(Mean, Sd) UCL	16.37	99% Chebyshev(Mean, Sd) UCL	22.66

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.16

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:50:19 PM
From File	8_shallow_copper_noND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Copper

General Statistics

Total Number of Observations	14	Number of Distinct Observations	14
		Number of Missing Observations	3
Minimum	11	Mean	3492
Maximum	48500	Median	16.6
SD	12954	Std. Error of Mean	3462
Coefficient of Variation	3.709	Skewness	3.742

Normal GOF Test

Shapiro Wilk Test Statistic	0.299	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.529	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9624	95% Adjusted-CLT UCL (Chen-1995)	12886
		95% Modified-t UCL (Johnson-1978)	10201

Gamma GOF Test

A-D Test Statistic	4.295	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.911	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.485	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.256	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.164	k star (bias corrected MLE)	0.177
Theta hat (MLE)	21232	Theta star (bias corrected MLE)	19746
nu hat (MLE)	4.606	nu star (bias corrected)	4.952
MLE Mean (bias corrected)	3492	MLE Sd (bias corrected)	8304
		Approximate Chi Square Value (0.05)	1.13
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	0.91

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	15303	95% Adjusted Gamma UCL (use when n<50)	19004

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.506	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.874	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.375	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.226	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.398	Mean of logged Data	3.549
Maximum of Logged Data	10.79	SD of logged Data	2.197

Assuming Lognormal Distribution

95% H-UCL	8558	90% Chebyshev (MVUE) UCL	754.7
95% Chebyshev (MVUE) UCL	981.5	97.5% Chebyshev (MVUE) UCL	1296
99% Chebyshev (MVUE) UCL	1915		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	9187	95% Jackknife UCL	9624
95% Standard Bootstrap UCL	9077	95% Bootstrap-t UCL	8475762
95% Hall's Bootstrap UCL	4748802	95% Percentile Bootstrap UCL	10408
95% BCA Bootstrap UCL	13893		
90% Chebyshev(Mean, Sd) UCL	13879	95% Chebyshev(Mean, Sd) UCL	18583
97.5% Chebyshev(Mean, Sd) UCL	25113	99% Chebyshev(Mean, Sd) UCL	37940

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	37940

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:50:53 PM
From File	9_shallow_benzo_noND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo[a]pyrene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	11
		Number of Missing Observations	4
Minimum	0	Mean	1202
Maximum	8200	Median	375
SD	2214	Std. Error of Mean	591.7
Coefficient of Variation	1.842	Skewness	2.818

Normal GOF Test

Shapiro Wilk Test Statistic	0.592	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.327	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2250	95% Adjusted-CLT UCL (Chen-1995)	2652
		95% Modified-t UCL (Johnson-1978)	2324

Gamma Statistics Not Available

Lognormal Statistics Not Available

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	2175	95% Jackknife UCL	2250
95% Standard Bootstrap UCL	2133	95% Bootstrap-t UCL	4719
95% Hall's Bootstrap UCL	5538	95% Percentile Bootstrap UCL	2241
95% BCA Bootstrap UCL	2721		
90% Chebyshev(Mean, Sd) UCL	2977	95% Chebyshev(Mean, Sd) UCL	3781
97.5% Chebyshev(Mean, Sd) UCL	4897	99% Chebyshev(Mean, Sd) UCL	7090

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3781

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:51:29 PM
From File	14_shallow_lead_noND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	1
Minimum	52	Mean	410.5
Maximum	2070	Median	247.5
SD	557.1	Std. Error of Mean	160.8
Coefficient of Variation	1.357	Skewness	2.775

Normal GOF Test

Shapiro Wilk Test Statistic	0.636	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	699.3	95% Adjusted-CLT UCL (Chen-1995)	812.7
		95% Modified-t UCL (Johnson-1978)	720.8

Gamma GOF Test

A-D Test Statistic	0.456	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.758	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.145	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.253	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.969	k star (bias corrected MLE)	0.782
Theta hat (MLE)	423.7	Theta star (bias corrected MLE)	524.8
nu hat (MLE)	23.25	nu star (bias corrected)	18.77
MLE Mean (bias corrected)	410.5	MLE Sd (bias corrected)	464.2
		Approximate Chi Square Value (0.05)	9.951
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	8.986

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	774.4	95% Adjusted Gamma UCL (use when n<50)	857.6

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.139	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.951	Mean of logged Data	5.419
Maximum of Logged Data	7.635	SD of logged Data	1.126

Assuming Lognormal Distribution

95% H-UCL	1240	90% Chebyshev (MVUE) UCL	809.2
95% Chebyshev (MVUE) UCL	997.1	97.5% Chebyshev (MVUE) UCL	1258
99% Chebyshev (MVUE) UCL	1770		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	675	95% Jackknife UCL	699.3
95% Standard Bootstrap UCL	664.5	95% Bootstrap-t UCL	1163
95% Hall's Bootstrap UCL	1724	95% Percentile Bootstrap UCL	703.7
95% BCA Bootstrap UCL	857.8		
90% Chebyshev(Mean, Sd) UCL	893	95% Chebyshev(Mean, Sd) UCL	1111
97.5% Chebyshev(Mean, Sd) UCL	1415	99% Chebyshev(Mean, Sd) UCL	2011

Suggested UCL to Use

95% Adjusted Gamma UCL	857.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 6:08:09 PM
From File	17_deep_13DNB_wND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,3-Dinitrobenzene

General Statistics

Total Number of Observations	11	Number of Distinct Observations	7
		Number of Missing Observations	34
Number of Detects	2	Number of Non-Detects	9
Number of Distinct Detects	2	Number of Distinct Non-Detects	5
Minimum Detect	5100	Minimum Non-Detect	155
Maximum Detect	120000	Maximum Non-Detect	175
Variance Detects	6.601E+9	Percent Non-Detects	81.82%
Mean Detects	62550	SD Detects	81247
Median Detects	62550	CV Detects	1.299
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	10.12	SD of Logged Detects	2.233

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	11500	KM Standard Error of Mean	14643
KM SD	34340	95% KM (BCA) UCL	N/A
95% KM (t) UCL	38039	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	35585	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	55427	95% KM Chebyshev UCL	75325
97.5% KM Chebyshev UCL	102943	99% KM Chebyshev UCL	157192

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.657	k star (bias corrected MLE)	N/A
Theta hat (MLE)	95158	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	2.629	nu star (bias corrected)	N/A
Mean (detects)	62550		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	11500	SD (KM)	34340
Variance (KM)	1.179E+9	SE of Mean (KM)	14643
k hat (KM)	0.112	k star (KM)	0.142
nu hat (KM)	2.467	nu star (KM)	3.128
theta hat (KM)	102546	theta star (KM)	80890
80% gamma percentile (KM)	11958	90% gamma percentile (KM)	33820
95% gamma percentile (KM)	63931	99% gamma percentile (KM)	152299

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (3.13, α)	0.411	Adjusted Chi Square Value (3.13, β)	0.29
95% Gamma Approximate KM-UCL (use when n>=50)	87466	95% Gamma Adjusted KM-UCL (use when n<50)	124131

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	11374	Mean in Log Scale	-0.816
SD in Original Scale	36060	SD in Log Scale	6.327
95% t UCL (assumes normality of ROS data)	31080	95% Percentile Bootstrap UCL	32730
95% BCA Bootstrap UCL	44100	95% Bootstrap t UCL	86417348
95% H-UCL (Log ROS)	6.154E+21		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	5.966	KM Geo Mean	389.8
KM SD (logged)	2.069	95% Critical H Value (KM-Log)	5.312
KM Standard Error of Mean (logged)	0.882	95% H-UCL (KM -Log)	107181
KM SD (logged)	2.069	95% Critical H Value (KM-Log)	5.312
KM Standard Error of Mean (logged)	0.882		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	11438	Mean in Log Scale	5.427
SD in Original Scale	36037	SD in Log Scale	2.424
95% t UCL (Assumes normality)	31132	95% H-Stat UCL	473022

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

KM Bootstrap t UCL	N/A

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Exhibit 4-9 ProUCL Output Functional Area 21 Shallow Arsenic
TNT Project Area Soil Secondary Consituents of Concern
Hercules LLC Former Kenvil Works Facility
Kenvil, NJ

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.14/25/2019 5:52:59 PM
From File	21_shallow_arsenic_noND_input.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	13
Minimum	1.9	Mean	9.178
Maximum	36.1	Median	4.21
SD	10.57	Std. Error of Mean	2.93
Coefficient of Variation	1.151	Skewness	1.851

Normal GOF Test

Shapiro Wilk Test Statistic	0.661	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.398	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.4	95% Adjusted-CLT UCL (Chen-1995)	15.61
		95% Modified-t UCL (Johnson-1978)	14.65

Gamma GOF Test

A-D Test Statistic	1.542	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.754	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.344	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.242	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.266	k star (bias corrected MLE)	1.025
Theta hat (MLE)	7.25	Theta star (bias corrected MLE)	8.954
nu hat (MLE)	32.91	nu star (bias corrected)	26.65
MLE Mean (bias corrected)	9.178	MLE Sd (bias corrected)	9.065
		Approximate Chi Square Value (0.05)	15.88
Adjusted Level of Significance	0.0301	Adjusted Chi Square Value	14.71

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	15.4	95% Adjusted Gamma UCL (use when n<50)	16.63

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.831	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.866	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.283	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.234	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.642	Mean of logged Data	1.772
Maximum of Logged Data	3.586	SD of logged Data	0.896

Assuming Lognormal Distribution

95% H-UCL	17.55	90% Chebyshev (MVUE) UCL	15.17
95% Chebyshev (MVUE) UCL	18.21	97.5% Chebyshev (MVUE) UCL	22.44
99% Chebyshev (MVUE) UCL	30.74		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	14	95% Jackknife UCL	14.4
95% Standard Bootstrap UCL	13.7	95% Bootstrap-t UCL	17.91
95% Hall's Bootstrap UCL	13.25	95% Percentile Bootstrap UCL	14.2
95% BCA Bootstrap UCL	15.61		
90% Chebyshev(Mean, Sd) UCL	17.97	95% Chebyshev(Mean, Sd) UCL	21.95
97.5% Chebyshev(Mean, Sd) UCL	27.48	99% Chebyshev(Mean, Sd) UCL	38.34

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	21.95

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Exhibit 5

95UCL Outputs – Impact to Groundwater

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 9:46:08 AM
From File	Functional Area 3 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Dinitrobenzene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	10
Number of Detects	3	Number of Non-Detects	12
Number of Distinct Detects	3	Number of Distinct Non-Detects	7
Minimum Detect	330	Minimum Non-Detect	55
Maximum Detect	840	Maximum Non-Detect	180
Variance Detects	81900	Percent Non-Detects	80%
Mean Detects	510	SD Detects	286.2
Median Detects	360	CV Detects	0.561
Skewness Detects	1.711	Kurtosis Detects	N/A
Mean of Logged Detects	6.14	SD of Logged Detects	0.516

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.794	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.367	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	146	KM Standard Error of Mean	66.37
KM SD	209.9	95% KM (BCA) UCL	N/A
95% KM (t) UCL	262.9	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	255.2	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	345.1	95% KM Chebyshev UCL	435.3
97.5% KM Chebyshev UCL	560.5	99% KM Chebyshev UCL	806.3

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	5.431	k star (bias corrected MLE)	N/A

Theta hat (MLE)	93.9	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	32.59	nu star (bias corrected)	N/A
Mean (detects)	510		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	102
Maximum	840	Median	0.01
SD	237.2	CV	2.326
k hat (MLE)	0.113	k star (bias corrected MLE)	0.135
Theta hat (MLE)	903.5	Theta star (bias corrected MLE)	756.9
nu hat (MLE)	3.387	nu star (bias corrected)	4.043
Adjusted Level of Significance (β)	0.0324		
Approximate Chi Square Value (4.04, α)	0.739	Adjusted Chi Square Value (4.04, β)	0.587
95% Gamma Approximate UCL (use when n>=50)	558.3	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	146	SD (KM)	209.9
Variance (KM)	44044	SE of Mean (KM)	66.37
k hat (KM)	0.484	k star (KM)	0.432
nu hat (KM)	14.52	nu star (KM)	12.95
theta hat (KM)	301.7	theta star (KM)	338.3
80% gamma percentile (KM)	237.5	90% gamma percentile (KM)	406.7
95% gamma percentile (KM)	590.8	99% gamma percentile (KM)	1050

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (12.95, α)	5.858	Adjusted Chi Square Value (12.95, β)	5.281
95% Gamma Approximate KM-UCL (use when n>=50)	322.7	95% Gamma Adjusted KM-UCL (use when n<50)	358

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.819	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.355	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	136	Mean in Log Scale	4.107
SD in Original Scale	222.8	SD in Log Scale	1.191
95% t UCL (assumes normality of ROS data)	237.3	95% Percentile Bootstrap UCL	236.2
95% BCA Bootstrap UCL	291.2	95% Bootstrap t UCL	355.6
95% H-UCL (Log ROS)	327.3		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.434	KM Geo Mean	84.25
KM SD (logged)	0.873	95% Critical H Value (KM-Log)	2.549
KM Standard Error of Mean (logged)	0.276	95% H-UCL (KM -Log)	223.7
KM SD (logged)	0.873	95% Critical H Value (KM-Log)	2.549
KM Standard Error of Mean (logged)	0.276		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	147.3	Mean in Log Scale	4.342
SD in Original Scale	218.2	SD in Log Scale	1.079
95% t UCL (Assumes normality)	246.6	95% H-Stat UCL	314.7

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	262.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 9:57:16 AM
From File	Functional Area 5 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Nitrobenzene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	12
		Number of Missing Observations	3
Number of Detects	1	Number of Non-Detects	23
Number of Distinct Detects	1	Number of Distinct Non-Detects	11

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Nitrobenzene was not processed!

Antimony

General Statistics

Total Number of Observations	31	Number of Distinct Observations	28
		Number of Missing Observations	19
Minimum	0.235	Mean	1.377
Maximum	7.7	Median	1.105
SD	1.445	Std. Error of Mean	0.26
Coefficient of Variation	1.05	Skewness	3.223

Normal GOF Test

Shapiro Wilk Test Statistic	0.631	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.293	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.156	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.817	95% Adjusted-CLT UCL (Chen-1995)	1.964
		95% Modified-t UCL (Johnson-1978)	1.842

Gamma GOF Test

A-D Test Statistic	1.532	**Anderson-Darling Gamma GOF Test**

5% A-D Critical Value	0.763	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.197	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.161	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.556	k star (bias corrected MLE)	1.427
Theta hat (MLE)	0.884	Theta star (bias corrected MLE)	0.965
nu hat (MLE)	96.5	nu star (bias corrected)	88.49
MLE Mean (bias corrected)	1.377	MLE Sd (bias corrected)	1.152
		Approximate Chi Square Value (0.05)	67.81
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	66.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.797	95% Adjusted Gamma UCL (use when n<50)	1.824

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.253	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.156	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-1.448	Mean of logged Data	-0.0348
Maximum of Logged Data	2.041	SD of logged Data	0.855

Assuming Lognormal Distribution

95% H-UCL	1.98	90% Chebyshev (MVUE) UCL	2.074
95% Chebyshev (MVUE) UCL	2.394	97.5% Chebyshev (MVUE) UCL	2.836
99% Chebyshev (MVUE) UCL	3.706		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	1.804	95% Jackknife UCL	1.817
95% Standard Bootstrap UCL	1.802	95% Bootstrap-t UCL	2.283
95% Hall's Bootstrap UCL	3.91	95% Percentile Bootstrap UCL	1.854
95% BCA Bootstrap UCL	2.035		
90% Chebyshev(Mean, Sd) UCL	2.155	95% Chebyshev(Mean, Sd) UCL	2.508
97.5% Chebyshev(Mean, Sd) UCL	2.998	99% Chebyshev(Mean, Sd) UCL	3.959

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.508

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	31	Number of Distinct Observations	30
		Number of Missing Observations	19
Minimum	1.065	Mean	6.241
Maximum	47.2	Median	3.89
SD	10.24	Std. Error of Mean	1.839
Coefficient of Variation	1.641	Skewness	3.642

Normal GOF Test

Shapiro Wilk Test Statistic	0.404	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.416	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.156	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.363	95% Adjusted-CLT UCL (Chen-1995)	10.55
		95% Modified-t UCL (Johnson-1978)	9.563

Gamma GOF Test

A-D Test Statistic	4.018	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.77	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.325	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.162	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.217	k star (bias corrected MLE)	1.121
Theta hat (MLE)	5.127	Theta star (bias corrected MLE)	5.567
nu hat (MLE)	75.47	nu star (bias corrected)	69.5
MLE Mean (bias corrected)	6.241	MLE Sd (bias corrected)	5.894
		Approximate Chi Square Value (0.05)	51.31
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	50.44

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	8.453	95% Adjusted Gamma UCL (use when n<50)	8.599

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.811	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Lognormal at 5% Significance Level

Lilliefors Test Statistic	0.236	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.156	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.063	Mean of logged Data	1.367
Maximum of Logged Data	3.854	SD of logged Data	0.776

Assuming Lognormal Distribution

95% H-UCL	7.223	90% Chebyshev (MVUE) UCL	7.649
95% Chebyshev (MVUE) UCL	8.74	97.5% Chebyshev (MVUE) UCL	10.25
99% Chebyshev (MVUE) UCL	13.23		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	9.266	95% Jackknife UCL	9.363
95% Standard Bootstrap UCL	9.32	95% Bootstrap-t UCL	25.78
95% Hall's Bootstrap UCL	27.59	95% Percentile Bootstrap UCL	9.633
95% BCA Bootstrap UCL	10.64		
90% Chebyshev(Mean, Sd) UCL	11.76	95% Chebyshev(Mean, Sd) UCL	14.26
97.5% Chebyshev(Mean, Sd) UCL	17.73	99% Chebyshev(Mean, Sd) UCL	24.54

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.26

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	31	Number of Distinct Observations	30
		Number of Missing Observations	19
Minimum	0.134	Mean	0.618
Maximum	1.38	Median	0.61
SD	0.265	Std. Error of Mean	0.0475
Coefficient of Variation	0.428	Skewness	0.599

Normal GOF Test

Shapiro Wilk Test Statistic	0.969	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.929	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.103	**Lilliefors GOF Test**	

5% Lilliefors Critical Value	0.156	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.699	95% Adjusted-CLT UCL (Chen-1995)	0.702
		95% Modified-t UCL (Johnson-1978)	0.699

Gamma GOF Test

A-D Test Statistic	0.399	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.747	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0949	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.158	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	4.946	k star (bias corrected MLE)	4.489
Theta hat (MLE)	0.125	Theta star (bias corrected MLE)	0.138
nu hat (MLE)	306.6	nu star (bias corrected)	278.3
MLE Mean (bias corrected)	0.618	MLE Sd (bias corrected)	0.292
		Approximate Chi Square Value (0.05)	240.7
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	238.7

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.715	95% Adjusted Gamma UCL (use when n<50)	0.72

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.934	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.128	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.156	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-2.01	Mean of logged Data	-0.586
Maximum of Logged Data	0.322	SD of logged Data	0.5

Assuming Lognormal Distribution

95% H-UCL	0.752	90% Chebyshev (MVUE) UCL	0.805
95% Chebyshev (MVUE) UCL	0.885	97.5% Chebyshev (MVUE) UCL	0.996
99% Chebyshev (MVUE) UCL	1.214		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.696	95% Jackknife UCL	0.699

95% Standard Bootstrap UCL	0.694	95% Bootstrap-t UCL	0.708
95% Hall's Bootstrap UCL	0.712	95% Percentile Bootstrap UCL	0.699
95% BCA Bootstrap UCL	0.699		
90% Chebyshev(Mean, Sd) UCL	0.761	95% Chebyshev(Mean, Sd) UCL	0.825
97.5% Chebyshev(Mean, Sd) UCL	0.915	99% Chebyshev(Mean, Sd) UCL	1.091

Suggested UCL to Use

95% Student's-t UCL	0.699

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Cadmium

General Statistics

Total Number of Observations	31	Number of Distinct Observations	28
		Number of Missing Observations	19
Number of Detects	8	Number of Non-Detects	23
Number of Distinct Detects	8	Number of Distinct Non-Detects	20
Minimum Detect	0.05	Minimum Non-Detect	0.14
Maximum Detect	8.8	Maximum Non-Detect	1.44
Variance Detects	9.111	Percent Non-Detects	74.19%
Mean Detects	1.36	SD Detects	3.019
Median Detects	0.197	CV Detects	2.219
Skewness Detects	2.783	Kurtosis Detects	7.803
Mean of Logged Detects	-1.177	SD of Logged Detects	1.654

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.493	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.457	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.437	KM Standard Error of Mean	0.296
KM SD	1.537	95% KM (BCA) UCL	0.996
95% KM (t) UCL	0.939	95% KM (Percentile Bootstrap) UCL	0.986
95% KM (z) UCL	0.923	95% KM Bootstrap t UCL	3.545
90% KM Chebyshev UCL	1.324	95% KM Chebyshev UCL	1.726
97.5% KM Chebyshev UCL	2.284	99% KM Chebyshev UCL	3.38

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.958	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.773	Detected Data Not Gamma Distributed at 5% Significance Level

K-S Test Statistic	0.313	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.312	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.437	k star (bias corrected MLE)	0.356
Theta hat (MLE)	3.113	Theta star (bias corrected MLE)	3.816
nu hat (MLE)	6.99	nu star (bias corrected)	5.702
Mean (detects)	1.36		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.358
Maximum	8.8	Median	0.01
SD	1.577	CV	4.399
k hat (MLE)	0.262	k star (bias corrected MLE)	0.258
Theta hat (MLE)	1.37	Theta star (bias corrected MLE)	1.39
nu hat (MLE)	16.22	nu star (bias corrected)	15.99
Adjusted Level of Significance (β)	0.0413		
Approximate Chi Square Value (15.99, α)	7.953	Adjusted Chi Square Value (15.99, β)	7.638
95% Gamma Approximate UCL (use when n>=50)	0.721	95% Gamma Adjusted UCL (use when n<50)	0.75

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.437	SD (KM)	1.537
Variance (KM)	2.361	SE of Mean (KM)	0.296
k hat (KM)	0.0808	k star (KM)	0.0945
nu hat (KM)	5.011	nu star (KM)	5.859
theta hat (KM)	5.405	theta star (KM)	4.622
80% gamma percentile (KM)	0.278	90% gamma percentile (KM)	1.134
95% gamma percentile (KM)	2.542	99% gamma percentile (KM)	7.137

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (5.86, α)	1.568	Adjusted Chi Square Value (5.86, β)	1.449
95% Gamma Approximate KM-UCL (use when n>=50)	1.632	95% Gamma Adjusted KM-UCL (use when n<50)	1.766

95% Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50)

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.423	Mean in Log Scale	-2.065
SD in Original Scale	1.563	SD in Log Scale	0.999
95% t UCL (assumes normality of ROS data)	0.899	95% Percentile Bootstrap UCL	0.98
95% BCA Bootstrap UCL	1.281	95% Bootstrap t UCL	4.726
95% H-UCL (Log ROS)	0.325		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-2.033	KM Geo Mean	0.131
KM SD (logged)	1.041	95% Critical H Value (KM-Log)	2.472
KM Standard Error of Mean (logged)	0.263	95% H-UCL (KM -Log)	0.36
KM SD (logged)	1.041	95% Critical H Value (KM-Log)	2.472
KM Standard Error of Mean (logged)	0.263		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.534	Mean in Log Scale	-1.602
SD in Original Scale	1.554	SD in Log Scale	1.075
95% t UCL (Assumes normality)	1.008	95% H-Stat UCL	0.588

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1.726

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	31	Number of Distinct Observations	28
		Number of Missing Observations	19
Minimum	12	Mean	35.22
Maximum	178	Median	18.8
SD	43.51	Std. Error of Mean	7.815
Coefficient of Variation	1.235	Skewness	2.767

Normal GOF Test

Shapiro Wilk Test Statistic	0.516	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.356	**Lilliefors GOF Test**	

5% Lilliefors Critical Value	0.156	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.48	95% Adjusted-CLT UCL (Chen-1995)	52.22
		95% Modified-t UCL (Johnson-1978)	49.13

Gamma GOF Test

A-D Test Statistic	4.001	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.763	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.303	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.161	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.536	k star (bias corrected MLE)	1.409
Theta hat (MLE)	22.92	Theta star (bias corrected MLE)	24.99
nu hat (MLE)	95.26	nu star (bias corrected)	87.38
MLE Mean (bias corrected)	35.22	MLE Sd (bias corrected)	29.67
		Approximate Chi Square Value (0.05)	66.83
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	65.83

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	46.05	95% Adjusted Gamma UCL (use when n<50)	46.75

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.768	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.239	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.156	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.485	Mean of logged Data	3.202
Maximum of Logged Data	5.182	SD of logged Data	0.719

Assuming Lognormal Distribution

95% H-UCL	42.05	90% Chebyshev (MVUE) UCL	44.78
95% Chebyshev (MVUE) UCL	50.78	97.5% Chebyshev (MVUE) UCL	59.12
99% Chebyshev (MVUE) UCL	75.5		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	48.07	95% Jackknife UCL	48.48

95% Standard Bootstrap UCL	47.78	95% Bootstrap-t UCL	62.28
95% Hall's Bootstrap UCL	49.22	95% Percentile Bootstrap UCL	48.38
95% BCA Bootstrap UCL	52.75		
90% Chebyshev(Mean, Sd) UCL	58.66	95% Chebyshev(Mean, Sd) UCL	69.28
97.5% Chebyshev(Mean, Sd) UCL	84.02	99% Chebyshev(Mean, Sd) UCL	113

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	69.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	31	Number of Distinct Observations	29
		Number of Missing Observations	19
Minimum	0.0178	Mean	0.117
Maximum	0.53	Median	0.0622
SD	0.13	Std. Error of Mean	0.0234
Coefficient of Variation	1.113	Skewness	2.223

Normal GOF Test

Shapiro Wilk Test Statistic	0.628	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.156	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.157	95% Adjusted-CLT UCL (Chen-1995)	0.166
		95% Modified-t UCL (Johnson-1978)	0.158

Gamma GOF Test

A-D Test Statistic	2.352	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.764	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.193	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.161	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.471	k star (bias corrected MLE)	1.35
Theta hat (MLE)	0.0796	Theta star (bias corrected MLE)	0.0867
nu hat (MLE)	91.2	nu star (bias corrected)	83.7

MLE Mean (bias corrected)	0.117	MLE Sd (bias corrected)	0.101
		Approximate Chi Square Value (0.05)	63.62
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	62.64

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.154	95% Adjusted Gamma UCL (use when n<50)	0.156

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.929	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.145	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.156	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.029	Mean of logged Data	-2.522
Maximum of Logged Data	-0.635	SD of logged Data	0.803

Assuming Lognormal Distribution

95% H-UCL	0.153	90% Chebyshev (MVUE) UCL	0.162
95% Chebyshev (MVUE) UCL	0.185	97.5% Chebyshev (MVUE) UCL	0.218
99% Chebyshev (MVUE) UCL	0.283		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.156	95% Jackknife UCL	0.157
95% Standard Bootstrap UCL	0.154	95% Bootstrap-t UCL	0.182
95% Hall's Bootstrap UCL	0.156	95% Percentile Bootstrap UCL	0.158
95% BCA Bootstrap UCL	0.169		
90% Chebyshev(Mean, Sd) UCL	0.187	95% Chebyshev(Mean, Sd) UCL	0.219
97.5% Chebyshev(Mean, Sd) UCL	0.263	99% Chebyshev(Mean, Sd) UCL	0.35

Suggested UCL to Use

95% H-UCL	0.153

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Nickel

General Statistics

Total Number of Observations	31	Number of Distinct Observations	30
		Number of Missing Observations	19
Minimum	3.21	Mean	9.572
Maximum	34.3	Median	9.04
SD	5.539	Std. Error of Mean	0.995
Coefficient of Variation	0.579	Skewness	3.016

Normal GOF Test

Shapiro Wilk Test Statistic	0.727	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.216	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.156	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.26	95% Adjusted-CLT UCL (Chen-1995)	11.78
		95% Modified-t UCL (Johnson-1978)	11.35

Gamma GOF Test

A-D Test Statistic	0.704	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.749	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.142	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.158	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	4.344	k star (bias corrected MLE)	3.945
Theta hat (MLE)	2.204	Theta star (bias corrected MLE)	2.426
nu hat (MLE)	269.3	nu star (bias corrected)	244.6
MLE Mean (bias corrected)	9.572	MLE Sd (bias corrected)	4.819
		Approximate Chi Square Value (0.05)	209.4
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	207.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	11.18	95% Adjusted Gamma UCL (use when n<50)	11.28

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.938	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.121	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.156	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.166	Mean of logged Data	2.139
Maximum of Logged Data	3.535	SD of logged Data	0.489

Assuming Lognormal Distribution

95% H-UCL	11.36	90% Chebyshev (MVUE) UCL	12.15
95% Chebyshev (MVUE) UCL	13.33	97.5% Chebyshev (MVUE) UCL	14.98
99% Chebyshev (MVUE) UCL	18.21		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	11.21	95% Jackknife UCL	11.26
95% Standard Bootstrap UCL	11.17	95% Bootstrap-t UCL	12.15
95% Hall's Bootstrap UCL	19.08	95% Percentile Bootstrap UCL	11.37
95% BCA Bootstrap UCL	11.74		
90% Chebyshev(Mean, Sd) UCL	12.56	95% Chebyshev(Mean, Sd) UCL	13.91
97.5% Chebyshev(Mean, Sd) UCL	15.78	99% Chebyshev(Mean, Sd) UCL	19.47

Suggested UCL to Use

95% Adjusted Gamma UCL	11.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Selenium

General Statistics

Total Number of Observations	31	Number of Distinct Observations	27
		Number of Missing Observations	19
Number of Detects	7	Number of Non-Detects	24
Number of Distinct Detects	6	Number of Distinct Non-Detects	22
Minimum Detect	0.57	Minimum Non-Detect	0.255
Maximum Detect	1.23	Maximum Non-Detect	5.8
Variance Detects	0.0496	Percent Non-Detects	77.42%
Mean Detects	1.046	SD Detects	0.223
Median Detects	1.1	CV Detects	0.213
Skewness Detects	-2.051	Kurtosis Detects	4.653
Mean of Logged Detects	0.0187	SD of Logged Detects	0.265

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.758	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Normal at 5% Significance Level	

Lilliefors Test Statistic	0.311	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.685	KM Standard Error of Mean	0.14
KM SD	0.351	95% KM (BCA) UCL	1.037
95% KM (t) UCL	0.923	95% KM (Percentile Bootstrap) UCL	1.033
95% KM (z) UCL	0.915	95% KM Bootstrap t UCL	0.959
90% KM Chebyshev UCL	1.105	95% KM Chebyshev UCL	1.295
97.5% KM Chebyshev UCL	1.559	99% KM Chebyshev UCL	2.077

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.002	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.707	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.332	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.311	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	19.42	k star (bias corrected MLE)	11.19
Theta hat (MLE)	0.0538	Theta star (bias corrected MLE)	0.0934
nu hat (MLE)	271.9	nu star (bias corrected)	156.7
Mean (detects)	1.046		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.56	Mean	0.8
Maximum	1.23	Median	0.76
SD	0.174	CV	0.218
k hat (MLE)	24.75	k star (bias corrected MLE)	22.38
Theta hat (MLE)	0.0323	Theta star (bias corrected MLE)	0.0358
nu hat (MLE)	1534	nu star (bias corrected)	1387
Adjusted Level of Significance (β)	0.0413		
Approximate Chi Square Value (N/A, α)	1302	Adjusted Chi Square Value (N/A, β)	1297
95% Gamma Approximate UCL (use when n>=50)	0.853	95% Gamma Adjusted UCL (use when n<50)	0.856

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.685	SD (KM)	0.351
Variance (KM)	0.123	SE of Mean (KM)	0.14
k hat (KM)	3.804	k star (KM)	3.458
nu hat (KM)	235.9	nu star (KM)	214.4
theta hat (KM)	0.18	theta star (KM)	0.198

80% gamma percentile (KM)	0.961	90% gamma percentile (KM)	1.179
95% gamma percentile (KM)	1.382	99% gamma percentile (KM)	1.817

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (214.37, α)	181.5	Adjusted Chi Square Value (214.37, β)	179.8
95% Gamma Approximate KM-UCL (use when n>=50)	0.809	95% Gamma Adjusted KM-UCL (use when n<50)	0.817

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.686	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.329	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.771	Mean in Log Scale	-0.285
SD in Original Scale	0.187	SD in Log Scale	0.216
95% t UCL (assumes normality of ROS data)	0.827	95% Percentile Bootstrap UCL	0.829
95% BCA Bootstrap UCL	0.834	95% Bootstrap t UCL	0.842
95% H-UCL (Log ROS)	0.825		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.538	KM Geo Mean	0.584
KM SD (logged)	0.597	95% Critical H Value (KM-Log)	2.007
KM Standard Error of Mean (logged)	0.265	95% H-UCL (KM -Log)	0.868
KM SD (logged)	0.597	95% Critical H Value (KM-Log)	2.007
KM Standard Error of Mean (logged)	0.265		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.724	Mean in Log Scale	-0.453
SD in Original Scale	0.476	SD in Log Scale	0.497
95% t UCL (Assumes normality)	0.87	95% H-Stat UCL	0.857

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.923	KM H-UCL	0.868
95% KM (BCA) UCL	1.037		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	31	Number of Distinct Observations	28
		Number of Missing Observations	19
Number of Detects	7	Number of Non-Detects	24
Number of Distinct Detects	7	Number of Distinct Non-Detects	21
Minimum Detect	1.39	Minimum Non-Detect	0.414
Maximum Detect	2.97	Maximum Non-Detect	11.6
Variance Detects	0.316	Percent Non-Detects	77.42%
Mean Detects	2.246	SD Detects	0.562
Median Detects	2.16	CV Detects	0.25
Skewness Detects	-0.299	Kurtosis Detects	-0.937
Mean of Logged Detects	0.78	SD of Logged Detects	0.268

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.963	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.153	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.841	KM Standard Error of Mean	0.161
KM SD	0.815	95% KM (BCA) UCL	1.167
95% KM (t) UCL	1.114	95% KM (Percentile Bootstrap) UCL	1.111
95% KM (z) UCL	1.105	95% KM Bootstrap t UCL	1.063
90% KM Chebyshev UCL	1.323	95% KM Chebyshev UCL	1.541
97.5% KM Chebyshev UCL	1.844	99% KM Chebyshev UCL	2.44

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.257	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.707	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.177	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.312	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	17.17	k star (bias corrected MLE)	9.905
Theta hat (MLE)	0.131	Theta star (bias corrected MLE)	0.227
nu hat (MLE)	240.3	nu star (bias corrected)	138.7
Mean (detects)	2.246		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.752
Maximum	2.97	Median	0.292
SD	0.872	CV	1.159
k hat (MLE)	0.826	k star (bias corrected MLE)	0.768
Theta hat (MLE)	0.91	Theta star (bias corrected MLE)	0.98
nu hat (MLE)	51.24	nu star (bias corrected)	47.62
Adjusted Level of Significance (β)	0.0413		
Approximate Chi Square Value (47.62, α)	32.78	Adjusted Chi Square Value (47.62, β)	32.09
95% Gamma Approximate UCL (use when n>=50)	1.093	95% Gamma Adjusted UCL (use when n<50)	1.116

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.841	SD (KM)	0.815
Variance (KM)	0.664	SE of Mean (KM)	0.161
k hat (KM)	1.066	k star (KM)	0.984
nu hat (KM)	66.07	nu star (KM)	61.01
theta hat (KM)	0.789	theta star (KM)	0.855
80% gamma percentile (KM)	1.355	90% gamma percentile (KM)	1.944
95% gamma percentile (KM)	2.534	99% gamma percentile (KM)	3.905

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (61.01, α)	44.05	Adjusted Chi Square Value (61.01, β)	43.25
95% Gamma Approximate KM-UCL (use when n>=50)	1.165	95% Gamma Adjusted KM-UCL (use when n<50)	1.187

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.193	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.121	Mean in Log Scale	-0.00929
SD in Original Scale	0.672	SD in Log Scale	0.462
95% t UCL (assumes normality of ROS data)	1.326	95% Percentile Bootstrap UCL	1.321
95% BCA Bootstrap UCL	1.368	95% Bootstrap t UCL	1.39
95% H-UCL (Log ROS)	1.294		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.495	KM Geo Mean	0.609
KM SD (logged)	0.713	95% Critical H Value (KM-Log)	2.115
KM Standard Error of Mean (logged)	0.141	95% H-UCL (KM -Log)	1.035
KM SD (logged)	0.713	95% Critical H Value (KM-Log)	2.115
KM Standard Error of Mean (logged)	0.141		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1.025	Mean in Log Scale	-0.415
SD in Original Scale	1.202	SD in Log Scale	0.882
95% t UCL (Assumes normality)	1.392	95% H-Stat UCL	1.409

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.114

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	31	Number of Distinct Observations	31
		Number of Missing Observations	19
Minimum	12.7	Mean	224
Maximum	4810	Median	51.6
SD	853.9	Std. Error of Mean	153.4
Coefficient of Variation	3.812	Skewness	5.512

Normal GOF Test

Shapiro Wilk Test Statistic	0.231	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.45	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.156	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	484.3	95% Adjusted-CLT UCL (Chen-1995)	638.5
		95% Modified-t UCL (Johnson-1978)	509.6

Gamma GOF Test

A-D Test Statistic	5.869	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.81	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.368	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.167	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.5	k star (bias corrected MLE)	0.473
Theta hat (MLE)	447.9	Theta star (bias corrected MLE)	473.4
nu hat (MLE)	31	nu star (bias corrected)	29.33
MLE Mean (bias corrected)	224	MLE Sd (bias corrected)	325.6
		Approximate Chi Square Value (0.05)	17.97
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	17.47

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	365.6	95% Adjusted Gamma UCL (use when n<50)	376

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.788	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.929	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.211	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.156	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.542	Mean of logged Data	4.141
Maximum of Logged Data	8.478	SD of logged Data	1.052

Assuming Lognormal Distribution

95% H-UCL	176.1	90% Chebyshev (MVUE) UCL	176.6
95% Chebyshev (MVUE) UCL	208.4	97.5% Chebyshev (MVUE) UCL	252.6
99% Chebyshev (MVUE) UCL	339.2		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	476.2	95% Jackknife UCL	484.3
95% Standard Bootstrap UCL	480.3	95% Bootstrap-t UCL	3817
95% Hall's Bootstrap UCL	1994	95% Percentile Bootstrap UCL	530.9
95% BCA Bootstrap UCL	684.7		
90% Chebyshev(Mean, Sd) UCL	684.1	95% Chebyshev(Mean, Sd) UCL	892.5
97.5% Chebyshev(Mean, Sd) UCL	1182	99% Chebyshev(Mean, Sd) UCL	1750

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	892.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	28	Number of Distinct Observations	20
		Number of Missing Observations	18
Number of Detects	12	Number of Non-Detects	16
Number of Distinct Detects	12	Number of Distinct Non-Detects	8
Minimum Detect	23	Minimum Non-Detect	90
Maximum Detect	390	Maximum Non-Detect	490
Variance Detects	16313	Percent Non-Detects	57.14%
Mean Detects	150.5	SD Detects	127.7
Median Detects	74	CV Detects	0.849
Skewness Detects	0.772	Kurtosis Detects	-0.959
Mean of Logged Detects	4.636	SD of Logged Detects	0.941

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.841	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.285	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	98.27	KM Standard Error of Mean	20
KM SD	95.78	95% KM (BCA) UCL	135.4
95% KM (t) UCL	132.3	95% KM (Percentile Bootstrap) UCL	131.6
95% KM (z) UCL	131.2	95% KM Bootstrap t UCL	143.3
90% KM Chebyshev UCL	158.3	95% KM Chebyshev UCL	185.5
97.5% KM Chebyshev UCL	223.2	99% KM Chebyshev UCL	297.3

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.641	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.227	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.25	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.468	k star (bias corrected MLE)	1.156
Theta hat (MLE)	102.5	Theta star (bias corrected MLE)	130.1
nu hat (MLE)	35.23	nu star (bias corrected)	27.76
Mean (detects)	150.5		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	3.839	Mean	99.04
Maximum	390	Median	62.99
SD	96.68	CV	0.976
k hat (MLE)	1.365	k star (bias corrected MLE)	1.243
Theta hat (MLE)	72.54	Theta star (bias corrected MLE)	79.69
nu hat (MLE)	76.46	nu star (bias corrected)	69.6
Adjusted Level of Significance (β)	0.0404		
Approximate Chi Square Value (69.60, α)	51.4	Adjusted Chi Square Value (69.60, β)	50.43
95% Gamma Approximate UCL (use when n>=50)	134.1	95% Gamma Adjusted UCL (use when n<50)	136.7

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	98.27	SD (KM)	95.78
Variance (KM)	9174	SE of Mean (KM)	20
k hat (KM)	1.053	k star (KM)	0.964
nu hat (KM)	58.95	nu star (KM)	53.96
theta hat (KM)	93.36	theta star (KM)	102
80% gamma percentile (KM)	158.6	90% gamma percentile (KM)	228.3
95% gamma percentile (KM)	298.3	99% gamma percentile (KM)	461.1

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (53.96, α)	38.09	Adjusted Chi Square Value (53.96, β)	37.26
95% Gamma Approximate KM-UCL (use when n>=50)	139.2	95% Gamma Adjusted KM-UCL (use when n<50)	142.3

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.192	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	99.49	Mean in Log Scale	4.299
SD in Original Scale	94.6	SD in Log Scale	0.731
95% t UCL (assumes normality of ROS data)	129.9	95% Percentile Bootstrap UCL	129.7
95% BCA Bootstrap UCL	135.5	95% Bootstrap t UCL	142.5
95% H-UCL (Log ROS)	130.2		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.254	KM Geo Mean	70.37
KM SD (logged)	0.76	95% Critical H Value (KM-Log)	2.182
KM Standard Error of Mean (logged)	0.186	95% H-UCL (KM -Log)	129.2
KM SD (logged)	0.76	95% Critical H Value (KM-Log)	2.182
KM Standard Error of Mean (logged)	0.186		

DL/2 Statistics

DL/2 Normal **DL/2 Log-Transformed**

Mean in Original Scale	107.3	Mean in Log Scale	4.365
SD in Original Scale	98.39	SD in Log Scale	0.753
95% t UCL (Assumes normality)	138.9	95% H-Stat UCL	143

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	142.3	95% GROS Adjusted Gamma UCL	136.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	28	Number of Distinct Observations	14
		Number of Missing Observations	18
Number of Detects	1	Number of Non-Detects	27
Number of Distinct Detects	1	Number of Distinct Non-Detects	13

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable N-Nitrosodiphenylamine was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:01:14 AM
From File	Functional Area 6 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Dinitrobenzene

General Statistics

Total Number of Observations	68	Number of Distinct Observations	23
		Number of Missing Observations	22
Number of Detects	7	Number of Non-Detects	61
Number of Distinct Detects	7	Number of Distinct Non-Detects	16
Minimum Detect	280	Minimum Non-Detect	49.5
Maximum Detect	3500	Maximum Non-Detect	195
Variance Detects	1150995	Percent Non-Detects	89.71%
Mean Detects	1124	SD Detects	1073
Median Detects	840	CV Detects	0.954
Skewness Detects	2.379	Kurtosis Detects	6.032
Mean of Logged Detects	6.753	SD of Logged Detects	0.75

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.663	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.403	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	160.1	KM Standard Error of Mean	59.77
KM SD	456.3	95% KM (BCA) UCL	283.2
95% KM (t) UCL	259.8	95% KM (Percentile Bootstrap) UCL	264.3
95% KM (z) UCL	258.5	95% KM Bootstrap t UCL	321.5
90% KM Chebyshev UCL	339.5	95% KM Chebyshev UCL	420.7
97.5% KM Chebyshev UCL	533.4	99% KM Chebyshev UCL	754.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.688	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.715	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.326	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.315	Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.987	k star (bias corrected MLE)	1.231
Theta hat (MLE)	565.8	Theta star (bias corrected MLE)	913.6
nu hat (MLE)	27.82	nu star (bias corrected)	17.23
Mean (detects)	1124		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	115.7
Maximum	3500	Median	0.01
SD	470.7	CV	4.067
k hat (MLE)	0.0993	k star (bias corrected MLE)	0.105
Theta hat (MLE)	1166	Theta star (bias corrected MLE)	1105
nu hat (MLE)	13.5	nu star (bias corrected)	14.24
Adjusted Level of Significance (β)	0.0465		
Approximate Chi Square Value (14.24, α)	6.736	Adjusted Chi Square Value (14.24, β)	6.624
95% Gamma Approximate UCL (use when n>=50)	244.7	95% Gamma Adjusted UCL (use when n<50)	248.8

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	160.1	SD (KM)	456.3
Variance (KM)	208231	SE of Mean (KM)	59.77
k hat (KM)	0.123	k star (KM)	0.128
nu hat (KM)	16.75	nu star (KM)	17.34
theta hat (KM)	1300	theta star (KM)	1256
80% gamma percentile (KM)	150	90% gamma percentile (KM)	460.8
95% gamma percentile (KM)	906.2	99% gamma percentile (KM)	2246

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (17.34, α)	8.918	Adjusted Chi Square Value (17.34, β)	8.787
95% Gamma Approximate KM-UCL (use when n>=50)	311.4	95% Gamma Adjusted KM-UCL (use when n<50)	316.1

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	144	Mean in Log Scale	3.075
SD in Original Scale	465.4	SD in Log Scale	1.829
95% t UCL (assumes normality of ROS data)	238.1	95% Percentile Bootstrap UCL	248.3
95% BCA Bootstrap UCL	301.8	95% Bootstrap t UCL	359.5
95% H-UCL (Log ROS)	212.5		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.195	KM Geo Mean	66.38
KM SD (logged)	0.894	95% Critical H Value (KM-Log)	2.187
KM Standard Error of Mean (logged)	0.117	95% H-UCL (KM -Log)	125.8
KM SD (logged)	0.894	95% Critical H Value (KM-Log)	2.187
KM Standard Error of Mean (logged)	0.117		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	163.3	Mean in Log Scale	4.13
SD in Original Scale	459.7	SD in Log Scale	1.053
95% t UCL (Assumes normality)	256.3	95% H-Stat UCL	144.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	311.4	95% GROS Approximate Gamma UCL	244.7

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nitrobenzene

General Statistics

Total Number of Observations	42	Number of Distinct Observations	13
		Number of Missing Observations	48
Number of Detects	0	Number of Non-Detects	42
Number of Distinct Detects	0	Number of Distinct Non-Detects	13

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!

Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!

The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Nitrobenzene was not processed!

Antimony

General Statistics

Total Number of Observations	48	Number of Distinct Observations	41
		Number of Missing Observations	32
Number of Detects	18	Number of Non-Detects	30
Number of Distinct Detects	17	Number of Distinct Non-Detects	24
Minimum Detect	0.59	Minimum Non-Detect	0.215
Maximum Detect	4.06	Maximum Non-Detect	1.275
Variance Detects	0.794	Percent Non-Detects	62.5%
Mean Detects	1.656	SD Detects	0.891
Median Detects	1.335	CV Detects	0.538
Skewness Detects	1.784	Kurtosis Detects	3.041
Mean of Logged Detects	0.395	SD of Logged Detects	0.463

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.793	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.224	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.202	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.876	KM Standard Error of Mean	0.14
KM SD	0.844	95% KM (BCA) UCL	1.12
95% KM (t) UCL	1.111	95% KM (Percentile Bootstrap) UCL	1.113
95% KM (z) UCL	1.107	95% KM Bootstrap t UCL	1.13
90% KM Chebyshev UCL	1.297	95% KM Chebyshev UCL	1.487
97.5% KM Chebyshev UCL	1.751	99% KM Chebyshev UCL	2.27

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.748	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.743	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.19	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.204	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.746	k star (bias corrected MLE)	3.992
Theta hat (MLE)	0.349	Theta star (bias corrected MLE)	0.415
nu hat (MLE)	170.8	nu star (bias corrected)	143.7
Mean (detects)	1.656		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.675

Maximum	4.06	Median	0.0923
SD	0.943	CV	1.396
k hat (MLE)	0.415	k star (bias corrected MLE)	0.403
Theta hat (MLE)	1.628	Theta star (bias corrected MLE)	1.676
nu hat (MLE)	39.81	nu star (bias corrected)	38.66
Adjusted Level of Significance (β)	0.045		
Approximate Chi Square Value (38.66, α)	25.42	Adjusted Chi Square Value (38.66, β)	25.08
95% Gamma Approximate UCL (use when n>=50)	1.027	95% Gamma Adjusted UCL (use when n<50)	1.04

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.876	SD (KM)	0.844
Variance (KM)	0.712	SE of Mean (KM)	0.14
k hat (KM)	1.079	k star (KM)	1.026
nu hat (KM)	103.6	nu star (KM)	98.46
theta hat (KM)	0.812	theta star (KM)	0.854
80% gamma percentile (KM)	1.407	90% gamma percentile (KM)	2.005
95% gamma percentile (KM)	2.602	99% gamma percentile (KM)	3.985

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (98.46, α)	76.57	Adjusted Chi Square Value (98.46, β)	75.97
95% Gamma Approximate KM-UCL (use when n>=50)	1.127	95% Gamma Adjusted KM-UCL (use when n<50)	1.136

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.94	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.162	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.202	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.935	Mean in Log Scale	-0.296
SD in Original Scale	0.783	SD in Log Scale	0.631
95% t UCL (assumes normality of ROS data)	1.124	95% Percentile Bootstrap UCL	1.128
95% BCA Bootstrap UCL	1.162	95% Bootstrap t UCL	1.187
95% H-UCL (Log ROS)	1.089		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.564	KM Geo Mean	0.569
KM SD (logged)	0.943	95% Critical H Value (KM-Log)	2.276
KM Standard Error of Mean (logged)	0.188	95% H-UCL (KM -Log)	1.213
KM SD (logged)	0.943	95% Critical H Value (KM-Log)	2.276
KM Standard Error of Mean (logged)	0.188		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.907	Mean in Log Scale	-0.42
SD in Original Scale	0.806	SD in Log Scale	0.838

95% t UCL (Assumes normality)	1.103	95% H-Stat UCL	1.217

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	1.136	95% GROS Adjusted Gamma UCL	1.04

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	48	Number of Distinct Observations	46
		Number of Missing Observations	32
Number of Detects	46	Number of Non-Detects	2
Number of Distinct Detects	44	Number of Distinct Non-Detects	2
Minimum Detect	1.24	Minimum Non-Detect	1.045
Maximum Detect	15	Maximum Non-Detect	1.06
Variance Detects	4.697	Percent Non-Detects	4.167%
Mean Detects	3.912	SD Detects	2.167
Median Detects	3.54	CV Detects	0.554
Skewness Detects	3.115	Kurtosis Detects	14.69
Mean of Logged Detects	1.256	SD of Logged Detects	0.455

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.752	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.945	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.201	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.129	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	3.793	KM Standard Error of Mean	0.317
KM SD	2.175	95% KM (BCA) UCL	4.312
95% KM (t) UCL	4.325	95% KM (Percentile Bootstrap) UCL	4.355
95% KM (z) UCL	4.315	95% KM Bootstrap t UCL	4.542
90% KM Chebyshev UCL	4.745	95% KM Chebyshev UCL	5.176
97.5% KM Chebyshev UCL	5.775	99% KM Chebyshev UCL	6.951

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.693	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.13	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.131	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.804	k star (bias corrected MLE)	4.505
Theta hat (MLE)	0.814	Theta star (bias corrected MLE)	0.868
nu hat (MLE)	442	nu star (bias corrected)	414.5
Mean (detects)	3.912		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.504	Mean	3.77
Maximum	15	Median	3.535
SD	2.23	CV	0.591
k hat (MLE)	3.456	k star (bias corrected MLE)	3.254
Theta hat (MLE)	1.091	Theta star (bias corrected MLE)	1.159
nu hat (MLE)	331.8	nu star (bias corrected)	312.4
Adjusted Level of Significance (β)	0.045		
Approximate Chi Square Value (312.40, α)	272.5	Adjusted Chi Square Value (312.40, β)	271.3
95% Gamma Approximate UCL (use when n>=50)	4.323	95% Gamma Adjusted UCL (use when n<50)	4.341

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3.793	SD (KM)	2.175
Variance (KM)	4.732	SE of Mean (KM)	0.317
k hat (KM)	3.04	k star (KM)	2.864
nu hat (KM)	291.8	nu star (KM)	274.9
theta hat (KM)	1.248	theta star (KM)	1.324
80% gamma percentile (KM)	5.44	90% gamma percentile (KM)	6.797
95% gamma percentile (KM)	8.067	99% gamma percentile (KM)	10.83

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (274.93, α)	237.5	Adjusted Chi Square Value (274.93, β)	236.5
95% Gamma Approximate KM-UCL (use when n>=50)	4.39	95% Gamma Adjusted KM-UCL (use when n<50)	4.41

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.972	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.1	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.129	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.799	Mean in Log Scale	1.211
SD in Original Scale	2.191	SD in Log Scale	0.496
95% t UCL (assumes normality of ROS data)	4.329	95% Percentile Bootstrap UCL	4.367
95% BCA Bootstrap UCL	4.424	95% Bootstrap t UCL	4.546
95% H-UCL (Log ROS)	4.351		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.206	KM Geo Mean	3.34
KM SD (logged)	0.503	95% Critical H Value (KM-Log)	1.889
KM Standard Error of Mean (logged)	0.0734	95% H-UCL (KM -Log)	4.353
KM SD (logged)	0.503	95% Critical H Value (KM-Log)	1.889
KM Standard Error of Mean (logged)	0.0734		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	3.771	Mean in Log Scale	1.177
SD in Original Scale	2.228	SD in Log Scale	0.587
95% t UCL (Assumes normality)	4.311	95% H-Stat UCL	4.559

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	4.41	95% GROS Adjusted Gamma UCL	4.341

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	48	Number of Distinct Observations	47
		Number of Missing Observations	32
Minimum	0.132	Mean	0.608
Maximum	1.85	Median	0.553
SD	0.339	Std. Error of Mean	0.049
Coefficient of Variation	0.559	Skewness	1.828

Normal GOF Test

Shapiro Wilk Test Statistic	0.842	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Data Not Normal at 5% Significance Level	

Lilliefors Test Statistic	0.149	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.127	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.69	95% Adjusted-CLT UCL (Chen-1995)	0.702
		95% Modified-t UCL (Johnson-1978)	0.692

Gamma GOF Test

A-D Test Statistic	0.579	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.754	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0971	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.128	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.842	k star (bias corrected MLE)	3.616
Theta hat (MLE)	0.158	Theta star (bias corrected MLE)	0.168
nu hat (MLE)	368.8	nu star (bias corrected)	347.1
MLE Mean (bias corrected)	0.608	MLE Sd (bias corrected)	0.32
		Approximate Chi Square Value (0.05)	304.9
Adjusted Level of Significance	0.045	Adjusted Chi Square Value	303.7

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	0.692	95% Adjusted Gamma UCL (use when n<50)	0.695

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.116	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.127	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-2.025	Mean of logged Data	-0.634
Maximum of Logged Data	0.615	SD of logged Data	0.536

Assuming Lognormal Distribution

95% H-UCL	0.711	90% Chebyshev (MVUE) UCL	0.76
95% Chebyshev (MVUE) UCL	0.828	97.5% Chebyshev (MVUE) UCL	0.922
99% Chebyshev (MVUE) UCL	1.107		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.688	95% Jackknife UCL	0.69
95% Standard Bootstrap UCL	0.687	95% Bootstrap-t UCL	0.714
95% Hall's Bootstrap UCL	0.718	95% Percentile Bootstrap UCL	0.692
95% BCA Bootstrap UCL	0.709		
90% Chebyshev(Mean, Sd) UCL	0.755	95% Chebyshev(Mean, Sd) UCL	0.821
97.5% Chebyshev(Mean, Sd) UCL	0.914	99% Chebyshev(Mean, Sd) UCL	1.095

Suggested UCL to Use

95% Adjusted Gamma UCL	0.695

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Cadmium

General Statistics

Total Number of Observations	48	Number of Distinct Observations	44
		Number of Missing Observations	32
Number of Detects	5	Number of Non-Detects	43
Number of Distinct Detects	5	Number of Distinct Non-Detects	39
Minimum Detect	0.03	Minimum Non-Detect	0.0325
Maximum Detect	0.693	Maximum Non-Detect	1.47
Variance Detects	0.0726	Percent Non-Detects	89.58%
Mean Detects	0.251	SD Detects	0.269
Median Detects	0.123	CV Detects	1.075
Skewness Detects	1.491	Kurtosis Detects	1.867
Mean of Logged Detects	-1.903	SD of Logged Detects	1.202

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.843	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.282	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0832	KM Standard Error of Mean	0.0263
KM SD	0.112	95% KM (BCA) UCL	0.141
95% KM (t) UCL	0.127	95% KM (Percentile Bootstrap) UCL	0.133
95% KM (z) UCL	0.127	95% KM Bootstrap t UCL	0.13
90% KM Chebyshev UCL	0.162	95% KM Chebyshev UCL	0.198
97.5% KM Chebyshev UCL	0.248	99% KM Chebyshev UCL	0.345

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.23	**Anderson-Darling GOF Test**

5% A-D Critical Value	0.69	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.23	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.364	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.099	k star (bias corrected MLE)	0.573
Theta hat (MLE)	0.228	Theta star (bias corrected MLE)	0.437
nu hat (MLE)	10.99	nu star (bias corrected)	5.73
Mean (detects)	0.251		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0411
Maximum	0.693	Median	0.01
SD	0.108	CV	2.631
k hat (MLE)	0.666	k star (bias corrected MLE)	0.638
Theta hat (MLE)	0.0618	Theta star (bias corrected MLE)	0.0645
nu hat (MLE)	63.92	nu star (bias corrected)	61.26
Adjusted Level of Significance (β)	0.045		
Approximate Chi Square Value (61.26, α)	44.26	Adjusted Chi Square Value (61.26, β)	43.81
95% Gamma Approximate UCL (use when n>=50)	0.0569	95% Gamma Adjusted UCL (use when n<50)	0.0575

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0832	SD (KM)	0.112
Variance (KM)	0.0126	SE of Mean (KM)	0.0263
k hat (KM)	0.549	k star (KM)	0.528
nu hat (KM)	52.66	nu star (KM)	50.7
theta hat (KM)	0.152	theta star (KM)	0.157
80% gamma percentile (KM)	0.137	90% gamma percentile (KM)	0.222
95% gamma percentile (KM)	0.313	99% gamma percentile (KM)	0.536

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (50.70, α)	35.35	Adjusted Chi Square Value (50.70, β)	34.95
95% Gamma Approximate KM-UCL (use when n>=50)	0.119	95% Gamma Adjusted KM-UCL (use when n<50)	0.121

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.986	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.164	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0698	Mean in Log Scale	-2.927
SD in Original Scale	0.101	SD in Log Scale	0.544
95% t UCL (assumes normality of ROS data)	0.0943	95% Percentile Bootstrap UCL	0.0974
95% BCA Bootstrap UCL	0.112	95% Bootstrap t UCL	0.195
95% H-UCL (Log ROS)	0.0723		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-2.889	KM Geo Mean	0.0556
KM SD (logged)	0.787	95% Critical H Value (KM-Log)	2.119
KM Standard Error of Mean (logged)	0.31	95% H-UCL (KM -Log)	0.0967
KM SD (logged)	0.787	95% Critical H Value (KM-Log)	2.119
KM Standard Error of Mean (logged)	0.31		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.232	Mean in Log Scale	-1.826
SD in Original Scale	0.226	SD in Log Scale	0.847
95% t UCL (Assumes normality)	0.287	95% H-Stat UCL	0.302

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.127

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	48	Number of Distinct Observations	46
		Number of Missing Observations	32
Minimum	1.25	Mean	18.83
Maximum	52.2	Median	16.45
SD	10.99	Std. Error of Mean	1.587
Coefficient of Variation	0.584	Skewness	1.386

Normal GOF Test

Shapiro Wilk Test Statistic	0.878	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.161	**Lilliefors GOF Test**	

5% Lilliefors Critical Value	0.127	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.49	95% Adjusted-CLT UCL (Chen-1995)	21.77
		95% Modified-t UCL (Johnson-1978)	21.54

Gamma GOF Test

A-D Test Statistic	0.661	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.756	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.124	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.129	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.982	k star (bias corrected MLE)	2.81
Theta hat (MLE)	6.313	Theta star (bias corrected MLE)	6.7
nu hat (MLE)	286.3	nu star (bias corrected)	269.7
MLE Mean (bias corrected)	18.83	MLE Sd (bias corrected)	11.23
		Approximate Chi Square Value (0.05)	232.7
Adjusted Level of Significance	0.045	Adjusted Chi Square Value	231.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	21.82	95% Adjusted Gamma UCL (use when n<50)	21.92

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.947	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.166	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.127	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.223	Mean of logged Data	2.758
Maximum of Logged Data	3.955	SD of logged Data	0.661

Assuming Lognormal Distribution

95% H-UCL	23.81	90% Chebyshev (MVUE) UCL	25.57
95% Chebyshev (MVUE) UCL	28.31	97.5% Chebyshev (MVUE) UCL	32.12
99% Chebyshev (MVUE) UCL	39.59		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	21.44	95% Jackknife UCL	21.49

95% Standard Bootstrap UCL	21.37	95% Bootstrap-t UCL	21.93
95% Hall's Bootstrap UCL	22.14	95% Percentile Bootstrap UCL	21.45
95% BCA Bootstrap UCL	21.83		
90% Chebyshev(Mean, Sd) UCL	23.59	95% Chebyshev(Mean, Sd) UCL	25.74
97.5% Chebyshev(Mean, Sd) UCL	28.74	99% Chebyshev(Mean, Sd) UCL	34.61

Suggested UCL to Use

95% Adjusted Gamma UCL	21.92

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	48	Number of Distinct Observations	41
		Number of Missing Observations	32
Minimum	0.012	Mean	0.0782
Maximum	0.497	Median	0.0525
SD	0.0906	Std. Error of Mean	0.0131
Coefficient of Variation	1.158	Skewness	3.085

Normal GOF Test

Shapiro Wilk Test Statistic	0.589	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.364	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.127	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.1	95% Adjusted-CLT UCL (Chen-1995)	0.106
		95% Modified-t UCL (Johnson-1978)	0.101

Gamma GOF Test

A-D Test Statistic	3.766	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.767	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.283	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.13	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.565	k star (bias corrected MLE)	1.481
Theta hat (MLE)	0.05	Theta star (bias corrected MLE)	0.0528
nu hat (MLE)	150.2	nu star (bias corrected)	142.2

MLE Mean (bias corrected)	0.0782	MLE Sd (bias corrected)	0.0643
		Approximate Chi Square Value (0.05)	115.6
Adjusted Level of Significance	0.045	Adjusted Chi Square Value	114.9

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.0962	95% Adjusted Gamma UCL (use when n<50)	0.0968

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.214	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.127	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.423	Mean of logged Data	-2.9
Maximum of Logged Data	-0.699	SD of logged Data	0.765

Assuming Lognormal Distribution

95% H-UCL	0.0931	90% Chebyshev (MVUE) UCL	0.1
95% Chebyshev (MVUE) UCL	0.112	97.5% Chebyshev (MVUE) UCL	0.129
99% Chebyshev (MVUE) UCL	0.162		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	0.0998	95% Jackknife UCL	0.1
95% Standard Bootstrap UCL	0.0996	95% Bootstrap-t UCL	0.112
95% Hall's Bootstrap UCL	0.114	95% Percentile Bootstrap UCL	0.102
95% BCA Bootstrap UCL	0.108		
90% Chebyshev(Mean, Sd) UCL	0.117	95% Chebyshev(Mean, Sd) UCL	0.135
97.5% Chebyshev(Mean, Sd) UCL	0.16	99% Chebyshev(Mean, Sd) UCL	0.208

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	0.135

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	48	Number of Distinct Observations	45

		Number of Missing Observations	32
Minimum	0.658	Mean	8.46
Maximum	19.5	Median	8.43
SD	3.699	Std. Error of Mean	0.534
Coefficient of Variation	0.437	Skewness	0.469

Normal GOF Test

Shapiro Wilk Test Statistic	0.928	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.123	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.127	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.356	95% Adjusted-CLT UCL (Chen-1995)	9.377
		95% Modified-t UCL (Johnson-1978)	9.362

Gamma GOF Test

A-D Test Statistic	2.631	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.755	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.207	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.129	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.562	k star (bias corrected MLE)	3.353
Theta hat (MLE)	2.375	Theta star (bias corrected MLE)	2.523
nu hat (MLE)	341.9	nu star (bias corrected)	321.9
MLE Mean (bias corrected)	8.46	MLE Sd (bias corrected)	4.62
		Approximate Chi Square Value (0.05)	281.3
Adjusted Level of Significance	0.045	Adjusted Chi Square Value	280.2

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	9.68	95% Adjusted Gamma UCL (use when n<50)	9.721

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.765	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.947	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.245	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.127	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.419	Mean of logged Data	1.989
Maximum of Logged Data	2.97	SD of logged Data	0.661

Assuming Lognormal Distribution

95% H-UCL	11.03	90% Chebyshev (MVUE) UCL	11.84
95% Chebyshev (MVUE) UCL	13.11	97.5% Chebyshev (MVUE) UCL	14.88
99% Chebyshev (MVUE) UCL	18.34		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	9.339	95% Jackknife UCL	9.356
95% Standard Bootstrap UCL	9.34	95% Bootstrap-t UCL	9.426
95% Hall's Bootstrap UCL	9.448	95% Percentile Bootstrap UCL	9.361
95% BCA Bootstrap UCL	9.381		
90% Chebyshev(Mean, Sd) UCL	10.06	95% Chebyshev(Mean, Sd) UCL	10.79
97.5% Chebyshev(Mean, Sd) UCL	11.79	99% Chebyshev(Mean, Sd) UCL	13.77

Suggested UCL to Use

95% Student's-t UCL	9.356

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Selenium

General Statistics

Total Number of Observations	48	Number of Distinct Observations	34
		Number of Missing Observations	32
Number of Detects	11	Number of Non-Detects	37
Number of Distinct Detects	11	Number of Distinct Non-Detects	23
Minimum Detect	0.41	Minimum Non-Detect	0.275
Maximum Detect	1.65	Maximum Non-Detect	1.2
Variance Detects	0.124	Percent Non-Detects	77.08%
Mean Detects	1.088	SD Detects	0.352
Median Detects	1.14	CV Detects	0.324
Skewness Detects	-0.48	Kurtosis Detects	0.0665
Mean of Logged Detects	0.0237	SD of Logged Detects	0.393

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.968	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.128	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.75	KM Standard Error of Mean	0.108
KM SD	0.345	95% KM (BCA) UCL	0.919
95% KM (t) UCL	0.93	95% KM (Percentile Bootstrap) UCL	0.929
95% KM (z) UCL	0.927	95% KM Bootstrap t UCL	0.985
90% KM Chebyshev UCL	1.072	95% KM Chebyshev UCL	1.219
97.5% KM Chebyshev UCL	1.422	99% KM Chebyshev UCL	1.82

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.432	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.73	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.177	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.256	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.385	k star (bias corrected MLE)	6.159
Theta hat (MLE)	0.13	Theta star (bias corrected MLE)	0.177
nu hat (MLE)	184.5	nu star (bias corrected)	135.5
Mean (detects)	1.088		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.317	Mean	0.746
Maximum	1.65	Median	0.666
SD	0.272	CV	0.364
k hat (MLE)	9.111	k star (bias corrected MLE)	8.556
Theta hat (MLE)	0.0819	Theta star (bias corrected MLE)	0.0872
nu hat (MLE)	874.7	nu star (bias corrected)	821.4
Adjusted Level of Significance (β)	0.045		
Approximate Chi Square Value (821.36, α)	755.9	Adjusted Chi Square Value (821.36, β)	753.9
95% Gamma Approximate UCL (use when n>=50)	0.811	95% Gamma Adjusted UCL (use when n<50)	0.813

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.75	SD (KM)	0.345
Variance (KM)	0.119	SE of Mean (KM)	0.108
k hat (KM)	4.733	k star (KM)	4.451
nu hat (KM)	454.3	nu star (KM)	427.3
theta hat (KM)	0.158	theta star (KM)	0.168
80% gamma percentile (KM)	1.021	90% gamma percentile (KM)	1.226
95% gamma percentile (KM)	1.413	99% gamma percentile (KM)	1.812

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (427.26, α)	380.3	Adjusted Chi Square Value (427.26, β)	379
95% Gamma Approximate KM-UCL (use when n>=50)	0.842	95% Gamma Adjusted KM-UCL (use when n<50)	0.845

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.203	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.735	Mean in Log Scale	-0.362
SD in Original Scale	0.27	SD in Log Scale	0.318
95% t UCL (assumes normality of ROS data)	0.8	95% Percentile Bootstrap UCL	0.801
95% BCA Bootstrap UCL	0.808	95% Bootstrap t UCL	0.814
95% H-UCL (Log ROS)	0.796		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.411	KM Geo Mean	0.663
KM SD (logged)	0.52	95% Critical H Value (KM-Log)	1.901
KM Standard Error of Mean (logged)	0.185	95% H-UCL (KM -Log)	0.877
KM SD (logged)	0.52	95% Critical H Value (KM-Log)	1.901
KM Standard Error of Mean (logged)	0.185		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.669	Mean in Log Scale	-0.478
SD in Original Scale	0.29	SD in Log Scale	0.388
95% t UCL (Assumes normality)	0.739	95% H-Stat UCL	0.741

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.93

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	48	Number of Distinct Observations	36
		Number of Missing Observations	32
Number of Detects	7	Number of Non-Detects	41
Number of Distinct Detects	7	Number of Distinct Non-Detects	29
Minimum Detect	0.805	Minimum Non-Detect	0.43
Maximum Detect	2.71	Maximum Non-Detect	1.59
Variance Detects	0.349	Percent Non-Detects	85.42%
Mean Detects	1.778	SD Detects	0.591
Median Detects	1.67	CV Detects	0.332
Skewness Detects	-0.0516	Kurtosis Detects	1.059
Mean of Logged Detects	0.52	SD of Logged Detects	0.379

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.963	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.652	KM Standard Error of Mean	0.0861
KM SD	0.519	95% KM (BCA) UCL	0.81
95% KM (t) UCL	0.797	95% KM (Percentile Bootstrap) UCL	0.791
95% KM (z) UCL	0.794	95% KM Bootstrap t UCL	0.778
90% KM Chebyshev UCL	0.911	95% KM Chebyshev UCL	1.028
97.5% KM Chebyshev UCL	1.19	99% KM Chebyshev UCL	1.509

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.342	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.709	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.241	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.312	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	9.155	k star (bias corrected MLE)	5.327
Theta hat (MLE)	0.194	Theta star (bias corrected MLE)	0.334
nu hat (MLE)	128.2	nu star (bias corrected)	74.58
Mean (detects)	1.778		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.284

Maximum	2.71	Median	0.01
SD	0.661	CV	2.328
k hat (MLE)	0.302	k star (bias corrected MLE)	0.297
Theta hat (MLE)	0.94	Theta star (bias corrected MLE)	0.955
nu hat (MLE)	29	nu star (bias corrected)	28.52
Adjusted Level of Significance (β)	0.045		
Approximate Chi Square Value (28.52, α)	17.34	Adjusted Chi Square Value (28.52, β)	17.07
95% Gamma Approximate UCL (use when n>=50)	0.467	95% Gamma Adjusted UCL (use when n<50)	0.475

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.652	SD (KM)	0.519
Variance (KM)	0.269	SE of Mean (KM)	0.0861
k hat (KM)	1.579	k star (KM)	1.494
nu hat (KM)	151.6	nu star (KM)	143.5
theta hat (KM)	0.413	theta star (KM)	0.436
80% gamma percentile (KM)	1.009	90% gamma percentile (KM)	1.36
95% gamma percentile (KM)	1.701	99% gamma percentile (KM)	2.47

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (143.46, α)	116.8	Adjusted Chi Square Value (143.46, β)	116
95% Gamma Approximate KM-UCL (use when n>=50)	0.801	95% Gamma Adjusted KM-UCL (use when n<50)	0.806

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.272	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.573	Mean in Log Scale	-0.812
SD in Original Scale	0.554	SD in Log Scale	0.627
95% t UCL (assumes normality of ROS data)	0.707	95% Percentile Bootstrap UCL	0.712
95% BCA Bootstrap UCL	0.73	95% Bootstrap t UCL	0.779
95% H-UCL (Log ROS)	0.648		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.603	KM Geo Mean	0.547
KM SD (logged)	0.508	95% Critical H Value (KM-Log)	1.893
KM Standard Error of Mean (logged)	0.0932	95% H-UCL (KM -Log)	0.716
KM SD (logged)	0.508	95% Critical H Value (KM-Log)	1.893
KM Standard Error of Mean (logged)	0.0932		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.682	Mean in Log Scale	-0.57
SD in Original Scale	0.52	SD in Log Scale	0.577

95% t UCL (Assumes normality)	0.808	95% H-Stat UCL	0.787

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.797

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	48	Number of Distinct Observations	47
		Number of Missing Observations	32
Minimum	1.24	Mean	47.75
Maximum	186	Median	38.75
SD	37.09	Std. Error of Mean	5.353
Coefficient of Variation	0.777	Skewness	2.19

Normal GOF Test

Shapiro Wilk Test Statistic	0.769	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.214	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.127	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.73	95% Adjusted-CLT UCL (Chen-1995)	58.36
		95% Modified-t UCL (Johnson-1978)	57.01

Gamma GOF Test

A-D Test Statistic	1.48	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.763	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.188	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.13	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.89	k star (bias corrected MLE)	1.786
Theta hat (MLE)	25.26	Theta star (bias corrected MLE)	26.73

nu hat (MLE)	181.5	nu star (bias corrected)	171.5
MLE Mean (bias corrected)	47.75	MLE Sd (bias corrected)	35.73
		Approximate Chi Square Value (0.05)	142.2
Adjusted Level of Significance	0.045	Adjusted Chi Square Value	141.4

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	57.58	95% Adjusted Gamma UCL (use when n<50)	57.92

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.868	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.239	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.127	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.215	Mean of logged Data	3.579
Maximum of Logged Data	5.226	SD of logged Data	0.879

Assuming Lognormal Distribution

95% H-UCL	70	90% Chebyshev (MVUE) UCL	74.78
95% Chebyshev (MVUE) UCL	85.03	97.5% Chebyshev (MVUE) UCL	99.26
99% Chebyshev (MVUE) UCL	127.2		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	56.55	95% Jackknife UCL	56.73
95% Standard Bootstrap UCL	56.26	95% Bootstrap-t UCL	60.24
95% Hall's Bootstrap UCL	60.14	95% Percentile Bootstrap UCL	56.99
95% BCA Bootstrap UCL	58.16		
90% Chebyshev(Mean, Sd) UCL	63.81	95% Chebyshev(Mean, Sd) UCL	71.08
97.5% Chebyshev(Mean, Sd) UCL	81.18	99% Chebyshev(Mean, Sd) UCL	101

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	71.08

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	40	Number of Distinct Observations	25

		Number of Missing Observations	38
Minimum	9	Mean	219.9
Maximum	3600	Median	100
SD	555.4	Std. Error of Mean	87.82
Coefficient of Variation	2.526	Skewness	6.071

Normal GOF Test

Shapiro Wilk Test Statistic	0.281	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.94	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.371	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.139	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	367.9	95% Adjusted-CLT UCL (Chen-1995)	454.4
		95% Modified-t UCL (Johnson-1978)	381.9

Gamma GOF Test

A-D Test Statistic	3.719	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.784	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.23	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.144	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.867	k star (bias corrected MLE)	0.818
Theta hat (MLE)	253.7	Theta star (bias corrected MLE)	268.7
nu hat (MLE)	69.35	nu star (bias corrected)	65.48
MLE Mean (bias corrected)	219.9	MLE Sd (bias corrected)	243.1
		Approximate Chi Square Value (0.05)	47.86
Adjusted Level of Significance	0.044	Adjusted Chi Square Value	47.29

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	300.9	95% Adjusted Gamma UCL (use when n<50)	304.4

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.94	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.218	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.139	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.197	Mean of logged Data	4.716
Maximum of Logged Data	8.189	SD of logged Data	1.002

Assuming Lognormal Distribution

95% H-UCL	271.6	90% Chebyshev (MVUE) UCL	281.5
95% Chebyshev (MVUE) UCL	327	97.5% Chebyshev (MVUE) UCL	390.1
99% Chebyshev (MVUE) UCL	514.1		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	364.3	95% Jackknife UCL	367.9
95% Standard Bootstrap UCL	361.5	95% Bootstrap-t UCL	964.7
95% Hall's Bootstrap UCL	915.5	95% Percentile Bootstrap UCL	389.7
95% BCA Bootstrap UCL	501.9		
90% Chebyshev(Mean, Sd) UCL	483.4	95% Chebyshev(Mean, Sd) UCL	602.7
97.5% Chebyshev(Mean, Sd) UCL	768.3	99% Chebyshev(Mean, Sd) UCL	1094

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	602.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	40	Number of Distinct Observations	16
		Number of Missing Observations	38
Number of Detects	2	Number of Non-Detects	38
Number of Distinct Detects	2	Number of Distinct Non-Detects	14
Minimum Detect	210	Minimum Non-Detect	17.5
Maximum Detect	410	Maximum Non-Detect	230
Variance Detects	20000	Percent Non-Detects	95%
Mean Detects	310	SD Detects	141.4
Median Detects	310	CV Detects	0.456
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	5.682	SD of Logged Detects	0.473

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	32.53	KM Standard Error of Mean	15.35
KM SD	68.04	95% KM (BCA) UCL	N/A
95% KM (t) UCL	58.38	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	57.77	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	78.57	95% KM Chebyshev UCL	99.42
97.5% KM Chebyshev UCL	128.4	99% KM Chebyshev UCL	185.2

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	9.264	k star (bias corrected MLE)	N/A
Theta hat (MLE)	33.46	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	37.06	nu star (bias corrected)	N/A
Mean (detects)	310		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	32.53	SD (KM)	68.04
Variance (KM)	4629	SE of Mean (KM)	15.35
k hat (KM)	0.229	k star (KM)	0.228
nu hat (KM)	18.28	nu star (KM)	18.24
theta hat (KM)	142.3	theta star (KM)	142.6
80% gamma percentile (KM)	45.59	90% gamma percentile (KM)	98.14
95% gamma percentile (KM)	161.7	99% gamma percentile (KM)	333.2

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.044
Approximate Chi Square Value (18.24, α)	9.568	Adjusted Chi Square Value (18.24, β)	9.332
95% Gamma Approximate KM-UCL (use when n>=50)	62.02	95% Gamma Adjusted KM-UCL (use when n<50)	63.59

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	35.96	Mean in Log Scale	2.887
SD in Original Scale	70.09	SD in Log Scale	1.052
95% t UCL (assumes normality of ROS data)	54.63	95% Percentile Bootstrap UCL	56.79
95% BCA Bootstrap UCL	64.61	95% Bootstrap t UCL	97.34
95% H-UCL (Log ROS)	47.27		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.008	KM Geo Mean	20.25
KM SD (logged)	0.628	95% Critical H Value (KM-Log)	2.026
KM Standard Error of Mean (logged)	0.143	95% H-UCL (KM -Log)	30.25
KM SD (logged)	0.628	95% Critical H Value (KM-Log)	2.026
KM Standard Error of Mean (logged)	0.143		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	69.73	Mean in Log Scale	4.009
SD in Original Scale	65.61	SD in Log Scale	0.67
95% t UCL (Assumes normality)	87.21	95% H-Stat UCL	86.04

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	58.38	KM H-UCL	30.25
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:03:50 AM
From File	Functional Area 7 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Antimony

General Statistics

Total Number of Observations	36	Number of Distinct Observations	31
		Number of Missing Observations	21
Minimum	0.21	Mean	1.65
Maximum	21.8	Median	1.078
SD	3.526	Std. Error of Mean	0.588
Coefficient of Variation	2.137	Skewness	5.632

Normal GOF Test

Shapiro Wilk Test Statistic	0.32	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.372	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.643	95% Adjusted-CLT UCL (Chen-1995)	3.206
		95% Modified-t UCL (Johnson-1978)	2.735

Gamma GOF Test

A-D Test Statistic	3.187	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.776	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.286	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.151	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.005	k star (bias corrected MLE)	0.939
Theta hat (MLE)	1.643	Theta star (bias corrected MLE)	1.757
nu hat (MLE)	72.33	nu star (bias corrected)	67.63
MLE Mean (bias corrected)	1.65	MLE Sd (bias corrected)	1.703
		Approximate Chi Square Value (0.05)	49.71
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	49.01

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	2.245	95% Adjusted Gamma UCL (use when n<50)	2.277

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.87	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.231	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-1.561	Mean of logged Data	-0.0734
Maximum of Logged Data	3.082	SD of logged Data	0.912

Assuming Lognormal Distribution

95% H-UCL	2.004	90% Chebyshev (MVUE) UCL	2.105
95% Chebyshev (MVUE) UCL	2.431	97.5% Chebyshev (MVUE) UCL	2.883
99% Chebyshev (MVUE) UCL	3.771		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	2.617	95% Jackknife UCL	2.643
95% Standard Bootstrap UCL	2.606	95% Bootstrap-t UCL	5.924
95% Hall's Bootstrap UCL	6.381	95% Percentile Bootstrap UCL	2.777
95% BCA Bootstrap UCL	3.501		
90% Chebyshev(Mean, Sd) UCL	3.413	95% Chebyshev(Mean, Sd) UCL	4.212
97.5% Chebyshev(Mean, Sd) UCL	5.32	99% Chebyshev(Mean, Sd) UCL	7.497

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.212

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	36	Number of Distinct Observations	36
		Number of Missing Observations	21
Minimum	1.01	Mean	13.01
Maximum	334	Median	3.265
SD	55.08	Std. Error of Mean	9.181
Coefficient of Variation	4.233	Skewness	5.98

Normal GOF Test

Shapiro Wilk Test Statistic	0.199	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.466	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.52	95% Adjusted-CLT UCL (Chen-1995)	37.89
		95% Modified-t UCL (Johnson-1978)	30.05

Gamma GOF Test

A-D Test Statistic	8.071	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.812	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.406	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.155	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.508	k star (bias corrected MLE)	0.484
Theta hat (MLE)	25.62	Theta star (bias corrected MLE)	26.88
nu hat (MLE)	36.56	nu star (bias corrected)	34.85
MLE Mean (bias corrected)	13.01	MLE Sd (bias corrected)	18.7
		Approximate Chi Square Value (0.05)	22.35
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	21.89

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	20.3	95% Adjusted Gamma UCL (use when n<50)	20.72

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.718	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.00995	Mean of logged Data	1.318
Maximum of Logged Data	5.811	SD of logged Data	0.943

Assuming Lognormal Distribution

95% H-UCL	8.437	90% Chebyshev (MVUE) UCL	8.824
95% Chebyshev (MVUE) UCL	10.23	97.5% Chebyshev (MVUE) UCL	12.17
99% Chebyshev (MVUE) UCL	15.99		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	28.11	95% Jackknife UCL	28.52
95% Standard Bootstrap UCL	27.63	95% Bootstrap-t UCL	333
95% Hall's Bootstrap UCL	149.1	95% Percentile Bootstrap UCL	31.31
95% BCA Bootstrap UCL	41.37		
90% Chebyshev(Mean, Sd) UCL	40.55	95% Chebyshev(Mean, Sd) UCL	53.03
97.5% Chebyshev(Mean, Sd) UCL	70.35	99% Chebyshev(Mean, Sd) UCL	104.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	53.03

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	36	Number of Distinct Observations	36
		Number of Missing Observations	21
Minimum	0.0949	Mean	0.527
Maximum	1.37	Median	0.445
SD	0.366	Std. Error of Mean	0.061
Coefficient of Variation	0.694	Skewness	0.828

Normal GOF Test

Shapiro Wilk Test Statistic	0.89	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.151	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.63	95% Adjusted-CLT UCL (Chen-1995)	0.636
		95% Modified-t UCL (Johnson-1978)	0.631

Gamma GOF Test

A-D Test Statistic	0.46	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.759	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.116	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.149	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.119	k star (bias corrected MLE)	1.961
Theta hat (MLE)	0.249	Theta star (bias corrected MLE)	0.269
nu hat (MLE)	152.5	nu star (bias corrected)	141.2
MLE Mean (bias corrected)	0.527	MLE Sd (bias corrected)	0.376
		Approximate Chi Square Value (0.05)	114.7
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	113.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	0.648	95% Adjusted Gamma UCL (use when n<50)	0.655

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.953	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.935	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.112	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.145	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-2.355	Mean of logged Data	-0.895
Maximum of Logged Data	0.315	SD of logged Data	0.751

Assuming Lognormal Distribution

95% H-UCL	0.709	90% Chebyshev (MVUE) UCL	0.758
95% Chebyshev (MVUE) UCL	0.858	97.5% Chebyshev (MVUE) UCL	0.997
99% Chebyshev (MVUE) UCL	1.27		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.627	95% Jackknife UCL	0.63
95% Standard Bootstrap UCL	0.626	95% Bootstrap-t UCL	0.64
95% Hall's Bootstrap UCL	0.634	95% Percentile Bootstrap UCL	0.622
95% BCA Bootstrap UCL	0.635		
90% Chebyshev(Mean, Sd) UCL	0.71	95% Chebyshev(Mean, Sd) UCL	0.793
97.5% Chebyshev(Mean, Sd) UCL	0.908	99% Chebyshev(Mean, Sd) UCL	1.133

Suggested UCL to Use

95% Adjusted Gamma UCL	0.655

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Cadmium

General Statistics

Total Number of Observations	36	Number of Distinct Observations	34
		Number of Missing Observations	21
Number of Detects	17	Number of Non-Detects	19
Number of Distinct Detects	17	Number of Distinct Non-Detects	17
Minimum Detect	0.04	Minimum Non-Detect	0.135
Maximum Detect	1.3	Maximum Non-Detect	1.45
Variance Detects	0.101	Percent Non-Detects	52.78%
Mean Detects	0.412	SD Detects	0.318
Median Detects	0.324	CV Detects	0.77
Skewness Detects	1.782	Kurtosis Detects	3.283
Mean of Logged Detects	-1.146	SD of Logged Detects	0.787

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.816	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.23	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.207	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.252	KM Standard Error of Mean	0.049
KM SD	0.271	95% KM (BCA) UCL	0.373
95% KM (t) UCL	0.335	95% KM (Percentile Bootstrap) UCL	0.348
95% KM (z) UCL	0.333	95% KM Bootstrap t UCL	0.353
90% KM Chebyshev UCL	0.399	95% KM Chebyshev UCL	0.466
97.5% KM Chebyshev UCL	0.558	99% KM Chebyshev UCL	0.74

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.379	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.749	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.136	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.212	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.078	k star (bias corrected MLE)	1.751
Theta hat (MLE)	0.198	Theta star (bias corrected MLE)	0.235
nu hat (MLE)	70.66	nu star (bias corrected)	59.52
Mean (detects)	0.412		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.213
Maximum	1.3	Median	0.0812
SD	0.288	CV	1.352
k hat (MLE)	0.664	k star (bias corrected MLE)	0.627
Theta hat (MLE)	0.321	Theta star (bias corrected MLE)	0.34
nu hat (MLE)	47.78	nu star (bias corrected)	45.13
Adjusted Level of Significance (β)	0.0428		
Approximate Chi Square Value (45.13, α)	30.72	Adjusted Chi Square Value (45.13, β)	30.18
95% Gamma Approximate UCL (use when n>=50)	0.313	95% Gamma Adjusted UCL (use when n<50)	0.319

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.252	SD (KM)	0.271
Variance (KM)	0.0734	SE of Mean (KM)	0.049
k hat (KM)	0.866	k star (KM)	0.812
nu hat (KM)	62.35	nu star (KM)	58.49
theta hat (KM)	0.291	theta star (KM)	0.31
80% gamma percentile (KM)	0.412	90% gamma percentile (KM)	0.611
95% gamma percentile (KM)	0.813	99% gamma percentile (KM)	1.291

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (58.49, α)	41.91	Adjusted Chi Square Value (58.49, β)	41.27
95% Gamma Approximate KM-UCL (use when n>=50)	0.352	95% Gamma Adjusted KM-UCL (use when n<50)	0.357

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.94	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.139	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.207	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.247	Mean in Log Scale	-1.778
SD in Original Scale	0.267	SD in Log Scale	0.836
95% t UCL (assumes normality of ROS data)	0.323	95% Percentile Bootstrap UCL	0.327
95% BCA Bootstrap UCL	0.343	95% Bootstrap t UCL	0.368
95% H-UCL (Log ROS)	0.327		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.893	KM Geo Mean	0.151
KM SD (logged)	1.058	95% Critical H Value (KM-Log)	2.449
KM Standard Error of Mean (logged)	0.228	95% H-UCL (KM -Log)	0.408
KM SD (logged)	1.058	95% Critical H Value (KM-Log)	2.449
KM Standard Error of Mean (logged)	0.228		

DL/2 Statistics

DL/2 Normal **DL/2 Log-Transformed**

Mean in Original Scale	0.277	Mean in Log Scale	-1.604
SD in Original Scale	0.27	SD in Log Scale	0.773
95% t UCL (Assumes normality)	0.353	95% H-Stat UCL	0.359

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	0.357	95% GROS Adjusted Gamma UCL	0.319

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	36	Number of Distinct Observations	33
		Number of Missing Observations	21
Minimum	1.64	Mean	1369
Maximum	48500	Median	17.3
SD	8080	Std. Error of Mean	1347
Coefficient of Variation	5.9	Skewness	6

Normal GOF Test

Shapiro Wilk Test Statistic	0.172	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.53	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3644	95% Adjusted-CLT UCL (Chen-1995)	5023
		95% Modified-t UCL (Johnson-1978)	3869

Gamma GOF Test

A-D Test Statistic	11.23	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.93	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.492	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.164	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.176	k star (bias corrected MLE)	0.18
Theta hat (MLE)	7771	Theta star (bias corrected MLE)	7606
nu hat (MLE)	12.69	nu star (bias corrected)	12.96
MLE Mean (bias corrected)	1369	MLE Sd (bias corrected)	3227
		Approximate Chi Square Value (0.05)	5.868
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	5.651

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	3025	95% Adjusted Gamma UCL (use when n<50)	3141

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.662	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.935	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.243	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.145	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.495	Mean of logged Data	2.963
Maximum of Logged Data	10.79	SD of logged Data	1.583

Assuming Lognormal Distribution

95% H-UCL	156.1	90% Chebyshev (MVUE) UCL	128.3
95% Chebyshev (MVUE) UCL	157.8	97.5% Chebyshev (MVUE) UCL	198.8
99% Chebyshev (MVUE) UCL	279.3		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	3584	95% Jackknife UCL	3644
95% Standard Bootstrap UCL	3518	95% Bootstrap-t UCL	1056083
95% Hall's Bootstrap UCL	352360	95% Percentile Bootstrap UCL	4061
95% BCA Bootstrap UCL	5419		
90% Chebyshev(Mean, Sd) UCL	5409	95% Chebyshev(Mean, Sd) UCL	7239
97.5% Chebyshev(Mean, Sd) UCL	9779	99% Chebyshev(Mean, Sd) UCL	14768

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7239

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	36	Number of Distinct Observations	30
		Number of Missing Observations	21
Minimum	0.0168	Mean	0.123
Maximum	2.3	Median	0.0535
SD	0.374	Std. Error of Mean	0.0624
Coefficient of Variation	3.037	Skewness	5.948

Normal GOF Test

Shapiro Wilk Test Statistic	0.221	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.444	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.229	95% Adjusted-CLT UCL (Chen-1995)	0.292
		95% Modified-t UCL (Johnson-1978)	0.239

Gamma GOF Test

A-D Test Statistic	7.423	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.783	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.344	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.152	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.856	k star (bias corrected MLE)	0.804
Theta hat (MLE)	0.144	Theta star (bias corrected MLE)	0.153
nu hat (MLE)	61.66	nu star (bias corrected)	57.85
MLE Mean (bias corrected)	0.123	MLE Sd (bias corrected)	0.137
		Approximate Chi Square Value (0.05)	41.37
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	40.73

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.172	95% Adjusted Gamma UCL (use when n<50)	0.175

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.682	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.224	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.086	Mean of logged Data	-2.781

Maximum of Logged Data	0.833	SD of logged Data	0.746

Assuming Lognormal Distribution

95% H-UCL	0.107	90% Chebyshev (MVUE) UCL	0.114
95% Chebyshev (MVUE) UCL	0.129	97.5% Chebyshev (MVUE) UCL	0.15
99% Chebyshev (MVUE) UCL	0.191		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	0.226	95% Jackknife UCL	0.229
95% Standard Bootstrap UCL	0.225	95% Bootstrap-t UCL	1.308
95% Hall's Bootstrap UCL	0.695	95% Percentile Bootstrap UCL	0.245
95% BCA Bootstrap UCL	0.311		
90% Chebyshev(Mean, Sd) UCL	0.31	95% Chebyshev(Mean, Sd) UCL	0.395
97.5% Chebyshev(Mean, Sd) UCL	0.513	99% Chebyshev(Mean, Sd) UCL	0.744

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	0.395

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	36	Number of Distinct Observations	33
		Number of Missing Observations	21
Minimum	0.51	Mean	9.071
Maximum	71.4	Median	8.015
SD	11.78	Std. Error of Mean	1.964
Coefficient of Variation	1.299	Skewness	4.491

Normal GOF Test

Shapiro Wilk Test Statistic	0.526	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.39	95% Adjusted-CLT UCL (Chen-1995)	13.87
		95% Modified-t UCL (Johnson-1978)	12.63

Gamma GOF Test

A-D Test Statistic	0.989	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.771	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.18	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.15	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.244	k star (bias corrected MLE)	1.159
Theta hat (MLE)	7.29	Theta star (bias corrected MLE)	7.826
nu hat (MLE)	89.59	nu star (bias corrected)	83.45
MLE Mean (bias corrected)	9.071	MLE Sd (bias corrected)	8.426
		Approximate Chi Square Value (0.05)	63.4
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	62.61

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	11.94	95% Adjusted Gamma UCL (use when n<50)	12.09

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.938	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.145	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.673	Mean of logged Data	1.752
Maximum of Logged Data	4.268	SD of logged Data	0.998

Assuming Lognormal Distribution

95% H-UCL	14.17	90% Chebyshev (MVUE) UCL	14.67
95% Chebyshev (MVUE) UCL	17.11	97.5% Chebyshev (MVUE) UCL	20.49
99% Chebyshev (MVUE) UCL	27.13		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	12.3	95% Jackknife UCL	12.39
95% Standard Bootstrap UCL	12.22	95% Bootstrap-t UCL	16.84
95% Hall's Bootstrap UCL	26.81	95% Percentile Bootstrap UCL	12.49
95% BCA Bootstrap UCL	14.57		
90% Chebyshev(Mean, Sd) UCL	14.96	95% Chebyshev(Mean, Sd) UCL	17.63
97.5% Chebyshev(Mean, Sd) UCL	21.33	99% Chebyshev(Mean, Sd) UCL	28.61

Suggested UCL to Use

95% H-UCL 14.17

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Selenium

General Statistics

Total Number of Observations	36	Number of Distinct Observations	30
		Number of Missing Observations	21
Minimum	0.487	Mean	1.483
Maximum	15.8	Median	1.088
SD	2.468	Std. Error of Mean	0.411
Coefficient of Variation	1.664	Skewness	5.897

Normal GOF Test

Shapiro Wilk Test Statistic	0.252	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.44	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.178	95% Adjusted-CLT UCL (Chen-1995)	2.591
		95% Modified-t UCL (Johnson-1978)	2.245

Gamma GOF Test

A-D Test Statistic	6.663	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.76	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.339	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.149	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.946	k star (bias corrected MLE)	1.802
Theta hat (MLE)	0.762	Theta star (bias corrected MLE)	0.823
nu hat (MLE)	140.1	nu star (bias corrected)	129.7
MLE Mean (bias corrected)	1.483	MLE Sd (bias corrected)	1.105
		Approximate Chi Square Value (0.05)	104.4

Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	103.4

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.842	95% Adjusted Gamma UCL (use when n<50)	1.86

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.628	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.935	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.242	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.145	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.719	Mean of logged Data	0.115
Maximum of Logged Data	2.76	SD of logged Data	0.522

Assuming Lognormal Distribution

95% H-UCL	1.524	90% Chebyshev (MVUE) UCL	1.631
95% Chebyshev (MVUE) UCL	1.79	97.5% Chebyshev (MVUE) UCL	2.011
99% Chebyshev (MVUE) UCL	2.445		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	2.159	95% Jackknife UCL	2.178
95% Standard Bootstrap UCL	2.133	95% Bootstrap-t UCL	6.433
95% Hall's Bootstrap UCL	5.774	95% Percentile Bootstrap UCL	2.293
95% BCA Bootstrap UCL	2.733		
90% Chebyshev(Mean, Sd) UCL	2.717	95% Chebyshev(Mean, Sd) UCL	3.276
97.5% Chebyshev(Mean, Sd) UCL	4.051	99% Chebyshev(Mean, Sd) UCL	5.575

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.276

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	36	Number of Distinct Observations	32
		Number of Missing Observations	21
Number of Detects	6	Number of Non-Detects	30
Number of Distinct Detects	6	Number of Distinct Non-Detects	26

Minimum Detect	0.53	Minimum Non-Detect	0.41
Maximum Detect	2.5	Maximum Non-Detect	5.6
Variance Detects	0.668	Percent Non-Detects	83.33%
Mean Detects	1.277	SD Detects	0.817
Median Detects	1.065	CV Detects	0.64
Skewness Detects	0.624	Kurtosis Detects	-1.409
Mean of Logged Detects	0.0625	SD of Logged Detects	0.668

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.876	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.267	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.599	KM Standard Error of Mean	0.0897
KM SD	0.456	95% KM (BCA) UCL	0.808
95% KM (t) UCL	0.751	95% KM (Percentile Bootstrap) UCL	0.755
95% KM (z) UCL	0.747	95% KM Bootstrap t UCL	0.75
90% KM Chebyshev UCL	0.868	95% KM Chebyshev UCL	0.99
97.5% KM Chebyshev UCL	1.159	99% KM Chebyshev UCL	1.492

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.444	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.702	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.278	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.907	k star (bias corrected MLE)	1.564
Theta hat (MLE)	0.439	Theta star (bias corrected MLE)	0.816
nu hat (MLE)	34.88	nu star (bias corrected)	18.77
Mean (detects)	1.277		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.232
Maximum	2.5	Median	0.01
SD	0.569	CV	2.449
k hat (MLE)	0.308	k star (bias corrected MLE)	0.301
Theta hat (MLE)	0.755	Theta star (bias corrected MLE)	0.773

nu hat (MLE)	22.16	nu star (bias corrected)	21.64
Adjusted Level of Significance (β)	0.0428		
Approximate Chi Square Value (21.64, α)	12.07	Adjusted Chi Square Value (21.64, β)	11.75
95% Gamma Approximate UCL (use when n>=50)	0.416	95% Gamma Adjusted UCL (use when n<50)	0.428

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.599	SD (KM)	0.456
Variance (KM)	0.208	SE of Mean (KM)	0.0897
k hat (KM)	1.727	k star (KM)	1.602
nu hat (KM)	124.4	nu star (KM)	115.3
theta hat (KM)	0.347	theta star (KM)	0.374
80% gamma percentile (KM)	0.921	90% gamma percentile (KM)	1.229
95% gamma percentile (KM)	1.528	99% gamma percentile (KM)	2.199

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (115.35, α)	91.55	Adjusted Chi Square Value (115.35, β)	90.59
95% Gamma Approximate KM-UCL (use when n>=50)	0.755	95% Gamma Adjusted KM-UCL (use when n<50)	0.763

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.879	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.249	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.39	Mean in Log Scale	-1.32
SD in Original Scale	0.512	SD in Log Scale	0.736
95% t UCL (assumes normality of ROS data)	0.534	95% Percentile Bootstrap UCL	0.537
95% BCA Bootstrap UCL	0.589	95% Bootstrap t UCL	0.671
95% H-UCL (Log ROS)	0.455		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.654	KM Geo Mean	0.52
KM SD (logged)	0.448	95% Critical H Value (KM-Log)	1.873
KM Standard Error of Mean (logged)	0.0957	95% H-UCL (KM -Log)	0.662
KM SD (logged)	0.448	95% Critical H Value (KM-Log)	1.873
KM Standard Error of Mean (logged)	0.0957		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.779	Mean in Log Scale	-0.546
SD in Original Scale	0.747	SD in Log Scale	0.714
95% t UCL (Assumes normality)	0.989	95% H-Stat UCL	0.962

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.751

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	36	Number of Distinct Observations	36
		Number of Missing Observations	21
Minimum	3.77	Mean	862.1
Maximum	27700	Median	38.9
SD	4606	Std. Error of Mean	767.7
Coefficient of Variation	5.343	Skewness	5.978

Normal GOF Test

Shapiro Wilk Test Statistic	0.19	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.482	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.145	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2159	95% Adjusted-CLT UCL (Chen-1995)	2942
		95% Modified-t UCL (Johnson-1978)	2287

Gamma GOF Test

A-D Test Statistic	7.755	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.887	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.427	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.162	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.241	k star (bias corrected MLE)	0.239
Theta hat (MLE)	3579	Theta star (bias corrected MLE)	3603
nu hat (MLE)	17.34	nu star (bias corrected)	17.23
MLE Mean (bias corrected)	862.1	MLE Sd (bias corrected)	1762
		Approximate Chi Square Value (0.05)	8.837
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	8.563

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1681	95% Adjusted Gamma UCL (use when n<50)	1735

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.85	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.935	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.23	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.145	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.327	Mean of logged Data	3.793
Maximum of Logged Data	10.23	SD of logged Data	1.637

Assuming Lognormal Distribution

95% H-UCL	410.5	90% Chebyshev (MVUE) UCL	325.6
95% Chebyshev (MVUE) UCL	402.2	97.5% Chebyshev (MVUE) UCL	508.5
99% Chebyshev (MVUE) UCL	717.2		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	2125	95% Jackknife UCL	2159
95% Standard Bootstrap UCL	2070	95% Bootstrap-t UCL	52041
95% Hall's Bootstrap UCL	35812	95% Percentile Bootstrap UCL	2383
95% BCA Bootstrap UCL	3884		
90% Chebyshev(Mean, Sd) UCL	3165	95% Chebyshev(Mean, Sd) UCL	4209
97.5% Chebyshev(Mean, Sd) UCL	5657	99% Chebyshev(Mean, Sd) UCL	8501

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4209

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	28	Number of Distinct Observations	21
		Number of Missing Observations	29
Number of Detects	11	Number of Non-Detects	17
Number of Distinct Detects	11	Number of Distinct Non-Detects	10
Minimum Detect	28	Minimum Non-Detect	85

Maximum Detect	570	Maximum Non-Detect	550
Variance Detects	31125	Percent Non-Detects	60.71%
Mean Detects	153.6	SD Detects	176.4
Median Detects	73	CV Detects	1.148
Skewness Detects	1.814	Kurtosis Detects	2.496
Mean of Logged Detects	4.55	SD of Logged Detects	0.986

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.724	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.281	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	94.27	KM Standard Error of Mean	24.48
KM SD	118.7	95% KM (BCA) UCL	135.8
95% KM (t) UCL	136	95% KM (Percentile Bootstrap) UCL	136.6
95% KM (z) UCL	134.5	95% KM Bootstrap t UCL	185.3
90% KM Chebyshev UCL	167.7	95% KM Chebyshev UCL	201
97.5% KM Chebyshev UCL	247.1	99% KM Chebyshev UCL	337.8

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.611	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.748	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.198	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.261	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.171	k star (bias corrected MLE)	0.912
Theta hat (MLE)	131.2	Theta star (bias corrected MLE)	168.4
nu hat (MLE)	25.76	nu star (bias corrected)	20.07
Mean (detects)	153.6		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	83.67
Maximum	570	Median	43.57
SD	123.9	CV	1.48
k hat (MLE)	0.484	k star (bias corrected MLE)	0.456
Theta hat (MLE)	173	Theta star (bias corrected MLE)	183.6
nu hat (MLE)	27.08	nu star (bias corrected)	25.51

Adjusted Level of Significance (β)	0.0404		
Approximate Chi Square Value (25.51, α)	15.01	Adjusted Chi Square Value (25.51, β)	14.51
95% Gamma Approximate UCL (use when n>=50)	142.3	95% Gamma Adjusted UCL (use when n<50)	147.2

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	94.27	SD (KM)	118.7
Variance (KM)	14078	SE of Mean (KM)	24.48
k hat (KM)	0.631	k star (KM)	0.587
nu hat (KM)	35.35	nu star (KM)	32.9
theta hat (KM)	149.3	theta star (KM)	160.5
80% gamma percentile (KM)	155.4	90% gamma percentile (KM)	246.3
95% gamma percentile (KM)	341.8	99% gamma percentile (KM)	573.1

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (32.90, α)	20.79	Adjusted Chi Square Value (32.90, β)	20.19
95% Gamma Approximate KM-UCL (use when n>=50)	149.2	95% Gamma Adjusted KM-UCL (use when n<50)	153.6

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.149	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.251	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	93.36	Mean in Log Scale	4.181
SD in Original Scale	118.9	SD in Log Scale	0.724
95% t UCL (assumes normality of ROS data)	131.6	95% Percentile Bootstrap UCL	132.6
95% BCA Bootstrap UCL	153.3	95% Bootstrap t UCL	212.6
95% H-UCL (Log ROS)	114.7		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.162	KM Geo Mean	64.22
KM SD (logged)	0.75	95% Critical H Value (KM-Log)	2.173
KM Standard Error of Mean (logged)	0.184	95% H-UCL (KM -Log)	116.4
KM SD (logged)	0.75	95% Critical H Value (KM-Log)	2.173
KM Standard Error of Mean (logged)	0.184		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	107.6	Mean in Log Scale	4.336
SD in Original Scale	121.9	SD in Log Scale	0.744
95% t UCL (Assumes normality)	146.8	95% H-Stat UCL	137.4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1	153.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	28	Number of Distinct Observations	15
		Number of Missing Observations	29
Number of Detects	1	Number of Non-Detects	27
Number of Distinct Detects	1	Number of Distinct Non-Detects	14

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable N-Nitrosodiphenylamine was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:08:27 AM
From File	Functional Area 8 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Antimony

General Statistics

Total Number of Observations	19	Number of Distinct Observations	17
		Number of Missing Observations	63
Number of Detects	5	Number of Non-Detects	14
Number of Distinct Detects	5	Number of Distinct Non-Detects	12
Minimum Detect	0.23	Minimum Non-Detect	0.22
Maximum Detect	1.16	Maximum Non-Detect	1.15
Variance Detects	0.191	Percent Non-Detects	73.68%
Mean Detects	0.668	SD Detects	0.437
Median Detects	0.57	CV Detects	0.654
Skewness Detects	0.276	Kurtosis Detects	-2.948
Mean of Logged Detects	-0.607	SD of Logged Detects	0.741

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.861	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.233	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.375	KM Standard Error of Mean	0.083
KM SD	0.29	95% KM (BCA) UCL	0.529
95% KM (t) UCL	0.519	95% KM (Percentile Bootstrap) UCL	0.512
95% KM (z) UCL	0.512	95% KM Bootstrap t UCL	0.51
90% KM Chebyshev UCL	0.624	95% KM Chebyshev UCL	0.737
97.5% KM Chebyshev UCL	0.894	99% KM Chebyshev UCL	1.201

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.4	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.683	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.256	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.611	k star (bias corrected MLE)	1.178
Theta hat (MLE)	0.256	Theta star (bias corrected MLE)	0.567
nu hat (MLE)	26.11	nu star (bias corrected)	11.78
Mean (detects)	0.668		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.261
Maximum	1.16	Median	0.138
SD	0.33	CV	1.266
k hat (MLE)	0.835	k star (bias corrected MLE)	0.738
Theta hat (MLE)	0.313	Theta star (bias corrected MLE)	0.354
nu hat (MLE)	31.72	nu star (bias corrected)	28.05
Adjusted Level of Significance (β)	0.0369		
Approximate Chi Square Value (28.05, α)	16.97	Adjusted Chi Square Value (28.05, β)	16.21
95% Gamma Approximate UCL (use when n>=50)	0.431	95% Gamma Adjusted UCL (use when n<50)	0.451

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.375	SD (KM)	0.29
Variance (KM)	0.0844	SE of Mean (KM)	0.083
k hat (KM)	1.67	k star (KM)	1.441
nu hat (KM)	63.45	nu star (KM)	54.77
theta hat (KM)	0.225	theta star (KM)	0.26
80% gamma percentile (KM)	0.583	90% gamma percentile (KM)	0.79
95% gamma percentile (KM)	0.991	99% gamma percentile (KM)	1.446

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (54.77, α)	38.76	Adjusted Chi Square Value (54.77, β)	37.58
95% Gamma Approximate KM-UCL (use when n>=50)	0.53	95% Gamma Adjusted KM-UCL (use when n<50)	0.547

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.308	Mean in Log Scale	-1.451
SD in Original Scale	0.305	SD in Log Scale	0.675
95% t UCL (assumes normality of ROS data)	0.43	95% Percentile Bootstrap UCL	0.435
95% BCA Bootstrap UCL	0.461	95% Bootstrap t UCL	0.616
95% H-UCL (Log ROS)	0.417		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.17	KM Geo Mean	0.31
KM SD (logged)	0.547	95% Critical H Value (KM-Log)	2.055
KM Standard Error of Mean (logged)	0.166	95% H-UCL (KM -Log)	0.47
KM SD (logged)	0.547	95% Critical H Value (KM-Log)	2.055
KM Standard Error of Mean (logged)	0.166		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.466	Mean in Log Scale	-0.995
SD in Original Scale	0.298	SD in Log Scale	0.752
95% t UCL (Assumes normality)	0.585	95% H-Stat UCL	0.735

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.519

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	19	Number of Distinct Observations	18
		Number of Missing Observations	63
Number of Detects	16	Number of Non-Detects	3
Number of Distinct Detects	15	Number of Distinct Non-Detects	3
Minimum Detect	0.0736	Minimum Non-Detect	0.264
Maximum Detect	0.8	Maximum Non-Detect	0.27
Variance Detects	0.0412	Percent Non-Detects	15.79%
Mean Detects	0.451	SD Detects	0.203
Median Detects	0.485	CV Detects	0.45
Skewness Detects	-0.28	Kurtosis Detects	-0.335
Mean of Logged Detects	-0.944	SD of Logged Detects	0.644

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.974	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.123	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.213	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.401	KM Standard Error of Mean	0.0514
KM SD	0.215	95% KM (BCA) UCL	0.488
95% KM (t) UCL	0.49	95% KM (Percentile Bootstrap) UCL	0.486
95% KM (z) UCL	0.486	95% KM Bootstrap t UCL	0.493
90% KM Chebyshev UCL	0.556	95% KM Chebyshev UCL	0.625
97.5% KM Chebyshev UCL	0.722	99% KM Chebyshev UCL	0.913

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.635	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.743	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.194	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.216	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.55	k star (bias corrected MLE)	2.926
Theta hat (MLE)	0.127	Theta star (bias corrected MLE)	0.154
nu hat (MLE)	113.6	nu star (bias corrected)	93.62
Mean (detects)	0.451		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0736	Mean	0.411
Maximum	0.8	Median	0.45
SD	0.208	CV	0.508
k hat (MLE)	3.236	k star (bias corrected MLE)	2.76
Theta hat (MLE)	0.127	Theta star (bias corrected MLE)	0.149
nu hat (MLE)	123	nu star (bias corrected)	104.9
Adjusted Level of Significance (β)	0.0369		
Approximate Chi Square Value (104.89, α)	82.26	Adjusted Chi Square Value (104.89, β)	80.51
95% Gamma Approximate UCL (use when n>=50)	0.523	95% Gamma Adjusted UCL (use when n<50)	0.535

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.401	SD (KM)	0.215
Variance (KM)	0.0461	SE of Mean (KM)	0.0514
k hat (KM)	3.488	k star (KM)	2.973
nu hat (KM)	132.6	nu star (KM)	113
theta hat (KM)	0.115	theta star (KM)	0.135
80% gamma percentile (KM)	0.573	90% gamma percentile (KM)	0.713
95% gamma percentile (KM)	0.844	99% gamma percentile (KM)	1.128

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (112.97, α)	89.43	Adjusted Chi Square Value (112.97, β)	87.6
95% Gamma Approximate KM-UCL (use when n>=50)	0.507	95% Gamma Adjusted KM-UCL (use when n<50)	0.517

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.846	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.214	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.213	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.405	Mean in Log Scale	-1.082
SD in Original Scale	0.214	SD in Log Scale	0.673
95% t UCL (assumes normality of ROS data)	0.491	95% Percentile Bootstrap UCL	0.483
95% BCA Bootstrap UCL	0.487	95% Bootstrap t UCL	0.493
95% H-UCL (Log ROS)	0.601		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.123	KM Geo Mean	0.325
KM SD (logged)	0.727	95% Critical H Value (KM-Log)	2.252
KM Standard Error of Mean (logged)	0.181	95% H-UCL (KM -Log)	0.623
KM SD (logged)	0.727	95% Critical H Value (KM-Log)	2.252
KM Standard Error of Mean (logged)	0.181		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.401	Mean in Log Scale	-1.113
SD in Original Scale	0.22	SD in Log Scale	0.712
95% t UCL (Assumes normality)	0.488	95% H-Stat UCL	0.616

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.49

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Cadmium

General Statistics

Total Number of Observations	19	Number of Distinct Observations	19

		Number of Missing Observations	63
Minimum	0.05	Mean	1.015
Maximum	13.1	Median	0.251
SD	2.958	Std. Error of Mean	0.679
Coefficient of Variation	2.913	Skewness	4.217

Normal GOF Test

Shapiro Wilk Test Statistic	0.329	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.453	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.197	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.192	95% Adjusted-CLT UCL (Chen-1995)	2.833
		95% Modified-t UCL (Johnson-1978)	2.301

Gamma GOF Test

A-D Test Statistic	2.93	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.803	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.342	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.21	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.499	k star (bias corrected MLE)	0.456
Theta hat (MLE)	2.034	Theta star (bias corrected MLE)	2.229
nu hat (MLE)	18.97	nu star (bias corrected)	17.31
MLE Mean (bias corrected)	1.015	MLE Sd (bias corrected)	1.504
		Approximate Chi Square Value (0.05)	8.894
Adjusted Level of Significance	0.0369	Adjusted Chi Square Value	8.369

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.976	95% Adjusted Gamma UCL (use when n<50)	2.1

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.847	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.238	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.197	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-2.996	Mean of logged Data	-1.257
Maximum of Logged Data	2.573	SD of logged Data	1.24

Assuming Lognormal Distribution

95% H-UCL	1.459	90% Chebyshev (MVUE) UCL	1.14
95% Chebyshev (MVUE) UCL	1.395	97.5% Chebyshev (MVUE) UCL	1.751
99% Chebyshev (MVUE) UCL	2.448		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	2.131	95% Jackknife UCL	2.192
95% Standard Bootstrap UCL	2.09	95% Bootstrap-t UCL	15.73
95% Hall's Bootstrap UCL	7.346	95% Percentile Bootstrap UCL	2.359
95% BCA Bootstrap UCL	3.135		
90% Chebyshev(Mean, Sd) UCL	3.051	95% Chebyshev(Mean, Sd) UCL	3.973
97.5% Chebyshev(Mean, Sd) UCL	5.253	99% Chebyshev(Mean, Sd) UCL	7.766

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.973

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	19	Number of Distinct Observations	19
		Number of Missing Observations	63
Minimum	0.874	Mean	18.56
Maximum	56	Median	13.5
SD	14.9	Std. Error of Mean	3.418
Coefficient of Variation	0.803	Skewness	1.035

Normal GOF Test

Shapiro Wilk Test Statistic	0.884	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.901	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.249	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.197	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.48	95% Adjusted-CLT UCL (Chen-1995)	25.05
		95% Modified-t UCL (Johnson-1978)	24.62

Gamma GOF Test

A-D Test Statistic	0.306	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.758	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.145	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.202	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.464	k star (bias corrected MLE)	1.268
Theta hat (MLE)	12.67	Theta star (bias corrected MLE)	14.63
nu hat (MLE)	55.64	nu star (bias corrected)	48.19
MLE Mean (bias corrected)	18.56	MLE Sd (bias corrected)	16.48
		Approximate Chi Square Value (0.05)	33.25
Adjusted Level of Significance	0.0369	Adjusted Chi Square Value	32.17

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	26.89	95% Adjusted Gamma UCL (use when n<50)	27.8

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.935	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.135	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.197	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.135	Mean of logged Data	2.542
Maximum of Logged Data	4.025	SD of logged Data	1.014

Assuming Lognormal Distribution

95% H-UCL	39.83	90% Chebyshev (MVUE) UCL	36.38
95% Chebyshev (MVUE) UCL	43.59	97.5% Chebyshev (MVUE) UCL	53.61
99% Chebyshev (MVUE) UCL	73.28		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	24.18	95% Jackknife UCL	24.48
95% Standard Bootstrap UCL	24.11	95% Bootstrap-t UCL	25.92
95% Hall's Bootstrap UCL	25.05	95% Percentile Bootstrap UCL	24.47
95% BCA Bootstrap UCL	24.63		
90% Chebyshev(Mean, Sd) UCL	28.81	95% Chebyshev(Mean, Sd) UCL	33.46
97.5% Chebyshev(Mean, Sd) UCL	39.9	99% Chebyshev(Mean, Sd) UCL	52.57

Suggested UCL to Use

95% Adjusted Gamma UCL	27.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	19	Number of Distinct Observations	18
		Number of Missing Observations	63
Minimum	0.0125	Mean	0.246
Maximum	3.1	Median	0.0535
SD	0.695	Std. Error of Mean	0.159
Coefficient of Variation	2.83	Skewness	4.286

Normal GOF Test

Shapiro Wilk Test Statistic	0.321	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.901	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.438	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.197	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.522	95% Adjusted-CLT UCL (Chen-1995)	0.675
		95% Modified-t UCL (Johnson-1978)	0.548

Gamma GOF Test

A-D Test Statistic	2.583	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.798	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.313	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.209	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.551	k star (bias corrected MLE)	0.499
Theta hat (MLE)	0.445	Theta star (bias corrected MLE)	0.492
nu hat (MLE)	20.95	nu star (bias corrected)	18.98
MLE Mean (bias corrected)	0.246	MLE Sd (bias corrected)	0.347
		Approximate Chi Square Value (0.05)	10.1
Adjusted Level of Significance	0.0369	Adjusted Chi Square Value	9.538

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.461	95% Adjusted Gamma UCL (use when n<50)	0.489

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.876	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.901	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.17	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.197	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.382	Mean of logged Data	-2.539
Maximum of Logged Data	1.131	SD of logged Data	1.195

Assuming Lognormal Distribution

95% H-UCL	0.365	90% Chebyshev (MVUE) UCL	0.295
95% Chebyshev (MVUE) UCL	0.36	97.5% Chebyshev (MVUE) UCL	0.45
99% Chebyshev (MVUE) UCL	0.627		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.508	95% Jackknife UCL	0.522
95% Standard Bootstrap UCL	0.504	95% Bootstrap-t UCL	2.973
95% Hall's Bootstrap UCL	1.676	95% Percentile Bootstrap UCL	0.555
95% BCA Bootstrap UCL	0.728		
90% Chebyshev(Mean, Sd) UCL	0.724	95% Chebyshev(Mean, Sd) UCL	0.94
97.5% Chebyshev(Mean, Sd) UCL	1.241	99% Chebyshev(Mean, Sd) UCL	1.832

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	0.94

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	19	Number of Distinct Observations	19
		Number of Missing Observations	63
Number of Detects	17	Number of Non-Detects	2
Number of Distinct Detects	17	Number of Distinct Non-Detects	2
Minimum Detect	0.83	Minimum Non-Detect	0.525
Maximum Detect	18.2	Maximum Non-Detect	0.535
Variance Detects	20.47	Percent Non-Detects	10.53%
Mean Detects	7.449	SD Detects	4.524
Median Detects	8.9	CV Detects	0.607
Skewness Detects	0.354	Kurtosis Detects	0.593

Mean of Logged Detects	1.721	SD of Logged Detects	0.924

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.929	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.155	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.207	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	6.72	KM Standard Error of Mean	1.103
KM SD	4.664	95% KM (BCA) UCL	8.52
95% KM (t) UCL	8.633	95% KM (Percentile Bootstrap) UCL	8.428
95% KM (z) UCL	8.534	95% KM Bootstrap t UCL	8.796
90% KM Chebyshev UCL	10.03	95% KM Chebyshev UCL	11.53
97.5% KM Chebyshev UCL	13.61	99% KM Chebyshev UCL	17.69

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.933	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.751	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.219	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.212	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.889	k star (bias corrected MLE)	1.595
Theta hat (MLE)	3.944	Theta star (bias corrected MLE)	4.672
nu hat (MLE)	64.21	nu star (bias corrected)	54.21
Mean (detects)	7.449		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.83	Mean	6.777
Maximum	18.2	Median	7.5
SD	4.717	CV	0.696
k hat (MLE)	1.505	k star (bias corrected MLE)	1.302
Theta hat (MLE)	4.503	Theta star (bias corrected MLE)	5.203
nu hat (MLE)	57.18	nu star (bias corrected)	49.49
Adjusted Level of Significance (β)	0.0369		
Approximate Chi Square Value (49.49, α)	34.34	Adjusted Chi Square Value (49.49, β)	33.24
95% Gamma Approximate UCL (use when n>=50)	9.767	95% Gamma Adjusted UCL (use when n<50)	10.09

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	6.72	SD (KM)	4.664
Variance (KM)	21.75	SE of Mean (KM)	1.103
k hat (KM)	2.076	k star (KM)	1.783
nu hat (KM)	78.89	nu star (KM)	67.76
theta hat (KM)	3.237	theta star (KM)	3.768
80% gamma percentile (KM)	10.2	90% gamma percentile (KM)	13.43
95% gamma percentile (KM)	16.54	99% gamma percentile (KM)	23.47

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (67.76, α)	49.82	Adjusted Chi Square Value (67.76, β)	48.47
95% Gamma Approximate KM-UCL (use when n>=50)	9.141	95% Gamma Adjusted KM-UCL (use when n<50)	9.394

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.828	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	6.75	Mean in Log Scale	1.517
SD in Original Scale	4.752	SD in Log Scale	1.063
95% t UCL (assumes normality of ROS data)	8.64	95% Percentile Bootstrap UCL	8.509
95% BCA Bootstrap UCL	8.698	95% Bootstrap t UCL	8.656
95% H-UCL (Log ROS)	15.79		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.472	KM Geo Mean	4.356
KM SD (logged)	1.116	95% Critical H Value (KM-Log)	2.779
KM Standard Error of Mean (logged)	0.264	95% H-UCL (KM -Log)	16.87
KM SD (logged)	1.116	95% Critical H Value (KM-Log)	2.779
KM Standard Error of Mean (logged)	0.264		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	6.693	Mean in Log Scale	1.4
SD in Original Scale	4.83	SD in Log Scale	1.297
95% t UCL (Assumes normality)	8.614	95% H-Stat UCL	23.94

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	8.633

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Selenium

General Statistics

Total Number of Observations	19	Number of Distinct Observations	16
		Number of Missing Observations	63
Number of Detects	10	Number of Non-Detects	9
Number of Distinct Detects	9	Number of Distinct Non-Detects	7
Minimum Detect	0.64	Minimum Non-Detect	1.035
Maximum Detect	1.72	Maximum Non-Detect	1.14
Variance Detects	0.112	Percent Non-Detects	47.37%
Mean Detects	0.967	SD Detects	0.334
Median Detects	0.875	CV Detects	0.346
Skewness Detects	1.429	Kurtosis Detects	1.903
Mean of Logged Detects	-0.0804	SD of Logged Detects	0.311

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.858	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.262	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.886	KM Standard Error of Mean	0.0695
KM SD	0.259	95% KM (BCA) UCL	1.017
95% KM (t) UCL	1.007	95% KM (Percentile Bootstrap) UCL	1.002
95% KM (z) UCL	1.001	95% KM Bootstrap t UCL	1.047
90% KM Chebyshev UCL	1.095	95% KM Chebyshev UCL	1.189
97.5% KM Chebyshev UCL	1.321	99% KM Chebyshev UCL	1.578

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.432	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.725	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.195	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	10.91	k star (bias corrected MLE)	7.705
Theta hat (MLE)	0.0886	Theta star (bias corrected MLE)	0.125
nu hat (MLE)	218.2	nu star (bias corrected)	154.1
Mean (detects)	0.967		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.639	Mean	0.889
Maximum	1.72	Median	0.799
SD	0.256	CV	0.288
k hat (MLE)	16.35	k star (bias corrected MLE)	13.8
Theta hat (MLE)	0.0544	Theta star (bias corrected MLE)	0.0645
nu hat (MLE)	621.1	nu star (bias corrected)	524.4
Adjusted Level of Significance (β)	0.0369		
Approximate Chi Square Value (524.38, α)	472.3	Adjusted Chi Square Value (524.38, β)	468
95% Gamma Approximate UCL (use when n>=50)	0.988	95% Gamma Adjusted UCL (use when n<50)	0.997

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.886	SD (KM)	0.259
Variance (KM)	0.0673	SE of Mean (KM)	0.0695
k hat (KM)	11.67	k star (KM)	9.866
nu hat (KM)	443.6	nu star (KM)	374.9
theta hat (KM)	0.0759	theta star (KM)	0.0898
80% gamma percentile (KM)	1.111	90% gamma percentile (KM)	1.262
95% gamma percentile (KM)	1.396	99% gamma percentile (KM)	1.671

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (374.90, α)	331	Adjusted Chi Square Value (374.90, β)	327.4
95% Gamma Approximate KM-UCL (use when n>=50)	1.004	95% Gamma Adjusted KM-UCL (use when n<50)	1.015

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.923	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.187	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.891	Mean in Log Scale	-0.146
SD in Original Scale	0.255	SD in Log Scale	0.238
95% t UCL (assumes normality of ROS data)	0.992	95% Percentile Bootstrap UCL	0.993
95% BCA Bootstrap UCL	1.025	95% Bootstrap t UCL	1.067
95% H-UCL (Log ROS)	0.984		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.155	KM Geo Mean	0.856
KM SD (logged)	0.25	95% Critical H Value (KM-Log)	1.812
KM Standard Error of Mean (logged)	0.0709	95% H-UCL (KM -Log)	0.983

KM SD (logged)	0.25	95% Critical H Value (KM-Log)	1.812
KM Standard Error of Mean (logged)	0.0709		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.764	Mean in Log Scale	-0.336
SD in Original Scale	0.323	SD in Log Scale	0.354
95% t UCL (Assumes normality)	0.892	95% H-Stat UCL	0.89

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.007

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	19	Number of Distinct Observations	18
		Number of Missing Observations	63
Number of Detects	0	Number of Non-Detects	19
Number of Distinct Detects	0	Number of Distinct Non-Detects	18

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Thallium was not processed!

Zinc

General Statistics

Total Number of Observations	19	Number of Distinct Observations	19
		Number of Missing Observations	63
Minimum	2.17	Mean	303.2
Maximum	3990	Median	46.3
SD	916.4	Std. Error of Mean	210.2
Coefficient of Variation	3.022	Skewness	4.038

Normal GOF Test

Shapiro Wilk Test Statistic	0.355	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.447	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.197	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	667.8	95% Adjusted-CLT UCL (Chen-1995)	857.1
		95% Modified-t UCL (Johnson-1978)	700.3

Gamma GOF Test

A-D Test Statistic	1.831	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.836	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.286	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.214	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.333	k star (bias corrected MLE)	0.315
Theta hat (MLE)	911.1	Theta star (bias corrected MLE)	961.5
nu hat (MLE)	12.65	nu star (bias corrected)	11.98
MLE Mean (bias corrected)	303.2	MLE Sd (bias corrected)	540
		Approximate Chi Square Value (0.05)	5.216
Adjusted Level of Significance	0.0369	Adjusted Chi Square Value	4.83

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	696.6	95% Adjusted Gamma UCL (use when n<50)	752.3

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.119	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.197	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.775	Mean of logged Data	3.677
Maximum of Logged Data	8.292	SD of logged Data	1.921

Assuming Lognormal Distribution

95% H-UCL	1611	90% Chebyshev (MVUE) UCL	521.9
95% Chebyshev (MVUE) UCL	667.7	97.5% Chebyshev (MVUE) UCL	870.1
99% Chebyshev (MVUE) UCL	1268		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	649	95% Jackknife UCL	667.8
95% Standard Bootstrap UCL	640.7	95% Bootstrap-t UCL	5239
95% Hall's Bootstrap UCL	2394	95% Percentile Bootstrap UCL	710.1
95% BCA Bootstrap UCL	926.4		
90% Chebyshev(Mean, Sd) UCL	934	95% Chebyshev(Mean, Sd) UCL	1220
97.5% Chebyshev(Mean, Sd) UCL	1616	99% Chebyshev(Mean, Sd) UCL	2395

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	2395

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	11
		Number of Missing Observations	67
Number of Detects	5	Number of Non-Detects	10
Number of Distinct Detects	5	Number of Distinct Non-Detects	6
Minimum Detect	154	Minimum Non-Detect	90
Maximum Detect	1160	Maximum Non-Detect	2000
Variance Detects	208603	Percent Non-Detects	66.67%
Mean Detects	650.8	SD Detects	456.7
Median Detects	520	CV Detects	0.702
Skewness Detects	0.269	Kurtosis Detects	-2.797
Mean of Logged Detects	6.224	SD of Logged Detects	0.854

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.237	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	307.1	KM Standard Error of Mean	115.3
KM SD	371.6	95% KM (BCA) UCL	505.1
95% KM (t) UCL	510.1	95% KM (Percentile Bootstrap) UCL	497.5
95% KM (z) UCL	496.7	95% KM Bootstrap t UCL	549.3
90% KM Chebyshev UCL	652.9	95% KM Chebyshev UCL	809.6
97.5% KM Chebyshev UCL	1027	99% KM Chebyshev UCL	1454

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.319	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.684	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.255	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.116	k star (bias corrected MLE)	0.98
Theta hat (MLE)	307.6	Theta star (bias corrected MLE)	664.3
nu hat (MLE)	21.16	nu star (bias corrected)	9.797
Mean (detects)	650.8		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	216.9
Maximum	1160	Median	0.01
SD	400.6	CV	1.846
k hat (MLE)	0.124	k star (bias corrected MLE)	0.144
Theta hat (MLE)	1752	Theta star (bias corrected MLE)	1511
nu hat (MLE)	3.716	nu star (bias corrected)	4.306
Adjusted Level of Significance (β)	0.0324		
Approximate Chi Square Value (4.31, α)	0.846	Adjusted Chi Square Value (4.31, β)	0.679
95% Gamma Approximate UCL (use when n>=50)	1104	95% Gamma Adjusted UCL (use when n<50)	1377

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	307.1	SD (KM)	371.6
Variance (KM)	138104	SE of Mean (KM)	115.3
k hat (KM)	0.683	k star (KM)	0.591
nu hat (KM)	20.49	nu star (KM)	17.72
theta hat (KM)	449.7	theta star (KM)	519.8
80% gamma percentile (KM)	506.2	90% gamma percentile (KM)	801.5
95% gamma percentile (KM)	1111	99% gamma percentile (KM)	1861

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (17.72, α)	9.191	Adjusted Chi Square Value (17.72, β)	8.443
95% Gamma Approximate KM-UCL (use when n>=50)	592.2	95% Gamma Adjusted KM-UCL (use when n<50)	644.7

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.922	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**

5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	251.7	Mean in Log Scale	4.574
SD in Original Scale	381.5	SD in Log Scale	1.422
95% t UCL (assumes normality of ROS data)	425.2	95% Percentile Bootstrap UCL	426.3
95% BCA Bootstrap UCL	469.2	95% Bootstrap t UCL	702.6
95% H-UCL (Log ROS)	996.6		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	5.175	KM Geo Mean	176.7
KM SD (logged)	0.958	95% Critical H Value (KM-Log)	2.678
KM Standard Error of Mean (logged)	0.298	95% H-UCL (KM -Log)	555.4
KM SD (logged)	0.958	95% Critical H Value (KM-Log)	2.678
KM Standard Error of Mean (logged)	0.298		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	379.9	Mean in Log Scale	5.132
SD in Original Scale	444.8	SD in Log Scale	1.365
95% t UCL (Assumes normality)	582.2	95% H-Stat UCL	1468

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	510.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	15	Number of Distinct Observations	11
		Number of Missing Observations	67
Number of Detects	2	Number of Non-Detects	13
Number of Distinct Detects	2	Number of Distinct Non-Detects	9
Minimum Detect	78	Minimum Non-Detect	90
Maximum Detect	100	Maximum Non-Detect	2000
Variance Detects	242	Percent Non-Detects	86.67%
Mean Detects	89	SD Detects	15.56
Median Detects	89	CV Detects	0.175

Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	4.481	SD of Logged Detects	0.176

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	80.75	KM Standard Error of Mean	3.638
KM SD	7.276	95% KM (BCA) UCL	N/A
95% KM (t) UCL	87.16	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	86.73	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	91.66	95% KM Chebyshev UCL	96.61
97.5% KM Chebyshev UCL	103.5	99% KM Chebyshev UCL	116.9

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	65.13	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.367	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	260.5	nu star (bias corrected)	N/A
Mean (detects)	89		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	80.75	SD (KM)	7.276
Variance (KM)	52.94	SE of Mean (KM)	3.638
k hat (KM)	123.2	k star (KM)	98.58
nu hat (KM)	3695	nu star (KM)	2958
theta hat (KM)	0.656	theta star (KM)	0.819
80% gamma percentile (KM)	87.5	90% gamma percentile (KM)	91.33
95% gamma percentile (KM)	94.58	99% gamma percentile (KM)	100.9

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0324
Approximate Chi Square Value (N/A, α)	2832	Adjusted Chi Square Value (N/A, β)	2817
95% Gamma Approximate KM-UCL (use when n>=50)	84.32	95% Gamma Adjusted KM-UCL (use when n<50)	84.78

Lognormal GOF Test on Detected Observations Only
Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	80.29	Mean in Log Scale	4.383
SD in Original Scale	6.79	SD in Log Scale	0.081

95% t UCL (assumes normality of ROS data)	83.38	95% Percentile Bootstrap UCL	83.31
95% BCA Bootstrap UCL	83.81	95% Bootstrap t UCL	84.68
95% H-UCL (Log ROS)	N/A		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.388	KM Geo Mean	80.46
KM SD (logged)	0.0822	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0411	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.0822	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0411		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	196.4	Mean in Log Scale	4.591
SD in Original Scale	322.4	SD in Log Scale	1.011
95% t UCL (Assumes normality)	343	95% H-Stat UCL	346.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	87.16	KM H-UCL	N/A
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:21:57 AM
From File	Functional Area 10 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Nitrobenzene

General Statistics

Total Number of Observations	34	Number of Distinct Observations	7
		Number of Missing Observations	10
Number of Detects	1	Number of Non-Detects	33
Number of Distinct Detects	1	Number of Distinct Non-Detects	6

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Nitrobenzene was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:27:32 AM
From File	Functional Area 11 D.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Dinitrobenzene

General Statistics

Total Number of Observations	11	Number of Distinct Observations	5
		Number of Missing Observations	5
Number of Detects	0	Number of Non-Detects	11
Number of Distinct Detects	0	Number of Distinct Non-Detects	5

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Dinitrobenzene was not processed!

Antimony

General Statistics

Total Number of Observations	10	Number of Distinct Observations	9
		Number of Missing Observations	1
Number of Detects	2	Number of Non-Detects	8
Number of Distinct Detects	2	Number of Distinct Non-Detects	7
Minimum Detect	3.2	Minimum Non-Detect	0.16
Maximum Detect	27	Maximum Non-Detect	1.175
Variance Detects	283.2	Percent Non-Detects	80%
Mean Detects	15.1	SD Detects	16.83
Median Detects	15.1	CV Detects	1.115
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	2.229	SD of Logged Detects	1.508

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	3.148	KM Standard Error of Mean	3.579
KM SD	8.002	95% KM (BCA) UCL	N/A
95% KM (t) UCL	9.708	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	9.034	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	13.88	95% KM Chebyshev UCL	18.75
97.5% KM Chebyshev UCL	25.5	99% KM Chebyshev UCL	38.76

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.169	k star (bias corrected MLE)	N/A
Theta hat (MLE)	12.92	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	4.676	nu star (bias corrected)	N/A
Mean (detects)	15.1		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3.148	SD (KM)	8.002
Variance (KM)	64.03	SE of Mean (KM)	3.579
k hat (KM)	0.155	k star (KM)	0.175
nu hat (KM)	3.095	nu star (KM)	3.5
theta hat (KM)	20.34	theta star (KM)	17.99
80% gamma percentile (KM)	3.836	90% gamma percentile (KM)	9.479
95% gamma percentile (KM)	16.76	99% gamma percentile (KM)	37.29

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0267
Approximate Chi Square Value (3.50, α)	0.535	Adjusted Chi Square Value (3.50, β)	0.374
95% Gamma Approximate KM-UCL (use when n>=50)	20.6	95% Gamma Adjusted KM-UCL (use when n<50)	29.43

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.022	Mean in Log Scale	-4.604
SD in Original Scale	8.485	SD in Log Scale	3.749
95% t UCL (assumes normality of ROS data)	7.941	95% Percentile Bootstrap UCL	8.421
95% BCA Bootstrap UCL	11.12	95% Bootstrap t UCL	7786
95% H-UCL (Log ROS)	2193252		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.02	KM Geo Mean	0.361
KM SD (logged)	1.693	95% Critical H Value (KM-Log)	4.66
KM Standard Error of Mean (logged)	0.757	95% H-UCL (KM -Log)	20.99
KM SD (logged)	1.693	95% Critical H Value (KM-Log)	4.66
KM Standard Error of Mean (logged)	0.757		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	3.159	Mean in Log Scale	-1.131
SD in Original Scale	8.432	SD in Log Scale	1.917
95% t UCL (Assumes normality)	8.047	95% H-Stat UCL	56.08

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

975% KM (Chebyshev) UCL	25.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
		Number of Missing Observations	1
Minimum	0.12	Mean	0.479
Maximum	0.81	Median	0.475
SD	0.184	Std. Error of Mean	0.0583
Coefficient of Variation	0.385	Skewness	-0.0888

Normal GOF Test

Shapiro Wilk Test Statistic	0.952	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.191	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.586	95% Adjusted-CLT UCL (Chen-1995)	0.573
		95% Modified-t UCL (Johnson-1978)	0.586

Gamma GOF Test

A-D Test Statistic	0.568	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.216	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	5.503	k star (bias corrected MLE)	3.919
Theta hat (MLE)	0.0871	Theta star (bias corrected MLE)	0.122
nu hat (MLE)	110.1	nu star (bias corrected)	78.37
MLE Mean (bias corrected)	0.479	MLE Sd (bias corrected)	0.242
		Approximate Chi Square Value (0.05)	58.98
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	56.06

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.637	95% Adjusted Gamma UCL (use when n<50)	0.67

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.812	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.256	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.262	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-2.12	Mean of logged Data	-0.829
Maximum of Logged Data	-0.211	SD of logged Data	0.513

Assuming Lognormal Distribution

95% H-UCL	0.73	90% Chebyshev (MVUE) UCL	0.734
95% Chebyshev (MVUE) UCL	0.844	97.5% Chebyshev (MVUE) UCL	0.997
99% Chebyshev (MVUE) UCL	1.297		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.575	95% Jackknife UCL	0.586
95% Standard Bootstrap UCL	0.571	95% Bootstrap-t UCL	0.59
95% Hall's Bootstrap UCL	0.612	95% Percentile Bootstrap UCL	0.569
95% BCA Bootstrap UCL	0.567		
90% Chebyshev(Mean, Sd) UCL	0.654	95% Chebyshev(Mean, Sd) UCL	0.733
97.5% Chebyshev(Mean, Sd) UCL	0.843	99% Chebyshev(Mean, Sd) UCL	1.059

Suggested UCL to Use

95% Student's-t UCL	0.586

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Cadmium

General Statistics

Total Number of Observations	10	Number of Distinct Observations	9
		Number of Missing Observations	1
Number of Detects	3	Number of Non-Detects	7
Number of Distinct Detects	3	Number of Distinct Non-Detects	6
Minimum Detect	0.1	Minimum Non-Detect	0.095
Maximum Detect	1	Maximum Non-Detect	1.47
Variance Detects	0.225	Percent Non-Detects	70%
Mean Detects	0.463	SD Detects	0.474
Median Detects	0.29	CV Detects	1.024
Skewness Detects	1.425	Kurtosis Detects	N/A
Mean of Logged Detects	-1.18	SD of Logged Detects	1.152

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.9	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.309	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.219	KM Standard Error of Mean	0.115
KM SD	0.283	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.431	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.409	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.565	95% KM Chebyshev UCL	0.722
97.5% KM Chebyshev UCL	0.94	99% KM Chebyshev UCL	1.367

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.36	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.341	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	8.157	nu star (bias corrected)	N/A
Mean (detects)	0.463		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.146
Maximum	1	Median	0.01
SD	0.313	CV	2.144
k hat (MLE)	0.398	k star (bias corrected MLE)	0.345
Theta hat (MLE)	0.367	Theta star (bias corrected MLE)	0.423
nu hat (MLE)	7.965	nu star (bias corrected)	6.909
Adjusted Level of Significance (β)	0.0267		
Approximate Chi Square Value (6.91, α)	2.121	Adjusted Chi Square Value (6.91, β)	1.691
95% Gamma Approximate UCL (use when n>=50)	0.476	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.219	SD (KM)	0.283
Variance (KM)	0.0798	SE of Mean (KM)	0.115
k hat (KM)	0.602	k star (KM)	0.488
nu hat (KM)	12.04	nu star (KM)	9.758
theta hat (KM)	0.364	theta star (KM)	0.449
80% gamma percentile (KM)	0.36	90% gamma percentile (KM)	0.596
95% gamma percentile (KM)	0.849	99% gamma percentile (KM)	1.474

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (9.76, α)	3.791	Adjusted Chi Square Value (9.76, β)	3.172
95% Gamma Approximate KM-UCL (use when n>=50)	0.564	95% Gamma Adjusted KM-UCL (use when n<50)	0.674

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.998	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.187	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.167	Mean in Log Scale	-2.708
SD in Original Scale	0.304	SD in Log Scale	1.277
95% t UCL (assumes normality of ROS data)	0.343	95% Percentile Bootstrap UCL	0.344
95% BCA Bootstrap UCL	0.449	95% Bootstrap t UCL	1.593
95% H-UCL (Log ROS)	0.727		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.948	KM Geo Mean	0.143
KM SD (logged)	0.769	95% Critical H Value (KM-Log)	2.652
KM Standard Error of Mean (logged)	0.314	95% H-UCL (KM -Log)	0.378
KM SD (logged)	0.769	95% Critical H Value (KM-Log)	2.652

KM Standard Error of Mean (logged)	0.314

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.256	Mean in Log Scale	-1.972
SD in Original Scale	0.335	SD in Log Scale	1.066
95% t UCL (Assumes normality)	0.45	95% H-Stat UCL	0.778

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.431

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
		Number of Missing Observations	1
Minimum	16.2	Mean	29.03
Maximum	88.6	Median	20.3
SD	21.86	Std. Error of Mean	6.913
Coefficient of Variation	0.753	Skewness	2.715

Normal GOF Test

Shapiro Wilk Test Statistic	0.606	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.282	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.262	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.7	95% Adjusted-CLT UCL (Chen-1995)	46.74
		95% Modified-t UCL (Johnson-1978)	42.69

Gamma GOF Test

A-D Test Statistic	1.143	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.731	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.258	**Kolmogorov-Smirnov Gamma GOF Test**

5% K-S Critical Value	0.268	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.436	k star (bias corrected MLE)	2.472
Theta hat (MLE)	8.448	Theta star (bias corrected MLE)	11.74
nu hat (MLE)	68.73	nu star (bias corrected)	49.44
MLE Mean (bias corrected)	29.03	MLE Sd (bias corrected)	18.46
		Approximate Chi Square Value (0.05)	34.3
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	32.12

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	41.85	95% Adjusted Gamma UCL (use when n<50)	44.69

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.782	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.241	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.262	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.785	Mean of logged Data	3.216
Maximum of Logged Data	4.484	SD of logged Data	0.513

Assuming Lognormal Distribution

95% H-UCL	41.71	90% Chebyshev (MVUE) UCL	41.93
95% Chebyshev (MVUE) UCL	48.23	97.5% Chebyshev (MVUE) UCL	56.97
99% Chebyshev (MVUE) UCL	74.14		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	40.4	95% Jackknife UCL	41.7
95% Standard Bootstrap UCL	39.91	95% Bootstrap-t UCL	73.99
95% Hall's Bootstrap UCL	81.39	95% Percentile Bootstrap UCL	41.74
95% BCA Bootstrap UCL	48.17		
90% Chebyshev(Mean, Sd) UCL	49.77	95% Chebyshev(Mean, Sd) UCL	59.16
97.5% Chebyshev(Mean, Sd) UCL	72.2	99% Chebyshev(Mean, Sd) UCL	97.81

Suggested UCL to Use

95% Adjusted Gamma UCL	44.69

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
		Number of Missing Observations	1
Minimum	2.6	Mean	6.781
Maximum	9.1	Median	7.455
SD	1.902	Std. Error of Mean	0.601
Coefficient of Variation	0.28	Skewness	-1.221

Normal GOF Test

Shapiro Wilk Test Statistic	0.906	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.23	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.883	95% Adjusted-CLT UCL (Chen-1995)	7.522
		95% Modified-t UCL (Johnson-1978)	7.845

Gamma GOF Test

A-D Test Statistic	0.7	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.725	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.252	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	10.21	k star (bias corrected MLE)	7.216
Theta hat (MLE)	0.664	Theta star (bias corrected MLE)	0.94
nu hat (MLE)	204.3	nu star (bias corrected)	144.3
MLE Mean (bias corrected)	6.781	MLE Sd (bias corrected)	2.524
		Approximate Chi Square Value (0.05)	117.6
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	113.4

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	8.325	95% Adjusted Gamma UCL (use when n<50)	8.633

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.792	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.248	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.262	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.956	Mean of logged Data	1.864
Maximum of Logged Data	2.208	SD of logged Data	0.365

Assuming Lognormal Distribution

95% H-UCL	8.849	90% Chebyshev (MVUE) UCL	9.245
95% Chebyshev (MVUE) UCL	10.33	97.5% Chebyshev (MVUE) UCL	11.84
99% Chebyshev (MVUE) UCL	14.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	7.77	95% Jackknife UCL	7.883
95% Standard Bootstrap UCL	7.731	95% Bootstrap-t UCL	7.682
95% Hall's Bootstrap UCL	7.555	95% Percentile Bootstrap UCL	7.622
95% BCA Bootstrap UCL	7.541		
90% Chebyshev(Mean, Sd) UCL	8.585	95% Chebyshev(Mean, Sd) UCL	9.402
97.5% Chebyshev(Mean, Sd) UCL	10.54	99% Chebyshev(Mean, Sd) UCL	12.76

Suggested UCL to Use

95% Student's-t UCL	7.883

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Selenium

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
		Number of Missing Observations	1
Minimum	0.17	Mean	3.822
Maximum	17.3	Median	1.375
SD	5.59	Std. Error of Mean	1.768
Coefficient of Variation	1.462	Skewness	1.904

Normal GOF Test

Shapiro Wilk Test Statistic	0.719	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.326	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.262	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.062	95% Adjusted-CLT UCL (Chen-1995)	7.867
		95% Modified-t UCL (Johnson-1978)	7.24

Gamma GOF Test

A-D Test Statistic	0.47	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.771	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.191	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.279	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.574	k star (bias corrected MLE)	0.468
Theta hat (MLE)	6.659	Theta star (bias corrected MLE)	8.159
nu hat (MLE)	11.48	nu star (bias corrected)	9.368
MLE Mean (bias corrected)	3.822	MLE Sd (bias corrected)	5.584
		Approximate Chi Square Value (0.05)	3.551
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	2.956

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	10.08	95% Adjusted Gamma UCL (use when n<50)	12.11

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.929	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.842	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.172	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.262	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-1.772	Mean of logged Data	0.257
Maximum of Logged Data	2.851	SD of logged Data	1.644

Assuming Lognormal Distribution

95% H-UCL	60.1	90% Chebyshev (MVUE) UCL	10.32
95% Chebyshev (MVUE) UCL	13.23	97.5% Chebyshev (MVUE) UCL	17.26
99% Chebyshev (MVUE) UCL	25.18		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	6.729	95% Jackknife UCL	7.062
95% Standard Bootstrap UCL	6.528	95% Bootstrap-t UCL	11.62
95% Hall's Bootstrap UCL	16.35	95% Percentile Bootstrap UCL	6.829
95% BCA Bootstrap UCL	7.873		
90% Chebyshev(Mean, Sd) UCL	9.125	95% Chebyshev(Mean, Sd) UCL	11.53
97.5% Chebyshev(Mean, Sd) UCL	14.86	99% Chebyshev(Mean, Sd) UCL	21.41

Suggested UCL to Use

95% Adjusted Gamma UCL	12.11

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	10	Number of Distinct Observations	8
		Number of Missing Observations	1
Number of Detects	1	Number of Non-Detects	9
Number of Distinct Detects	1	Number of Distinct Non-Detects	7

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Thallium was not processed!

Zinc

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
		Number of Missing Observations	1
Minimum	13.8	Mean	126.2
Maximum	340	Median	66.65
SD	113.9	Std. Error of Mean	36.02
Coefficient of Variation	0.903	Skewness	0.994

Normal GOF Test

Shapiro Wilk Test Statistic	0.836	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Data Not Normal at 5% Significance Level	

Lilliefors Test Statistic	0.294	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	192.2	95% Adjusted-CLT UCL (Chen-1995)	197.5
		95% Modified-t UCL (Johnson-1978)	194.1

Gamma GOF Test

A-D Test Statistic	0.418	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.742	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.237	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.272	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.363	k star (bias corrected MLE)	1.02
Theta hat (MLE)	92.59	Theta star (bias corrected MLE)	123.6
nu hat (MLE)	27.25	nu star (bias corrected)	20.41
MLE Mean (bias corrected)	126.2	MLE Sd (bias corrected)	124.9
		Approximate Chi Square Value (0.05)	11.15
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	9.984

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	230.9	95% Adjusted Gamma UCL (use when n<50)	257.9

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.18	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.262	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.625	Mean of logged Data	4.428
Maximum of Logged Data	5.829	SD of logged Data	1.004

Assuming Lognormal Distribution

95% H-UCL	392.3	90% Chebyshev (MVUE) UCL	258.9
95% Chebyshev (MVUE) UCL	317.5	97.5% Chebyshev (MVUE) UCL	398.8
99% Chebyshev (MVUE) UCL	558.5		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	185.4	95% Jackknife UCL	192.2
95% Standard Bootstrap UCL	182.5	95% Bootstrap-t UCL	215.6
95% Hall's Bootstrap UCL	183.5	95% Percentile Bootstrap UCL	181.9
95% BCA Bootstrap UCL	193.6		
90% Chebyshev(Mean, Sd) UCL	234.2	95% Chebyshev(Mean, Sd) UCL	283.2
97.5% Chebyshev(Mean, Sd) UCL	351.1	99% Chebyshev(Mean, Sd) UCL	484.5

Suggested UCL to Use

95% Adjusted Gamma UCL	257.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	10	Number of Distinct Observations	9
		Number of Missing Observations	1
Number of Detects	5	Number of Non-Detects	5
Number of Distinct Detects	5	Number of Distinct Non-Detects	4
Minimum Detect	45	Minimum Non-Detect	180
Maximum Detect	3200	Maximum Non-Detect	205
Variance Detects	1704013	Percent Non-Detects	50%
Mean Detects	920	SD Detects	1305
Median Detects	590	CV Detects	1.419
Skewness Detects	1.98	Kurtosis Detects	4.092
Mean of Logged Detects	5.864	SD of Logged Detects	1.696

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.733	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.376	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	495	KM Standard Error of Mean	328.6
KM SD	928.7	95% KM (BCA) UCL	1117
95% KM (t) UCL	1097	95% KM (Percentile Bootstrap) UCL	1066
95% KM (z) UCL	1035	95% KM Bootstrap t UCL	2292
90% KM Chebyshev UCL	1481	95% KM Chebyshev UCL	1927
97.5% KM Chebyshev UCL	2547	99% KM Chebyshev UCL	3764

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.313	**Anderson-Darling GOF Test**	

5% A-D Critical Value	0.704	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.225	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.369	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.638	k star (bias corrected MLE)	0.388
Theta hat (MLE)	1443	Theta star (bias corrected MLE)	2369
nu hat (MLE)	6.375	nu star (bias corrected)	3.883
Mean (detects)	920		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	460
Maximum	3200	Median	22.51
SD	996.2	CV	2.166
k hat (MLE)	0.141	k star (bias corrected MLE)	0.165
Theta hat (MLE)	3264	Theta star (bias corrected MLE)	2782
nu hat (MLE)	2.819	nu star (bias corrected)	3.307
Adjusted Level of Significance (β)	0.0267		
Approximate Chi Square Value (3.31, α)	0.469	Adjusted Chi Square Value (3.31, β)	0.325
95% Gamma Approximate UCL (use when n>=50)	3245	95% Gamma Adjusted UCL (use when n<50)	4680

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	495	SD (KM)	928.7
Variance (KM)	862543	SE of Mean (KM)	328.6
k hat (KM)	0.284	k star (KM)	0.266
nu hat (KM)	5.681	nu star (KM)	5.31
theta hat (KM)	1743	theta star (KM)	1864
80% gamma percentile (KM)	733.6	90% gamma percentile (KM)	1479
95% gamma percentile (KM)	2353	99% gamma percentile (KM)	4661

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (5.31, α)	1.298	Adjusted Chi Square Value (5.31, β)	0.988
95% Gamma Approximate KM-UCL (use when n>=50)	2025	95% Gamma Adjusted KM-UCL (use when n<50)	2660

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.22	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	495.9	Mean in Log Scale	5.032
SD in Original Scale	978.6	SD in Log Scale	1.459
95% t UCL (assumes normality of ROS data)	1063	95% Percentile Bootstrap UCL	1063
95% BCA Bootstrap UCL	1235	95% Bootstrap t UCL	2687
95% H-UCL (Log ROS)	3282		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	5.022	KM Geo Mean	151.7
KM SD (logged)	1.389	95% Critical H Value (KM-Log)	3.95
KM Standard Error of Mean (logged)	0.521	95% H-UCL (KM -Log)	2476
KM SD (logged)	1.389	95% Critical H Value (KM-Log)	3.95
KM Standard Error of Mean (logged)	0.521		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	508.8	Mean in Log Scale	5.221
SD in Original Scale	972.3	SD in Log Scale	1.318
95% t UCL (Assumes normality)	1072	95% H-Stat UCL	2337

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Bootstrap t UCL	2292	ı Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1	2660

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	10	Number of Distinct Observations	9
		Number of Missing Observations	1
Number of Detects	1	Number of Non-Detects	9
Number of Distinct Detects	1	Number of Distinct Non-Detects	8

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable N-Nitrosodiphenylamine was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:31:55 AM
From File	Functional Area 12 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Dinitrobenzene

General Statistics

Total Number of Observations	19	Number of Distinct Observations	8
		Number of Missing Observations	6
Number of Detects	1	Number of Non-Detects	18
Number of Distinct Detects	1	Number of Distinct Non-Detects	7

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Dinitrobenzene was not processed!

Nitrobenzene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	7
		Number of Missing Observations	11
Number of Detects	0	Number of Non-Detects	14
Number of Distinct Detects	0	Number of Distinct Non-Detects	7

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Nitrobenzene was not processed!

Antimony

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Number of Detects	2	Number of Non-Detects	7
Number of Distinct Detects	2	Number of Distinct Non-Detects	7
Minimum Detect	1.07	Minimum Non-Detect	0.31
Maximum Detect	1.09	Maximum Non-Detect	2.85

Variance Detects	2.0000E-4	Percent Non-Detects	77.78%
Mean Detects	1.08	SD Detects	0.0141
Median Detects	1.08	CV Detects	0.0131
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	0.0769	SD of Logged Detects	0.0131

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.618	KM Standard Error of Mean	0.239
KM SD	0.377	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1.062	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1.01	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.334	95% KM Chebyshev UCL	1.658
97.5% KM Chebyshev UCL	2.108	99% KM Chebyshev UCL	2.992

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	11664	k star (bias corrected MLE)	N/A
Theta hat (MLE)	9.2595E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	46655	nu star (bias corrected)	N/A
Mean (detects)	1.08		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.618	SD (KM)	0.377
Variance (KM)	0.142	SE of Mean (KM)	0.239
k hat (KM)	2.683	k star (KM)	1.863
nu hat (KM)	48.3	nu star (KM)	33.53
theta hat (KM)	0.23	theta star (KM)	0.332
80% gamma percentile (KM)	0.933	90% gamma percentile (KM)	1.222
95% gamma percentile (KM)	1.499	99% gamma percentile (KM)	2.117

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0231
Approximate Chi Square Value (33.53, α)	21.29	Adjusted Chi Square Value (33.53, β)	19.26

95% Gamma Approximate KM-UCL (use when n>=50)	0.973	95% Gamma Adjusted KM-UCL (use when n<50)	1.076

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.046	Mean in Log Scale	0.0447
SD in Original Scale	0.0221	SD in Log Scale	0.021
95% t UCL (assumes normality of ROS data)	1.06	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A	95% Bootstrap t UCL	N/A
95% H-UCL (Log ROS)	N/A		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.672	KM Geo Mean	0.511
KM SD (logged)	0.611	95% Critical H Value (KM-Log)	2.461
KM Standard Error of Mean (logged)	0.387	95% H-UCL (KM -Log)	1.048
KM SD (logged)	0.611	95% Critical H Value (KM-Log)	2.461
KM Standard Error of Mean (logged)	0.387		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.685	Mean in Log Scale	-0.593
SD in Original Scale	0.425	SD in Log Scale	0.752
95% t UCL (Assumes normality)	0.949	95% H-Stat UCL	1.509

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.062	KM H-UCL	1.048
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Minimum	1.13	Mean	5.943
Maximum	28.3	Median	3.43

SD	8.444	Std. Error of Mean	2.815
Coefficient of Variation	1.421	Skewness	2.917

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.506	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.468	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.18	95% Adjusted-CLT UCL (Chen-1995)	13.5
		95% Modified-t UCL (Johnson-1978)	11.63

Gamma GOF Test

A-D Test Statistic	1.314	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.739	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.406	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.285	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.241	k star (bias corrected MLE)	0.901
Theta hat (MLE)	4.791	Theta star (bias corrected MLE)	6.595
nu hat (MLE)	22.33	nu star (bias corrected)	16.22
MLE Mean (bias corrected)	5.943	MLE Sd (bias corrected)	6.261
		Approximate Chi Square Value (0.05)	8.118
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	6.944

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	11.88	95% Adjusted Gamma UCL (use when n<50)	13.88

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.817	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.334	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.122	Mean of logged Data	1.328

Maximum of Logged Data	3.343	SD of logged Data	0.861

Assuming Lognormal Distribution

95% H-UCL	13.37	90% Chebyshev (MVUE) UCL	9.805
95% Chebyshev (MVUE) UCL	11.89	97.5% Chebyshev (MVUE) UCL	14.79
99% Chebyshev (MVUE) UCL	20.49		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	10.57	95% Jackknife UCL	11.18
95% Standard Bootstrap UCL	10.36	95% Bootstrap-t UCL	36.72
95% Hall's Bootstrap UCL	38.35	95% Percentile Bootstrap UCL	11.47
95% BCA Bootstrap UCL	14.22		
90% Chebyshev(Mean, Sd) UCL	14.39	95% Chebyshev(Mean, Sd) UCL	18.21
97.5% Chebyshev(Mean, Sd) UCL	23.52	99% Chebyshev(Mean, Sd) UCL	33.95

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Minimum	0.189	Mean	0.314
Maximum	0.46	Median	0.279
SD	0.111	Std. Error of Mean	0.037
Coefficient of Variation	0.353	Skewness	0.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.871	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.181	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.383	95% Adjusted-CLT UCL (Chen-1995)	0.378
		95% Modified-t UCL (Johnson-1978)	0.384

Gamma GOF Test

A-D Test Statistic	0.521	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.722	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.21	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.279	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	8.856	k star (bias corrected MLE)	5.978
Theta hat (MLE)	0.0355	Theta star (bias corrected MLE)	0.0526
nu hat (MLE)	159.4	nu star (bias corrected)	107.6
MLE Mean (bias corrected)	0.314	MLE Sd (bias corrected)	0.129
		Approximate Chi Square Value (0.05)	84.67
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	80.38

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.4	95% Adjusted Gamma UCL (use when n<50)	0.421

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.205	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-1.666	Mean of logged Data	-1.214
Maximum of Logged Data	-0.777	SD of logged Data	0.363

Assuming Lognormal Distribution

95% H-UCL	0.414	90% Chebyshev (MVUE) UCL	0.43
95% Chebyshev (MVUE) UCL	0.482	97.5% Chebyshev (MVUE) UCL	0.554
99% Chebyshev (MVUE) UCL	0.696		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.375	95% Jackknife UCL	0.383
95% Standard Bootstrap UCL	0.373	95% Bootstrap-t UCL	0.388

95% Hall's Bootstrap UCL	0.363	95% Percentile Bootstrap UCL	0.369
95% BCA Bootstrap UCL	0.37		
90% Chebyshev(Mean, Sd) UCL	0.425	95% Chebyshev(Mean, Sd) UCL	0.476
97.5% Chebyshev(Mean, Sd) UCL	0.545	99% Chebyshev(Mean, Sd) UCL	0.682

Suggested UCL to Use

95% Student's-t UCL	0.383

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Cadmium

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Number of Detects	3	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	6
Minimum Detect	0.22	Minimum Non-Detect	0.28
Maximum Detect	1.6	Maximum Non-Detect	1.385
Variance Detects	0.62	Percent Non-Detects	66.67%
Mean Detects	0.691	SD Detects	0.788
Median Detects	0.252	CV Detects	1.14
Skewness Detects	1.729	Kurtosis Detects	N/A
Mean of Logged Detects	-0.807	SD of Logged Detects	1.108

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.767	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.378	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.388	KM Standard Error of Mean	0.175
KM SD	0.429	95% KM (BCA) UCL	N/A

95% KM (t) UCL	0.714	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.676	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.914	95% KM Chebyshev UCL	1.152
97.5% KM Chebyshev UCL	1.483	99% KM Chebyshev UCL	2.133

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.284	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.538	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	7.705	nu star (bias corrected)	N/A
Mean (detects)	0.691		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.22	Mean	0.389
Maximum	1.6	Median	0.238
SD	0.454	CV	1.169
k hat (MLE)	1.923	k star (bias corrected MLE)	1.356
Theta hat (MLE)	0.202	Theta star (bias corrected MLE)	0.287
nu hat (MLE)	34.61	nu star (bias corrected)	24.41
Adjusted Level of Significance (β)	0.0231		
Approximate Chi Square Value (24.41, α)	14.16	Adjusted Chi Square Value (24.41, β)	12.54
95% Gamma Approximate UCL (use when n>=50)	0.67	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.388	SD (KM)	0.429
Variance (KM)	0.184	SE of Mean (KM)	0.175
k hat (KM)	0.816	k star (KM)	0.618
nu hat (KM)	14.69	nu star (KM)	11.13
theta hat (KM)	0.475	theta star (KM)	0.627
80% gamma percentile (KM)	0.639	90% gamma percentile (KM)	1.001
95% gamma percentile (KM)	1.38	99% gamma percentile (KM)	2.292

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (11.13, α)	4.66	Adjusted Chi Square Value (11.13, β)	3.816
95% Gamma Approximate KM-UCL (use when n>=50)	0.926	95% Gamma Adjusted KM-UCL (use when n<50)	1.13

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.801	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.363	**Lilliefors GOF Test**	

5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.4	Mean in Log Scale	-1.181
SD in Original Scale	0.45	SD in Log Scale	0.621
95% t UCL (assumes normality of ROS data)	0.679	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A	95% Bootstrap t UCL	N/A
95% H-UCL (Log ROS)	0.642		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.233	KM Geo Mean	0.291
KM SD (logged)	0.606	95% Critical H Value (KM-Log)	2.45
KM Standard Error of Mean (logged)	0.251	95% H-UCL (KM -Log)	0.591
KM SD (logged)	0.606	95% Critical H Value (KM-Log)	2.45
KM Standard Error of Mean (logged)	0.251		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.445	Mean in Log Scale	-1.22
SD in Original Scale	0.487	SD in Log Scale	0.9
95% t UCL (Assumes normality)	0.747	95% H-Stat UCL	1.156

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.714

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Minimum	7.27	Mean	81.78
Maximum	644	Median	10
SD	210.9	Std. Error of Mean	70.29
Coefficient of Variation	2.579	Skewness	2.997

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use

guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.408	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.502	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	212.5	95% Adjusted-CLT UCL (Chen-1995)	272.4
		95% Modified-t UCL (Johnson-1978)	224.2

Gamma GOF Test

A-D Test Statistic	2.219	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.786	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.454	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.297	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.416	k star (bias corrected MLE)	0.351
Theta hat (MLE)	196.7	Theta star (bias corrected MLE)	232.9
nu hat (MLE)	7.482	nu star (bias corrected)	6.322
MLE Mean (bias corrected)	81.78	MLE Sd (bias corrected)	138
		Approximate Chi Square Value (0.05)	1.806
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	1.344

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	286.2	95% Adjusted Gamma UCL (use when n<50)	384.5

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.615	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.323	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.984	Mean of logged Data	2.831
Maximum of Logged Data	6.468	SD of logged Data	1.408

Assuming Lognormal Distribution

95% H-UCL	372	90% Chebyshev (MVUE) UCL	94.32

95% Chebyshev (MVUE) UCL	119.7	97.5% Chebyshev (MVUE) UCL	154.8
99% Chebyshev (MVUE) UCL	224		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	197.4	95% Jackknife UCL	212.5
95% Standard Bootstrap UCL	193.3	95% Bootstrap-t UCL	5680
95% Hall's Bootstrap UCL	2970	95% Percentile Bootstrap UCL	221.9
95% BCA Bootstrap UCL	293.1		
90% Chebyshev(Mean, Sd) UCL	292.7	95% Chebyshev(Mean, Sd) UCL	388.2
97.5% Chebyshev(Mean, Sd) UCL	520.8	99% Chebyshev(Mean, Sd) UCL	781.2

Suggested UCL to Use

95% Hall's Bootstrap UCL 2970

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Lead

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Minimum	1.74	Mean	185.6
Maximum	1540	Median	3.56
SD	508.3	Std. Error of Mean	169.4
Coefficient of Variation	2.739	Skewness	2.991

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.42	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.488	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	500.6	95% Adjusted-CLT UCL (Chen-1995)	644.8
		95% Modified-t UCL (Johnson-1978)	528.8

Gamma GOF Test

A-D Test Statistic	1.371	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.821	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.327	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.304	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.266	k star (bias corrected MLE)	0.251
Theta hat (MLE)	698.5	Theta star (bias corrected MLE)	738.8
nu hat (MLE)	4.782	nu star (bias corrected)	4.521
MLE Mean (bias corrected)	185.6	MLE Sd (bias corrected)	370.3
		Approximate Chi Square Value (0.05)	0.938
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	0.645

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	894.6	95% Adjusted Gamma UCL (use when n<50)	1300

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.837	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.28	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.554	Mean of logged Data	2.576
Maximum of Logged Data	7.34	SD of logged Data	2.193

Assuming Lognormal Distribution

95% H-UCL	18040	90% Chebyshev (MVUE) UCL	254.3
95% Chebyshev (MVUE) UCL	332.8	97.5% Chebyshev (MVUE) UCL	441.7
99% Chebyshev (MVUE) UCL	655.6		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	464.3	95% Jackknife UCL	500.6
95% Standard Bootstrap UCL	447.9	95% Bootstrap-t UCL	7294

95% Hall's Bootstrap UCL	5959	95% Percentile Bootstrap UCL	523
95% BCA Bootstrap UCL	699.7		
90% Chebyshev(Mean, Sd) UCL	693.9	95% Chebyshev(Mean, Sd) UCL	924.1
97.5% Chebyshev(Mean, Sd) UCL	1244	99% Chebyshev(Mean, Sd) UCL	1871

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 1871

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	4
Number of Detects	5	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	3
Minimum Detect	0.0148	Minimum Non-Detect	0.053
Maximum Detect	0.11	Maximum Non-Detect	0.057
Variance Detects	0.00148	Percent Non-Detects	44.44%
Mean Detects	0.0556	SD Detects	0.0385
Median Detects	0.0384	CV Detects	0.693
Skewness Detects	0.678	Kurtosis Detects	-1.12
Mean of Logged Detects	-3.112	SD of Logged Detects	0.783

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.925	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.273	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.044	KM Standard Error of Mean	0.0117
KM SD	0.0296	95% KM (BCA) UCL	0.0633
95% KM (t) UCL	0.0658	95% KM (Percentile Bootstrap) UCL	0.0636
95% KM (z) UCL	0.0633	95% KM Bootstrap t UCL	0.0747

90% KM Chebyshev UCL	0.0792	95% KM Chebyshev UCL	0.0951
97.5% KM Chebyshev UCL	0.117	99% KM Chebyshev UCL	0.161

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.257	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.684	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.225	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.398	k star (bias corrected MLE)	1.092
Theta hat (MLE)	0.0232	Theta star (bias corrected MLE)	0.0509
nu hat (MLE)	23.98	nu star (bias corrected)	10.92
Mean (detects)	0.0556		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0148	Mean	0.0439
Maximum	0.11	Median	0.035
SD	0.031	CV	0.706
k hat (MLE)	2.825	k star (bias corrected MLE)	1.958
Theta hat (MLE)	0.0155	Theta star (bias corrected MLE)	0.0224
nu hat (MLE)	50.86	nu star (bias corrected)	35.24
Adjusted Level of Significance (β)	0.0231		
Approximate Chi Square Value (35.24, α)	22.66	Adjusted Chi Square Value (35.24, β)	20.55
95% Gamma Approximate UCL (use when n>=50)	0.0683	95% Gamma Adjusted UCL (use when n<50)	0.0753

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.044	SD (KM)	0.0296
Variance (KM)	8.7818E-4	SE of Mean (KM)	0.0117
k hat (KM)	2.202	k star (KM)	1.542
nu hat (KM)	39.64	nu star (KM)	27.76
theta hat (KM)	0.02	theta star (KM)	0.0285
80% gamma percentile (KM)	0.0678	90% gamma percentile (KM)	0.091
95% gamma percentile (KM)	0.114	99% gamma percentile (KM)	0.164

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (27.76, α)	16.74	Adjusted Chi Square Value (27.76, β)	14.97
95% Gamma Approximate KM-UCL (use when n>=50)	0.0729	95% Gamma Adjusted KM-UCL (use when n<50)	0.0816

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk GOF Test**

5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0433	Mean in Log Scale	-3.33
SD in Original Scale	0.0312	SD in Log Scale	0.627
95% t UCL (assumes normality of ROS data)	0.0626	95% Percentile Bootstrap UCL	0.0603
95% BCA Bootstrap UCL	0.0652	95% Bootstrap t UCL	0.103
95% H-UCL (Log ROS)	0.0757		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-3.332	KM Geo Mean	0.0357
KM SD (logged)	0.645	95% Critical H Value (KM-Log)	2.523
KM Standard Error of Mean (logged)	0.29	95% H-UCL (KM -Log)	0.0781
KM SD (logged)	0.645	95% Critical H Value (KM-Log)	2.523
KM Standard Error of Mean (logged)	0.29		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.043	Mean in Log Scale	-3.332
SD in Original Scale	0.0311	SD in Log Scale	0.613
95% t UCL (Assumes normality)	0.0623	95% H-Stat UCL	0.0735

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0658

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Minimum	3.05	Mean	9.949
Maximum	50.2	Median	4.6
SD	15.21	Std. Error of Mean	5.072
Coefficient of Variation	1.529	Skewness	2.914

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.484	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.402	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.38	95% Adjusted-CLT UCL (Chen-1995)	23.55
		95% Modified-t UCL (Johnson-1978)	20.2

Gamma GOF Test

A-D Test Statistic	1.71	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.741	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.4	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.286	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.144	k star (bias corrected MLE)	0.837
Theta hat (MLE)	8.699	Theta star (bias corrected MLE)	11.89
nu hat (MLE)	20.59	nu star (bias corrected)	15.06
MLE Mean (bias corrected)	9.949	MLE Sd (bias corrected)	10.88
		Approximate Chi Square Value (0.05)	7.302
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	6.198

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	20.52	95% Adjusted Gamma UCL (use when n<50)	24.17

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.69	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.355	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.115	Mean of logged Data	1.8
Maximum of Logged Data	3.916	SD of logged Data	0.854

Assuming Lognormal Distribution

95% H-UCL	21.07	90% Chebyshev (MVUE) UCL	15.58
95% Chebyshev (MVUE) UCL	18.89	97.5% Chebyshev (MVUE) UCL	23.47
99% Chebyshev (MVUE) UCL	32.48		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	18.29	95% Jackknife UCL	19.38
95% Standard Bootstrap UCL	17.95	95% Bootstrap-t UCL	153.6
95% Hall's Bootstrap UCL	89.62	95% Percentile Bootstrap UCL	19.63
95% BCA Bootstrap UCL	25.21		
90% Chebyshev(Mean, Sd) UCL	25.16	95% Chebyshev(Mean, Sd) UCL	32.06
97.5% Chebyshev(Mean, Sd) UCL	41.62	99% Chebyshev(Mean, Sd) UCL	60.41

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	32.06

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Selenium

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	4
Number of Detects	3	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	5
Minimum Detect	0.57	Minimum Non-Detect	1.065
Maximum Detect	6.3	Maximum Non-Detect	1.17
Variance Detects	10.58	Percent Non-Detects	66.67%
Mean Detects	2.546	SD Detects	3.253
Median Detects	0.767	CV Detects	1.278
Skewness Detects	1.725	Kurtosis Detects	N/A
Mean of Logged Detects	0.338	SD of Logged Detects	1.31

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.776	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.374	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	1.294	KM Standard Error of Mean	0.726
KM SD	1.772	95% KM (BCA) UCL	N/A
95% KM (t) UCL	2.645	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	2.489	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	3.474	95% KM Chebyshev UCL	4.461
97.5% KM Chebyshev UCL	5.831	99% KM Chebyshev UCL	8.523

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.971	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.622	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	5.825	nu star (bias corrected)	N/A
Mean (detects)	2.546		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0859	Mean	1.298
Maximum	6.3	Median	0.644
SD	1.905	CV	1.467
k hat (MLE)	0.995	k star (bias corrected MLE)	0.738
Theta hat (MLE)	1.304	Theta star (bias corrected MLE)	1.76
nu hat (MLE)	17.91	nu star (bias corrected)	13.28
Adjusted Level of Significance (β)	0.0231		
Approximate Chi Square Value (13.28, α)	6.078	Adjusted Chi Square Value (13.28, β)	5.088
95% Gamma Approximate UCL (use when n>=50)	2.835	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1.294	SD (KM)	1.772
Variance (KM)	3.141	SE of Mean (KM)	0.726
k hat (KM)	0.533	k star (KM)	0.43
nu hat (KM)	9.599	nu star (KM)	7.733
theta hat (KM)	2.427	theta star (KM)	3.013

80% gamma percentile (KM)	2.104	90% gamma percentile (KM)	3.608
95% gamma percentile (KM)	5.245	99% gamma percentile (KM)	9.332

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (7.73, α)	2.581	Adjusted Chi Square Value (7.73, β)	1.998
95% Gamma Approximate KM-UCL (use when n>=50)	3.877	95% Gamma Adjusted KM-UCL (use when n<50)	5.009

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.841	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.344	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.34	Mean in Log Scale	-0.113
SD in Original Scale	1.868	SD in Log Scale	0.771
95% t UCL (assumes normality of ROS data)	2.498	95% Percentile Bootstrap UCL	2.556
95% BCA Bootstrap UCL	3.174	95% Bootstrap t UCL	13.16
95% H-UCL (Log ROS)	2.548		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.163	KM Geo Mean	0.849
KM SD (logged)	0.722	95% Critical H Value (KM-Log)	2.66
KM Standard Error of Mean (logged)	0.311	95% H-UCL (KM -Log)	2.174
KM SD (logged)	0.722	95% Critical H Value (KM-Log)	2.66
KM Standard Error of Mean (logged)	0.311		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1.223	Mean in Log Scale	-0.272
SD in Original Scale	1.905	SD in Log Scale	0.799
95% t UCL (Assumes normality)	2.404	95% H-Stat UCL	2.321

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	2.645

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Number of Detects	2	Number of Non-Detects	7
Number of Distinct Detects	2	Number of Distinct Non-Detects	7
Minimum Detect	1.09	Minimum Non-Detect	0.6
Maximum Detect	1.61	Maximum Non-Detect	5.7
Variance Detects	0.135	Percent Non-Detects	77.78%
Mean Detects	1.35	SD Detects	0.368
Median Detects	1.35	CV Detects	0.272
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	0.281	SD of Logged Detects	0.276

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.833	KM Standard Error of Mean	0.197
KM SD	0.354	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1.2	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1.157	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.424	95% KM Chebyshev UCL	1.692
97.5% KM Chebyshev UCL	2.063	99% KM Chebyshev UCL	2.793

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	26.62	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0507	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	106.5	nu star (bias corrected)	N/A
Mean (detects)	1.35		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.833	SD (KM)	0.354
Variance (KM)	0.126	SE of Mean (KM)	0.197
k hat (KM)	5.533	k star (KM)	3.763

nu hat (KM)	99.59	nu star (KM)	67.73
theta hat (KM)	0.151	theta star (KM)	0.221
80% gamma percentile (KM)	1.157	90% gamma percentile (KM)	1.409
95% gamma percentile (KM)	1.642	99% gamma percentile (KM)	2.141

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0231
Approximate Chi Square Value (67.73, α)	49.79	Adjusted Chi Square Value (67.73, β)	46.56
95% Gamma Approximate KM-UCL (use when n>=50)	1.134	95% Gamma Adjusted KM-UCL (use when n<50)	1.212

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.83	Mean in Log Scale	-0.239
SD in Original Scale	0.326	SD in Log Scale	0.32
95% t UCL (assumes normality of ROS data)	1.032	95% Percentile Bootstrap UCL	1.004
95% BCA Bootstrap UCL	1.065	95% Bootstrap t UCL	1.694
95% H-UCL (Log ROS)	1.043		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.257	KM Geo Mean	0.773
KM SD (logged)	0.368	95% Critical H Value (KM-Log)	2.092
KM Standard Error of Mean (logged)	0.212	95% H-UCL (KM -Log)	1.086
KM SD (logged)	0.368	95% Critical H Value (KM-Log)	2.092
KM Standard Error of Mean (logged)	0.212		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.937	Mean in Log Scale	-0.335
SD in Original Scale	0.827	SD in Log Scale	0.739
95% t UCL (Assumes normality)	1.45	95% H-Stat UCL	1.899

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.2	KM H-UCL	1.086
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	4
Minimum	9.78	Mean	322.3
Maximum	2720	Median	21.7
SD	899.2	Std. Error of Mean	299.7
Coefficient of Variation	2.79	Skewness	2.999

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.402	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.508	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	879.7	95% Adjusted-CLT UCL (Chen-1995)	1136
		95% Modified-t UCL (Johnson-1978)	929.6

Gamma GOF Test

A-D Test Statistic	2.152	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.806	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.457	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.301	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.307	k star (bias corrected MLE)	0.279
Theta hat (MLE)	1049	Theta star (bias corrected MLE)	1156
nu hat (MLE)	5.529	nu star (bias corrected)	5.02
MLE Mean (bias corrected)	322.3	MLE Sd (bias corrected)	610.4
		Approximate Chi Square Value (0.05)	1.161
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	0.82

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1393	95% Adjusted Gamma UCL (use when n<50)	1973

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.666	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.305	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.28	Mean of logged Data	3.54
Maximum of Logged Data	7.908	SD of logged Data	1.711

Assuming Lognormal Distribution

95% H-UCL	3006	90% Chebyshev (MVUE) UCL	304.3
95% Chebyshev (MVUE) UCL	391.9	97.5% Chebyshev (MVUE) UCL	513.6
99% Chebyshev (MVUE) UCL	752.6		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	815.4	95% Jackknife UCL	879.7
95% Standard Bootstrap UCL	791.1	95% Bootstrap-t UCL	38957
95% Hall's Bootstrap UCL	17509	95% Percentile Bootstrap UCL	919.2
95% BCA Bootstrap UCL	1219		
90% Chebyshev(Mean, Sd) UCL	1222	95% Chebyshev(Mean, Sd) UCL	1629
97.5% Chebyshev(Mean, Sd) UCL	2194	99% Chebyshev(Mean, Sd) UCL	3305

Suggested UCL to Use

95% Hall's Bootstrap UCL	17509

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	13	Number of Distinct Observations	10
		Number of Missing Observations	2
Number of Detects	5	Number of Non-Detects	8
Number of Distinct Detects	5	Number of Distinct Non-Detects	5
Minimum Detect	46	Minimum Non-Detect	85
Maximum Detect	2000	Maximum Non-Detect	190

Variance Detects	882465	Percent Non-Detects	61.54%
Mean Detects	739.4	SD Detects	939.4
Median Detects	80	CV Detects	1.27
Skewness Detects	0.766	Kurtosis Detects	-2.415
Mean of Logged Detects	5.478	SD of Logged Detects	1.821

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.765	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.359	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data Not Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	324.8	KM Standard Error of Mean	191
KM SD	615.7	95% KM (BCA) UCL	689.1
95% KM (t) UCL	665.3	95% KM (Percentile Bootstrap) UCL	626.1
95% KM (z) UCL	639.1	95% KM Bootstrap t UCL	7345
90% KM Chebyshev UCL	897.9	95% KM Chebyshev UCL	1158
97.5% KM Chebyshev UCL	1518	99% KM Chebyshev UCL	2226

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.687	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.708	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.369	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.371	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.554	k star (bias corrected MLE)	0.355
Theta hat (MLE)	1334	Theta star (bias corrected MLE)	2083
nu hat (MLE)	5.542	nu star (bias corrected)	3.55
Mean (detects)	739.4		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	343
Maximum	2000	Median	46
SD	642.6	CV	1.873
k hat (MLE)	0.287	k star (bias corrected MLE)	0.272
Theta hat (MLE)	1194	Theta star (bias corrected MLE)	1260
nu hat (MLE)	7.468	nu star (bias corrected)	7.078
Adjusted Level of Significance (β)	0.0301		

Approximate Chi Square Value (7.08, α)	2.213	Adjusted Chi Square Value (7.08, β)	1.847
95% Gamma Approximate UCL (use when n>=50)	1097	95% Gamma Adjusted UCL (use when n<50)	1315

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	324.8	SD (KM)	615.7
Variance (KM)	379087	SE of Mean (KM)	191
k hat (KM)	0.278	k star (KM)	0.265
nu hat (KM)	7.236	nu star (KM)	6.9
theta hat (KM)	1167	theta star (KM)	1224
80% gamma percentile (KM)	481.3	90% gamma percentile (KM)	970.4
95% gamma percentile (KM)	1544	99% gamma percentile (KM)	3059

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.90, α)	2.116	Adjusted Chi Square Value (6.90, β)	1.759
95% Gamma Approximate KM-UCL (use when n>=50)	1059	95% Gamma Adjusted KM-UCL (use when n<50)	1274

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.792	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.326	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	342	Mean in Log Scale	4.781
SD in Original Scale	635.3	SD in Log Scale	1.306
95% t UCL (assumes normality of ROS data)	656.1	95% Percentile Bootstrap UCL	663.4
95% BCA Bootstrap UCL	746.4	95% Bootstrap t UCL	3447
95% H-UCL (Log ROS)	1010		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.666	KM Geo Mean	106.2
KM SD (logged)	1.211	95% Critical H Value (KM-Log)	3.228
KM Standard Error of Mean (logged)	0.392	95% H-UCL (KM -Log)	684.3
KM SD (logged)	1.211	95% Critical H Value (KM-Log)	3.228
KM Standard Error of Mean (logged)	0.392		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	316.9	Mean in Log Scale	4.527
SD in Original Scale	644.4	SD in Log Scale	1.325
95% t UCL (Assumes normality)	635.4	95% H-Stat UCL	830.1

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 665.3

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	13	Number of Distinct Observations	9
		Number of Missing Observations	2
Number of Detects	0	Number of Non-Detects	13
Number of Distinct Detects	0	Number of Distinct Non-Detects	9

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable N-Nitrosodiphenylamine was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:43:49 AM
From File	Functional Area 13 D.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Nitrobenzene

General Statistics

Total Number of Observations	21	Number of Distinct Observations	12
		Number of Missing Observations	2
Number of Detects	2	Number of Non-Detects	19
Number of Distinct Detects	2	Number of Distinct Non-Detects	10
Minimum Detect	85	Minimum Non-Detect	50
Maximum Detect	570	Maximum Non-Detect	220
Variance Detects	117613	Percent Non-Detects	90.48%
Mean Detects	327.5	SD Detects	342.9
Median Detects	327.5	CV Detects	1.047
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	5.394	SD of Logged Detects	1.346

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	77.14	KM Standard Error of Mean	34.16
KM SD	110.6	95% KM (BCA) UCL	N/A
95% KM (t) UCL	136.1	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	133.3	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	179.6	95% KM Chebyshev UCL	226.1
97.5% KM Chebyshev UCL	290.5	99% KM Chebyshev UCL	417.1

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.402	k star (bias corrected MLE)	N/A
Theta hat (MLE)	233.7	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	5.607	nu star (bias corrected)	N/A
Mean (detects)	327.5		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	77.14	SD (KM)	110.6
Variance (KM)	12223	SE of Mean (KM)	34.16
k hat (KM)	0.487	k star (KM)	0.449
nu hat (KM)	20.45	nu star (KM)	18.86
theta hat (KM)	158.4	theta star (KM)	171.8
80% gamma percentile (KM)	125.9	90% gamma percentile (KM)	213.3
95% gamma percentile (KM)	307.8	99% gamma percentile (KM)	542.8

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0383
Approximate Chi Square Value (18.86, α)	10.02	Adjusted Chi Square Value (18.86, β)	9.522
95% Gamma Approximate KM-UCL (use when n>=50)	145.3	95% Gamma Adjusted KM-UCL (use when n<50)	152.8

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	32.49	Mean in Log Scale	0.0448
SD in Original Scale	124.5	SD in Log Scale	2.291
95% t UCL (assumes normality of ROS data)	79.35	95% Percentile Bootstrap UCL	86.05
95% BCA Bootstrap UCL	114.2	95% Bootstrap t UCL	2067
95% H-UCL (Log ROS)	155.9		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.064	KM Geo Mean	58.21
KM SD (logged)	0.527	95% Critical H Value (KM-Log)	2.014
KM Standard Error of Mean (logged)	0.165	95% H-UCL (KM -Log)	84.82
KM SD (logged)	0.527	95% Critical H Value (KM-Log)	2.014
KM Standard Error of Mean (logged)	0.165		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	70.98	Mean in Log Scale	3.822
SD in Original Scale	117.4	SD in Log Scale	0.754
95% t UCL (Assumes normality)	115.2	95% H-Stat UCL	88.78

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	226.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:40:48 AM
From File	Functional Area 13 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Dinitrobenzene

General Statistics

Total Number of Observations	28	Number of Distinct Observations	12
		Number of Missing Observations	1
Number of Detects	1	Number of Non-Detects	27
Number of Distinct Detects	1	Number of Distinct Non-Detects	11

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Dinitrobenzene was not processed!

Nitrobenzene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	6
		Number of Missing Observations	14
Number of Detects	0	Number of Non-Detects	15
Number of Distinct Detects	0	Number of Distinct Non-Detects	6

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Nitrobenzene was not processed!

Benzo[a]pyrene

General Statistics

Total Number of Observations	16	Number of Distinct Observations	8
		Number of Missing Observations	1
Number of Detects	3	Number of Non-Detects	13
Number of Distinct Detects	3	Number of Distinct Non-Detects	5
Minimum Detect	77	Minimum Non-Detect	85
Maximum Detect	2000	Maximum Non-Detect	240

Variance Detects	997646	Percent Non-Detects	81.25%
Mean Detects	882.3	SD Detects	998.8
Median Detects	570	CV Detects	1.132
Skewness Detects	1.27	Kurtosis Detects	N/A
Mean of Logged Detects	6.097	SD of Logged Detects	1.643

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.927	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.289	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	228	KM Standard Error of Mean	144.8
KM SD	472.8	95% KM (BCA) UCL	N/A
95% KM (t) UCL	481.8	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	466.1	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	662.3	95% KM Chebyshev UCL	859
97.5% KM Chebyshev UCL	1132	99% KM Chebyshev UCL	1668

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.858	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1029	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	5.146	nu star (bias corrected)	N/A
Mean (detects)	882.3		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	225.2
Maximum	2000	Median	26.93
SD	504.2	CV	2.239
k hat (MLE)	0.153	k star (bias corrected MLE)	0.166
Theta hat (MLE)	1476	Theta star (bias corrected MLE)	1359
nu hat (MLE)	4.884	nu star (bias corrected)	5.302
Adjusted Level of Significance (β)	0.0335		

Approximate Chi Square Value (5.30, α)	1.294	Adjusted Chi Square Value (5.30, β)	1.085
95% Gamma Approximate UCL (use when n>=50)	922.7	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	228	SD (KM)	472.8
Variance (KM)	223510	SE of Mean (KM)	144.8
k hat (KM)	0.233	k star (KM)	0.231
nu hat (KM)	7.443	nu star (KM)	7.38
theta hat (KM)	980.3	theta star (KM)	988.6
80% gamma percentile (KM)	321.1	90% gamma percentile (KM)	687.6
95% gamma percentile (KM)	1130	99% gamma percentile (KM)	2321

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (7.38, α)	2.382	Adjusted Chi Square Value (7.38, β)	2.071
95% Gamma Approximate KM-UCL (use when n>=50)	706.5	95% Gamma Adjusted KM-UCL (use when n<50)	812.4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.983	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.227	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	241.3	Mean in Log Scale	4.584
SD in Original Scale	488.7	SD in Log Scale	1.222
95% t UCL (assumes normality of ROS data)	455.5	95% Percentile Bootstrap UCL	470.2
95% BCA Bootstrap UCL	594.6	95% Bootstrap t UCL	1323
95% H-UCL (Log ROS)	542.1		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.672	KM Geo Mean	107
KM SD (logged)	0.897	95% Critical H Value (KM-Log)	2.55
KM Standard Error of Mean (logged)	0.275	95% H-UCL (KM -Log)	288.9
KM SD (logged)	0.897	95% Critical H Value (KM-Log)	2.55
KM Standard Error of Mean (logged)	0.275		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	211.2	Mean in Log Scale	4.367
SD in Original Scale	494.4	SD in Log Scale	1.09
95% t UCL (Assumes normality)	427.9	95% H-Stat UCL	317.7

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 481.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

N-Nitrosodiphenylamine

General Statistics

Total Number of Observations	16	Number of Distinct Observations	7
		Number of Missing Observations	1
Number of Detects	0	Number of Non-Detects	16
Number of Distinct Detects	0	Number of Distinct Non-Detects	7

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable N-Nitrosodiphenylamine was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:46:35 AM
From File	Functional Area 14 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo[a]pyrene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
Number of Detects	2	Number of Non-Detects	12
Number of Distinct Detects	2	Number of Distinct Non-Detects	7
Minimum Detect	48	Minimum Non-Detect	10
Maximum Detect	190	Maximum Non-Detect	202.7
Variance Detects	10082	Percent Non-Detects	85.71%
Mean Detects	119	SD Detects	100.4
Median Detects	119	CV Detects	0.844
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	4.559	SD of Logged Detects	0.973

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	42.42	KM Standard Error of Mean	25.17
KM SD	48.07	95% KM (BCA) UCL	N/A
95% KM (t) UCL	86.98	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	83.81	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	117.9	95% KM Chebyshev UCL	152.1
97.5% KM Chebyshev UCL	199.6	99% KM Chebyshev UCL	292.8

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.426	k star (bias corrected MLE)	N/A
Theta hat (MLE)	49.05	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	9.705	nu star (bias corrected)	N/A
Mean (detects)	119		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	42.42	SD (KM)	48.07
Variance (KM)	2311	SE of Mean (KM)	25.17
k hat (KM)	0.779	k star (KM)	0.659
nu hat (KM)	21.8	nu star (KM)	18.46
theta hat (KM)	54.48	theta star (KM)	64.33
80% gamma percentile (KM)	69.84	90% gamma percentile (KM)	108
95% gamma percentile (KM)	147.5	99% gamma percentile (KM)	242.4

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0312
Approximate Chi Square Value (18.46, α)	9.725	Adjusted Chi Square Value (18.46, β)	8.894
95% Gamma Approximate KM-UCL (use when n>=50)	80.52	95% Gamma Adjusted KM-UCL (use when n<50)	88.05

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	39.68	Mean in Log Scale	3.364
SD in Original Scale	45.19	SD in Log Scale	0.734
95% t UCL (assumes normality of ROS data)	61.07	95% Percentile Bootstrap UCL	61.53
95% BCA Bootstrap UCL	72.31	95% Bootstrap t UCL	98.63
95% H-UCL (Log ROS)	61.54		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.267	KM Geo Mean	26.23
KM SD (logged)	0.959	95% Critical H Value (KM-Log)	2.725
KM Standard Error of Mean (logged)	0.759	95% H-UCL (KM -Log)	85.82
KM SD (logged)	0.959	95% Critical H Value (KM-Log)	2.725
KM Standard Error of Mean (logged)	0.759		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	61.92	Mean in Log Scale	3.9
SD in Original Scale	43.55	SD in Log Scale	0.789
95% t UCL (Assumes normality)	82.53	95% H-Stat UCL	115.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	152.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:49:42 AM
From File	Functional Area 15 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Dinitrobenzene

General Statistics

Total Number of Observations	23	Number of Distinct Observations	13
		Number of Missing Observations	8
Number of Detects	2	Number of Non-Detects	21
Number of Distinct Detects	2	Number of Distinct Non-Detects	11
Minimum Detect	1200	Minimum Non-Detect	55
Maximum Detect	4800	Maximum Non-Detect	175
Variance Detects	6480000	Percent Non-Detects	91.3%
Mean Detects	3000	SD Detects	2546
Median Detects	3000	CV Detects	0.849
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	7.783	SD of Logged Detects	0.98

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	311.1	KM Standard Error of Mean	290.5
KM SD	985.1	95% KM (BCA) UCL	N/A
95% KM (t) UCL	809.9	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	788.9	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1183	95% KM Chebyshev UCL	1577
97.5% KM Chebyshev UCL	2125	99% KM Chebyshev UCL	3201

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.394	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1253	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	9.577	nu star (bias corrected)	N/A
Mean (detects)	3000		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	311.1	SD (KM)	985.1
Variance (KM)	970335	SE of Mean (KM)	290.5
k hat (KM)	0.0997	k star (KM)	0.116
nu hat (KM)	4.588	nu star (KM)	5.323
theta hat (KM)	3119	theta star (KM)	2688
80% gamma percentile (KM)	261.6	90% gamma percentile (KM)	872.2
95% gamma percentile (KM)	1783	99% gamma percentile (KM)	4589

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (5.32, α)	1.304	Adjusted Chi Square Value (5.32, β)	1.167
95% Gamma Approximate KM-UCL (use when n>=50)	1270	95% Gamma Adjusted KM-UCL (use when n<50)	1418

95% Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50)

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	264.3	Mean in Log Scale	0.534
SD in Original Scale	1020	SD in Log Scale	2.936
95% t UCL (assumes normality of ROS data)	629.4	95% Percentile Bootstrap UCL	679.9
95% BCA Bootstrap UCL	940.2	95% Bootstrap t UCL	37734
95% H-UCL (Log ROS)	4376		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.336	KM Geo Mean	76.38
KM SD (logged)	1.083	95% Critical H Value (KM-Log)	2.637
KM Standard Error of Mean (logged)	0.319	95% H-UCL (KM -Log)	252.6
KM SD (logged)	1.083	95% Critical H Value (KM-Log)	2.637
KM Standard Error of Mean (logged)	0.319		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	304.1	Mean in Log Scale	4.109
SD in Original Scale	1009	SD in Log Scale	1.252
95% t UCL (Assumes normality)	665.5	95% H-Stat UCL	287.2

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1577

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	11	Number of Distinct Observations	10
		Number of Missing Observations	7
Number of Detects	4	Number of Non-Detects	7
Number of Distinct Detects	4	Number of Distinct Non-Detects	6
Minimum Detect	49	Minimum Non-Detect	20
Maximum Detect	580	Maximum Non-Detect	210
Variance Detects	55658	Percent Non-Detects	63.64%
Mean Detects	263.3	SD Detects	235.9
Median Detects	212	CV Detects	0.896
Skewness Detects	0.98	Kurtosis Detects	0.00525
Mean of Logged Detects	5.195	SD of Logged Detects	1.074

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	118.7	KM Standard Error of Mean	58.37
KM SD	165.7	95% KM (BCA) UCL	N/A
95% KM (t) UCL	224.5	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	214.7	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	293.8	95% KM Chebyshev UCL	373.1
97.5% KM Chebyshev UCL	483.2	99% KM Chebyshev UCL	699.4

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.21	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.663	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.198	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.4	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.466	k star (bias corrected MLE)	0.533
Theta hat (MLE)	179.6	Theta star (bias corrected MLE)	493.8
nu hat (MLE)	11.73	nu star (bias corrected)	4.265
Mean (detects)	263.3		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	95.73
Maximum	580	Median	0.01
SD	185.3	CV	1.936
k hat (MLE)	0.139	k star (bias corrected MLE)	0.161
Theta hat (MLE)	690.1	Theta star (bias corrected MLE)	592.8
nu hat (MLE)	3.052	nu star (bias corrected)	3.553
Adjusted Level of Significance (β)	0.0278		
Approximate Chi Square Value (3.55, α)	0.553	Adjusted Chi Square Value (3.55, β)	0.397
95% Gamma Approximate UCL (use when n>=50)	614.5	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	118.7	SD (KM)	165.7
Variance (KM)	27456	SE of Mean (KM)	58.37
k hat (KM)	0.513	k star (KM)	0.434
nu hat (KM)	11.29	nu star (KM)	9.542
theta hat (KM)	231.3	theta star (KM)	273.6
80% gamma percentile (KM)	193.1	90% gamma percentile (KM)	330.3
95% gamma percentile (KM)	479.4	99% gamma percentile (KM)	851.3

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (9.54, α)	3.658	Adjusted Chi Square Value (9.54, β)	3.088
95% Gamma Approximate KM-UCL (use when n>=50)	309.6	95% Gamma Adjusted KM-UCL (use when n<50)	366.8

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.985	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.182	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	110.1	Mean in Log Scale	3.811
SD in Original Scale	177.5	SD in Log Scale	1.305
95% t UCL (assumes normality of ROS data)	207.1	95% Percentile Bootstrap UCL	197.8
95% BCA Bootstrap UCL	256.4	95% Bootstrap t UCL	532
95% H-UCL (Log ROS)	470.9		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.076	KM Geo Mean	58.88
KM SD (logged)	1.096	95% Critical H Value (KM-Log)	3.186
KM Standard Error of Mean (logged)	0.448	95% H-UCL (KM -Log)	324.2

KM SD (logged)	1.096	95% Critical H Value (KM-Log)	3.186
KM Standard Error of Mean (logged)	0.448		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	131.6	Mean in Log Scale	4.332
SD in Original Scale	167.9	SD in Log Scale	1.079
95% t UCL (Assumes normality)	223.4	95% H-Stat UCL	399.5

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	224.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:53:16 AM
From File	Functional Area 16 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Antimony

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
		Number of Missing Observations	2
Number of Detects	7	Number of Non-Detects	5
Number of Distinct Detects	7	Number of Distinct Non-Detects	5
Minimum Detect	0.94	Minimum Non-Detect	0.22
Maximum Detect	1.59	Maximum Non-Detect	1.195
Variance Detects	0.068	Percent Non-Detects	41.67%
Mean Detects	1.296	SD Detects	0.261
Median Detects	1.27	CV Detects	0.201
Skewness Detects	-0.0768	Kurtosis Detects	-1.968
Mean of Logged Detects	0.241	SD of Logged Detects	0.206

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.902	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.212	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	1.01	KM Standard Error of Mean	0.175
KM SD	0.461	95% KM (BCA) UCL	1.28
95% KM (t) UCL	1.325	95% KM (Percentile Bootstrap) UCL	1.285
95% KM (z) UCL	1.299	95% KM Bootstrap t UCL	1.244
90% KM Chebyshev UCL	1.537	95% KM Chebyshev UCL	1.775
97.5% KM Chebyshev UCL	2.106	99% KM Chebyshev UCL	2.756

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.384	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.707	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.233	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.311	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	28	k star (bias corrected MLE)	16.1
Theta hat (MLE)	0.0463	Theta star (bias corrected MLE)	0.0805
nu hat (MLE)	392	nu star (bias corrected)	225.4
Mean (detects)	1.296		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.689	Mean	1.114
Maximum	1.59	Median	1.013
SD	0.303	CV	0.272
k hat (MLE)	15.24	k star (bias corrected MLE)	11.49
Theta hat (MLE)	0.0731	Theta star (bias corrected MLE)	0.097
nu hat (MLE)	365.8	nu star (bias corrected)	275.7
Adjusted Level of Significance (β)	0.029		
Approximate Chi Square Value (275.70, α)	238.2	Adjusted Chi Square Value (275.70, β)	232.9
95% Gamma Approximate UCL (use when n>=50)	1.289	95% Gamma Adjusted UCL (use when n<50)	1.319

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1.01	SD (KM)	0.461
Variance (KM)	0.213	SE of Mean (KM)	0.175
k hat (KM)	4.795	k star (KM)	3.652
nu hat (KM)	115.1	nu star (KM)	87.64
theta hat (KM)	0.211	theta star (KM)	0.277
80% gamma percentile (KM)	1.408	90% gamma percentile (KM)	1.719
95% gamma percentile (KM)	2.007	99% gamma percentile (KM)	2.624

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (87.64, α)	67.06	Adjusted Chi Square Value (87.64, β)	64.31
95% Gamma Approximate KM-UCL (use when n>=50)	1.32	95% Gamma Adjusted KM-UCL (use when n<50)	1.377

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.908	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.216	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.125	Mean in Log Scale	0.088
SD in Original Scale	0.291	SD in Log Scale	0.251
95% t UCL (assumes normality of ROS data)	1.275	95% Percentile Bootstrap UCL	1.266
95% BCA Bootstrap UCL	1.271	95% Bootstrap t UCL	1.314
95% H-UCL (Log ROS)	1.299		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.175	KM Geo Mean	0.839
KM SD (logged)	0.709	95% Critical H Value (KM-Log)	2.428
KM Standard Error of Mean (logged)	0.296	95% H-UCL (KM -Log)	1.815
KM SD (logged)	0.709	95% Critical H Value (KM-Log)	2.428
KM Standard Error of Mean (logged)	0.296		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.952	Mean in Log Scale	-0.236
SD in Original Scale	0.482	SD in Log Scale	0.751
95% t UCL (Assumes normality)	1.202	95% H-Stat UCL	1.842

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.325

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2
Minimum	1.9	Mean	4.599
Maximum	8.8	Median	4.535
SD	1.86	Std. Error of Mean	0.537
Coefficient of Variation	0.404	Skewness	0.82

Normal GOF Test

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.165	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.564	95% Adjusted-CLT UCL (Chen-1995)	5.618

95% Modified-t UCL (Johnson-1978)	5.585

Gamma GOF Test

A-D Test Statistic	0.236	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.731	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.119	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.246	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	6.62	k star (bias corrected MLE)	5.021
Theta hat (MLE)	0.695	Theta star (bias corrected MLE)	0.916
nu hat (MLE)	158.9	nu star (bias corrected)	120.5
MLE Mean (bias corrected)	4.599	MLE Sd (bias corrected)	2.053
		Approximate Chi Square Value (0.05)	96.15
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	92.84

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	5.764	95% Adjusted Gamma UCL (use when n<50)	5.97

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.963	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.145	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.642	Mean of logged Data	1.448
Maximum of Logged Data	2.175	SD of logged Data	0.422

Assuming Lognormal Distribution

95% H-UCL	6.036	90% Chebyshev (MVUE) UCL	6.33
95% Chebyshev (MVUE) UCL	7.106	97.5% Chebyshev (MVUE) UCL	8.184
99% Chebyshev (MVUE) UCL	10.3		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	5.482	95% Jackknife UCL	5.564
95% Standard Bootstrap UCL	5.438	95% Bootstrap-t UCL	5.759
95% Hall's Bootstrap UCL	6.084	95% Percentile Bootstrap UCL	5.478
95% BCA Bootstrap UCL	5.644		
90% Chebyshev(Mean, Sd) UCL	6.21	95% Chebyshev(Mean, Sd) UCL	6.94
97.5% Chebyshev(Mean, Sd) UCL	7.953	99% Chebyshev(Mean, Sd) UCL	9.942

Suggested UCL to Use

95% Student's-t UCL	5.564

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2
Minimum	0.163	Mean	0.55
Maximum	0.78	Median	0.71
SD	0.251	Std. Error of Mean	0.0724
Coefficient of Variation	0.456	Skewness	-0.646

Normal GOF Test

Shapiro Wilk Test Statistic	0.781	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.32	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.68	95% Adjusted-CLT UCL (Chen-1995)	0.655
		95% Modified-t UCL (Johnson-1978)	0.678

Gamma GOF Test

A-D Test Statistic	1.319	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.736	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.337	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.247	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.801	k star (bias corrected MLE)	2.906
Theta hat (MLE)	0.145	Theta star (bias corrected MLE)	0.189
nu hat (MLE)	91.22	nu star (bias corrected)	69.75
MLE Mean (bias corrected)	0.55	MLE Sd (bias corrected)	0.323
		Approximate Chi Square Value (0.05)	51.52
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	49.14

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.745	95% Adjusted Gamma UCL (use when n<50)	0.781

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.771	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.327	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.243	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-1.814	Mean of logged Data	-0.735
Maximum of Logged Data	-0.248	SD of logged Data	0.598

Assuming Lognormal Distribution

95% H-UCL	0.863	90% Chebyshev (MVUE) UCL	0.865
95% Chebyshev (MVUE) UCL	1.001	97.5% Chebyshev (MVUE) UCL	1.191
99% Chebyshev (MVUE) UCL	1.562		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	0.669	95% Jackknife UCL	0.68
95% Standard Bootstrap UCL	0.664	95% Bootstrap-t UCL	0.667
95% Hall's Bootstrap UCL	0.645	95% Percentile Bootstrap UCL	0.665
95% BCA Bootstrap UCL	0.656		
90% Chebyshev(Mean, Sd) UCL	0.767	95% Chebyshev(Mean, Sd) UCL	0.866
97.5% Chebyshev(Mean, Sd) UCL	1.002	99% Chebyshev(Mean, Sd) UCL	1.271

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	0.866

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Cadmium

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2

Number of Detects	2	Number of Non-Detects	10
Number of Distinct Detects	2	Number of Distinct Non-Detects	10
Minimum Detect	0.393	Minimum Non-Detect	0.0275
Maximum Detect	2.5	Maximum Non-Detect	1.415
Variance Detects	2.22	Percent Non-Detects	83.33%
Mean Detects	1.447	SD Detects	1.49
Median Detects	1.447	CV Detects	1.03
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-0.00883	SD of Logged Detects	1.308

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.271	KM Standard Error of Mean	0.279
KM SD	0.681	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.772	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.729	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.107	95% KM Chebyshev UCL	1.486
97.5% KM Chebyshev UCL	2.012	99% KM Chebyshev UCL	3.045

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.467	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.986	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	5.869	nu star (bias corrected)	N/A
Mean (detects)	1.447		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.271	SD (KM)	0.681
Variance (KM)	0.464	SE of Mean (KM)	0.279
k hat (KM)	0.158	k star (KM)	0.174
nu hat (KM)	3.793	nu star (KM)	4.178
theta hat (KM)	1.713	theta star (KM)	1.555
80% gamma percentile (KM)	0.329	90% gamma percentile (KM)	0.815
95% gamma percentile (KM)	1.444	99% gamma percentile (KM)	3.216

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.029
Approximate Chi Square Value (4.18, α)	0.793	Adjusted Chi Square Value (4.18, β)	0.599
95% Gamma Approximate KM-UCL (use when n>=50)	1.426	95% Gamma Adjusted KM-UCL (use when n<50)	1.889

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.248	Mean in Log Scale	-4.022
SD in Original Scale	0.718	SD in Log Scale	1.921
95% t UCL (assumes normality of ROS data)	0.62	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A	95% Bootstrap t UCL	N/A
95% H-UCL (Log ROS)	1.82		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-2.947	KM Geo Mean	0.0525
KM SD (logged)	1.413	95% Critical H Value (KM-Log)	3.716
KM Standard Error of Mean (logged)	0.597	95% H-UCL (KM -Log)	0.694
KM SD (logged)	1.413	95% Critical H Value (KM-Log)	3.716
KM Standard Error of Mean (logged)	0.597		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.432	Mean in Log Scale	-1.644
SD in Original Scale	0.691	SD in Log Scale	1.323
95% t UCL (Assumes normality)	0.79	95% H-Stat UCL	1.901

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1.486

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2
Minimum	5.24	Mean	13.97
Maximum	34.2	Median	12.25
SD	7.886	Std. Error of Mean	2.277
Coefficient of Variation	0.564	Skewness	1.583

Normal GOF Test

Shapiro Wilk Test Statistic	0.867	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.188	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.06	95% Adjusted-CLT UCL (Chen-1995)	18.83
		95% Modified-t UCL (Johnson-1978)	18.23

Gamma GOF Test

A-D Test Statistic	0.242	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.736	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.118	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.246	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.978	k star (bias corrected MLE)	3.039
Theta hat (MLE)	3.512	Theta star (bias corrected MLE)	4.597
nu hat (MLE)	95.47	nu star (bias corrected)	72.94
MLE Mean (bias corrected)	13.97	MLE Sd (bias corrected)	8.014
		Approximate Chi Square Value (0.05)	54.27
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	51.82

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	18.78	95% Adjusted Gamma UCL (use when n<50)	19.66

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.136	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.656	Mean of logged Data	2.506
Maximum of Logged Data	3.532	SD of logged Data	0.534

Assuming Lognormal Distribution

95% H-UCL	20.08	90% Chebyshev (MVUE) UCL	20.56
95% Chebyshev (MVUE) UCL	23.56	97.5% Chebyshev (MVUE) UCL	27.72
99% Chebyshev (MVUE) UCL	35.89		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	17.72	95% Jackknife UCL	18.06
95% Standard Bootstrap UCL	17.52	95% Bootstrap-t UCL	20.22
95% Hall's Bootstrap UCL	35.01	95% Percentile Bootstrap UCL	17.73
95% BCA Bootstrap UCL	18.43		
90% Chebyshev(Mean, Sd) UCL	20.8	95% Chebyshev(Mean, Sd) UCL	23.9
97.5% Chebyshev(Mean, Sd) UCL	28.19	99% Chebyshev(Mean, Sd) UCL	36.62

Suggested UCL to Use

95% Student's-t UCL	18.06

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2
Minimum	0.013	Mean	0.25
Maximum	2.44	Median	0.04
SD	0.691	Std. Error of Mean	0.199
Coefficient of Variation	2.759	Skewness	3.442

Normal GOF Test

Shapiro Wilk Test Statistic	0.375	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.48	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.609	95% Adjusted-CLT UCL (Chen-1995)	0.79
		95% Modified-t UCL (Johnson-1978)	0.642

Gamma GOF Test

A-D Test Statistic	2.092	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.799	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.345	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.261	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.427	k star (bias corrected MLE)	0.376
Theta hat (MLE)	0.586	Theta star (bias corrected MLE)	0.666
nu hat (MLE)	10.25	nu star (bias corrected)	9.024
MLE Mean (bias corrected)	0.25	MLE Sd (bias corrected)	0.408
		Approximate Chi Square Value (0.05)	3.341
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	2.835

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.676	95% Adjusted Gamma UCL (use when n<50)	0.797

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.806	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.251	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.243	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.343	Mean of logged Data	-2.909
Maximum of Logged Data	0.892	SD of logged Data	1.408

Assuming Lognormal Distribution

95% H-UCL	0.708	90% Chebyshev (MVUE) UCL	0.299
95% Chebyshev (MVUE) UCL	0.376	97.5% Chebyshev (MVUE) UCL	0.483
99% Chebyshev (MVUE) UCL	0.694		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	0.578	95% Jackknife UCL	0.609
95% Standard Bootstrap UCL	0.556	95% Bootstrap-t UCL	4.919
95% Hall's Bootstrap UCL	3.688	95% Percentile Bootstrap UCL	0.647
95% BCA Bootstrap UCL	0.861		
90% Chebyshev(Mean, Sd) UCL	0.849	95% Chebyshev(Mean, Sd) UCL	1.12
97.5% Chebyshev(Mean, Sd) UCL	1.496	99% Chebyshev(Mean, Sd) UCL	2.235

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.12

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2
Minimum	2.32	Mean	7.202
Maximum	12.2	Median	7.94
SD	3.496	Std. Error of Mean	1.009
Coefficient of Variation	0.485	Skewness	-0.292

Normal GOF Test

Shapiro Wilk Test Statistic	0.906	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.182	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.014	95% Adjusted-CLT UCL (Chen-1995)	8.771
		95% Modified-t UCL (Johnson-1978)	9

Gamma GOF Test

A-D Test Statistic	0.727	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.219	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.247	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.555	k star (bias corrected MLE)	2.722
Theta hat (MLE)	2.026	Theta star (bias corrected MLE)	2.646
nu hat (MLE)	85.33	nu star (bias corrected)	65.33
MLE Mean (bias corrected)	7.202	MLE Sd (bias corrected)	4.365
		Approximate Chi Square Value (0.05)	47.73
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	45.44

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	9.857	95% Adjusted Gamma UCL (use when n<50)	10.35

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.848	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.24	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.842	Mean of logged Data	1.827
Maximum of Logged Data	2.501	SD of logged Data	0.613

Assuming Lognormal Distribution

95% H-UCL	11.45	90% Chebyshev (MVUE) UCL	11.41
95% Chebyshev (MVUE) UCL	13.25	97.5% Chebyshev (MVUE) UCL	15.79
99% Chebyshev (MVUE) UCL	20.78		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	8.862	95% Jackknife UCL	9.014
95% Standard Bootstrap UCL	8.776	95% Bootstrap-t UCL	8.947
95% Hall's Bootstrap UCL	8.759	95% Percentile Bootstrap UCL	8.771
95% BCA Bootstrap UCL	8.69		
90% Chebyshev(Mean, Sd) UCL	10.23	95% Chebyshev(Mean, Sd) UCL	11.6
97.5% Chebyshev(Mean, Sd) UCL	13.5	99% Chebyshev(Mean, Sd) UCL	17.24

Suggested UCL to Use

95% Student's-t UCL	9.014

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Selenium

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2
Number of Detects	3	Number of Non-Detects	9
Number of Distinct Detects	3	Number of Distinct Non-Detects	9
Minimum Detect	0.44	Minimum Non-Detect	0.24
Maximum Detect	1.24	Maximum Non-Detect	1.135
Variance Detects	0.203	Percent Non-Detects	75%
Mean Detects	0.96	SD Detects	0.451
Median Detects	1.2	CV Detects	0.47
Skewness Detects	-1.717	Kurtosis Detects	N/A
Mean of Logged Detects	-0.141	SD of Logged Detects	0.589

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.787	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.369	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.487	KM Standard Error of Mean	0.137
KM SD	0.341	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.732	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.711	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.896	95% KM Chebyshev UCL	1.082
97.5% KM Chebyshev UCL	1.34	99% KM Chebyshev UCL	1.846

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	5.143	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.187	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	30.86	nu star (bias corrected)	N/A
Mean (detects)	0.96		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.382
Maximum	1.24	Median	0.212
SD	0.402	CV	1.052
k hat (MLE)	1.156	k star (bias corrected MLE)	0.923
Theta hat (MLE)	0.331	Theta star (bias corrected MLE)	0.414
nu hat (MLE)	27.74	nu star (bias corrected)	22.14
Adjusted Level of Significance (β)	0.029		
Approximate Chi Square Value (22.14, α)	12.44	Adjusted Chi Square Value (22.14, β)	11.35
95% Gamma Approximate UCL (use when n>=50)	0.68	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.487	SD (KM)	0.341
Variance (KM)	0.116	SE of Mean (KM)	0.137

k hat (KM)	2.043	k star (KM)	1.587
nu hat (KM)	49.02	nu star (KM)	38.1
theta hat (KM)	0.238	theta star (KM)	0.307
80% gamma percentile (KM)	0.748	90% gamma percentile (KM)	1
95% gamma percentile (KM)	1.244	99% gamma percentile (KM)	1.793

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (38.10, α)	24.96	Adjusted Chi Square Value (38.10, β)	23.35
95% Gamma Approximate KM-UCL (use when n>=50)	0.743	95% Gamma Adjusted KM-UCL (use when n<50)	0.794

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.774	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.375	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.449	Mean in Log Scale	-1.002
SD in Original Scale	0.365	SD in Log Scale	0.595
95% t UCL (assumes normality of ROS data)	0.638	95% Percentile Bootstrap UCL	0.626
95% BCA Bootstrap UCL	0.686	95% Bootstrap t UCL	1.344
95% H-UCL (Log ROS)	0.658		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.904	KM Geo Mean	0.405
KM SD (logged)	0.565	95% Critical H Value (KM-Log)	2.224
KM Standard Error of Mean (logged)	0.28	95% H-UCL (KM -Log)	0.694
KM SD (logged)	0.565	95% Critical H Value (KM-Log)	2.224
KM Standard Error of Mean (logged)	0.28		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.611	Mean in Log Scale	-0.622
SD in Original Scale	0.31	SD in Log Scale	0.575
95% t UCL (Assumes normality)	0.771	95% H-Stat UCL	0.934

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.732

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	2
Minimum	20.9	Mean	104.8
Maximum	768	Median	48.8
SD	209.8	Std. Error of Mean	60.56
Coefficient of Variation	2.002	Skewness	3.408

Normal GOF Test

Shapiro Wilk Test Statistic	0.412	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.453	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	213.6	95% Adjusted-CLT UCL (Chen-1995)	268.1
		95% Modified-t UCL (Johnson-1978)	223.5

Gamma GOF Test

A-D Test Statistic	1.907	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.763	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.36	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.254	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.825	k star (bias corrected MLE)	0.674
Theta hat (MLE)	127.1	Theta star (bias corrected MLE)	155.5
nu hat (MLE)	19.79	nu star (bias corrected)	16.18
MLE Mean (bias corrected)	104.8	MLE Sd (bias corrected)	127.7
		Approximate Chi Square Value (0.05)	8.087
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	7.23

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	209.7	95% Adjusted Gamma UCL (use when n<50)	234.5

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.767	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.261	**Lilliefors Lognormal GOF Test**

5% Lilliefors Critical Value	0.243	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.04	Mean of logged Data	3.935
Maximum of Logged Data	6.644	SD of logged Data	0.975

Assuming Lognormal Distribution

95% H-UCL	191.4	90% Chebyshev (MVUE) UCL	148.4
95% Chebyshev (MVUE) UCL	180.3	97.5% Chebyshev (MVUE) UCL	224.5
99% Chebyshev (MVUE) UCL	311.4		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	204.4	95% Jackknife UCL	213.6
95% Standard Bootstrap UCL	203.8	95% Bootstrap-t UCL	979.7
95% Hall's Bootstrap UCL	744.7	95% Percentile Bootstrap UCL	224.5
95% BCA Bootstrap UCL	289.3		
90% Chebyshev(Mean, Sd) UCL	286.5	95% Chebyshev(Mean, Sd) UCL	368.8
97.5% Chebyshev(Mean, Sd) UCL	483	99% Chebyshev(Mean, Sd) UCL	707.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	368.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo[a]pyrene

General Statistics

Total Number of Observations	12	Number of Distinct Observations	8
		Number of Missing Observations	2
Number of Detects	3	Number of Non-Detects	9
Number of Distinct Detects	3	Number of Distinct Non-Detects	5
Minimum Detect	41	Minimum Non-Detect	10
Maximum Detect	280	Maximum Non-Detect	205
Variance Detects	15130	Percent Non-Detects	75%
Mean Detects	143.7	SD Detects	123
Median Detects	110	CV Detects	0.856
Skewness Detects	1.139	Kurtosis Detects	N/A
Mean of Logged Detects	4.683	SD of Logged Detects	0.961

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	55.31	KM Standard Error of Mean	28.14
KM SD	73.7	95% KM (BCA) UCL	N/A
95% KM (t) UCL	105.9	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	101.6	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	139.7	95% KM Chebyshev UCL	178
97.5% KM Chebyshev UCL	231.1	99% KM Chebyshev UCL	335.3

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.907	k star (bias corrected MLE)	N/A
Theta hat (MLE)	75.34	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	11.44	nu star (bias corrected)	N/A
Mean (detects)	143.7		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	39.4
Maximum	280	Median	0.01
SD	82.56	CV	2.095
k hat (MLE)	0.16	k star (bias corrected MLE)	0.175
Theta hat (MLE)	246.6	Theta star (bias corrected MLE)	224.7
nu hat (MLE)	3.834	nu star (bias corrected)	4.209
Adjusted Level of Significance (β)	0.029		
Approximate Chi Square Value (4.21, α)	0.806	Adjusted Chi Square Value (4.21, β)	0.609
95% Gamma Approximate UCL (use when n>=50)	205.8	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	55.31	SD (KM)	73.7
Variance (KM)	5432	SE of Mean (KM)	28.14
k hat (KM)	0.563	k star (KM)	0.478

nu hat (KM)	13.52	nu star (KM)	11.47
theta hat (KM)	98.19	theta star (KM)	115.7
80% gamma percentile (KM)	90.64	90% gamma percentile (KM)	151
95% gamma percentile (KM)	215.9	99% gamma percentile (KM)	376.1

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (11.47, α)	4.882	Adjusted Chi Square Value (11.47, β)	4.245
95% Gamma Approximate KM-UCL (use when n>=50)	130	95% Gamma Adjusted KM-UCL (use when n<50)	149.5

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	1	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.177	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	52.24	Mean in Log Scale	3.367
SD in Original Scale	76.81	SD in Log Scale	1.029
95% t UCL (assumes normality of ROS data)	92.06	95% Percentile Bootstrap UCL	90.71
95% BCA Bootstrap UCL	102.6	95% Bootstrap t UCL	236.8
95% H-UCL (Log ROS)	123.7		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.399	KM Geo Mean	29.94
KM SD (logged)	1.058	95% Critical H Value (KM-Log)	3.021
KM Standard Error of Mean (logged)	0.587	95% H-UCL (KM -Log)	137.3
KM SD (logged)	1.058	95% Critical H Value (KM-Log)	3.021
KM Standard Error of Mean (logged)	0.587		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	74.67	Mean in Log Scale	3.971
SD in Original Scale	70.86	SD in Log Scale	0.939
95% t UCL (Assumes normality)	111.4	95% H-Stat UCL	182.5

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	105.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 10:58:04 AM
From File	Functional Area 19 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Antimony

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
		Number of Missing Observations	6
Number of Detects	2	Number of Non-Detects	10
Number of Distinct Detects	2	Number of Distinct Non-Detects	9
Minimum Detect	0.991	Minimum Non-Detect	0.19
Maximum Detect	1.19	Maximum Non-Detect	1.235
Variance Detects	0.0198	Percent Non-Detects	83.33%
Mean Detects	1.091	SD Detects	0.141
Median Detects	1.091	CV Detects	0.129
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	0.0825	SD of Logged Detects	0.129

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.354	KM Standard Error of Mean	0.149
KM SD	0.35	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.622	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.599	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.801	95% KM Chebyshev UCL	1.004
97.5% KM Chebyshev UCL	1.285	99% KM Chebyshev UCL	1.838

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	119.8	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0091	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	479.1	nu star (bias corrected)	N/A
Mean (detects)	1.091		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.354	SD (KM)	0.35
Variance (KM)	0.122	SE of Mean (KM)	0.149
k hat (KM)	1.022	k star (KM)	0.822
nu hat (KM)	24.53	nu star (KM)	19.73
theta hat (KM)	0.346	theta star (KM)	0.43
80% gamma percentile (KM)	0.577	90% gamma percentile (KM)	0.854
95% gamma percentile (KM)	1.136	99% gamma percentile (KM)	1.8

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.029
Approximate Chi Square Value (19.73, α)	10.65	Adjusted Chi Square Value (19.73, β)	9.648
95% Gamma Approximate KM-UCL (use when n>=50)	0.655	95% Gamma Adjusted KM-UCL (use when n<50)	0.723

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.609	Mean in Log Scale	-0.546
SD in Original Scale	0.233	SD in Log Scale	0.307
95% t UCL (assumes normality of ROS data)	0.729	95% Percentile Bootstrap UCL	0.725
95% BCA Bootstrap UCL	0.763	95% Bootstrap t UCL	1.164
95% H-UCL (Log ROS)	0.726		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.344	KM Geo Mean	0.261
KM SD (logged)	0.673	95% Critical H Value (KM-Log)	2.375
KM Standard Error of Mean (logged)	0.287	95% H-UCL (KM -Log)	0.53
KM SD (logged)	0.673	95% Critical H Value (KM-Log)	2.375
KM Standard Error of Mean (logged)	0.287		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.337	Mean in Log Scale	-1.527
SD in Original Scale	0.381	SD in Log Scale	0.891
95% t UCL (Assumes normality)	0.535	95% H-Stat UCL	0.672

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.622	KM H-UCL	0.53
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
		Number of Missing Observations	6
Minimum	1.47	Mean	4.952
Maximum	17	Median	4.2
SD	3.937	Std. Error of Mean	1.137
Coefficient of Variation	0.795	Skewness	3.012

Normal GOF Test

Shapiro Wilk Test Statistic	0.587	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.381	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.993	95% Adjusted-CLT UCL (Chen-1995)	7.877
		95% Modified-t UCL (Johnson-1978)	7.157

Gamma GOF Test

A-D Test Statistic	1.161	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.739	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.295	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.247	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.063	k star (bias corrected MLE)	2.353
Theta hat (MLE)	1.617	Theta star (bias corrected MLE)	2.105
nu hat (MLE)	73.51	nu star (bias corrected)	56.47
MLE Mean (bias corrected)	4.952	MLE Sd (bias corrected)	3.228
		Approximate Chi Square Value (0.05)	40.2
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	38.11

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	6.956	95% Adjusted Gamma UCL (use when n<50)	7.337

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.853	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.251	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.243	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.385	Mean of logged Data	1.428
Maximum of Logged Data	2.833	SD of logged Data	0.56

Assuming Lognormal Distribution

95% H-UCL	7.094	90% Chebyshev (MVUE) UCL	7.207
95% Chebyshev (MVUE) UCL	8.294	97.5% Chebyshev (MVUE) UCL	9.803
99% Chebyshev (MVUE) UCL	12.77		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	6.821	95% Jackknife UCL	6.993
95% Standard Bootstrap UCL	6.787	95% Bootstrap-t UCL	10.41
95% Hall's Bootstrap UCL	15.45	95% Percentile Bootstrap UCL	7.006
95% BCA Bootstrap UCL	7.594		
90% Chebyshev(Mean, Sd) UCL	8.361	95% Chebyshev(Mean, Sd) UCL	9.906
97.5% Chebyshev(Mean, Sd) UCL	12.05	99% Chebyshev(Mean, Sd) UCL	16.26

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.906

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Beryllium

General Statistics

Total Number of Observations	12	Number of Distinct Observations	10
		Number of Missing Observations	6
Minimum	0.442	Mean	0.746
Maximum	0.89	Median	0.8
SD	0.134	Std. Error of Mean	0.0386
Coefficient of Variation	0.179	Skewness	-1.141

Normal GOF Test

Shapiro Wilk Test Statistic	0.874	**Shapiro Wilk GOF Test**	

5% Shapiro Wilk Critical Value	0.859	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.211	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.816	95% Adjusted-CLT UCL (Chen-1995)	0.796
		95% Modified-t UCL (Johnson-1978)	0.814

Gamma GOF Test

A-D Test Statistic	0.779	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.731	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.233	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.245	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	29.02	k star (bias corrected MLE)	21.82
Theta hat (MLE)	0.0257	Theta star (bias corrected MLE)	0.0342
nu hat (MLE)	696.6	nu star (bias corrected)	523.8
MLE Mean (bias corrected)	0.746	MLE Sd (bias corrected)	0.16
		Approximate Chi Square Value (0.05)	471.7
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	464.2

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.829	95% Adjusted Gamma UCL (use when n<50)	0.842

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.823	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.239	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.816	Mean of logged Data	-0.31
Maximum of Logged Data	-0.117	SD of logged Data	0.203

Assuming Lognormal Distribution

95% H-UCL	0.838	90% Chebyshev (MVUE) UCL	0.88
95% Chebyshev (MVUE) UCL	0.939	97.5% Chebyshev (MVUE) UCL	1.022
99% Chebyshev (MVUE) UCL	1.185		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.81	95% Jackknife UCL	0.816
95% Standard Bootstrap UCL	0.807	95% Bootstrap-t UCL	0.805
95% Hall's Bootstrap UCL	0.8	95% Percentile Bootstrap UCL	0.801
95% BCA Bootstrap UCL	0.798		
90% Chebyshev(Mean, Sd) UCL	0.862	95% Chebyshev(Mean, Sd) UCL	0.915
97.5% Chebyshev(Mean, Sd) UCL	0.987	99% Chebyshev(Mean, Sd) UCL	1.13

Suggested UCL to Use

95% Student's-t UCL	0.816

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Cadmium

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	6
Number of Detects	7	Number of Non-Detects	5
Number of Distinct Detects	7	Number of Distinct Non-Detects	5
Minimum Detect	0.44	Minimum Non-Detect	0.115
Maximum Detect	1.36	Maximum Non-Detect	1.305
Variance Detects	0.0849	Percent Non-Detects	41.67%
Mean Detects	0.825	SD Detects	0.291
Median Detects	0.79	CV Detects	0.353
Skewness Detects	0.881	Kurtosis Detects	1.462
Mean of Logged Detects	-0.245	SD of Logged Detects	0.352

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.953	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.193	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.56	KM Standard Error of Mean	0.128
KM SD	0.399	95% KM (BCA) UCL	0.774
95% KM (t) UCL	0.79	95% KM (Percentile Bootstrap) UCL	0.766
95% KM (z) UCL	0.771	95% KM Bootstrap t UCL	0.778
90% KM Chebyshev UCL	0.945	95% KM Chebyshev UCL	1.119

97.5% KM Chebyshev UCL	1.361	99% KM Chebyshev UCL	1.835

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.182	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.709	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.149	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.312	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	9.657	k star (bias corrected MLE)	5.613
Theta hat (MLE)	0.0854	Theta star (bias corrected MLE)	0.147
nu hat (MLE)	135.2	nu star (bias corrected)	78.59
Mean (detects)	0.825		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.258	Mean	0.611
Maximum	1.36	Median	0.587
SD	0.348	CV	0.57
k hat (MLE)	3.371	k star (bias corrected MLE)	2.584
Theta hat (MLE)	0.181	Theta star (bias corrected MLE)	0.237
nu hat (MLE)	80.91	nu star (bias corrected)	62.01
Adjusted Level of Significance (β)	0.029		
Approximate Chi Square Value (62.01, α)	44.9	Adjusted Chi Square Value (62.01, β)	42.69
95% Gamma Approximate UCL (use when n>=50)	0.844	95% Gamma Adjusted UCL (use when n<50)	0.888

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.56	SD (KM)	0.399
Variance (KM)	0.159	SE of Mean (KM)	0.128
k hat (KM)	1.973	k star (KM)	1.535
nu hat (KM)	47.36	nu star (KM)	36.85
theta hat (KM)	0.284	theta star (KM)	0.365
80% gamma percentile (KM)	0.864	90% gamma percentile (KM)	1.16
95% gamma percentile (KM)	1.447	99% gamma percentile (KM)	2.095

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (36.85, α)	23.96	Adjusted Chi Square Value (36.85, β)	22.38
95% Gamma Approximate KM-UCL (use when n>=50)	0.862	95% Gamma Adjusted KM-UCL (use when n<50)	0.922

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.987	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level

Lilliefors Test Statistic	0.146	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.644	Mean in Log Scale	-0.54
SD in Original Scale	0.314	SD in Log Scale	0.463
95% t UCL (assumes normality of ROS data)	0.807	95% Percentile Bootstrap UCL	0.792
95% BCA Bootstrap UCL	0.821	95% Bootstrap t UCL	0.856
95% H-UCL (Log ROS)	0.868		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.953	KM Geo Mean	0.386
KM SD (logged)	0.956	95% Critical H Value (KM-Log)	2.835
KM Standard Error of Mean (logged)	0.31	95% H-UCL (KM -Log)	1.378
KM SD (logged)	0.956	95% Critical H Value (KM-Log)	2.835
KM Standard Error of Mean (logged)	0.31		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.566	Mean in Log Scale	-0.992
SD in Original Scale	0.414	SD in Log Scale	1.119
95% t UCL (Assumes normality)	0.781	95% H-Stat UCL	1.998

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.79

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	6
Minimum	9.5	Mean	27.59
Maximum	122	Median	14.7
SD	31.69	Std. Error of Mean	9.147
Coefficient of Variation	1.148	Skewness	2.799

Normal GOF Test

Shapiro Wilk Test Statistic	0.602	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.293	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.02	95% Adjusted-CLT UCL (Chen-1995)	50.54
		95% Modified-t UCL (Johnson-1978)	45.25

Gamma GOF Test

A-D Test Statistic	1.071	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.745	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.271	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.249	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.592	k star (bias corrected MLE)	1.249
Theta hat (MLE)	17.34	Theta star (bias corrected MLE)	22.09
nu hat (MLE)	38.2	nu star (bias corrected)	29.98
MLE Mean (bias corrected)	27.59	MLE Sd (bias corrected)	24.69
		Approximate Chi Square Value (0.05)	18.48
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	17.11

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	44.77	95% Adjusted Gamma UCL (use when n<50)	48.34

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.846	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.226	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.251	Mean of logged Data	2.972
Maximum of Logged Data	4.804	SD of logged Data	0.767

Assuming Lognormal Distribution

95% H-UCL	46.9	90% Chebyshev (MVUE) UCL	43.14
95% Chebyshev (MVUE) UCL	51.16	97.5% Chebyshev (MVUE) UCL	62.3
99% Chebyshev (MVUE) UCL	84.17		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	42.64	95% Jackknife UCL	44.02
95% Standard Bootstrap UCL	41.74	95% Bootstrap-t UCL	72.54
95% Hall's Bootstrap UCL	94.97	95% Percentile Bootstrap UCL	43.86
95% BCA Bootstrap UCL	53.64		
90% Chebyshev(Mean, Sd) UCL	55.03	95% Chebyshev(Mean, Sd) UCL	67.46
97.5% Chebyshev(Mean, Sd) UCL	84.72	99% Chebyshev(Mean, Sd) UCL	118.6

Suggested UCL to Use

95% H-UCL	46.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Lead

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
		Number of Missing Observations	6
Minimum	2.21	Mean	40.67
Maximum	156	Median	21.05
SD	45.98	Std. Error of Mean	13.27
Coefficient of Variation	1.131	Skewness	1.647

Normal GOF Test

Shapiro Wilk Test Statistic	0.784	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.305	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.5	95% Adjusted-CLT UCL (Chen-1995)	69.24
		95% Modified-t UCL (Johnson-1978)	65.55

Gamma GOF Test

A-D Test Statistic	0.384	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.759	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.206	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.253	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.941	k star (bias corrected MLE)	0.761
Theta hat (MLE)	43.23	Theta star (bias corrected MLE)	53.43
nu hat (MLE)	22.58	nu star (bias corrected)	18.27
MLE Mean (bias corrected)	40.67	MLE Sd (bias corrected)	46.61
		Approximate Chi Square Value (0.05)	9.584
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	8.639

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	77.51	95% Adjusted Gamma UCL (use when n<50)	85.99

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.969	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.151	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.793	Mean of logged Data	3.087
Maximum of Logged Data	5.05	SD of logged Data	1.233

Assuming Lognormal Distribution

95% H-UCL	163.1	90% Chebyshev (MVUE) UCL	91.86
95% Chebyshev (MVUE) UCL	114.2	97.5% Chebyshev (MVUE) UCL	145.2
99% Chebyshev (MVUE) UCL	206.1		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	62.5	95% Jackknife UCL	64.5
95% Standard Bootstrap UCL	61.1	95% Bootstrap-t UCL	76.55
95% Hall's Bootstrap UCL	69.56	95% Percentile Bootstrap UCL	62.31
95% BCA Bootstrap UCL	70.29		
90% Chebyshev(Mean, Sd) UCL	80.49	95% Chebyshev(Mean, Sd) UCL	98.52
97.5% Chebyshev(Mean, Sd) UCL	123.6	99% Chebyshev(Mean, Sd) UCL	172.7

Suggested UCL to Use

95% Adjusted Gamma UCL	85.99

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	6
Minimum	5.99	Mean	8.617
Maximum	15.5	Median	7.735
SD	2.751	Std. Error of Mean	0.794
Coefficient of Variation	0.319	Skewness	1.588

Normal GOF Test

Shapiro Wilk Test Statistic	0.842	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.206	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Data appear Normal at 5% Significance Level	

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.04	95% Adjusted-CLT UCL (Chen-1995)	10.31
		95% Modified-t UCL (Johnson-1978)	10.1

Gamma GOF Test

A-D Test Statistic	0.475	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.731	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.159	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.245	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	12.78	k star (bias corrected MLE)	9.64
Theta hat (MLE)	0.674	Theta star (bias corrected MLE)	0.894
nu hat (MLE)	306.7	nu star (bias corrected)	231.4
MLE Mean (bias corrected)	8.617	MLE Sd (bias corrected)	2.775
		Approximate Chi Square Value (0.05)	197.1
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	192.3

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	10.11	95% Adjusted Gamma UCL (use when n<50)	10.37

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.146	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.79	Mean of logged Data	2.114
Maximum of Logged Data	2.741	SD of logged Data	0.283

Assuming Lognormal Distribution

95% H-UCL	10.15	90% Chebyshev (MVUE) UCL	10.72
95% Chebyshev (MVUE) UCL	11.68	97.5% Chebyshev (MVUE) UCL	13.02
99% Chebyshev (MVUE) UCL	15.64		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	9.923	95% Jackknife UCL	10.04
95% Standard Bootstrap UCL	9.868	95% Bootstrap-t UCL	10.76
95% Hall's Bootstrap UCL	16.28	95% Percentile Bootstrap UCL	9.994
95% BCA Bootstrap UCL	10.16		
90% Chebyshev(Mean, Sd) UCL	11	95% Chebyshev(Mean, Sd) UCL	12.08
97.5% Chebyshev(Mean, Sd) UCL	13.58	99% Chebyshev(Mean, Sd) UCL	16.52

Suggested UCL to Use

95% Student's-t UCL	10.04

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Selenium

General Statistics

Total Number of Observations	12	Number of Distinct Observations	10
		Number of Missing Observations	6
Number of Detects	9	Number of Non-Detects	3
Number of Distinct Detects	7	Number of Distinct Non-Detects	3
Minimum Detect	0.53	Minimum Non-Detect	1.045
Maximum Detect	1.7	Maximum Non-Detect	1.235
Variance Detects	0.142	Percent Non-Detects	25%

Mean Detects	1.05	SD Detects	0.377
Median Detects	1.1	CV Detects	0.359
Skewness Detects	0.438	Kurtosis Detects	-0.332
Mean of Logged Detects	-0.011	SD of Logged Detects	0.373

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.94	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.982	KM Standard Error of Mean	0.111
KM SD	0.344	95% KM (BCA) UCL	1.167
95% KM (t) UCL	1.181	95% KM (Percentile Bootstrap) UCL	1.165
95% KM (z) UCL	1.165	95% KM Bootstrap t UCL	1.197
90% KM Chebyshev UCL	1.315	95% KM Chebyshev UCL	1.466
97.5% KM Chebyshev UCL	1.675	99% KM Chebyshev UCL	2.087

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.309	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.722	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.179	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.279	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.532	k star (bias corrected MLE)	5.762
Theta hat (MLE)	0.123	Theta star (bias corrected MLE)	0.182
nu hat (MLE)	153.6	nu star (bias corrected)	103.7
Mean (detects)	1.05		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.53	Mean	0.981
Maximum	1.7	Median	0.93
SD	0.347	CV	0.354
k hat (MLE)	9.43	k star (bias corrected MLE)	7.128
Theta hat (MLE)	0.104	Theta star (bias corrected MLE)	0.138
nu hat (MLE)	226.3	nu star (bias corrected)	171.1
Adjusted Level of Significance (β)	0.029		
Approximate Chi Square Value (171.07, α)	141.8	Adjusted Chi Square Value (171.07, β)	137.8

95% Gamma Approximate UCL (use when n>=50)	1.183	95% Gamma Adjusted UCL (use when n<50)	1.218

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.982	SD (KM)	0.344
Variance (KM)	0.118	SE of Mean (KM)	0.111
k hat (KM)	8.153	k star (KM)	6.17
nu hat (KM)	195.7	nu star (KM)	148.1
theta hat (KM)	0.12	theta star (KM)	0.159
80% gamma percentile (KM)	1.29	90% gamma percentile (KM)	1.51
95% gamma percentile (KM)	1.709	99% gamma percentile (KM)	2.126

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (148.08, α)	121	Adjusted Chi Square Value (148.08, β)	117.2
95% Gamma Approximate KM-UCL (use when n>=50)	1.202	95% Gamma Adjusted KM-UCL (use when n<50)	1.24

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.951	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.178	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.978	Mean in Log Scale	-0.0766
SD in Original Scale	0.348	SD in Log Scale	0.341
95% t UCL (assumes normality of ROS data)	1.159	95% Percentile Bootstrap UCL	1.145
95% BCA Bootstrap UCL	1.16	95% Bootstrap t UCL	1.224
95% H-UCL (Log ROS)	1.202		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.0789	KM Geo Mean	0.924
KM SD (logged)	0.35	95% Critical H Value (KM-Log)	1.974
KM Standard Error of Mean (logged)	0.117	95% H-UCL (KM -Log)	1.21
KM SD (logged)	0.35	95% Critical H Value (KM-Log)	1.974
KM Standard Error of Mean (logged)	0.117		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.928	Mean in Log Scale	-0.153
SD in Original Scale	0.391	SD in Log Scale	0.411
95% t UCL (Assumes normality)	1.13	95% H-Stat UCL	1.201

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.181

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	6
Minimum	32.7	Mean	164.4
Maximum	983	Median	59.2
SD	271.1	Std. Error of Mean	78.26
Coefficient of Variation	1.649	Skewness	2.968

Normal GOF Test

Shapiro Wilk Test Statistic	0.522	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.388	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	305	95% Adjusted-CLT UCL (Chen-1995)	364.8
		95% Modified-t UCL (Johnson-1978)	316.1

Gamma GOF Test

A-D Test Statistic	1.53	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.76	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.286	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.253	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.921	k star (bias corrected MLE)	0.746
Theta hat (MLE)	178.6	Theta star (bias corrected MLE)	220.4
nu hat (MLE)	22.09	nu star (bias corrected)	17.9
MLE Mean (bias corrected)	164.4	MLE Sd (bias corrected)	190.3
		Approximate Chi Square Value (0.05)	9.32
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	8.391

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	315.8	95% Adjusted Gamma UCL (use when n<50)	350.8

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.817	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.209	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.243	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.487	Mean of logged Data	4.469
Maximum of Logged Data	6.891	SD of logged Data	0.986

Assuming Lognormal Distribution

95% H-UCL	335.4	90% Chebyshev (MVUE) UCL	257.1
95% Chebyshev (MVUE) UCL	312.6	97.5% Chebyshev (MVUE) UCL	389.7
99% Chebyshev (MVUE) UCL	541.2		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	293.1	95% Jackknife UCL	305
95% Standard Bootstrap UCL	289.9	95% Bootstrap-t UCL	1167
95% Hall's Bootstrap UCL	846.8	95% Percentile Bootstrap UCL	311.4
95% BCA Bootstrap UCL	410.7		
90% Chebyshev(Mean, Sd) UCL	399.2	95% Chebyshev(Mean, Sd) UCL	505.5
97.5% Chebyshev(Mean, Sd) UCL	653.2	99% Chebyshev(Mean, Sd) UCL	943.1

Suggested UCL to Use

95% H-UCL	335.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Benzo[a]pyrene

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
		Number of Missing Observations	6
Number of Detects	3	Number of Non-Detects	9

Number of Distinct Detects	3	Number of Distinct Non-Detects	8
Minimum Detect	25	Minimum Non-Detect	20.5
Maximum Detect	150	Maximum Non-Detect	2050
Variance Detects	4216	Percent Non-Detects	75%
Mean Detects	77.33	SD Detects	64.93
Median Detects	57	CV Detects	0.84
Skewness Detects	1.271	Kurtosis Detects	N/A
Mean of Logged Detects	4.091	SD of Logged Detects	0.897

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.926	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	42.18	KM Standard Error of Mean	17.04
KM SD	40.42	95% KM (BCA) UCL	N/A
95% KM (t) UCL	72.78	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	70.21	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	93.3	95% KM Chebyshev UCL	116.5
97.5% KM Chebyshev UCL	148.6	99% KM Chebyshev UCL	211.7

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.095	k star (bias corrected MLE)	N/A
Theta hat (MLE)	36.92	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	12.57	nu star (bias corrected)	N/A
Mean (detects)	77.33		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	19.34
Maximum	150	Median	0.01
SD	44.6	CV	2.306
k hat (MLE)	0.143	k star (bias corrected MLE)	0.163

Theta hat (MLE)	134.8	Theta star (bias corrected MLE)	118.6
nu hat (MLE)	3.442	nu star (bias corrected)	3.915
Adjusted Level of Significance (β)	0.029		
Approximate Chi Square Value (3.92, α)	0.688	Adjusted Chi Square Value (3.92, β)	0.514
95% Gamma Approximate UCL (use when n>=50)	110	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	42.18	SD (KM)	40.42
Variance (KM)	1634	SE of Mean (KM)	17.04
k hat (KM)	1.089	k star (KM)	0.872
nu hat (KM)	26.13	nu star (KM)	20.93
theta hat (KM)	38.74	theta star (KM)	48.36
80% gamma percentile (KM)	68.57	90% gamma percentile (KM)	100.4
95% gamma percentile (KM)	132.7	99% gamma percentile (KM)	208.2

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (20.93, α)	11.54	Adjusted Chi Square Value (20.93, β)	10.49
95% Gamma Approximate KM-UCL (use when n>=50)	76.5	95% Gamma Adjusted KM-UCL (use when n<50)	84.16

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.998	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.188	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	28.55	Mean in Log Scale	2.845
SD in Original Scale	40.57	SD in Log Scale	0.929
95% t UCL (assumes normality of ROS data)	49.58	95% Percentile Bootstrap UCL	49.15
95% BCA Bootstrap UCL	62.99	95% Bootstrap t UCL	142.5
95% H-UCL (Log ROS)	57.88		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.459	KM Geo Mean	31.77
KM SD (logged)	0.664	95% Critical H Value (KM-Log)	2.361
KM Standard Error of Mean (logged)	0.296	95% H-UCL (KM -Log)	63.55
KM SD (logged)	0.664	95% Critical H Value (KM-Log)	2.361
KM Standard Error of Mean (logged)	0.296		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	139.6	Mean in Log Scale	3.953
SD in Original Scale	282.8	SD in Log Scale	1.343
95% t UCL (Assumes normality)	286.2	95% H-Stat UCL	546.2

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 72.78

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.15/21/2019 12:10:25 PM
From File	Functional Area 20 S.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Antimony

General Statistics

Total Number of Observations	11	Number of Distinct Observations	6
		Number of Missing Observations	1
Number of Detects	3	Number of Non-Detects	8
Number of Distinct Detects	2	Number of Distinct Non-Detects	4
Minimum Detect	1	Minimum Non-Detect	0.215
Maximum Detect	1.45	Maximum Non-Detect	0.35
Variance Detects	0.0675	Percent Non-Detects	72.73%
Mean Detects	1.15	SD Detects	0.26
Median Detects	1	CV Detects	0.226
Skewness Detects	1.732	Kurtosis Detects	N/A
Mean of Logged Detects	0.124	SD of Logged Detects	0.215

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.47	KM Standard Error of Mean	0.159
KM SD	0.431	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.758	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.732	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.947	95% KM Chebyshev UCL	1.164
97.5% KM Chebyshev UCL	1.464	99% KM Chebyshev UCL	2.053

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	31.6	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0364	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	189.6	nu star (bias corrected)	N/A
Mean (detects)	1.15		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.462
Maximum	1.45	Median	0.174
SD	0.481	CV	1.04
k hat (MLE)	0.738	k star (bias corrected MLE)	0.597
Theta hat (MLE)	0.627	Theta star (bias corrected MLE)	0.775
nu hat (MLE)	16.23	nu star (bias corrected)	13.13
Adjusted Level of Significance (β)	0.0278		
Approximate Chi Square Value (13.13, α)	5.983	Adjusted Chi Square Value (13.13, β)	5.217
95% Gamma Approximate UCL (use when n>=50)	1.015	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.47	SD (KM)	0.431
Variance (KM)	0.186	SE of Mean (KM)	0.159
k hat (KM)	1.19	k star (KM)	0.926
nu hat (KM)	26.17	nu star (KM)	20.37
theta hat (KM)	0.395	theta star (KM)	0.508
80% gamma percentile (KM)	0.761	90% gamma percentile (KM)	1.103
95% gamma percentile (KM)	1.447	99% gamma percentile (KM)	2.251

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (20.37, α)	11.12	Adjusted Chi Square Value (20.37, β)	10.03
95% Gamma Approximate KM-UCL (use when n>=50)	0.861	95% Gamma Adjusted KM-UCL (use when n<50)	0.955

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.661	Mean in Log Scale	-0.524
SD in Original Scale	0.349	SD in Log Scale	0.475
95% t UCL (assumes normality of ROS data)	0.851	95% Percentile Bootstrap UCL	0.832
95% BCA Bootstrap UCL	0.87	95% Bootstrap t UCL	0.966
95% H-UCL (Log ROS)	0.915		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.084	KM Geo Mean	0.338
KM SD (logged)	0.745	95% Critical H Value (KM-Log)	2.54
KM Standard Error of Mean (logged)	0.275	95% H-UCL (KM -Log)	0.812
KM SD (logged)	0.745	95% Critical H Value (KM-Log)	2.54
KM Standard Error of Mean (logged)	0.275		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.419	Mean in Log Scale	-1.379
SD in Original Scale	0.484	SD in Log Scale	0.978
95% t UCL (Assumes normality)	0.683	95% H-Stat UCL	1.013

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.758

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	11	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	3.1	Mean	4.202
Maximum	5	Median	4.3
SD	0.547	Std. Error of Mean	0.165
Coefficient of Variation	0.13	Skewness	-0.684

Normal GOF Test

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.226	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.251	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.501	95% Adjusted-CLT UCL (Chen-1995)	4.437
		95% Modified-t UCL (Johnson-1978)	4.495

Gamma GOF Test

A-D Test Statistic	0.482	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.728	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.243	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	60.66	k star (bias corrected MLE)	44.18
Theta hat (MLE)	0.0693	Theta star (bias corrected MLE)	0.0951
nu hat (MLE)	1334	nu star (bias corrected)	971.9
MLE Mean (bias corrected)	4.202	MLE Sd (bias corrected)	0.632
		Approximate Chi Square Value (0.05)	900.5
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	889.3

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	4.535	95% Adjusted Gamma UCL (use when n<50)	4.592

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.25	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.251	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.131	Mean of logged Data	1.427
Maximum of Logged Data	1.609	SD of logged Data	0.137

Assuming Lognormal Distribution

95% H-UCL	4.551	90% Chebyshev (MVUE) UCL	4.726
95% Chebyshev (MVUE) UCL	4.964	97.5% Chebyshev (MVUE) UCL	5.293
99% Chebyshev (MVUE) UCL	5.939		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	4.473	95% Jackknife UCL	4.501
95% Standard Bootstrap UCL	4.456	95% Bootstrap-t UCL	4.463
95% Hall's Bootstrap UCL	4.448	95% Percentile Bootstrap UCL	4.445
95% BCA Bootstrap UCL	4.436		

90% Chebyshev(Mean, Sd) UCL	4.697	95% Chebyshev(Mean, Sd) UCL	4.921
97.5% Chebyshev(Mean, Sd) UCL	5.232	99% Chebyshev(Mean, Sd) UCL	5.843

Suggested UCL to Use

95% Student's-t UCL	4.501

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Beryllium

General Statistics

Total Number of Observations	11	Number of Distinct Observations	7
		Number of Missing Observations	1
Minimum	0.59	Mean	0.811
Maximum	0.89	Median	0.81
SD	0.0944	Std. Error of Mean	0.0284
Coefficient of Variation	0.116	Skewness	-1.474

Normal GOF Test

Shapiro Wilk Test Statistic	0.816	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.229	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.863	95% Adjusted-CLT UCL (Chen-1995)	0.844
		95% Modified-t UCL (Johnson-1978)	0.861

Gamma GOF Test

A-D Test Statistic	0.885	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.727	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.245	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	72.59	k star (bias corrected MLE)	52.86
Theta hat (MLE)	0.0112	Theta star (bias corrected MLE)	0.0153

nu hat (MLE)	1597	nu star (bias corrected)	1163
MLE Mean (bias corrected)	0.811	MLE Sd (bias corrected)	0.112
		Approximate Chi Square Value (0.05)	1085
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	1072

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.87	95% Adjusted Gamma UCL (use when n<50)	0.88

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.785	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.257	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.251	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.528	Mean of logged Data	-0.216
Maximum of Logged Data	-0.117	SD of logged Data	0.127

Assuming Lognormal Distribution

95% H-UCL	0.873	90% Chebyshev (MVUE) UCL	0.905
95% Chebyshev (MVUE) UCL	0.947	97.5% Chebyshev (MVUE) UCL	1.006
99% Chebyshev (MVUE) UCL	1.121		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.858	95% Jackknife UCL	0.863
95% Standard Bootstrap UCL	0.855	95% Bootstrap-t UCL	0.852
95% Hall's Bootstrap UCL	0.847	95% Percentile Bootstrap UCL	0.852
95% BCA Bootstrap UCL	0.847		
90% Chebyshev(Mean, Sd) UCL	0.897	95% Chebyshev(Mean, Sd) UCL	0.935
97.5% Chebyshev(Mean, Sd) UCL	0.989	99% Chebyshev(Mean, Sd) UCL	1.094

Suggested UCL to Use

95% Student's-t UCL	0.863

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Cadmium

General Statistics

Total Number of Observations	11	Number of Distinct Observations	10
		Number of Missing Observations	1
Number of Detects	8	Number of Non-Detects	3
Number of Distinct Detects	8	Number of Distinct Non-Detects	2
Minimum Detect	0.56	Minimum Non-Detect	0.0315
Maximum Detect	1	Maximum Non-Detect	1.51
Variance Detects	0.0227	Percent Non-Detects	27.27%
Mean Detects	0.76	SD Detects	0.151
Median Detects	0.76	CV Detects	0.198
Skewness Detects	0.183	Kurtosis Detects	-0.574
Mean of Logged Detects	-0.292	SD of Logged Detects	0.201

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.963	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.134	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.614	KM Standard Error of Mean	0.107
KM SD	0.317	95% KM (BCA) UCL	0.775
95% KM (t) UCL	0.809	95% KM (Percentile Bootstrap) UCL	0.771
95% KM (z) UCL	0.791	95% KM Bootstrap t UCL	0.773
90% KM Chebyshev UCL	0.936	95% KM Chebyshev UCL	1.082
97.5% KM Chebyshev UCL	1.285	99% KM Chebyshev UCL	1.682

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.217	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.157	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	28.78	k star (bias corrected MLE)	18.07
Theta hat (MLE)	0.0264	Theta star (bias corrected MLE)	0.0421
nu hat (MLE)	460.4	nu star (bias corrected)	289.1
Mean (detects)	0.76		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.385	Mean	0.692
Maximum	1	Median	0.7
SD	0.186	CV	0.269
k hat (MLE)	14.12	k star (bias corrected MLE)	10.33
Theta hat (MLE)	0.049	Theta star (bias corrected MLE)	0.067
nu hat (MLE)	310.6	nu star (bias corrected)	227.2
Adjusted Level of Significance (β)	0.0278		
Approximate Chi Square Value (227.25, α)	193.4	Adjusted Chi Square Value (227.25, β)	188.3
95% Gamma Approximate UCL (use when n>=50)	0.813	95% Gamma Adjusted UCL (use when n<50)	0.835

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.614	SD (KM)	0.317
Variance (KM)	0.101	SE of Mean (KM)	0.107
k hat (KM)	3.744	k star (KM)	2.783
nu hat (KM)	82.37	nu star (KM)	61.24
theta hat (KM)	0.164	theta star (KM)	0.221
80% gamma percentile (KM)	0.884	90% gamma percentile (KM)	1.108
95% gamma percentile (KM)	1.317	99% gamma percentile (KM)	1.774

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (61.24, α)	44.24	Adjusted Chi Square Value (61.24, β)	41.89
95% Gamma Approximate KM-UCL (use when n>=50)	0.85	95% Gamma Adjusted KM-UCL (use when n<50)	0.898

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.146	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.697	Mean in Log Scale	-0.39
SD in Original Scale	0.176	SD in Log Scale	0.261
95% t UCL (assumes normality of ROS data)	0.793	95% Percentile Bootstrap UCL	0.783
95% BCA Bootstrap UCL	0.783	95% Bootstrap t UCL	0.792
95% H-UCL (Log ROS)	0.82		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.925	KM Geo Mean	0.396
KM SD (logged)	1.277	95% Critical H Value (KM-Log)	3.557
KM Standard Error of Mean (logged)	0.432	95% H-UCL (KM -Log)	3.773
KM SD (logged)	1.277	95% Critical H Value (KM-Log)	3.557
KM Standard Error of Mean (logged)	0.432		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.624	Mean in Log Scale	-0.993
SD in Original Scale	0.326	SD in Log Scale	1.571
95% t UCL (Assumes normality)	0.802	95% H-Stat UCL	10.18

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.809

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Copper

General Statistics

Total Number of Observations	11	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	9.9	Mean	13.96
Maximum	18.7	Median	13.2
SD	3.061	Std. Error of Mean	0.923
Coefficient of Variation	0.219	Skewness	0.357

Normal GOF Test

Shapiro Wilk Test Statistic	0.904	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.64	95% Adjusted-CLT UCL (Chen-1995)	15.59
		95% Modified-t UCL (Johnson-1978)	15.65

Gamma GOF Test

A-D Test Statistic	0.492	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.201	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	23.26	k star (bias corrected MLE)	16.98
Theta hat (MLE)	0.6	Theta star (bias corrected MLE)	0.823
nu hat (MLE)	511.7	nu star (bias corrected)	373.5
MLE Mean (bias corrected)	13.96	MLE Sd (bias corrected)	3.389
		Approximate Chi Square Value (0.05)	329.7
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	323

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	15.82	95% Adjusted Gamma UCL (use when n<50)	16.15

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.186	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.251	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.293	Mean of logged Data	2.615
Maximum of Logged Data	2.929	SD of logged Data	0.218

Assuming Lognormal Distribution

95% H-UCL	15.92	90% Chebyshev (MVUE) UCL	16.73
95% Chebyshev (MVUE) UCL	17.98	97.5% Chebyshev (MVUE) UCL	19.71
99% Chebyshev (MVUE) UCL	23.13		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	15.48	95% Jackknife UCL	15.64
95% Standard Bootstrap UCL	15.42	95% Bootstrap-t UCL	16.03
95% Hall's Bootstrap UCL	15.33	95% Percentile Bootstrap UCL	15.46
95% BCA Bootstrap UCL	15.52		
90% Chebyshev(Mean, Sd) UCL	16.73	95% Chebyshev(Mean, Sd) UCL	17.99
97.5% Chebyshev(Mean, Sd) UCL	19.73	99% Chebyshev(Mean, Sd) UCL	23.15

Suggested UCL to Use

95% Student's-t UCL	15.64

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Lead

General Statistics

Total Number of Observations	11	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	8.53	Mean	14.66
Maximum	24	Median	12.4
SD	5.667	Std. Error of Mean	1.709
Coefficient of Variation	0.387	Skewness	0.922

Normal GOF Test

Shapiro Wilk Test Statistic	0.817	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.291	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.75	95% Adjusted-CLT UCL (Chen-1995)	17.98
		95% Modified-t UCL (Johnson-1978)	17.83

Gamma GOF Test

A-D Test Statistic	0.783	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.73	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.272	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.256	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	8.191	k star (bias corrected MLE)	6.017
Theta hat (MLE)	1.79	Theta star (bias corrected MLE)	2.436
nu hat (MLE)	180.2	nu star (bias corrected)	132.4
MLE Mean (bias corrected)	14.66	MLE Sd (bias corrected)	5.975
		Approximate Chi Square Value (0.05)	106.8
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	103.1

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	18.17	95% Adjusted Gamma UCL (use when n<50)	18.83

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.877	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.25	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.251	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.144	Mean of logged Data	2.623
Maximum of Logged Data	3.178	SD of logged Data	0.363

Assuming Lognormal Distribution

95% H-UCL	18.53	90% Chebyshev (MVUE) UCL	19.47
95% Chebyshev (MVUE) UCL	21.66	97.5% Chebyshev (MVUE) UCL	24.71
99% Chebyshev (MVUE) UCL	30.7		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	17.47	95% Jackknife UCL	17.75
95% Standard Bootstrap UCL	17.34	95% Bootstrap-t UCL	18.44
95% Hall's Bootstrap UCL	17.28	95% Percentile Bootstrap UCL	17.51
95% BCA Bootstrap UCL	17.97		
90% Chebyshev(Mean, Sd) UCL	19.78	95% Chebyshev(Mean, Sd) UCL	22.1
97.5% Chebyshev(Mean, Sd) UCL	25.33	99% Chebyshev(Mean, Sd) UCL	31.66

Suggested UCL to Use

95% Student's-t UCL	17.75	or 95% Modified-t UCL	17.83
or 95% H-UCL	18.53		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Mercury

General Statistics

Total Number of Observations	11	Number of Distinct Observations	5
		Number of Missing Observations	1
Number of Detects	5	Number of Non-Detects	6
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.0363	Minimum Non-Detect	0
Maximum Detect	0.08	Maximum Non-Detect	0
Variance Detects	2.5302E-4	Percent Non-Detects	54.55%
Mean Detects	0.0561	SD Detects	0.0159

Median Detects	0.052	CV Detects	0.284
Skewness Detects	0.614	Kurtosis Detects	1.406

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.202	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0255	KM Standard Error of Mean	0.00995
KM SD	0.0295	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0435	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0418	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0553	95% KM Chebyshev UCL	0.0689
97.5% KM Chebyshev UCL	0.0876	99% KM Chebyshev UCL	0.124

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.279	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.679	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.217	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.357	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	15.65	k star (bias corrected MLE)	6.394
Theta hat (MLE)	0.00358	Theta star (bias corrected MLE)	0.00877
nu hat (MLE)	156.5	nu star (bias corrected)	63.94
Mean (detects)	0.0561		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0255	SD (KM)	0.0295
Variance (KM)	8.7119E-4	SE of Mean (KM)	0.00995
k hat (KM)	0.745	k star (KM)	0.603
nu hat (KM)	16.4	nu star (KM)	13.26
theta hat (KM)	0.0342	theta star (KM)	0.0423
80% gamma percentile (KM)	0.042	90% gamma percentile (KM)	0.0662
95% gamma percentile (KM)	0.0915	99% gamma percentile (KM)	0.153

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (13.26, α)	6.067	Adjusted Chi Square Value (13.26, β)	5.294
95% Gamma Approximate KM-UCL (use when n>=50)	0.0557	95% Gamma Adjusted KM-UCL (use when n<50)	0.0638

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	N/A	KM Geo Mean	N/A

KM SD (logged)	N/A	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	N/A	95% H-UCL (KM -Log)	N/A
KM SD (logged)	N/A	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	N/A		

DL/2 Statistics

Mean in Original Scale	0.0255	SD in Original Scale	0.031
95% t UCL (Assumes normality)	0.0424		

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0435

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	11	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	7.2	Mean	8.947
Maximum	11.7	Median	8.7
SD	1.409	Std. Error of Mean	0.425
Coefficient of Variation	0.157	Skewness	0.484

Normal GOF Test

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.116	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.251	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.717	95% Adjusted-CLT UCL (Chen-1995)	9.712
		95% Modified-t UCL (Johnson-1978)	9.727

Gamma GOF Test

A-D Test Statistic	0.25	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.728	Detected data appear Gamma Distributed at 5% Significance Level	

K-S Test Statistic	0.118	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	45.35	k star (bias corrected MLE)	33.04
Theta hat (MLE)	0.197	Theta star (bias corrected MLE)	0.271
nu hat (MLE)	997.7	nu star (bias corrected)	726.9
MLE Mean (bias corrected)	8.947	MLE Sd (bias corrected)	1.557
		Approximate Chi Square Value (0.05)	665.4
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	655.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	9.775	95% Adjusted Gamma UCL (use when n<50)	9.918

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.953	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.108	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.251	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.974	Mean of logged Data	2.18
Maximum of Logged Data	2.46	SD of logged Data	0.155

Assuming Lognormal Distribution

95% H-UCL	9.798	90% Chebyshev (MVUE) UCL	10.21
95% Chebyshev (MVUE) UCL	10.78	97.5% Chebyshev (MVUE) UCL	11.57
99% Chebyshev (MVUE) UCL	13.13		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	9.646	95% Jackknife UCL	9.717
95% Standard Bootstrap UCL	9.604	95% Bootstrap-t UCL	9.829
95% Hall's Bootstrap UCL	9.759	95% Percentile Bootstrap UCL	9.627
95% BCA Bootstrap UCL	9.662		
90% Chebyshev(Mean, Sd) UCL	10.22	95% Chebyshev(Mean, Sd) UCL	10.8
97.5% Chebyshev(Mean, Sd) UCL	11.6	99% Chebyshev(Mean, Sd) UCL	13.17

Suggested UCL to Use

95% Student's-t UCL	9.717

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Selenium

General Statistics

Total Number of Observations	11	Number of Distinct Observations	10
		Number of Missing Observations	1
Number of Detects	8	Number of Non-Detects	3
Number of Distinct Detects	8	Number of Distinct Non-Detects	2
Minimum Detect	0.52	Minimum Non-Detect	0.275
Maximum Detect	1.3	Maximum Non-Detect	1.21
Variance Detects	0.0591	Percent Non-Detects	27.27%
Mean Detects	0.924	SD Detects	0.243
Median Detects	0.855	CV Detects	0.263
Skewness Detects	0.0875	Kurtosis Detects	0.264
Mean of Logged Detects	-0.112	SD of Logged Detects	0.28

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.789	KM Standard Error of Mean	0.11
KM SD	0.327	95% KM (BCA) UCL	0.964
95% KM (t) UCL	0.988	95% KM (Percentile Bootstrap) UCL	0.963
95% KM (z) UCL	0.97	95% KM Bootstrap t UCL	0.97
90% KM Chebyshev UCL	1.119	95% KM Chebyshev UCL	1.268
97.5% KM Chebyshev UCL	1.475	99% KM Chebyshev UCL	1.882

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.415	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.229	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	15.5	k star (bias corrected MLE)	9.769
Theta hat (MLE)	0.0596	Theta star (bias corrected MLE)	0.0946
nu hat (MLE)	248	nu star (bias corrected)	156.3
Mean (detects)	0.924		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.435	Mean	0.829
Maximum	1.3	Median	0.84
SD	0.272	CV	0.327
k hat (MLE)	9.757	k star (bias corrected MLE)	7.156
Theta hat (MLE)	0.085	Theta star (bias corrected MLE)	0.116
nu hat (MLE)	214.7	nu star (bias corrected)	157.4
Adjusted Level of Significance (β)	0.0278		
Approximate Chi Square Value (157.44, α)	129.4	Adjusted Chi Square Value (157.44, β)	125.3
95% Gamma Approximate UCL (use when n>=50)	1.009	95% Gamma Adjusted UCL (use when n<50)	1.042

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.789	SD (KM)	0.327
Variance (KM)	0.107	SE of Mean (KM)	0.11
k hat (KM)	5.804	k star (KM)	4.282
nu hat (KM)	127.7	nu star (KM)	94.2
theta hat (KM)	0.136	theta star (KM)	0.184
80% gamma percentile (KM)	1.079	90% gamma percentile (KM)	1.3
95% gamma percentile (KM)	1.502	99% gamma percentile (KM)	1.933

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (94.20, α)	72.81	Adjusted Chi Square Value (94.20, β)	69.76
95% Gamma Approximate KM-UCL (use when n>=50)	1.021	95% Gamma Adjusted KM-UCL (use when n<50)	1.065

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.909	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.254	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.833	Mean in Log Scale	-0.231
SD in Original Scale	0.265	SD in Log Scale	0.33
95% t UCL (assumes normality of ROS data)	0.978	95% Percentile Bootstrap UCL	0.951
95% BCA Bootstrap UCL	0.974	95% Bootstrap t UCL	1
95% H-UCL (Log ROS)	1.03		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.354	KM Geo Mean	0.702
KM SD (logged)	0.526	95% Critical H Value (KM-Log)	2.21
KM Standard Error of Mean (logged)	0.177	95% H-UCL (KM -Log)	1.164
KM SD (logged)	0.526	95% Critical H Value (KM-Log)	2.21

KM Standard Error of Mean (logged)	0.177

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.752	Mean in Log Scale	-0.488
SD in Original Scale	0.378	SD in Log Scale	0.785
95% t UCL (Assumes normality)	0.958	95% H-Stat UCL	1.594

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.988

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium

General Statistics

Total Number of Observations	11	Number of Distinct Observations	4
		Number of Missing Observations	1
Number of Detects	0	Number of Non-Detects	11
Number of Distinct Detects	0	Number of Distinct Non-Detects	4

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Thallium was not processed!

Zinc

General Statistics

Total Number of Observations	11	Number of Distinct Observations	10
		Number of Missing Observations	1
Minimum	40.7	Mean	76.83
Maximum	196	Median	61.3
SD	43.09	Std. Error of Mean	12.99
Coefficient of Variation	0.561	Skewness	2.435

Normal GOF Test

Shapiro Wilk Test Statistic	0.707	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.271	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	100.4	95% Adjusted-CLT UCL (Chen-1995)	108.4
		95% Modified-t UCL (Johnson-1978)	102

Gamma GOF Test

A-D Test Statistic	0.734	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.731	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.237	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.256	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	5.204	k star (bias corrected MLE)	3.846
Theta hat (MLE)	14.76	Theta star (bias corrected MLE)	19.98
nu hat (MLE)	114.5	nu star (bias corrected)	84.6
MLE Mean (bias corrected)	76.83	MLE Sd (bias corrected)	39.18
		Approximate Chi Square Value (0.05)	64.4
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	61.54

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	100.9	95% Adjusted Gamma UCL (use when n<50)	105.6

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.884	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.213	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.251	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.706	Mean of logged Data	4.242
Maximum of Logged Data	5.278	SD of logged Data	0.431

Assuming Lognormal Distribution

95% H-UCL	101.5	90% Chebyshev (MVUE) UCL	105.6
95% Chebyshev (MVUE) UCL	119.2	97.5% Chebyshev (MVUE) UCL	138
99% Chebyshev (MVUE) UCL	175.1		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	98.2	95% Jackknife UCL	100.4
95% Standard Bootstrap UCL	96.94	95% Bootstrap-t UCL	128.4
95% Hall's Bootstrap UCL	178.1	95% Percentile Bootstrap UCL	99.2
95% BCA Bootstrap UCL	108.7		
90% Chebyshev(Mean, Sd) UCL	115.8	95% Chebyshev(Mean, Sd) UCL	133.5
97.5% Chebyshev(Mean, Sd) UCL	158	99% Chebyshev(Mean, Sd) UCL	206.1

Suggested UCL to Use

95% Adjusted Gamma UCL	105.6

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Exhibit 6

Spatial Weighting Output Tables – Direct Contact

Exhibit 6-1 Direct Contact Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA1shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	1	1	B9-2-05	1999-10-15	0.0-2.0 ft	B9-2-052N		ug/kg
2	6	7	SO-R2-C-8-2	2013-11-14 11:43	0.5-1.0 ft	SO-R2-C-8-2_20131114		ug/kg
3	7	6	SO-R2-B-8-1	2013-11-14 12:18	0.3-0.8 ft	SO-R2-B-8-1_20131114		ug/kg
4	8	5	SB-R-C9-02	2006-05-16	0.5-1.0 ft	SB-R-C9-021.0N		ug/kg
5	9	4	SB-R-C9-01	2006-05-16	0.5-1.0 ft	SB-R-C9-011.0N		ug/kg
6	10	3	C8-1-01	1999-11-18	0.0-0.5 ft	C8-1-010.5N		ug/kg

Exhibit 6-1 Direct Contact Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Lead	Benzo[a]pyrene	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea
24100	2190000	3700	452823.4	748784	36	1
5680	15700	72	453003.9793	749001.1384	36	1
6290	8980	6	452815.0865	748810.1867	36	1
2840	6270	210	452917.967	748859.9135	36	1
5300	4520	200	453175.5963	748923.6759	36	1
14900	10200000	280	453044.8	748940.4	36	1

Exhibit 6-1 Direct Contact Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead	Spatial Weighted_Benzo[a]pyrene
86750.93484	288.8962003	3113.276943	0.035887532	864.8895192	78593.6949	132.7838681
86750.93484	576.9318938	10553.97459	0.121658338	691.0193622	1910.035913	8.759400366
86750.93484	529.6770378	15478.67646	0.178426624	1122.303467	1602.271086	1.070559746
86750.93484	658.7359988	24768.60727	0.28551401	810.8597881	1790.172842	59.95794208
86750.93484	549.1492166	13716.24853	0.158110671	837.9865573	714.6602338	31.62213424
86750.93484	597.4459166	19120.15481	0.220402868	3284.002727	2248109.249	61.71280292
			SUM:	7611.061421	2332720.084	295.9067075

Exhibit 6-2 Direct Contact Spatial Weighting Output Functional Area 1 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA1deep	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic
1	1	4	SO-R2-B-9-1	2013-11-14 12:18	9.5-10.0 ft	SO-R2-B-9-1_20131114		ug/kg	5270
2	6	5	SO-R2-C-8-2	2013-11-14 11:43	9.4-9.9 ft	SO-R2-C-8-2D_20131114		ug/kg	4920
3	7	3	SB-R-C9-02	2006-05-16	2.5-3.0 ft	SB-R-C9-023.0N		ug/kg	4080
4	8	2	SB-R-C9-01	2006-08-08	6.0-6.5 ft	SB-R-C9-016.5N		ug/kg	8720

Exhibit 6-2 Direct Contact Spatial Weighting Output Functional Area 1 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic
452815.0865	748810.1867	36	1	86750.93484	590.5040768	18466.78991	0.212871365	1121.832093
453003.9793	749001.1384	36	1	86750.93484	663.3809563	19610.46094	0.226054751	1112.189373
452917.967	748859.9135	36	1	86750.93484	718.5159637	28689.77339	0.330714285	1349.314283
453175.5963	748923.6759	36	1	86750.93484	607.4899151	19983.88844	0.230359344	2008.733479
							SUM:	5592.069228

Exhibit 6-3 Direct Contact Spatial Weighting Output Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA3shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	1	3	TP-R-C10-439-1	2006-08-11	1.5-2.0 ft	TP-R-C10-439-12.0N		ug/kg
2	6	5	TP-R-C10-439-3	2006-08-11	1.5-2.0 ft	TP-R-C10-439-32.0N		ug/kg
3	7	4	TP-R-C10-439-2	2006-08-11	1.5-2.0 ft	TP-R-C10-439-22.0N		ug/kg
4	8	2	SB-R-C9-04	2006-05-25	0.5-1.0 ft	SB-R-C9-041.0N		ug/kg
5	9	1	SB-R-C10-03	2006-06-07	0.5-1.0 ft	SB-R-C10-031.0N		ug/kg

Exhibit 6-3 Direct Contact Spatial Weighting Output Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Lead	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area
47200	7510000	453191.4204	748429.1225	35	3	83554.64868	636.3462415	15803.80417
4080	1610000	453244.9943	748402.515	35	3	83554.64868	460.647339	10884.96642
3670	160000	453213.7152	748444.4218	35	3	83554.64868	514.4316156	13931.35056
3640	5520	453223.8161	748687.342	35	3	83554.64868	726.6805033	32838.22627
3150	9250	453294.3679	748435.1979	35	3	83554.64868	524.8114482	10096.32886

Exhibit 6-3 Direct Contact Spatial Weighting Output Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
0.189143326	8927.564993	1420466.379
0.130273618	531.5163634	209740.5258
0.166733399	611.9115737	26677.34381
0.393014952	1430.574426	2169.442537
0.120835035	380.630359	1117.72407
SUM:	11882.19772	1660171.415

Exhibit 6-4 Direct Contact Spatial Weighting Output Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA5shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID
1	2	3	C10-2176-02	1999-11-19	0.0-1.0 ft	C10-2176-021N	
2	6	18	TP-R-B10-2/B10-509-8	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-82.0N	
3	7	17	TP-R-B10-2/B10-509-7	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-72.0N	
4	8	16	TP-R-B10-2/B10-509-5	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-52.0N	
5	9	15	TP-R-B10-2/B10-509-4	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-42.0N	
6	10	14	TP-R-B10-2/B10-509-3	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-32.0N	
7	11	13	SD-C9-1-01	2001-04-25	0.5-1.0 ft	SD-C9-1-011N	
8	12	12	SB-R-C10-04	2006-06-12	0.5-1.0 ft	SB-R-C10-041.0N	
9	13	11	SB-R-C10-01	2006-05-25	0.5-1.0 ft	SB-R-C10-011.0N	
10	14	10	C10-466-02	1999-10-08	0.0-1.0 ft	C10-466-021N	
11	15	9	C10-440-02	1999-10-08	0.0-2.0 ft	C10-440-022N	
12	16	8	C10-438-05	1999-10-08	0.0-2.0 ft	C10-438-052N	
13	17	7	C10-438-01	2000-07-21	0.0-2.0 ft	C10-438-012N	
14	18	6	C10-432-02	2000-07-13	0.0-1.0 ft	C10-432-021N	
15	19	5	C10-432-01	2000-09-27	0.0-1.0 ft	C10-432-011N	
16	20	4	C10-2179-03	1999-11-19	0.0-0.5 ft	C10-2179-030.5N	

Exhibit 6-4 Direct Contact Spatial Weighting Output Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

units	Arsenic	Lead	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length
ug/kg	207000	377000	453176.6	748053.9	32	5	99678.0542	310.0737475
ug/kg	3100	337000	453024.409	748094.287	32	5	99678.0542	205.7324628
ug/kg	3910	78300	452950.651	748406.031	32	5	99678.0542	486.4598598
ug/kg	4360	137000	453021.023	748048.851	32	5	99678.0542	328.0976206
ug/kg	2990	209000	453076.631	748069.481	32	5	99678.0542	327.291948
ug/kg	5360	199000	453033.535	748119.043	32	5	99678.0542	405.2505922
ug/kg	2700	68800	453062.1	748392.1	32	5	99678.0542	372.6207724
ug/kg	3200	6400	453019.775	748435.372	32	5	99678.0542	388.8310203
ug/kg	2860	26700	453085.2284	748128.5346	32	5	99678.0542	248.7828514
ug/kg	6900	3070000	453102	748248	32	5	99678.0542	575.1460084
ug/kg	5400	1550000	453070.9	748375.7	32	5	99678.0542	450.0702465
ug/kg	4200	29600	453118	748099	32	5	99678.0542	152.8836243
ug/kg	4010	34400	453126	748095	32	5	99678.0542	265.4746966
ug/kg	6290	107000	453106	748139	32	5	99678.0542	198.7679457
ug/kg	5160	96800	453110.5	748140.1	32	5	99678.0542	286.8043936
ug/kg	274000	603000	453176.6	748063.5	32	5	99678.0542	233.4941428

Exhibit 6-4 Direct Contact Spatial Weighting Output Functional Area 5 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
5818.721497	0.058375151	12083.65632	22007.43205
2294.884159	0.023022963	71.37118546	7758.738548
11622.57193	0.116601112	455.9103467	9129.867045
5731.443288	0.05749955	250.6980391	7877.438386
6489.727604	0.065106885	194.6695859	13607.33895
8471.496621	0.084988583	455.5388069	16912.72809
5600.043692	0.05618131	151.6895378	3865.274148
7318.321487	0.073419586	234.9426757	469.8853514
2982.239944	0.029918722	85.56754352	798.8298643
19471.97223	0.195348639	1347.905609	599720.3219
10407.81396	0.104414297	563.8372039	161842.1604
1194.131624	0.011979885	50.31551688	354.6045952
3139.508488	0.031496486	126.3009109	1083.479136
1466.124158	0.014708595	92.51706435	1573.819696
5175.018565	0.051917331	267.8934296	5025.597672
2494.038249	0.025020936	6855.736558	15087.62461
	SUM:	23288.55034	867115.1404

Exhibit 6-5 Direct Contact Spatial Weighting Output Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA7shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	3	3	B10-3-01	2000-06-16	0.0-1.0 ft	B10-3-011N		ug/kg
2	6	28	TP-R-B10-6-1	2006-08-11	1.5-2.0 ft	TP-R-B10-6-12.0N		ug/kg
3	7	26	TP-R-B10-508-4	2006-08-09	1.5-2.0 ft	TP-R-B10-508-42.0N		ug/kg
4	8	24	TP-R-B10-508-3	2006-08-09	1.5-2.0 ft	TP-R-B10-508-32.0N		ug/kg
5	9	23	TP-R-B10-508-1	2006-08-09	1.5-2.0 ft	TP-R-B10-508-12.0N		ug/kg
6	10	22	TP-R-B10-505-5	2006-08-09	1.5-2.0 ft	TP-R-B10-505-52.0N		ug/kg
7	11	21	TP-R-B10-505-4	2006-08-09	1.5-2.0 ft	TP-R-B10-505-42.0N		ug/kg
8	12	20	TP-R-B10-505-3	2006-08-09	1.5-2.0 ft	TP-R-B10-505-32.0N		ug/kg
9	13	19	TP-R-B10-505-2	2006-08-09	1.5-2.0 ft	TP-R-B10-505-22.0N		ug/kg
10	14	18	TP-R-B10-505-1	2006-08-08	1.5-2.0 ft	TP-R-B10-505-12.0N		ug/kg
11	15	16	TP-R-B10-2/B10-509-6	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-62.0N		ug/kg
12	16	14	TP-R-B10-2/B10-509-2	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-22.0N		ug/kg
13	17	13	TP-R-B10-2/B10-509-1	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-12.0N		ug/kg
14	18	12	SB-R-B10-02	2006-05-25	0.5-1.0 ft	SB-R-B10-021.0N		ug/kg
15	19	11	SB-R-B10-01	2006-05-25	0.5-1.0 ft	SB-R-B10-011.0N		ug/kg
16	20	9	B10-506-04	2000-07-21	0.0-2.0 ft	B10-506-042N		ug/kg
17	21	8	B10-506-02	1999-10-14	0.0-1.0 ft	B10-506-021N		ug/kg
18	22	7	B10-503-02	1999-10-11	0.0-1.0 ft	B10-503-021N		ug/kg
19	23	6	B10-4-02	2000-06-16	0.0-2.0 ft	B10-4-022N		ug/kg
20	24	5	B10-4-01	1999-10-15	0.0-2.0 ft	B10-4-012N		ug/kg
21	25	4	B10-3-03	1999-10-15	0.0-2.0 ft	B10-3-032N		ug/kg
22	26	2	B10-20-01	1999-10-15	0.0-1.0 ft	B10-20-011N		ug/kg

Exhibit 6-5 Direct Contact Spatial Weighting Output Functional Area 7 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Lead	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
213000	452922.4	748125.2	28	7	89622.91996	250.7658239	3468.578114	0.038701909	8243.506667
330000	452837.8072	748012.1922	28	7	89622.91996	227.6316363	2898.216501	0.032337894	10671.50508
4090000	452871.973	748062.244	28	7	89622.91996	219.5855852	2957.978782	0.033004713	134989.2776
16500	452861.454	748099.093	28	7	89622.91996	175.0619469	1969.900657	0.021979876	362.667952
269000	452856.125	748037.007	28	7	89622.91996	184.969022	1829.865612	0.020417384	5492.276415
281000	452803.487	747937.044	28	7	89622.91996	180.3188938	1857.062257	0.020720841	5822.556268
527000	452823.446	747927.543	28	7	89622.91996	163.4344779	1604.223689	0.017899703	9433.143718
69300	452833.813	747972.728	28	7	89622.91996	197.5805864	2485.201077	0.027729526	1921.656142
802000	452779.549	747977.786	28	7	89622.91996	243.5243934	3625.094789	0.0404483	32439.53692
232000	452808.86	747910.772	28	7	89622.91996	154.308116	962.0457207	0.010734372	2490.374196
561000	452994.925	747987.457	28	7	89622.91996	233.1691642	2940.436386	0.032808978	18405.83651
770000	452993.615	748073.603	28	7	89622.91996	283.3335046	4253.470596	0.04745963	36543.91489
60500	452961.271	747988.15	28	7	89622.91996	276.8185478	4378.163762	0.048850939	2955.481787
234000	452830.368	748081.338	28	7	89622.91996	196.2972803	1868.669902	0.020850357	4878.983604
8050	452602.729	748006.3618	28	7	89622.91996	524.5108536	14916.82125	0.166439804	1339.840424
21700	452738.2	747962.2	28	7	89622.91996	290.7860714	4360.227561	0.048650809	1055.722555
250000	452718.4	748003.2	28	7	89622.91996	423.3543034	11089.59914	0.123736195	30934.04887
162000	452713.2	747888.4	28	7	89622.91996	411.9069143	8006.258658	0.089332714	14471.89964
11600	452898.2	747967.9	28	7	89622.91996	234.1483653	3465.43712	0.038666862	448.5356046
41700	452898.1	747991.8	28	7	89622.91996	231.1746699	3162.296623	0.035284463	1471.362116
111000	452902.8	748111.9	28	7	89622.91996	222.7252011	2582.611655	0.028816419	3198.62256
5570000	452814.9	748093.5	28	7	89622.91996	306.2622704	4940.830388	0.055129094	307069.0541
								SUM:	634639.8036

Exhibit 6-6 Direct Contact Spatial Weighting Output Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA8shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID
1	2	9	B11-9-03	2000-06-30	0.0-1.0 ft	B11-9-031N	
2	6	16	TP-R-B10-502-2	2006-08-08	1.5-2.0 ft	TP-R-B10-502-22.0N	
3	7	15	TP-R-B10-502-1	2006-08-08	1.5-2.0 ft	TP-R-B10-502-12.0N	
4	8	14	TP-R-B10-501-1	2006-08-08	1.5-2.0 ft	TP-R-B10-501-12.0N	
5	9	13	TP-R-A11-504-1	2006-08-08	1.5-2.0 ft	TP-R-A11-504-12.0N	
6	10	12	SB-R-B11-03	2006-05-25	0.5-1.0 ft	SB-R-B11-031.0N	
7	11	11	SB-R-B11-02	2006-05-25	0.5-1.0 ft	SB-R-B11-021.0N	
8	12	8	B11-9-02	1999-11-05	0.0-2.0 ft	B11-9-022N	
9	13	7	B10-656-02	1999-10-12	0.0-2.0 ft	B10-656-022N	
10	14	6	B10-511-03	1999-11-19	0.0-2.0 ft	B10-511-032N	
11	15	5	B10-503-06	1999-10-12	0.0-2.0 ft	B10-503-062N	
12	16	4	B10-503-01	1999-10-11	0.0-2.0 ft	B10-503-012N	
13	17	3	B10-2178-05	1999-11-19	0.0-1.0 ft	B10-2178-051N	
14	18	1	B10-2178-03	1999-11-19	0.0-1.0 ft	B10-2178-031N	

Exhibit 6-6 Direct Contact Spatial Weighting Output Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

units	Arsenic	Lead	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area
ug/kg	5450	212000	453037	747824	23	8	86905.47445	217.5891823	2390.710978
ug/kg	3540	216000	452749.88	747826.597	23	8	86905.47445	428.6840785	12253.24903
ug/kg	2930	8310	452745.189	747849.274	23	8	86905.47445	169.0908868	1351.850045
ug/kg	5420	1040000	452768.958	747877.541	23	8	86905.47445	341.6950882	6140.48058
ug/kg	5620	1350000	452666.257	747703.125	23	8	86905.47445	419.9792472	8434.333271
ug/kg	4360	35700	452657.3604	747775.4305	23	8	86905.47445	324.5581603	5392.962417
ug/kg	3150	173000	452897.804	747829.337	23	8	86905.47445	568.7020984	19104.66107
ug/kg	4800	103000	453020.8	747824	23	8	86905.47445	308.738812	5753.136058
ug/kg	4000	7300	452663.3	747809.3	23	8	86905.47445	318.9930196	5252.045628
ug/kg	6200	1160000	453031.8	747849.1	23	8	86905.47445	293.0083648	3566.480461
ug/kg	4000	244000	452676.9	747872.6	23	8	86905.47445	248.3792131	2366.932042
ug/kg	4300	25100	452710.3	747862.2	23	8	86905.47445	196.0758109	2284.314234
ug/kg	274000	270000	452950	747872	23	8	86905.47445	415.670222	8129.869135
ug/kg	14600	17200000	452967	747860	23	8	86905.47445	358.7225129	4484.451098

Exhibit 6-6 Direct Contact Spatial Weighting Output Functional Area 8 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
0.027509325	149.9258236	5831.97699
0.140995134	499.122775	30454.94898
0.015555407	45.57734315	129.265434
0.070657005	382.9609694	73483.28565
0.097051806	545.4311513	131019.9385
0.062055497	270.5619673	2215.381246
0.219832654	692.4728591	38031.04909
0.066199927	317.7596492	6818.592473
0.060434002	241.7360085	441.1682156
0.041038617	254.4394239	47604.79544
0.027235707	108.9428281	6645.512516
0.026285044	113.0256899	659.7546085
0.093548412	25632.26491	25258.07126
0.05160148	753.3816074	887545.4553
SUM:	30007.603	1256139.196

Exhibit 6-7 Direct Contact Spatial Weighting Output Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA8deep	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Lead
1	1	4	TP-R-A11-504-1	2006-08-08	7.0-7.5 ft	TP-R-A11-504-17.5N		ug/kg	7550
2	6	12	TP-R-B10-502-2	2006-08-08	8.5-9.0 ft	TP-R-B10-502-29.0N		ug/kg	5750
3	7	11	TP-R-B10-502-1	2006-08-08	9.5-10.0 ft	TP-R-B10-502-110.0N		ug/kg	3530
4	8	10	TP-R-B10-501-1	2006-08-08	7.5-8.0 ft	TP-R-B10-501-18.0N		ug/kg	1300000
5	9	3	SB-R-B11-03	2006-05-25	4.5-5.0 ft	SB-R-B11-035.0N		ug/kg	1160
6	10	2	SB-R-B11-02	2006-05-25	6.0-6.5 ft	SB-R-B11-026.5N		ug/kg	4550

Exhibit 6-7 Direct Contact Spatial Weighting Output Functional Area 8 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
452666.257	747703.125	23	8	86905.47445	419.9786557	8434.320085	0.097051655	732.7399919
452749.88	747826.597	23	8	86905.47445	453.0954618	12684.08727	0.145952684	839.227934
452745.189	747849.274	23	8	86905.47445	300.6716574	4644.864683	0.05344732	188.6690388
452768.958	747877.541	23	8	86905.47445	353.4449631	6192.83424	0.071259426	92637.25401
452657.3604	747775.4305	23	8	86905.47445	445.5755553	11520.06829	0.132558603	153.7679795
452897.804	747829.337	23	8	86905.47445	831.8918028	43429.29272	0.49973023	2273.772546
							SUM:	96825.4315

Exhibit 6-8 Direct Contact Spatial Weighting Output Functional Area 9 Shallow metals
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA9shallow_metals	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic	Lead
1	2	11	C11-9-04	1999-11-18	0.0-0.5 ft	C11-9-040.5N		ug/kg	115000	11800000
2	6	14	SB-R-C11-03	2006-06-01	0.5-1.0 ft	SB-R-C11-031.0N		ug/kg	6270	473000
3	7	13	SB-R-C11-01	2006-05-31	0.5-1.0 ft	SB-R-C11-011.0N		ug/kg	22600	102000
4	8	10	C11-8-05	1999-11-09	0.0-2.0 ft	C11-8-052N		ug/kg	61400	4930000
5	9	9	C11-12-02	1999-11-10	0.0-1.0 ft	C11-12-021N		ug/kg	20200	2470000
6	10	8	C11-1-17	1999-11-18	0.0-1.0 ft	C11-1-171N		ug/kg	38600	10900000
7	11	7	C11-10-01	1999-11-09	0.0-2.0 ft	C11-10-012N		ug/kg	69400	2090000
8	12	6	C10-3-02	1999-11-22	0.0-1.0 ft	C10-3-021N		ug/kg	7800	971000
9	13	5	B11-1-11	1999-11-10	0.0-1.0 ft	B11-1-111N		ug/kg	53800	33800000
10	14	4	B11-11-05	1999-11-10	0.0-0.5 ft	B11-11-050.5N		ug/kg	12900	7320000
11	15	3	B11-1-08	1999-11-10	0.0-1.0 ft	B11-1-081N		ug/kg	64400	16900000
12	16	2	B10-7-10	1999-11-18	0.0-1.0 ft	B10-7-101N		ug/kg	5400	658000
13	17	1	B10-7-02	1999-11-18	0.0-1.0 ft	B10-7-021N		ug/kg	6100	1080000

Exhibit 6-8 Direct Contact Spatial Weighting Output Functional Area 9 Shallow metals
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
453318.4	747723.3	27	9	97761.92027	427.6672041	9682.453841	0.099041159	11389.73323	1168685.67
453143.3523	747886.9146	27	9	97761.92027	404.236985	9092.319493	0.093004715	583.1395605	43991.23001
453202.4936	747633.7706	27	9	97761.92027	374.7376519	6687.541739	0.068406407	1545.984806	6977.453547
453254.5	747701.1	27	9	97761.92027	347.5489711	7595.088095	0.077689637	4770.14371	383009.9103
453199.5	747824.6	27	9	97761.92027	352.6127393	6353.503442	0.064989552	1312.788959	160524.1945
453173.1	747733.8	27	9	97761.92027	311.5410546	6641.123016	0.067931593	2622.159505	740454.3679
453233.5	747805	27	9	97761.92027	440.6775427	12276.74893	0.125578026	8715.114982	262458.0737
453245.2	747994.5	27	9	97761.92027	463.4822318	12286.7817	0.12568065	980.3090716	122035.9114
453105.4	747745.4	27	9	97761.92027	273.2174105	4129.609874	0.042241497	2272.592545	1427762.603
453138.4	747818.8	27	9	97761.92027	342.4920187	7379.042442	0.075479721	973.6883978	552511.5559
453109.4	747717.9	27	9	97761.92027	305.6267172	5170.701913	0.052890756	3406.164714	893853.7837
453087.6	747926.7	27	9	97761.92027	401.6288117	7830.970127	0.080102458	432.553274	52707.41747
453033.2	747929	27	9	97761.92027	287.0766819	2636.059325	0.026964071	164.480831	29121.1963
							SUM:	39168.85358	5844093.368

Exhibit 6-9 Direct Contact Spatial Weighting Output Functional Area 9 Shallow Benzo(a)pyrene
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA9shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Benzo[a]pyrene	x_coord
1	2	11	C11-9-04	1999-11-18	0.0-0.5 ft	C11-9-040.5N		ug/kg	3200	453318.4
2	6	15	C10-15-02	1999-11-22	0.0-1.0 ft	C10-15-021N		ug/kg	400	453270.8
3	7	14	SB-R-C11-03	2006-06-01	0.5-1.0 ft	SB-R-C11-031.0N		ug/kg	970	453143.3523
4	8	13	SB-R-C11-01	2006-05-31	0.5-1.0 ft	SB-R-C11-011.0N		ug/kg	390	453202.4936
5	9	10	C11-8-05	1999-11-09	0.0-2.0 ft	C11-8-052N		ug/kg	670	453254.5
6	10	9	C11-12-02	1999-11-10	0.0-1.0 ft	C11-12-021N		ug/kg	2100	453199.5
7	11	8	C11-1-17	1999-11-18	0.0-1.0 ft	C11-1-171N		ug/kg	8200	453173.1
8	12	7	C11-10-01	1999-11-09	0.0-2.0 ft	C11-10-012N		ug/kg	99	453233.5
9	13	6	C10-3-02	1999-11-22	0.0-1.0 ft	C10-3-021N		ug/kg	99	453245.2
10	14	5	B11-1-11	1999-11-10	0.0-1.0 ft	B11-1-111N		ug/kg	150	453105.4
11	15	4	B11-11-05	1999-11-10	0.0-0.5 ft	B11-11-050.5N		ug/kg	360	453138.4
12	16	3	B11-1-08	1999-11-10	0.0-1.0 ft	B11-1-081N		ug/kg	390	453109.4
13	17	2	B10-7-10	1999-11-18	0.0-1.0 ft	B10-7-101N		ug/kg	380	453087.6
14	18	1	B10-7-02	1999-11-18	0.0-1.0 ft	B10-7-021N		ug/kg	380	453033.2

Exhibit 6-9 Direct Contact Spatial Weighting Output Functional Area 9 Shallow Benzo(a)pyrene
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Benzo[a]pyrene
747723.3	27	9	97761.92027	427.6672041	9682.453841	0.099041159	316.9317072
747950.3	27	9	97761.92027	401.9315374	9166.426609	0.093762751	37.50510049
747886.9146	27	9	97761.92027	390.2922576	8759.132345	0.089596566	86.90866905
747633.7706	27	9	97761.92027	374.7376519	6687.541739	0.068406407	26.67849886
747701.1	27	9	97761.92027	347.5489711	7595.088095	0.077689637	52.05205677
747824.6	27	9	97761.92027	316.8433873	5634.918243	0.057639194	121.0423064
747733.8	27	9	97761.92027	311.5410546	6641.123016	0.067931593	557.0390658
747805	27	9	97761.92027	402.8627174	10559.19822	0.108009317	10.69292237
747994.5	27	9	97761.92027	342.0576514	5889.672526	0.060245058	5.964260711
747745.4	27	9	97761.92027	273.2174105	4129.609874	0.042241497	6.336224569
747818.8	27	9	97761.92027	342.4920187	7379.042442	0.075479721	27.17269947
747717.9	27	9	97761.92027	305.6267172	5170.701913	0.052890756	20.62739501
747926.7	27	9	97761.92027	401.6288117	7830.970127	0.080102458	30.4389341
747929	27	9	97761.92027	287.0766819	2636.059325	0.026964071	10.24634685
						SUM:	1309.636188

Exhibit 6-10 Direct Contact Spatial Weighting Output Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA10shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	2	7	A11-8-03	1999-10-14	0.0-2.0 ft	A11-8-032N		ug/kg
2	6	18	TP-R-A11-7-2	2006-08-07	1.5-2.0 ft	TP-R-A11-7-22.0N		ug/kg
3	7	17	TP-R-A11-7-1	2006-08-07	1.5-2.0 ft	TP-R-A11-7-12.0N		ug/kg
4	8	16	TP-R-A11-5-2	2006-08-07	1.5-2.0 ft	TP-R-A11-5-22.0N		ug/kg
5	9	15	TP-R-A11-504-2	2006-08-08	1.5-2.0 ft	TP-R-A11-504-22.0N		ug/kg
6	10	14	TP-R-A11-4-2	2006-08-07	1.5-2.0 ft	TP-R-A11-4-22.0N		ug/kg
7	11	13	TP-R-A11-4-1	2006-08-07	1.5-2.0 ft	TP-R-A11-4-12.0N		ug/kg
8	12	12	TP-R-A11-2-1	2006-08-08	1.5-2.0 ft	TP-R-A11-2-12.0N		ug/kg
9	13	9	SB-R-A11-01	2006-05-23	0.5-1.0 ft	SB-R-A11-011.0N		ug/kg
10	14	5	A11-3-05	1999-10-08	0.0-1.0 ft	A11-3-051N		ug/kg
11	15	4	A11-3-03	1999-10-08	0.0-1.0 ft	A11-3-031N		ug/kg
12	16	2	A11-1-04	1999-10-08	0.0-1.0 ft	A11-1-041N		ug/kg
13	17	1	A11-1-01	1999-10-08	0.0-1.0 ft	A11-1-011N		ug/kg

Exhibit 6-10 Direct Contact Spatial Weighting Output Functional Area 10 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Lead	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
14100	452703.4	747376.5	21	10	88674.94034	435.6671833	9579.32267	0.108027393	1523.186248
1510000	452594.562	747486.279	21	10	88674.94034	373.1127172	7792.946198	0.08788217	132702.077
13300000	452573.465	747489.055	21	10	88674.94034	216.6029885	2862.567593	0.032281585	429345.0758
77900	452481.97	747335.022	21	10	88674.94034	303.0975734	4755.210731	0.053625192	4177.402483
88100	452670.777	747660.129	21	10	88674.94034	407.2796994	7790.25586	0.087851831	7739.746298
3790000	452563.541	747431.233	21	10	88674.94034	356.8643752	6896.641942	0.077774419	294765.047
6680	452534.728	747416.571	21	10	88674.94034	342.3453872	5921.702516	0.066779887	446.0896467
15400	452596.596	747538.744	21	10	88674.94034	461.2808376	12024.23993	0.135599075	2088.225763
26700	452460.058	747443.307	21	10	88674.94034	208.9199825	2105.094333	0.02373945	633.843321
136000	452470.6	747440.7	21	10	88674.94034	257.0195902	3300.214237	0.037216989	5061.51044
305000	452458.1	747473.7	21	10	88674.94034	365.340247	7045.614285	0.079454401	24233.59236
679000	452510.8	747569	21	10	88674.94034	499.4773154	14348.26101	0.161807394	109867.2205
1250000	452536.9	747536.1	21	10	88674.94034	280.9795076	4252.868346	0.047960205	59950.25665
								SUM:	1072533.274

Exhibit 6-11 Direct Contact Spatial Weighting Output Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA12shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic	Lead
1	1	12	B11-602C-08	1999-10-14	0.0-1.0 ft	B11-602C-081N		ug/kg	7000	858000
2	6	14	SB-R-B11-04	2006-05-31	0.5-1.0 ft	SB-R-B11-041.0N		ug/kg	4410	61000
3	7	13	B11-6-03	1999-11-09	0.0-1.0 ft	B11-6-031N		ug/kg	5100	450000
4	8	9	B11-513-02	1999-10-14	0.0-2.0 ft	B11-513-022N		ug/kg	4300	90300
5	9	6	B11-2044-08	1999-11-09	0.0-0.8 ft	B11-2044-080.8N		ug/kg	3400	37500
6	10	5	B11-2044-06	1999-11-09	0.0-0.7 ft	B11-2044-060.7N		ug/kg	10400	489000
7	11	4	B11-2044-05	1999-11-09	0.0-0.5 ft	B11-2044-050.5N		ug/kg	3700	74500
8	12	3	B11-2044-04	1999-11-09	0.0-1.3 ft	B11-2044-041.3N		ug/kg	5000	27300
9	13	1	B11-2044-03	1999-11-09	0.0-0.5 ft	B11-2044-030.5N		ug/kg	20000	63800

Exhibit 6-11 Direct Contact Spatial Weighting Output Functional Area 12 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
452846	747682.7	24	12	90599.32152	412.7996153	9084.335114	0.10026935	701.8854527	86031.10263
452964.274	747577.0209	24	12	90599.32152	634.7896741	21388.50016	0.236077929	1041.103665	14400.75365
453102.3	747575.4	24	12	90599.32152	350.297751	6293.062229	0.069460368	354.2478777	31257.16568
452983.6	747674.5	24	12	90599.32152	550.1286639	19833.26531	0.218911853	941.3209659	19767.74028
453087.8	747536.4	24	12	90599.32152	198.1045487	2188.924982	0.024160501	82.1457028	906.0187809
453105	747503.3	24	12	90599.32152	219.8204056	1721.844135	0.019005044	197.6524626	9293.466751
453098	747497.9	24	12	90599.32152	339.8347705	5891.839594	0.065031829	240.6177677	4844.871268
453035.2	747525.3	24	12	90599.32152	606.7974646	16861.60165	0.186111787	930.5589364	5080.851793
453071.5	747504.7	24	12	90599.32152	415.0312532	7336.003654	0.080971949	1619.438983	5166.010355
							SUM:	6108.971814	176747.9812

Exhibit 6-12 Direct Contact Spatial Weighting Output Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA13shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	1	4	SO-R2-A-11-1	2013-11-14 15:33	0.2-0.7 ft	SO-R2-A-11-1_20131114		ug/kg
2	6	3	SB-R-A12-03	2006-05-24	0.5-1.0 ft	SB-R-A12-031.0N		ug/kg
3	7	2	A11-9-04	1999-10-14	0.0-1.0 ft	A11-9-041N		ug/kg
4	8	1	A11-9-03	1999-10-14	0.0-1.3 ft	A11-9-031.3N		ug/kg

Exhibit 6-12 Direct Contact Spatial Weighting Output Functional Area 13 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Lead	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
5480	452203.0926	747276.9402	15	13	85979.31213	752.6564408	25391.01666	0.29531542	1618.328501
5740	452346.641	747242.143	15	13	85979.31213	697.9788147	22500.15893	0.261692707	1502.116138
577000	452269.1	747246.4	15	13	85979.31213	427.9333387	9659.315771	0.11234465	64822.86333
1700000	452305.5	747264.4	15	13	85979.31213	732.6218631	28428.80985	0.330647096	562100.0628
								SUM:	630043.3708

Exhibit 6-13 Direct Contact Spatial Weighting Output Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA14shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic	Lead	x_coord
1	2	6	C11-4-09	1999-11-11	0.0-1.5 ft	C11-4-091.5N		ug/kg	11500	662000	453512.5
2	6	13	C11-7-02	1999-11-12	0.0-1.0 ft	C11-7-021N		ug/kg	6900	57200	453233.6
3	7	12	C11-4B-01	1999-11-05	0.0-2.0 ft	C11-4B-012N		ug/kg	8800	379000	453516.9
4	8	11	C11-4A-02	2000-06-30	0.0-2.0 ft	C11-4A-022N		ug/kg	7960	52000	453556.6
5	9	10	C11-4A-01	1999-11-05	0.0-2.0 ft	C11-4A-012N		ug/kg	2900	53900	453544
6	10	9	C11-4-20	1999-11-11	0.0-1.0 ft	C11-4-201N		ug/kg	10800	380000	453549.8
7	11	8	C11-4-19	1999-11-11	0.0-2.0 ft	C11-4-192N		ug/kg	11800	2070000	453509.3
8	12	7	C11-4-13	1999-11-11	0.0-1.0 ft	C11-4-131N		ug/kg	11900	492000	453559.5
9	13	5	C11-30-06	1999-11-12	0.0-1.0 ft	C11-30-061N		ug/kg	104000	159000	453225.6
10	14	4	C11-30-05	1999-11-05	0.0-1.0 ft	C11-30-051N		ug/kg	56800	176000	453195.1
11	15	3	C11-30-01	1999-11-05	0.0-1.0 ft	C11-30-011N		ug/kg	9400	126000	453197.6
12	16	1	C11-27-02	1999-11-12	0.0-1.0 ft	C11-27-021N		ug/kg	7300	319000	453425.9

Exhibit 6-13 Direct Contact Spatial Weighting Output Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
747508.5	26	14	96766.52631	359.6469817	3642.887564	0.037646154	432.9307725	24921.75403
747516.8	26	14	96766.52631	596.0126676	18596.58207	0.192179907	1326.041362	10992.69071
747538.7	26	14	96766.52631	336.3433074	5055.613612	0.05224548	459.7602238	19801.03691
747591.3	26	14	96766.52631	304.8340859	6062.587566	0.062651702	498.7075476	3257.888502
747597.2	26	14	96766.52631	213.8055562	2972.768008	0.030721037	89.09100647	1655.863879
747662	26	14	96766.52631	271.5856946	4353.017803	0.044984748	485.8352786	17094.20425
747669.7	26	14	96766.52631	339.4844578	6305.026715	0.065157105	768.8538389	134875.2073
747628.3	26	14	96766.52631	255.4991055	3312.279909	0.034229604	407.3322916	16840.96534
747535.6	26	14	96766.52631	461.5710251	6377.859824	0.065909773	6854.616436	10479.65397
747607.1	26	14	96766.52631	485.3025254	7998.914614	0.082662	4695.20161	14548.51203
747566.8	26	14	96766.52631	404.7607696	7174.398886	0.074141329	696.9284948	9341.807484
747581.5	26	14	96766.52631	603.201213	24914.59367	0.2574712	1879.539762	82133.31287
						SUM:	18594.83862	345942.8973

Exhibit 6-14 Direct Contact Spatial Weighting Output Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA15shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Lead
1	1	10	SB-R-A12-04	2006-05-24	0.5-1.0 ft	SB-R-A12-041.0N		ug/kg	22000
2	6	11	TP-R-A11-5-1	2006-08-07	1.5-2.0 ft	TP-R-A11-5-12.0N		ug/kg	411000
3	7	9	A12-8-05	1999-10-14	0.0-2.0 ft	A12-8-052N		ug/kg	1290000
4	8	7	A12-7-04	1999-10-14	0.0-2.0 ft	A12-7-042N10/14/1999		ug/kg	26900
5	9	6	A12-7-03	1999-10-14	0.0-1.0 ft	A12-7-031N		ug/kg	75700
6	10	4	A12-6-02	2000-06-08	0.0-2.0 ft	A12-6-022N		ug/kg	4940
7	11	2	A12-6-01	1999-10-14	0.0-2.0 ft	A12-6-012N		ug/kg	91100
8	12	1	A11-8-02	2000-06-08	0.0-1.5 ft	A11-8-021.5N		ug/kg	13900

Exhibit 6-14 Direct Contact Spatial Weighting Output Functional Area 15 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
452512.541	747228.011	14	15	89979.93542	610.3051105	13216.52413	0.146883014	3231.426311
452488.804	747299.791	14	15	89979.93542	400.6092669	8136.443003	0.090425082	37164.70854
452605.6	747214	14	15	89979.93542	692.6129782	18148.18913	0.201691511	260182.0491
452659.7	747203.2	14	15	89979.93542	383.4118141	7381.568887	0.082035721	2206.760898
452678	747175.6	14	15	89979.93542	572.8811808	15376.79033	0.170891324	12936.47326
452758	747158	14	15	89979.93542	384.665014	8462.479505	0.094048517	464.599675
452764	747170	14	15	89979.93542	325.9532618	5755.400247	0.063963152	5827.043107
452726.4	747345.2	14	15	89979.93542	483.6023172	13502.57247	0.150062038	2085.862326
							SUM:	324098.9232

Exhibit 6-15 Direct Contact Spatial Weighting Output Functional Area 17 Shallow Arsenic
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA17shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic
1	1	2	A12-3-03	1999-11-18	0.0-1.5 ft	A12-3-031.5N		ug/kg	3000
2	6	10	SO-R2-B-12-1	2013-11-14 14:24	0.2-0.7 ft	SO-R2-B-12-1_20131114		ug/kg	7580
3	7	9	SB-R-B12-03	2006-05-24	0.5-1.0 ft	SB-R-B12-031.0N		ug/kg	3000
4	8	8	SB-R-B12-01	2006-05-23	0.5-1.0 ft	SB-R-B12-011.0N		ug/kg	1870
5	9	7	B12-450-03	1999-10-15	0.0-2.0 ft	B12-450-032N		ug/kg	5400
6	10	4	B12-237-01	1999-10-14	0.0-1.5 ft	B12-237-011.5N		ug/kg	28300

Exhibit 6-15 Direct Contact Spatial Weighting Output Functional Area 17 Shallow Arsenic
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic
452807.6	747191.6	16	17	89759.28487	348.0213581	7042.189703	0.078456393	235.3691781
452994.5445	746958.831	16	17	89759.28487	686.9213008	20660.16672	0.230173032	1744.71158
452855.613	747055.083	16	17	89759.28487	565.4045369	16468.34668	0.183472347	550.4170415
453079.7083	747101.2559	16	17	89759.28487	585.9045844	16898.93361	0.188269477	352.0639218
452956	747115	16	17	89759.28487	483.3206593	14990.92071	0.167012479	901.8673885
452996.4	747196.1	16	17	89759.28487	497.37604	13698.73077	0.152616309	4319.04155
							SUM:	8103.47066

Exhibit 6-16 Direct Contact Spatial Weighting Output Functional Area 17 Shallow Lead
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA17shallow_lead	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	1	4	SB-R-B12-03	2006-05-24	0.5-1.0 ft	SB-R-B12-031.0N		ug/kg
2	6	5	SO-R2-B-12-1	2013-11-14 14:24	0.2-0.7 ft	SO-R2-B-12-1_20131114		ug/kg
3	7	3	SB-R-B12-01	2006-05-23	0.5-1.0 ft	SB-R-B12-011.0N		ug/kg
4	8	2	B12-450-03	1999-10-15	0.0-2.0 ft	B12-450-032N		ug/kg
5	9	1	B12-237-01	1999-10-14	0.0-1.5 ft	B12-237-011.5N		ug/kg

Exhibit 6-16 Direct Contact Spatial Weighting Output Functional Area 17 Shallow Lead
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Lead	x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
3550	452855.613	747055.083	16	17	89759.28487	691.4376336	20919.12052	0.233058012	827.3559439
11700	452994.5445	746958.831	16	17	89759.28487	686.9212508	20660.15299	0.230172879	2693.02268
4370	453079.7083	747101.2559	16	17	89759.28487	585.9045844	16898.93361	0.188269477	822.737614
158000	452956	747115	16	17	89759.28487	563.6656374	17239.09202	0.192059151	30345.34581
1540000	452996.4	747196.1	16	17	89759.28487	540.7112789	14042.01021	0.156440754	240918.7613
								SUM:	275607.2234

Exhibit 6-17 Direct Contact Spatial Weighting Output Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA17deep	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	3	39	TP-RD-B12-07	2017-11-07	7.0-7.5 ft	BD110717B	TP-RD-B12-07(07.0-07.5)	ug/kg	110
2	6	43	TP-RD-B12-08	2017-11-07 10:00	9.0-9.5 ft	TP-RD-B12-08(09.0-09.5)		ug/kg	110
3	7	33	TP-RD-B12-05	2017-11-02 9:45	9.0-9.5 ft	TP-RD-B12-05(09.0-09.5)		ug/kg	100
4	8	29	TP-RD-B12-04	2017-11-02 9:25	9.0-9.5 ft	TP-RD-B12-04(09.0-09.5)		ug/kg	110
5	9	25	TP-RD-B12-03	2017-11-02 13:15	18.5-19.0 ft	TP-RD-B12-03(18.5-19.0)		ug/kg	110
6	10	17	TP-RD-B12-02A	2017-10-18 10:30	9.0-9.5 ft	TP-RD-B12-02A(09.0-09.5)		ug/kg	120
7	11	12	TP-RD-B12-02	2017-10-18 9:30	9.0-9.5 ft	TP-RD-B12-02(09.0-09.5)		ug/kg	120
8	12	11	TP-R-B12-234-2	2006-08-11	8.0-8.5 ft	TP-R-B12-234-28.5N		ug/kg	320
9	13	9	TP-R-B12-234-1	2006-08-11	7.5-8.0 ft	TP-R-B12-234-18.0N		ug/kg	310
10	14	7	TP-R-B12-1-3	2006-08-14	7.0-7.5 ft	TP-R-B12-1-37.5N		ug/kg	310
11	15	6	TP-R-B12-1-2	2006-08-14	9.0-9.5 ft	TP-R-B12-1-29.5N		ug/kg	310
12	16	4	TP-R-B12-1-1	2006-08-14	9.0-9.5 ft	TP-R-B12-1-19.5N		ug/kg	310
13	17	3	SO-R2-B-12-1	2013-11-14 14:24	9.4-10.0 ft	SO-R2-B-12-1D_20131114		ug/kg	310
14	18	2	SB-R-B12-03	2006-05-24	2.5-3.0 ft	SB-R-B12-033.0N		ug/kg	340
15	19	1	SB-R-B12-01	2006-05-23	4.0-4.5 ft	SB-R-B12-014.5N		ug/kg	330

Exhibit 6-17 Direct Contact Spatial Weighting Output Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_1,3-Dinitrobenzene
452801.76	747160.64	16	17	89759.28487	318.282309	6203.619213	0.069113955	7.602535096
453025.66	747207.84	16	17	89759.28487	157.0832333	1541.966893	0.017178912	1.889680366
453037.36	747141.65	16	17	89759.28487	286.7496089	4599.757066	0.051245474	5.124547363
452959.64	747104.13	16	17	89759.28487	409.0888325	11097.76319	0.123639167	13.60030834
452972.42	747188.39	16	17	89759.28487	162.2824404	1133.587954	0.0126292	1.389211993
452934.85	747186.39	16	17	89759.28487	313.7047248	6230.365226	0.06941193	8.329431637
452955.8	747186.93	16	17	89759.28487	194.7284559	1485.481522	0.016549614	1.985953686
453043.3601	747232.8687	16	17	89759.28487	158.1071791	1260.789645	0.014046342	4.494829553
453072.7533	747217.4827	16	17	89759.28487	239.0946406	2897.259053	0.032278099	10.00621059
452997.727	747161.065	16	17	89759.28487	192.1958137	2213.959573	0.024665522	7.646311672
453000.22	747187.231	16	17	89759.28487	131.4421798	987.9730236	0.011006917	3.412144356
453002.138	747216.306	16	17	89759.28487	157.2407781	1451.205043	0.016167743	5.012000306
452994.5445	746958.831	16	17	89759.28487	682.4054838	20206.81015	0.225122228	69.78789053
452855.613	747055.083	16	17	89759.28487	542.0158893	15441.27133	0.172029795	58.49013015
453079.7083	747101.2559	16	17	89759.28487	509.8230957	13007.45645	0.144914885	47.82191207
							SUM:	246.5930977

Exhibit 6-18 Direct Contact Spatial Weighting Output Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA19shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic	Lead
1	2	9	C12-8229-03	1999-10-20	0.0-2.0 ft	C12-8229-032N		ug/kg	3300	11500
2	6	10	SB-R-C12-04	2006-06-06	0.5-1.0 ft	SB-R-C12-041.0N		ug/kg	133000	15500
3	7	8	C12-8229-01	2000-06-22	0.0-2.0 ft	C12-8229-012N		ug/kg	4680	20700
4	8	7	C12-5-02	1999-10-20	0.0-2.0 ft	C12-5-022N		ug/kg	23600	1630000
5	9	6	C12-4-01	1999-10-19	0.0-2.0 ft	C12-4-012N		ug/kg	2400	1360000
6	10	5	C12-3-03	1999-10-19	0.0-2.0 ft	C12-3-032N		ug/kg	28800	93300000
7	11	4	C12-274-05	1999-10-21	0.0-1.0 ft	C12-274-051N		ug/kg	4000	3770000
8	12	3	C12-274-01	1999-10-21	0.0-2.0 ft	C12-274-012N		ug/kg	3500	50100
9	13	2	C12-1-04	1999-10-19	0.0-2.0 ft	C12-1-042N		ug/kg	8900	43900
10	14	1	C12-1-03	1999-10-19	0.0-2.0 ft	C12-1-032N		ug/kg	1800	10400

Exhibit 6-18 Direct Contact Spatial Weighting Output Functional Area 19 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
453634.7	747100.7	18	19	89271.55072	594.4182823	10574.65776	0.118454958	390.9013603	1362.232013
453568.9782	747206.2039	18	19	89271.55072	496.3716772	10355.3126	0.115997902	15427.72098	1797.967483
453631.7	747129.5	18	19	89271.55072	558.6234256	13183.42331	0.147677768	691.1319521	3056.929788
453452.8	747210.4	18	19	89271.55072	575.9647929	18109.22987	0.202855554	4787.391073	330654.5529
453512.7	747335.5	18	19	89271.55072	346.2251951	4610.719263	0.051648249	123.9557971	70241.61838
453541	747303	18	19	89271.55072	483.4340405	7849.52958	0.08792868	2532.345972	8203745.806
453407.3	747262	18	19	89271.55072	253.1848566	2997.343197	0.03357557	134.3022799	126579.8988
453405.1	747290.1	18	19	89271.55072	265.7694066	4157.294924	0.04656909	162.9918167	2333.111434
453568.3	747239.9	18	19	89271.55072	411.8168358	4778.070808	0.053522883	476.3536631	2349.654585
453571.6	747268.6	18	19	89271.55072	515.9349374	12655.98663	0.141769539	255.1851709	1474.40321
							SUM:	24982.28007	8743596.174

Exhibit 6-19 Direct Contact Spatial Weighting Output Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA21shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic	Lead	x_coord
1	2	11	TP-R-B13-2-4	2006-08-02	1.5-2.0 ft	TP-R-B13-2-42.0N		ug/kg	2650	6150	453102.222
2	6	13	TP-R-B13-2-8	2006-08-02	1.5-2.0 ft	TP-R-B13-2-82.0N		ug/kg	36100	104000	452971.05
3	7	12	TP-R-B13-2-7	2006-08-03	1.5-2.0 ft	TP-R-B13-2-72.0N		ug/kg	20800	121000	453077.365
4	8	10	TP-R-B13-2-3	2006-08-02	1.5-2.0 ft	TP-R-B13-2-32.0N		ug/kg	4600	8490	453055.99
5	9	9	TP-R-B13-1-4	2006-08-04	1.5-2.0 ft	TP-R-B13-1-42.0N		ug/kg	3930	47400	452992.026
6	10	8	TP-R-B13-1-3	2006-08-04	1.5-2.0 ft	TP-R-B13-1-32.0N		ug/kg	4210	243000	452976.473
7	11	7	TP-R-B13-1-1	2006-08-04	1.5-2.0 ft	TP-R-B13-1-12.0N		ug/kg	1900	352000	452999.835
8	12	6	SD-B13-3-01	2001-05-01	0.0-0.5 ft	SD-B13-3-010.5N		ug/kg	4900	3260000	453018.5
9	13	5	SD-B13-1-01	2001-05-01	1.0-1.5 ft	SD-B13-1-011.5N		ug/kg	5700	44400	452911
10	14	4	SB-R-B13-04	2006-05-23	0.5-1.0 ft	SB-R-B13-041.0N		ug/kg	23100	38400	452881.7551
11	15	3	SB-R-B13-02	2006-05-18	1.2-1.7 ft	SB-R-B13-021.67N		ug/kg	3460	74200	452936.4185
12	16	2	B13-8-05	2000-07-21	0.0-2.0 ft	B13-8-052N		ug/kg	4160	75100	452898.6
13	17	1	B13-8-04	1999-10-08	0.0-2.0 ft	B13-8-042N		ug/kg	3800	21700	452903.6

Exhibit 6-19 Direct Contact Spatial Weighting Output Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead
746515.373	9	21	88526.5686	279.1350797	3054.264692	0.034501108	91.42793583	212.1818133
746520.023	9	21	88526.5686	319.728029	6479.039397	0.073187513	2642.069222	7611.50136
746540.912	9	21	88526.5686	370.0618554	7271.765185	0.082142178	1708.557309	9939.203578
746625.959	9	21	88526.5686	448.2933926	12077.43394	0.136427223	627.5652271	1158.267126
746715.373	9	21	88526.5686	288.1890172	4069.236445	0.045966273	180.647454	2178.801353
746676.342	9	21	88526.5686	307.2974182	6329.128305	0.071494111	300.9902065	17373.06893
746682.19	9	21	88526.5686	287.812235	3897.318248	0.044024278	83.6461278	15496.54578
746767.9	9	21	88526.5686	627.2396241	22518.46483	0.254369566	1246.410873	829244.785
746769	9	21	88526.5686	294.6802045	4466.050925	0.050448707	287.5576302	2239.922593
746801.5279	9	21	88526.5686	450.0194439	10887.6143	0.122986968	2840.998972	4722.69959
746568.0468	9	21	88526.5686	291.2153727	4589.27177	0.051840615	179.3685283	3846.573641
746747	9	21	88526.5686	202.9528402	1700.247544	0.019206071	79.89725453	1442.375917
746752.6	9	21	88526.5686	177.9158153	1186.769433	0.0134058	50.94203829	290.9058502
						SUM:	10320.07878	895756.8325

Exhibit 6-20 Direct Contact Spatial Weighting Output Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA22shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Arsenic
1	1	7	SB-R-B13-03	2006-05-19	0.5-1.0 ft	SB-R-B13-031.0N		ug/kg	3750
2	6	8	SB-R-C13-04	2006-06-02	0.5-1.0 ft	SB-R-C13-041.0N		ug/kg	4190
3	7	6	C13-262B-05	1999-11-01	0.0-2.0 ft	C13-262B-052N		ug/kg	2000
4	8	5	C13-262B-01	1999-11-01	0.0-2.0 ft	C13-262B-012N		ug/kg	22700
5	9	4	B13-7-06	1999-11-02	0.0-1.0 ft	B13-7-061N		ug/kg	8800
6	10	3	B13-7-01	1999-11-02	0.0-2.0 ft	B13-7-012N		ug/kg	5000
7	11	2	B13-262A-05	1999-11-02	0.0-2.0 ft	B13-262A-052N		ug/kg	17000
8	12	1	B13-262A-01	1999-11-02	0.0-2.0 ft	B13-262A-012N		ug/kg	1700

Exhibit 6-20 Direct Contact Spatial Weighting Output Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic
453131.3557	746859.1903	10	22	85913.88463	458.6518648	7821.104994	0.091034238	341.3783913
453369.1144	746910.4873	10	22	85913.88463	639.0023356	20920.96728	0.243510899	1020.310667
453478.6	746865.3	10	22	85913.88463	578.648582	15113.9079	0.17591927	351.8385408
453495.1	746857.5	10	22	85913.88463	358.6534465	5396.620416	0.062814299	1425.884582
453194.9	746872.7	10	22	85913.88463	420.5164228	10760.60925	0.12524878	1102.189265
453205	746837.6	10	22	85913.88463	389.2418696	8779.69227	0.102191774	510.9588694
453297.8	746876	10	22	85913.88463	427.9012554	9731.610832	0.113271689	1925.618715
453318.1	746861.5	10	22	85913.88463	367.9527575	7389.399154	0.086009371	146.2159302
							SUM:	6824.394961

Exhibit 6-21 Direct Contact Spatial Weighting Output Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_DC_FA27shallow	Input_FID	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	Nitroglycerin
1	2	22	TP-RD-B14-03	2017-11-30 14:45	1.0-1.5 ft	TP-RD-B14-03(01.0-01.5)		ug/kg	130
2	6	21	TP-RD-B14-02	2017-11-08 13:15	1.0-1.5 ft	TP-RD-B14-02(01.0-01.5)		ug/kg	120
3	7	20	TP-RD-B14-01	2017-11-08 13:45	1.0-1.5 ft	TP-RD-B14-01(01.0-01.5)		ug/kg	120
4	8	19	TP-RD-B13-12	2017-12-01 8:20	1.0-1.5 ft	TP-RD-B13-12(01.0-01.5)		ug/kg	110
5	9	18	TP-RD-B13-11	2017-12-01 8:00	1.0-1.5 ft	TP-RD-B13-11(01.0-01.5)		ug/kg	110
6	10	17	TP-RD-B13-07	2017-11-08 14:12	1.0-1.5 ft	TP-RD-B13-07(01.0-01.5)		ug/kg	120
7	11	16	TP-RD-B13-06	2017-11-08 11:00	1.0-1.5 ft	TP-RD-B13-06(01.0-01.5)		ug/kg	120
8	12	15	TP-RD-B13-05	2017-12-01 9:45	1.0-1.5 ft	TP-RD-B13-05(01.0-01.5)		ug/kg	120
9	13	14	TP-R-B13-2-6	2006-08-02	1.5-2.0 ft	TP-R-B13-2-62.0N		ug/kg	130000
10	14	13	TP-R-B13-2-5	2006-08-02	1.5-2.0 ft	TP-R-B13-2-52.0N		ug/kg	6800
11	15	12	SD-B13-2-01	2001-05-01	1.5-2.0 ft	SD-B13-2-012N		ug/kg	230000
12	16	11	SB-R-B14-01	2006-05-18	0.8-1.3 ft	SB-R-B14-011.33N		ug/kg	7200
13	17	10	C13-1-17	1999-11-02	0.0-2.0 ft	C13-1-172N		ug/kg	5000
14	18	9	B13-757-04	1999-10-08	0.0-2.0 ft	B13-757-042FD	B13-757-040.2N	ug/kg	5624.3
15	19	7	B13-724-05	1999-10-08	0.0-2.0 ft	B13-724-052N		ug/kg	5328.8
16	20	5	B13-724-01	2000-07-21	0.0-2.0 ft	B13-724-012N		ug/kg	476000000
17	21	3	B13-682-06	1999-10-08	0.0-1.0 ft	B13-682-061N		ug/kg	6709.8
18	22	2	B13-682-04	1999-10-08	0.0-1.3 ft	B13-682-041.3N		ug/kg	7739
19	23	1	B13-682-03	1999-10-08	0.0-0.8 ft	B13-682-030.8N		ug/kg	5655.5

Exhibit 6-21 Direct Contact Spatial Weighting Output Functional Area 27 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord	y_coord	FID_FunctionalAreaIngestionDermal	FunctionalArea	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Nitroglycerin
453260.79	746305.95	6	27	83188.52976	360.9019663	4318.005328	0.051906258	6.747813602
453167.85	746338.87	6	27	83188.52976	437.412826	11505.11372	0.138301684	16.59620202
453274.93	746364.82	6	27	83188.52976	276.8027062	3989.269816	0.047954566	5.754547884
453125.02	746498.33	6	27	83188.52976	230.6716923	2321.481855	0.027906273	3.069690074
453106.23	746437.91	6	27	83188.52976	238.4684113	3363.611679	0.040433599	4.447695924
453270.67	746443.58	6	27	83188.52976	366.3243897	7037.881904	0.08460159	10.15219082
453156.18	746474.04	6	27	83188.52976	256.4169616	3316.72837	0.03987002	4.784402435
453024.56	746391.72	6	27	83188.52976	295.1124729	4047.73245	0.048657338	5.838880618
453023.334	746422.866	6	27	83188.52976	265.3412396	4179.618671	0.050242728	6531.554635
453085.96	746361.985	6	27	83188.52976	468.8827614	13189.39311	0.158548218	1078.127879
453253	746318.2	6	27	83188.52976	267.1639129	3281.849681	0.039450747	9073.671921
453269.884	746371.5052	6	27	83188.52976	158.0764996	1485.073407	0.017851901	128.533688
453273.3	746372.9	6	27	83188.52976	200.1312909	2343.482301	0.028170738	140.8536915
453069.9	746439.6	6	27	83188.52976	265.762521	4158.564471	0.049989638	281.1567198
453163.6	746437.8	6	27	83188.52976	224.4709439	3140.320579	0.037749442	201.1592265
453160.1	746459.3	6	27	83188.52976	171.2024453	1198.557869	0.01440773	6858079.44
453240.9	746415.3	6	27	83188.52976	212.2195276	2665.293527	0.032039195	214.9765907
453241.6	746449.7	6	27	83188.52976	296.7763998	4948.613281	0.059486726	460.367773
453212	746435.4	6	27	83188.52976	233.429734	2698.006718	0.032432437	183.4216452
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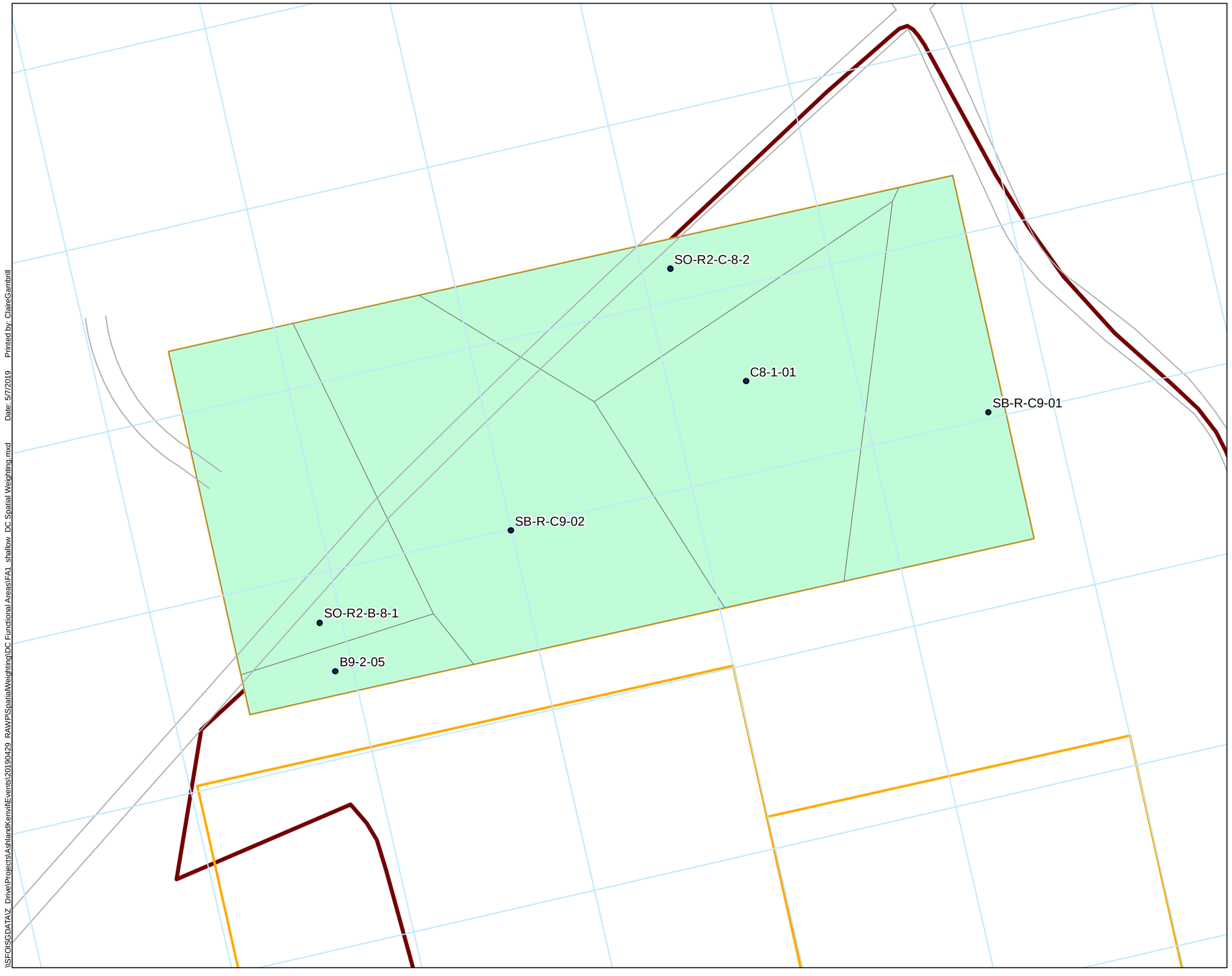
Exhibit 7

Spatial Weighting Figures – Direct Contact



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 1 Shallow

1540001*57

Exhibit 7-1

SO-R2-C-8-2

SB-R-C9-01

SB-R-C9-02

SO-R2-B-9-1

Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

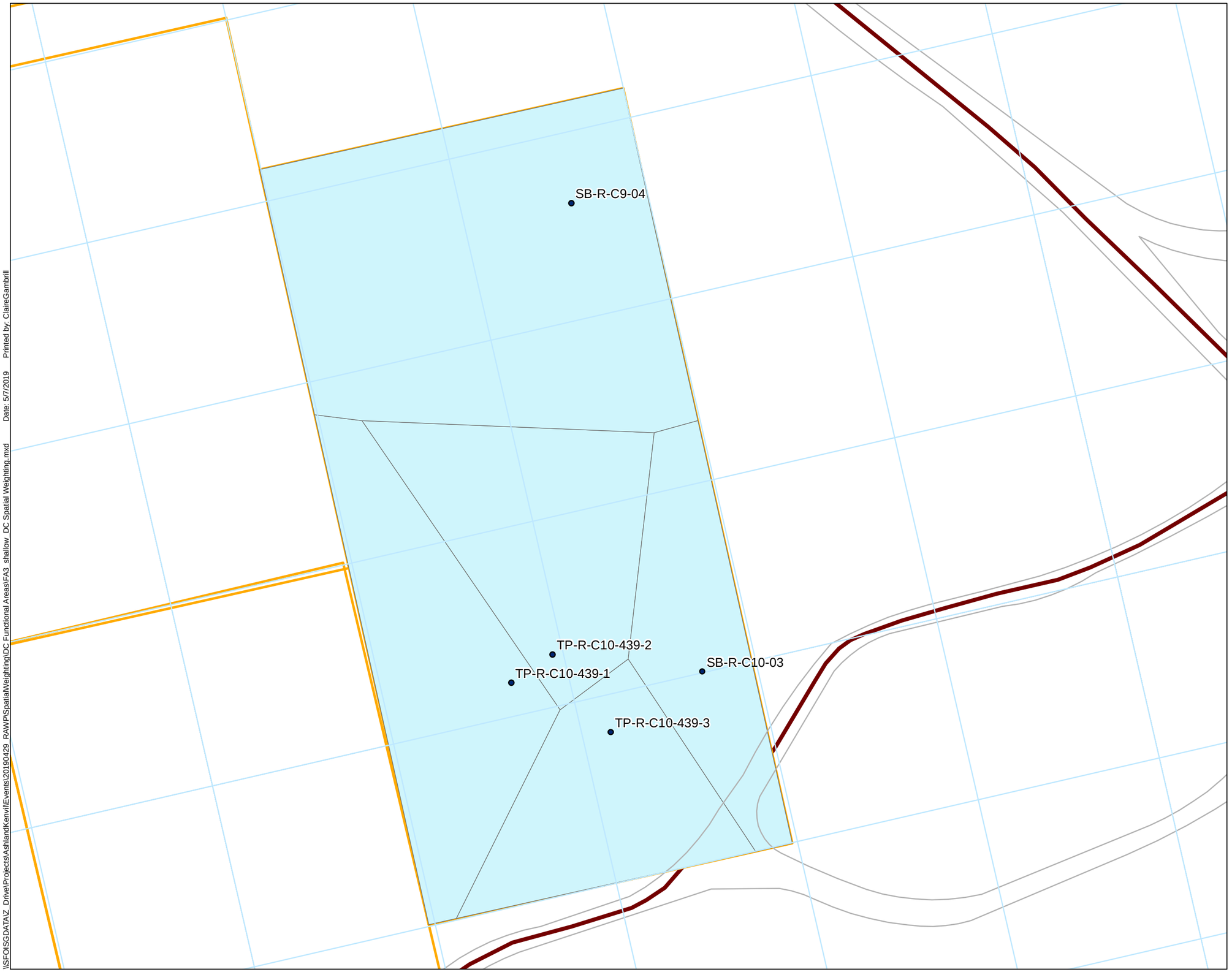
TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 1 Deep

1540001*57

Exhibit 7-2

\\SFOISGDATA\Z_Drive\Projects\Ashland\Kenvil\Events\20190429_RAWP\SpatialWeighting\DC Functional Areas\FA1_deep_DC Spatial Weighting.mxd Date: 5/7/2019 Printed by: ClaireGambrill



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 3 Shallow

1540001*57

Exhibit 7-3

SB-R-C10-04
TP-R-B10-2/B10-509-7
SD-C9-1-01
C10-440-02
C10-466-02
C10-432-02
SB-R-C10-01
C10-432-01
TP-R-B10-2/B10-509-3
TP-R-B10-2/B10-509-8
C10-438-05
C10-438-01
TP-R-B10-2/B10-509-4
C10-2179-03
C10-2176-02
TP-R-B10-2/B10-509-5

Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 5 Shallow

1540001*57

Exhibit 7-4

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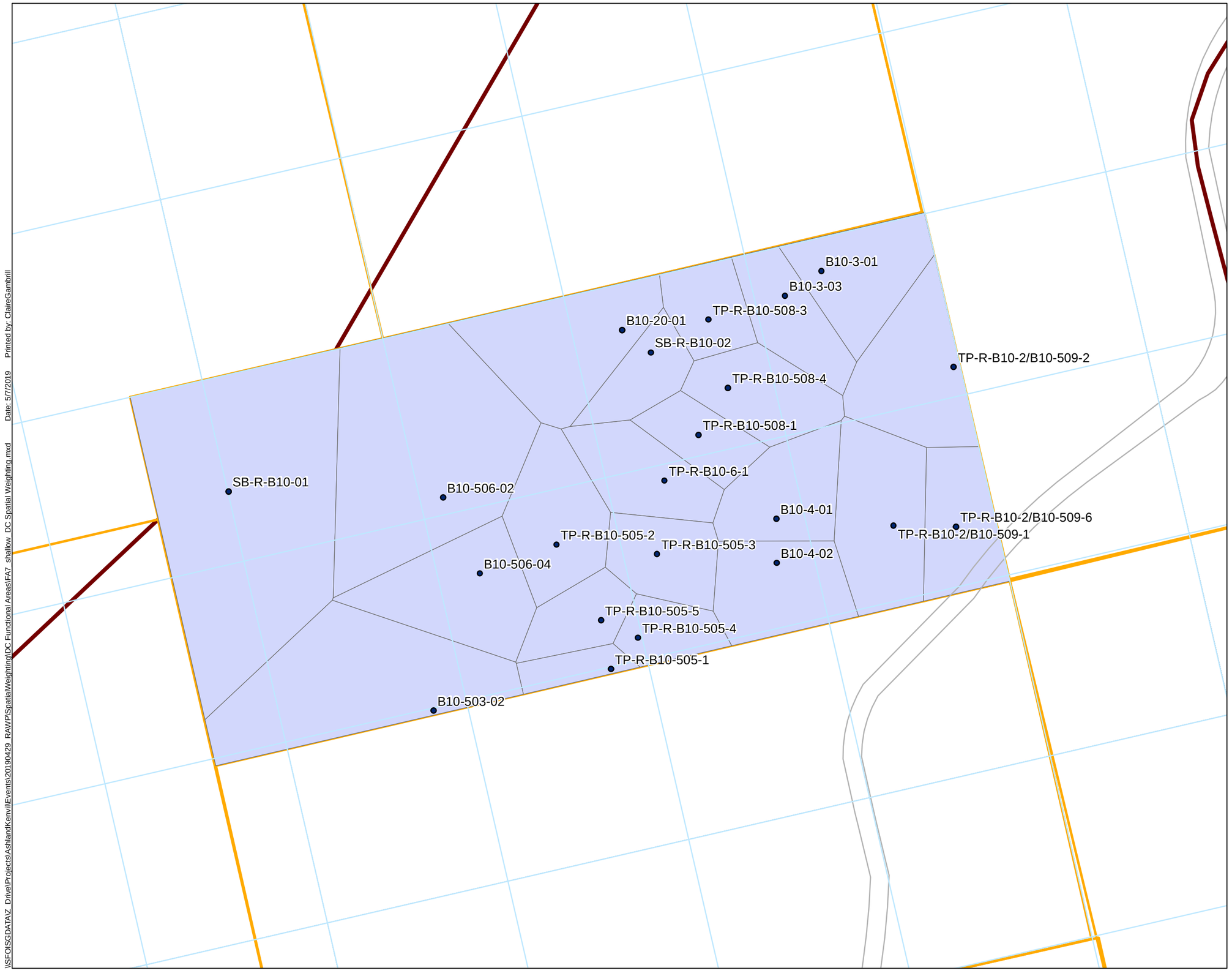

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 7 Shallow

1540001*57

Exhibit 7-5

Date: 5/7/2019 Printed by: ClaireGambrill

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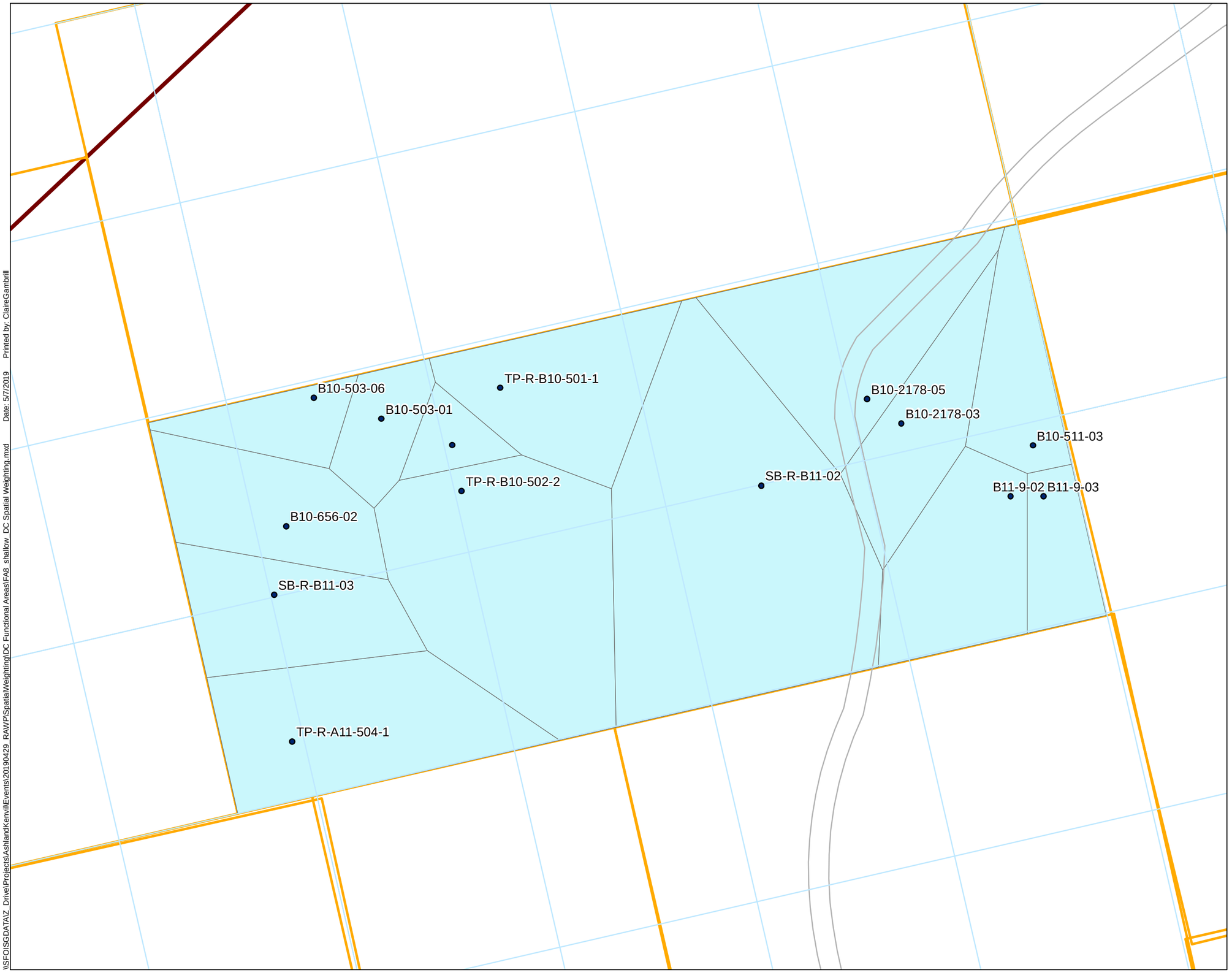

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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

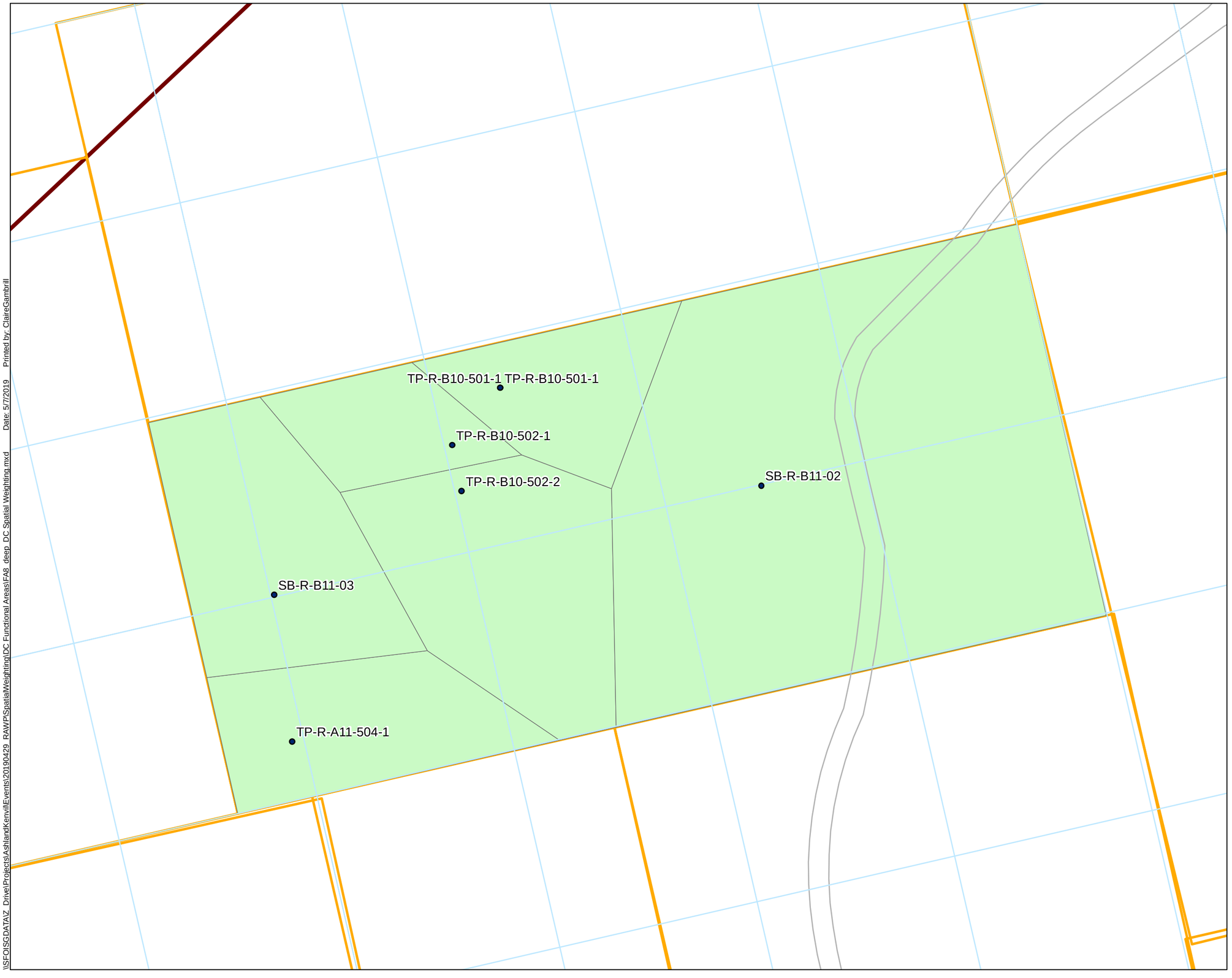
Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 8 Shallow

1540001*57

Exhibit 7-6



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

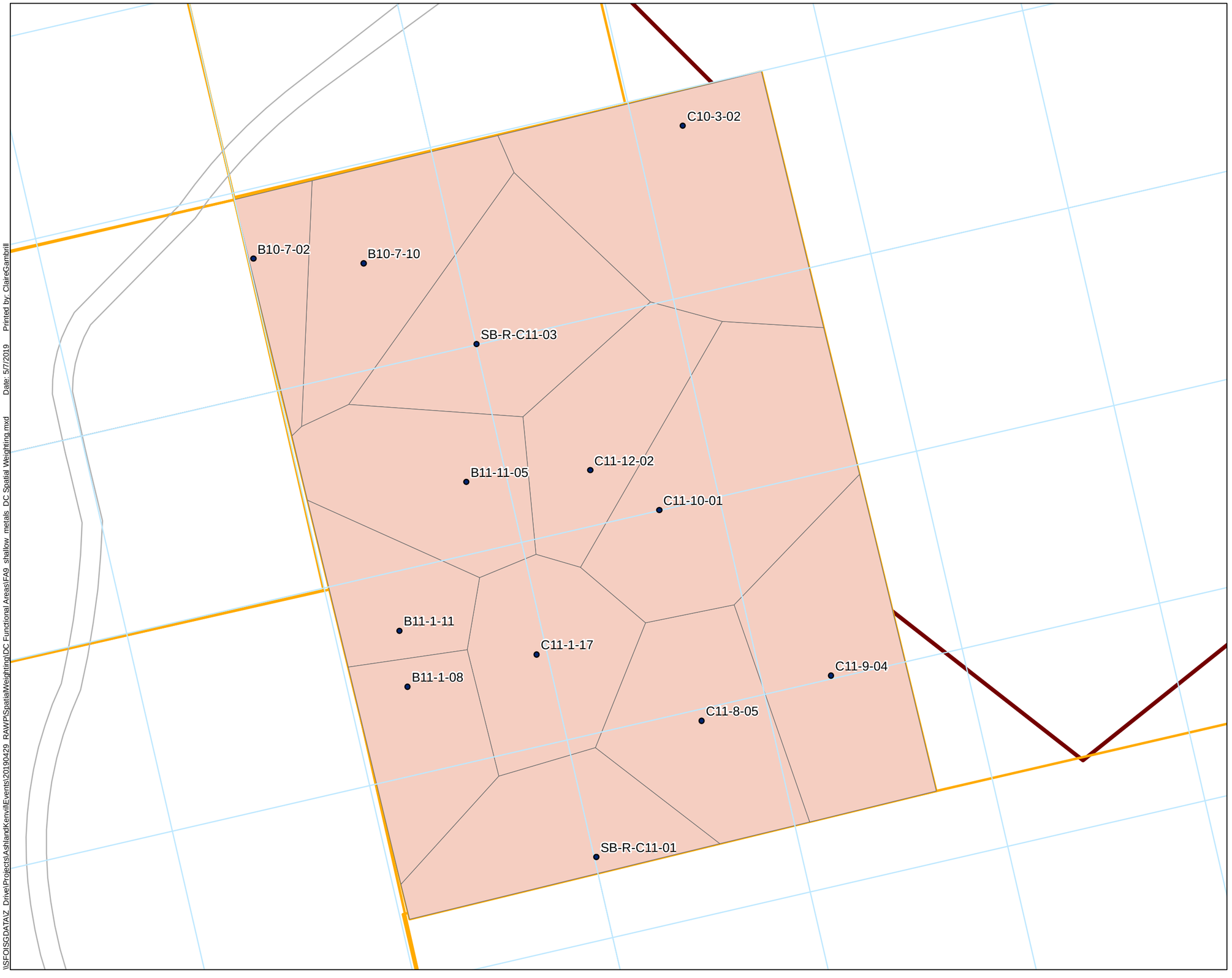
Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 8 Deep

1540001*57

Exhibit 7-7



Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

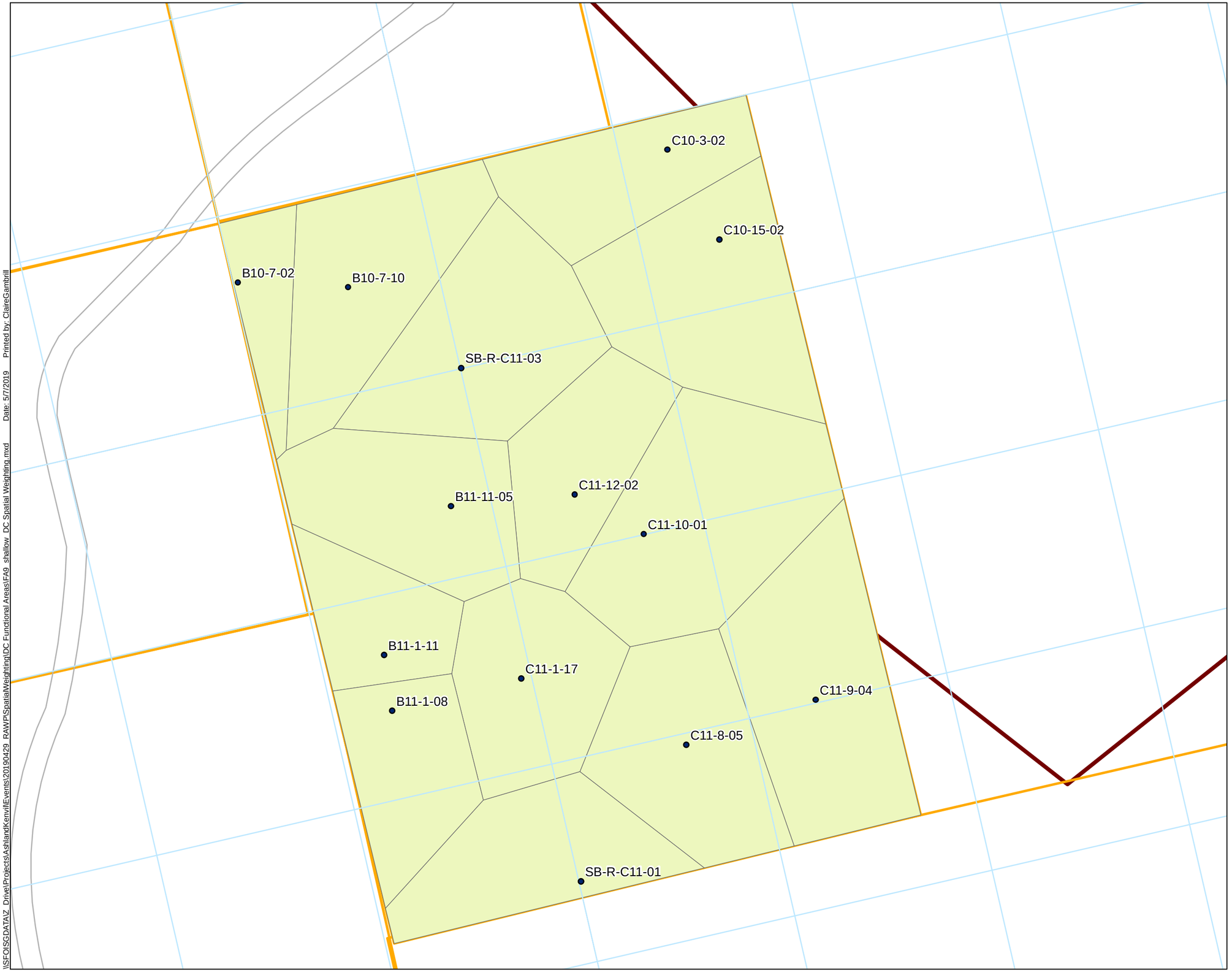
Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 9 Shallow (Metals)

1540001*57

Exhibit 7-8



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

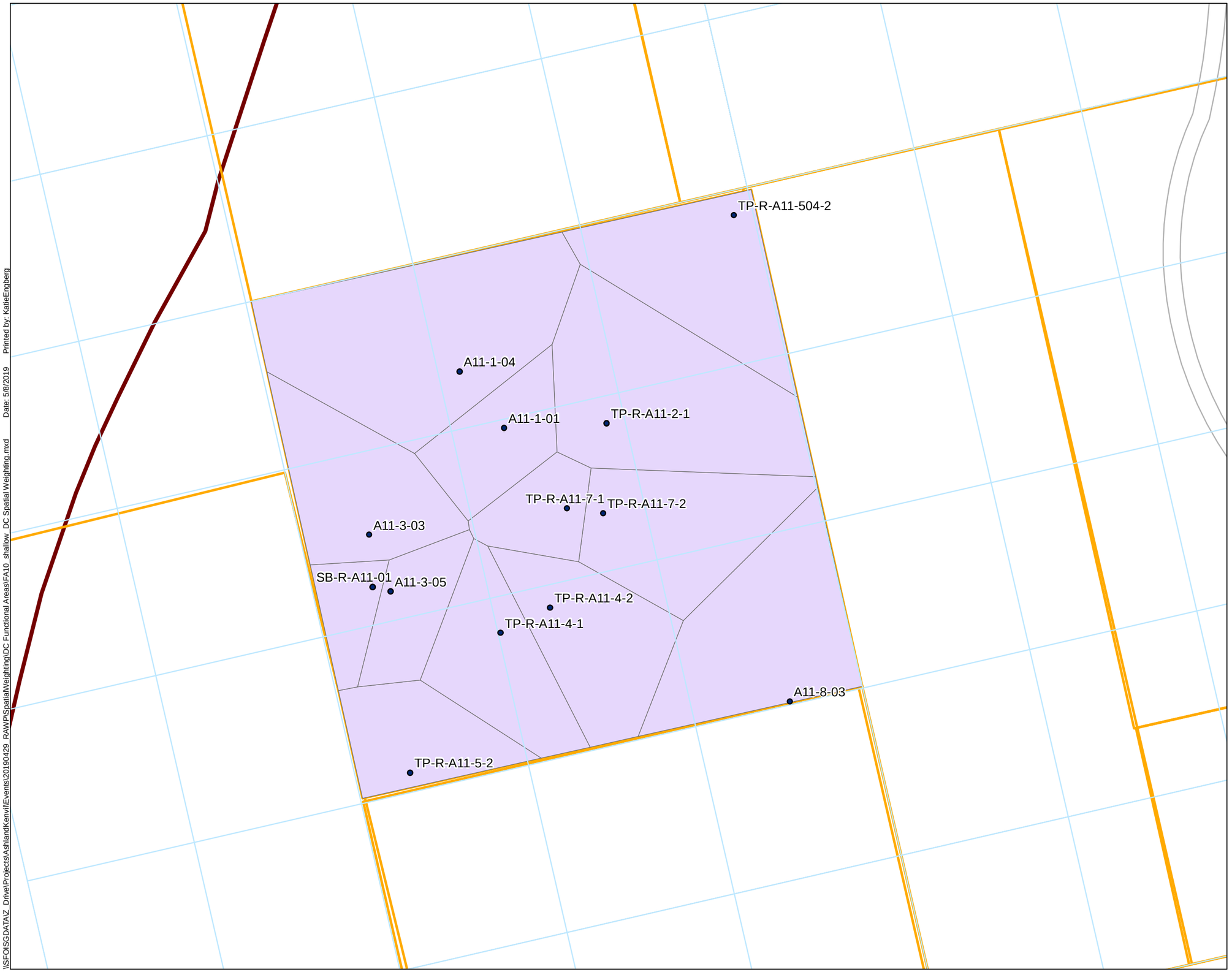
Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 9 Shallow (Benzo[a]pyrene)

1540001*57

Exhibit 7-9



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 10 Shallow

1540001*57

Exhibit 7-10

B11-602C-08

B11-513-02

SB-R-B11-04

B11-6-03

B11-2044-08

B11-2044-04

B11-2044-06

B11-2044-05

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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

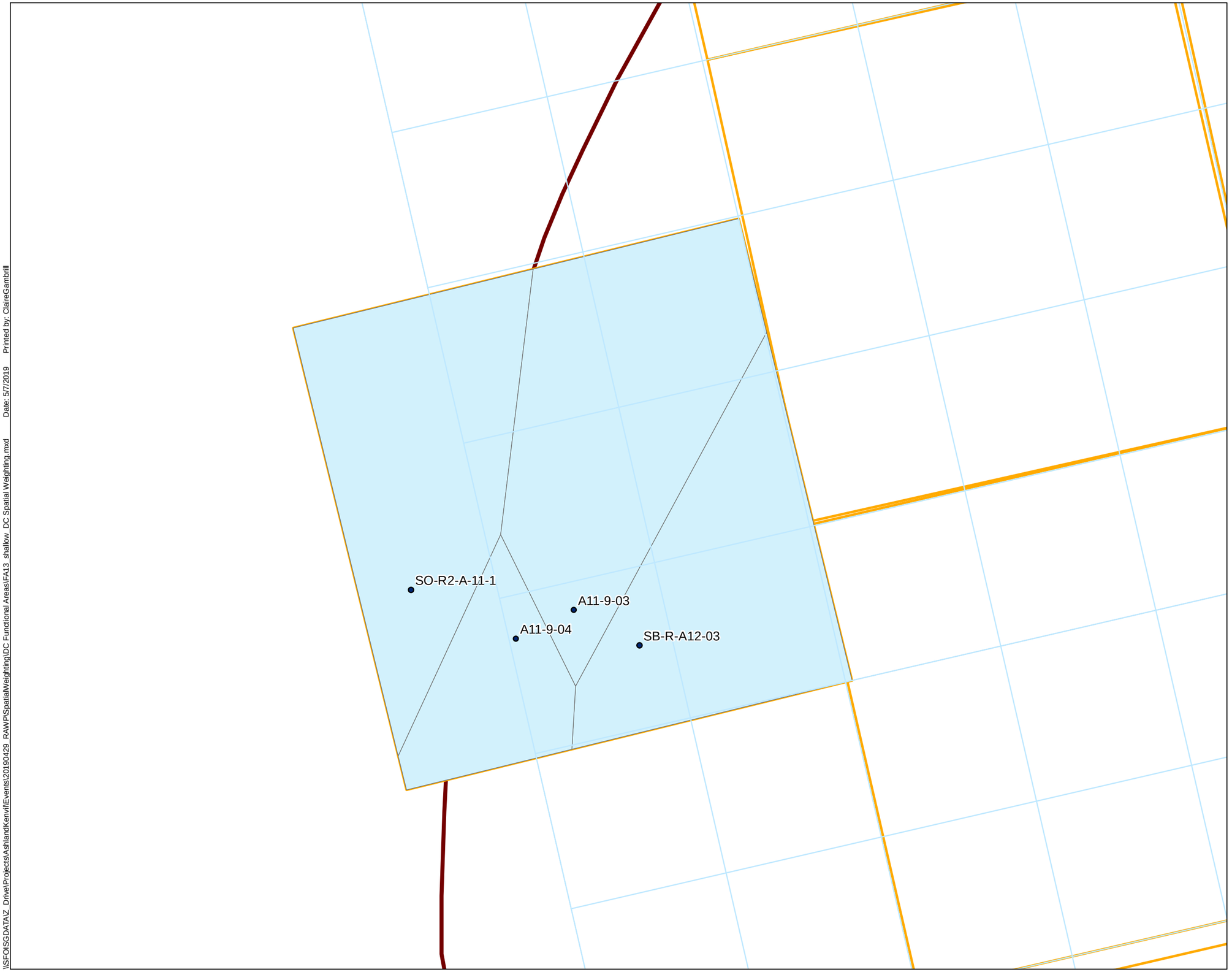
Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 12 Shallow

1540001*57

Exhibit 7-11



Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 13 Shallow

1540001*57

Exhibit 7-12

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C11-4-19
C11-4-20
C11-4-13
C11-30-05
C11-4A-01
C11-4A-02
C11-27-02
C11-30-01
C11-30-06
C11-4B-01
C11-7-02
C11-4-09

Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

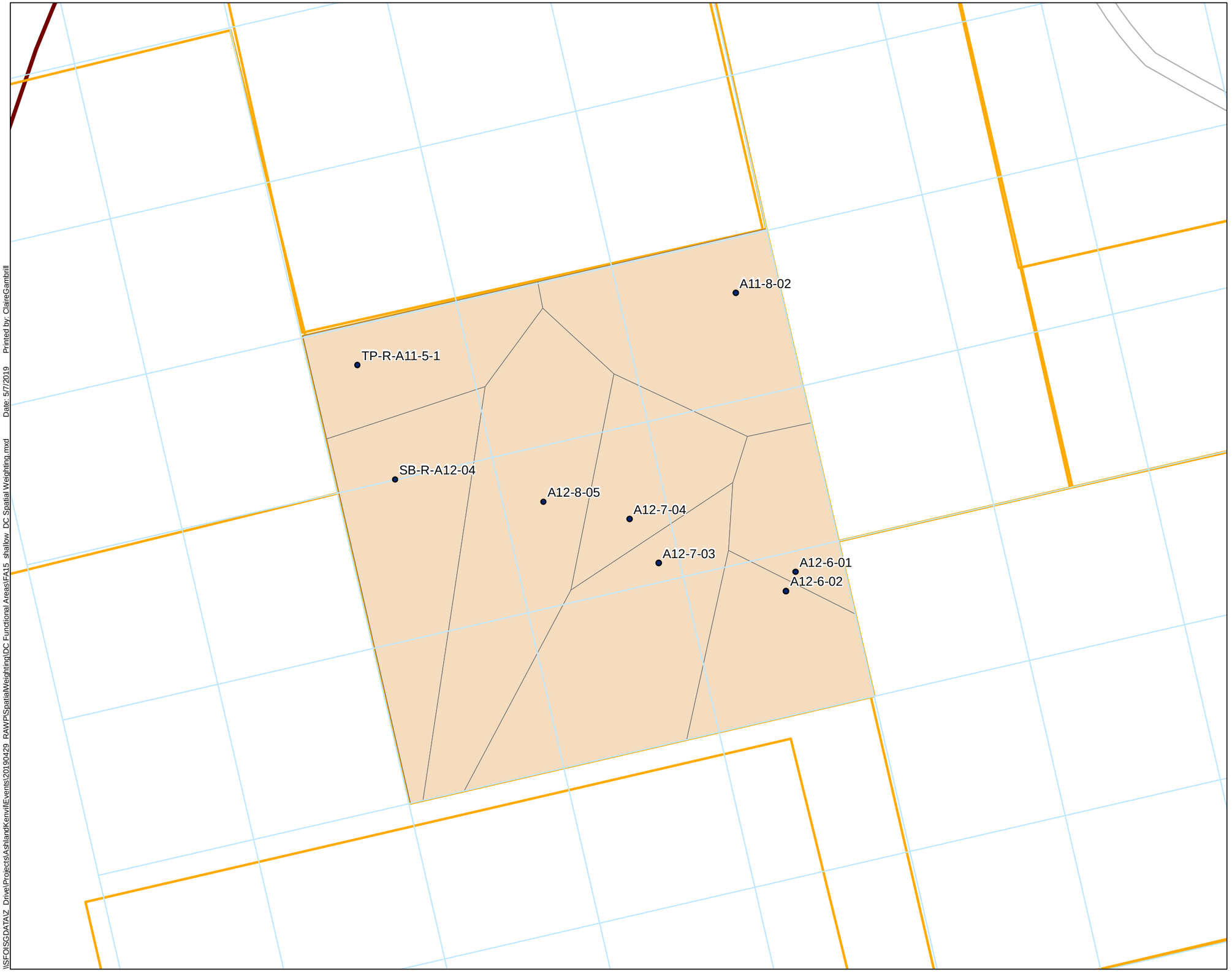
TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 14 Shallow

1540001*57

Exhibit 7-13

Printed by: ClaireGambrill Date: 5/7/2019 \\SFOISGDATA\Z_Drive\Projects\AshlandKenvilEvents\20190429_RAWPSpatialWeighting\DC Functional Areas\FA14_shallow_DC Spatial Weighting.mxd



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 15 Shallow

1540001*57

Exhibit 7-14

A12-3-03
B12-237-01
B12-450-03
SB-R-B12-01
SB-R-B12-03
SO-R2-B-12-1

Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 17 Shallow (Arsenic)

1540001*57

Exhibit 7-15

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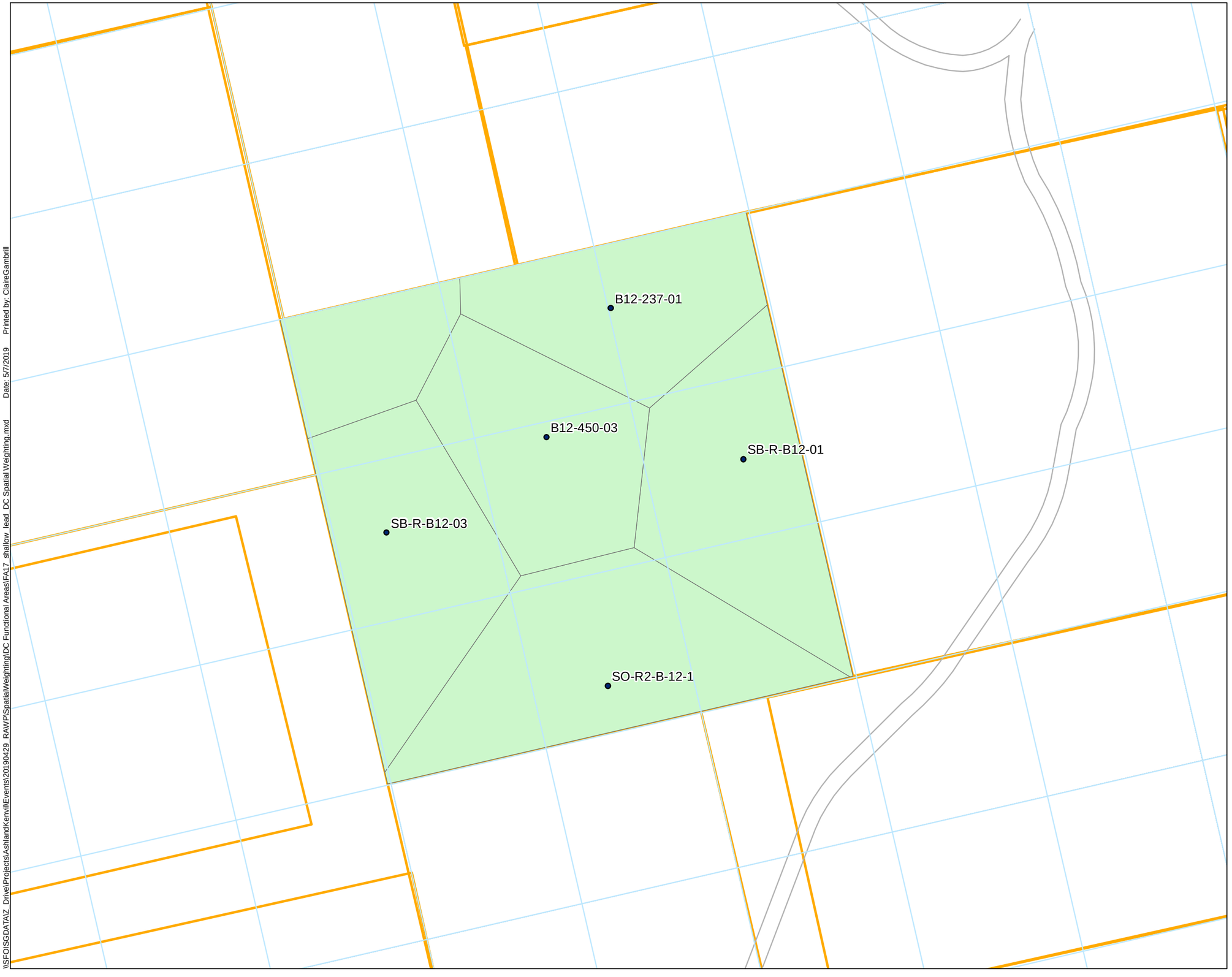

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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

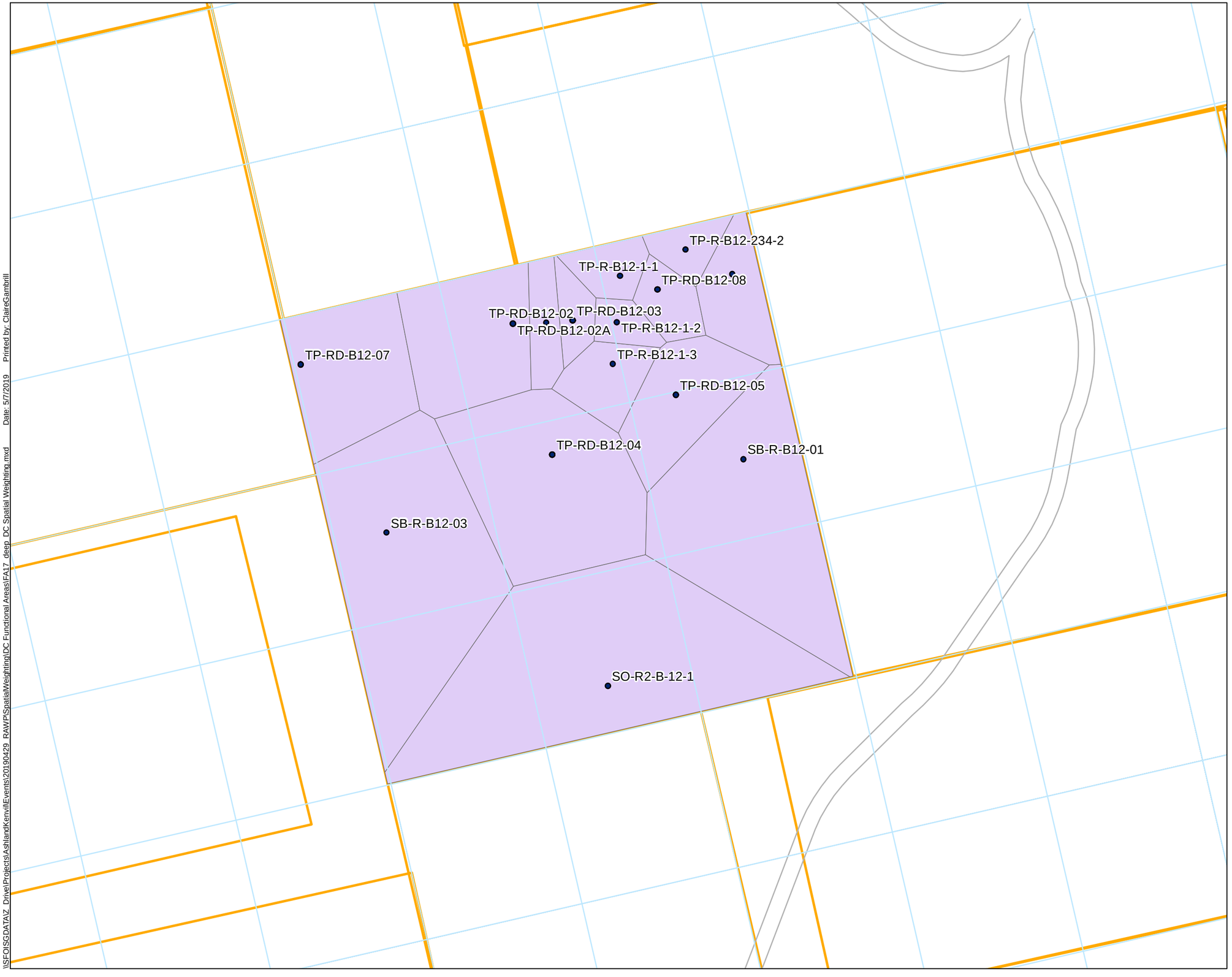
Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 17 Shallow (Lead)

1540001*57

Exhibit 7-16



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 17 Deep

1540001*57

Exhibit 7-17

C12-4-01
C12-3-03
C12-274-01
C12-1-03
C12-274-05
C12-1-04
C12-5-02
SB-R-C12-04
C12-8229-01
C12-8229-03

Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 19 Shallow

1540001*57

Exhibit 7-18

Date: 5/7/2019 Printed by: ClaireGambrill
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SB-R-B13-04
SD-B13-1-01
SD-B13-3-01
B13-8-04
B13-8-05
TP-R-B13-1-4
TP-R-B13-1-1
TP-R-B13-1-3
TP-R-B13-2-3
SB-R-B13-02
TP-R-B13-2-7
TP-R-B13-2-8
TP-R-B13-2-4

Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 21 Shallow

1540001*57

Exhibit 7-19

Printed by: ClaireGambrill Date: 5/7/2019
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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

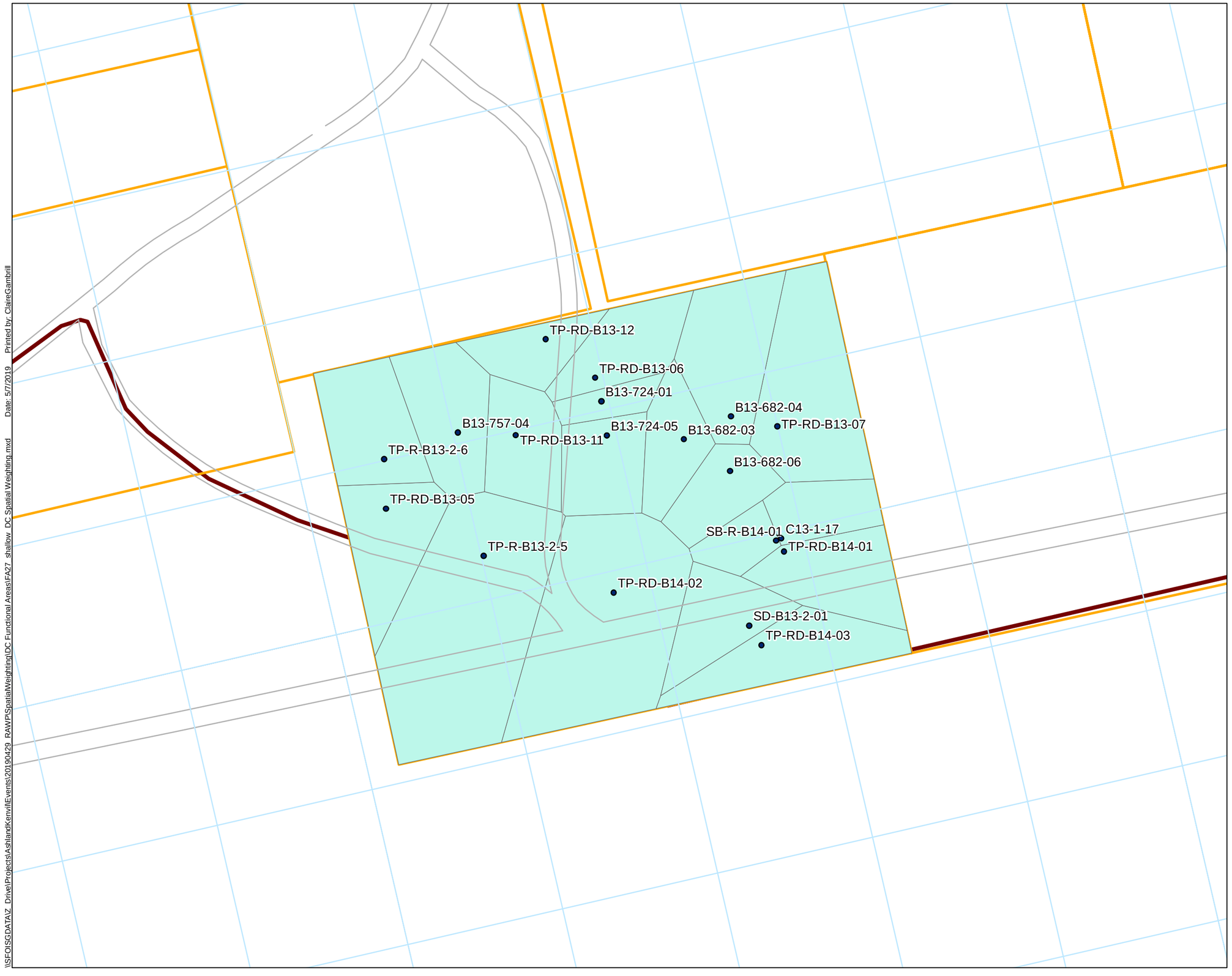
Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 22 Shallow

1540001*57

Exhibit 7-20



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Legend

- Roads
- Direct Contact Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

Kennedy/Jenks Consultants

TNT Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Direct Contact Spatial Weighting
Functional Area 27 Shallow

1540001*57

Exhibit 7-21

Exhibit 8

Spatial Weighting Output Tables – Impact to Groundwater

Exhibit 8-1 IGW Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA1_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	3	7	1029	908	985	SO-R2-B-9-2	2013-11-14 13:18	0.5-1.0 ft	SO-R2-B-9-2_20131114	<Null>	ug/kg	370	370	2470
2	6	11	1036	1012	815	SO-R2-B-9-1	2013-11-14 12:18	9.5-10.0 ft	SO-R2-B-9-1_20131114	<Null>	ug/kg	350	350	2290
3	7	9	1034	1001	231	B9-2-05	1999-10-15	0.0-2.0 ft	B9-2-052N	<Null>	ug/kg		480	14500
4	8	5	1027	906	983	SO-R2-C-8-2	2013-11-14 11:43	0.5-1.0 ft	SO-R2-C-8-2_20131114	<Null>	ug/kg	360	360	2400
5	9	4	1026	905	982	C8-1-01	1999-11-18	0.0-0.5 ft	C8-1-010.5N	<Null>	ug/kg		550	1300
6	10	2	1024	903	980	SB-R-C9-02	2006-05-16	2.5-3.0 ft	SB-R-C9-023.0N	<Null>	ug/kg	360	<Null>	2440

Exhibit 8-1 IGW Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance
7310	1590	326	25700	62900	72.3	15500	1120	3710	137000	370	410	452768.904	748699.7295	Point	2037	INT-CONTOUR	824		7.327365
5270	1380	572	24000	5530	61.5	14200	1110	796	52900	20	38	452815.0865	748810.1867	Point	905	INT-CONTOUR	828		9.791291
24100	880	590	171000	2190000	720	25900	3000	12800	258000	3700	480	452823.4	748784	Point	901	INT-CONTOUR	826		14.074336
5680	839	600	14100	15700	28.5	11800	1240	3600	54400	72	40	453003.9793	749001.1384	Point	297	INT-CONTOUR	824		11.63484
14900	230	410	31300	10200000	1100	7200	2800	1500	112000	280	550	453044.8	748940.4	Point	297	INT-CONTOUR	824		9.175189
4080	944	1190	20700	7010	9.7	16600	1240	2360	36700	210	200	452917.967	748859.9135	Point	291	INDEX-CONTOUR	820		7.645991

Exhibit 8-1 IGW Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1
30	31	748	SOLID	1097.706566	557.706079	76	302	SO-R2-B-9-2	2013-11-14 13:18	0.5-1.0 ft	SO-R2-B-9-2_20131114		ug/kg
30	31	748	SOLID	1097.706566	588.09041	80	301	SO-R2-B-9-1	2013-11-14 12:18	9.5-10.0 ft	SO-R2-B-9-1_20131114		ug/kg
30	31	748	SOLID	1097.706566	564.283297	78	103	B9-2-05	1999-10-15	0.0-2.0 ft	B9-2-052N		ug/kg
30	31	748	SOLID	1097.706566	639.78635	76	308	SO-R2-C-8-2	2013-11-14 11:43	0.5-1.0 ft	SO-R2-C-8-2_20131114		ug/kg
30	31	748	SOLID	1097.706566	568.35893	76	185	C8-1-01	1999-11-18	0.0-0.5 ft	C8-1-010.5N		ug/kg
30	31	748	SOLID	1097.706566	557.274278	72	282	SB-R-C9-02	2006-05-16	2.5-3.0 ft	SB-R-C9-023.0N		ug/kg

Exhibit 8-1 IGW Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
370	370	2470	7310	1040	326	25700	62900	72.3	15500	1120	3710	137000	370	410	452768.904	748699.7295
350	350	2290	5270	1380	572	24000	5530	61.5	14200	1110	796	52900	20	38	452815.0865	748810.1867
	480	14500	24100	880	590	171000	2190000	720	25900	3000	12800	258000	3700	480	452823.4	748784
360	360	2400	5680	812	600	14100	15700	28.5	11800	1240	3600	54400	72	40	453003.9793	749001.1384
	550	1300	14900	230	410	31300	10200000	1100	7200	2800	1500	112000	280	550	453044.8	748940.4
360		2360	4080	944	1190	20700	7010	9.7	16600	1240	2360	36700	200	200	452917.967	748859.9135

Exhibit 8-1 IGW Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Antimony	Spatial Weighted_Arsenic	Spatial Weighted_Beryllium	Spatial Weighted_Lead	Spatial Weighted_Mercury
34	1	50151.70507	381.656939	8965.777753	0.178773139	441.5696539	1306.831648	284.2492914	11244.83046	12.92529797
34	1	50151.70507	309.4663061	3580.065999	0.071384731	163.4710351	376.1975349	98.51092943	394.757565	4.390160985
34	1	50151.70507	372.9718568	7729.00203	0.154112448	2234.630493	3714.109992	135.6189541	337506.2607	110.9609624
34	1	50151.70507	438.2878154	8469.037295	0.168868382	405.284117	959.1724103	141.6805726	2651.233599	4.81274889
34	1	50151.70507	437.6871595	8252.983387	0.164560375	213.9284873	2451.949586	37.84888622	1678515.824	181.0164124
34	1	50151.70507	452.5587896	13154.8825	0.2623018	640.0163913	1070.191343	247.6128989	1838.735616	2.544327457
					SUM:	4098.900178	9878.452514	945.5215326	2032151.642	316.6499101

Exhibit 8-1 IGW Spatial Weighting Output Functional Area 1 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_Benzoapyrene
66.14606151
1.427694629
570.2160569
12.15852351
46.07690496
55.08337794
751.1086195

Exhibit 8-2 IGW Spatial Weighting Output Functional Area 2 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA2_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	4	4	1032	911	988	SB-R-C9-01	2006-05-16	2.0-2.5 ft	SB-R-C9-012.5N	<Null>	ug/kg	330	<Null>	2230	25300
2	6	2	1013	683	343	SB-R-C9-03	2006-05-16	2.0-2.5 ft	SB-R-C9-032.5N	<Null>	ug/kg	350	<Null>	2250	3140

Exhibit 8-2 IGW Spatial Weighting Output Functional Area 2 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
484	862	16300	6720	107	7420	2230	2230	22600	190	190	453175.5963	748923.6759	Point	297	INT-CONTOUR	824		12.198558	28
1000	980	21000	6430	25.2	17200	2250	1150	39100	190	190	452960.285	748651.693	Point	2100	INT-CONTOUR	804		5.678849	30

Exhibit 8-2 IGW Spatial Weighting Output Functional Area 2 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
29	746	SOLID	1303.307369	493.92104	78	279	SB-R-C9-01	2006-05-16	2.0-2.5 ft	SB-R-C9-012.5N		ug/kg	330
31	748	SOLID	1097.706566	374.134117	56	284	SB-R-C9-03	2006-05-16	2.0-2.5 ft	SB-R-C9-032.5N		ug/kg	350

Exhibit 8-2 IGW Spatial Weighting Output Functional Area 2 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	2230	25300	484	862	16300	6720	107	7420	2230	2230	22600	190	190	453175.5963	748923.6759	35
	2250	3140	1000	980	21000	6430	25.2	17200	2250	1150	39100	190	190	452960.285	748651.693	35

Exhibit 8-2 IGW Spatial Weighting Output Functional Area 2 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic
2	39945.95747	589.8317756	19459.68521	0.487150301	12324.90262
2	39945.95747	610.3634514	20486.27027	0.512849649	1610.347898
				SUM:	13935.25052

Exhibit 8-3 IGW Spatial Weighting Output Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA3_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	4	8	1010	679	12	SB-R-C9-04	2006-05-25	0.5-1.0 ft	SB-R-C9-041.0N	<Null>	ug/kg	350	<Null>
2	6	6	1003	629	626	SO-R2-B-9-3	2013-11-11 11:14	0.3-0.8 ft	SO-R2-B-9-3_20131111	<Null>	ug/kg	340	340
3	7	4	998	402	18	SB-R-B10-03	2006-06-13	0.5-1.0 ft	SB-R-B10-031.0N	<Null>	ug/kg	360	<Null>
4	8	3	991	851	69	TP-R-B10-2/B10-509-7	2006-08-10	4.0-4.5 ft	TP-R-B10-2/B10-509-74.5N	<Null>	ug/kg	360	<Null>

Exhibit 8-3 IGW Spatial Weighting Output Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName
2310	3640	724	2890	12500	5520	20.5	10900	2310	2310	29100	190	190	453223.8161	748687.342	Point	2101	INT-CONTOUR	802	
2220	5600	1010	554	14600	25300	22.7	10300	2220	3320	46500	14	38	452854.6018	748416.6059	Point	2040	INT-CONTOUR	796	
1160	3270	800	2870	16300	5930	31.9	11200	2290	2290	35400	200	200	452756.797	748203.791	Point	1788	INT-CONTOUR	792	
1240	4290	713	579	19100	201000	31.4	10300	2310	2310	39000	200	200	452950.651	748406.031	Point	1777	INT-CONTOUR	788	

Exhibit 8-3 IGW Spatial Weighting Output Functional Area 3 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
6.885674	28	29	746	SOLID	1303.307369	260.420575	56	42 3	73169.12415	640.9616212	22048.08227	0.301330411	1663.34387	
11.83093	30	31	748	SOLID	1097.706566	360.283173	48	42 3	73169.12415	575.3275275	15336.29234	0.2096006	5302.895186	
11.726894	32	33	750	SOLID	570.448977	233.926855	42	42 3	73169.12415	490.5743828	14221.43569	0.194363891	1152.577875	
3.551196	30	31	748	SOLID	1097.706566	278.978078	40	42 3	73169.12415	693.7235713	21563.3861	0.294706085	59235.92303	
												SUM:	67354.73996	

Exhibit 8-4 IGW Spatial Weighting Output Functional Area 4 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA4_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	11	1016	706	852	UD-06	1999-09-15	0.0-1.0 ft	UD-061N	<Null>	ug/kg	190	190	1100
2	4	4	958	55	574	SB-R-C10-04	2006-06-12	2.0-2.5 ft	SB-R-C10-042.5N	<Null>	ug/kg	350	<Null>	2290
3	6	10	1015	705	851	SB-R-A11-02	2006-05-25	2.5-3.0 ft	SB-R-A11-023.0N	<Null>	ug/kg	350	<Null>	2290
4	7	6	1000	404	20	SB-R-B10-01	2006-05-25	0.5-1.0 ft	SB-R-B10-011.0FD	SB-R-B10-011.0N	ug/kg	350	<Null>	2290
5	9	1	865	861	696	SD-C9-1-01	2001-04-25	0.5-1.0 ft	SD-C9-1-011N	<Null>	ug/kg	99	99	910

Exhibit 8-4 IGW Spatial Weighting Output Functional Area 4 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
5900	690	170	11700	37500	50	7200	1500	2200	41000	390	390	452389.3	747698.2	Point	2302	INDEX-CONTOUR	810		0.40272	34
2020	1450	2870	28800	5360	23.3	19100	1820	2010	45900	190	190	453019.775	748435.372	Point	1962	INT-CONTOUR	784		4.453206	30
2380	989	2860	20200	4670	75.3	12700	2290	2290	36400	200	200	452406.9664	747716.2757	Point	2302	INDEX-CONTOUR	810		5.296068	34
3390	967	2860	19900	8990	34.3	13400	2290	2290	39700	200	200	452602.729	748006.3618	Point	2042	INT-CONTOUR	798		0.634365	34
2700	520	77	18100	68800	29	8800	670	1200	80500	150	33	453062.1	748392.1	Point	2128	INT-CONTOUR	778		7.718246	30

Exhibit 8-4 IGW Spatial Weighting Output Functional Area 4 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Beryllium
35	752	SOLID	265.722142	273.518752	58	67	4	95689.65008	262.6424779	3718.914821	0.038864337	26.81639262
31	748	SOLID	1097.706566	226.224961	36	67	4	95689.65008	831.8609056	18310.11197	0.191348928	277.4559458
35	752	SOLID	265.722142	259.257416	58	67	4	95689.65008	547.0545582	16450.01296	0.171910055	170.0190439
35	752	SOLID	265.722142	229.841512	46	67	4	95689.65008	1123.980556	42504.80421	0.444194374	429.5359596
31	748	SOLID	1097.706566	176.964143	30	67	4	95689.65008	815.9905633	14705.73044	0.153681515	79.91438803
											SUM:	983.7417299

Exhibit 8-5 IGW Spatial Weighting Output Functional Area 5 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA5_shallow_13DNB	Input_FID	Location	Sample_Date	Sample_Depths	F1_3_Dinitrobenzene	Nitrobenzene	Lead	N_Nitrosodiphenylamine	FID_FunctionalArealGW	Functional_Area	FA_Area_SF
1	3	24	C10-440-02	1999-10-08	0.0-2.0 ft	200	200	1550000	510	44	5	104887.6491
2	4	45	TP-RD-B10-13	2017-10-13 8:15	1.0-1.5 ft	110	110	<Null>	<Null>	44	5	104887.6491
3	7	42	SB-R-B10-02	2006-05-25	0.5-1.0 ft	380	<Null>	234000	210	44	5	104887.6491
4	8	37	TP-RD-B10-14A	2017-10-16 10:40	1.0-1.5 ft	110	110	<Null>	<Null>	44	5	104887.6491
5	9	36	B10-506-02	1999-10-14	0.0-1.0 ft	210	210	250000	400	44	5	104887.6491
6	10	34	TP-RD-B10-06	2017-10-04 8:45	5.0-5.5 ft	120	120	<Null>	<Null>	44	5	104887.6491
7	11	30	TP-RD-B10-07	2017-10-03 14:10	1.0-1.5 ft	120	120	<Null>	<Null>	44	5	104887.6491
8	12	28	TP-R-B10-508-2	2006-08-09	2.0-2.5 ft	2300	<Null>	240000	180	44	5	104887.6491
9	13	22	TP-RD-B10-14	2017-10-12 15:06	1.0-1.5 ft	120	120	<Null>	<Null>	44	5	104887.6491
10	14	21	B10-503-06	1999-10-12	0.0-2.0 ft	217.4	217.4	244000	410	44	5	104887.6491
11	15	20	B10-506-04	2000-07-21	0.0-2.0 ft	821	244	21700	438	44	5	104887.6491
12	16	19	TP-R-B10-508-3	2006-08-09	5.5-6.0 ft	40000	<Null>	9780	200	44	5	104887.6491
13	17	15	TP-R-B10-508-1	2006-08-09	10.0-10.5 ft	1100	<Null>	71100	200	44	5	104887.6491
14	18	13	B10-503-07	2006-08-11	11.5-12.0 ft	320	<Null>	<Null>	180	44	5	104887.6491
15	19	12	B10-503-02	1999-10-11	0.0-1.0 ft	230	230	162000	380	44	5	104887.6491
16	20	8	TP-R-B10-508-4	2006-08-09	1.5-2.0 ft	1900	<Null>	6820000	200	44	5	104887.6491
17	21	7	TP-R-B10-6-1	2006-08-11	4.0-4.5 ft	460	<Null>	990000	200	44	5	104887.6491
18	22	3	TP-R-B10-505-2	2006-08-09	1.5-2.0 ft	340	<Null>	802000	190	44	5	104887.6491

Exhibit 8-5 IGW Spatial Weighting Output Functional Area 5 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
858.3795299	33010.71456	0.314724516	62.94490312
271.4605786	4016.715999	0.038295414	4.212495594
186.6370146	2281.621873	0.021753008	8.266143049
646.8321717	22559.15484	0.21507923	23.65871533
225.7707864	2913.131672	0.027773829	5.832504171
489.2679525	8578.727721	0.081789684	9.814762129
236.4000456	3840.791531	0.036618149	4.394177842
138.4290958	1177.534777	0.01122663	25.82124788
189.3921607	1240.076798	0.011822906	1.418748699
213.1305335	2673.766206	0.025491716	5.541899145
228.631082	3476.080758	0.033140992	27.20875456
477.3356843	9722.815767	0.092697432	3707.897297
111.7122219	752.323426	0.00717266	7.889925796
89.29304546	383.3805234	0.003655154	1.16964932
182.01571	2065.178448	0.019689434	4.528569827
211.6426521	1892.169545	0.018039965	34.27593396
146.7173518	1287.066546	0.012270907	5.644617034
221.1018296	3016.316317	0.028757593	9.777581597
		SUM:	3950.297926

Exhibit 8-6 IGW Spatial Weighting Output Functional Area 5 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA5_shallow_lead	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	3	38	907	295	543	TP-R-C10-439-2	2006-08-11	1.5-2.0 ft	TP-R-C10-439-22.0N	<Null>	ug/kg	<Null>	<Null>
2	4	44	927	360	712	A11-570-05	1999-10-14	0.0-1.0 ft	A11-570-051N	<Null>	ug/kg	<Null>	400
3	7	25	866	862	697	TP-R-C10-439-1	2006-08-11	1.5-2.0 ft	TP-R-C10-439-12.0N	<Null>	ug/kg	<Null>	<Null>
4	8	24	864	860	695	C10-440-02	1999-10-08	0.0-2.0 ft	C10-440-022N	<Null>	ug/kg	200	200
5	9	42	911	315	322	SB-R-B10-02	2006-05-25	0.5-1.0 ft	SB-R-B10-021.0N	<Null>	ug/kg	380	<Null>
6	10	40	909	302	732	B10-20-01	1999-10-15	0.0-1.0 ft	B10-20-011FD	B10-20-011N	ug/kg	<Null>	550
7	11	36	877	1023	42	B10-506-02	1999-10-14	0.0-1.0 ft	B10-506-021N	<Null>	ug/kg	210	210
8	12	28	869	867	502	TP-R-B10-508-2	2006-08-09	2.0-2.5 ft	TP-R-B10-508-22.5N	<Null>	ug/kg	2300	<Null>
9	13	21	851	665	700	B10-503-06	1999-10-12	0.0-2.0 ft	B10-503-062N	<Null>	ug/kg	217.4	217.4
10	14	20	850	664	699	B10-506-04	2000-07-21	0.0-2.0 ft	B10-506-042N	<Null>	ug/kg	821	244
11	15	17	847	628	70	TP-R-B10-508-3	2006-08-09	1.5-2.0 ft	TP-R-B10-508-32.0N	<Null>	ug/kg	120	<Null>
12	16	14	844	602	57	TP-R-B10-508-1	2006-08-09	1.5-2.0 ft	TP-R-B10-508-12.0N	<Null>	ug/kg	330	<Null>
13	17	12	828	252	421	B10-503-02	1999-10-11	0.0-1.0 ft	B10-503-021N	<Null>	ug/kg	230	230
14	18	8	824	171	214	TP-R-B10-508-4	2006-08-09	1.5-2.0 ft	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	ug/kg	1900	<Null>
15	19	7	823	996	942	TP-R-B10-6-1	2006-08-11	4.0-4.5 ft	TP-R-B10-6-14.5N	<Null>	ug/kg	460	<Null>
16	20	3	789	755	283	TP-R-B10-505-2	2006-08-09	1.5-2.0 ft	TP-R-B10-505-22.0N	<Null>	ug/kg	340	<Null>
17	21	2	736	389	39	B10-3-03	1999-10-15	0.0-2.0 ft	B10-3-032N	<Null>	ug/kg	<Null>	490
18	22	1	735	388	38	B10-3-01	2000-06-16	0.0-1.0 ft	B10-3-011N	<Null>	ug/kg	<Null>	410

Exhibit 8-6 IGW Spatial Weighting Output Functional Area 5 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName
1140	3670	347	528	12000	160000	46.3	5310	2110	2110	21700	<Null>	<Null>	453213.7152	748444.4218	Point	2308	INDEX-CONTOUR	780	
520	4500	610	280	23800	227000	370	10800	1000	940	119000	37	24000	452560.2	747723.6	Point	2039	INT-CONTOUR	786	
4360	47200	230	526	33700	7510000	103	4630	2100	2580	37100	<Null>	<Null>	453191.4204	748429.1225	Point	2128	INT-CONTOUR	778	
470	5400	850	280	18800	1550000	70	11000	1100	950	83000	510	510	453070.9	748375.7	Point	2128	INT-CONTOUR	778	
2480	3890	688	621	22400	234000	96.3	14300	2480	2480	82200	210	210	452830.368	748081.338	Point	1963	INT-CONTOUR	782	
7700	37600	510	8800	177000	8400000	530	34300	12500	25000	4430000	390	550	452814.9	748093.5	Point	1963	INT-CONTOUR	782	
510	4800	500	310	64100	250000	90	10300	1200	1000	50600	23	400	452718.4	748003.2	Point	1963	INT-CONTOUR	782	
2130	2090	134	532	25400	240000	92.2	3250	2130	2130	28800	62	180	452829.285	748046.61	Point	2226	INDEX-CONTOUR	780	
470	4000	400	280	18000	244000	110	6500	1100	930	79400	410	410	452676.9	747872.6	Point	2229	INDEX-CONTOUR	780	
496	5920	735	739	20200	21700	436	11800	1120	827	65400	438	438	452738.2	747962.2	Point	2226	INDEX-CONTOUR	780	
1980	3250	804	496	12700	16500	34.7	10100	1980	1980	37300	83	170	452861.454	748099.093	Point	2128	INT-CONTOUR	778	
2120	1650	345	92.4	12100	269000	135	3240	2120	2120	77700	180	180	452856.125	748037.007	Point	2043	INT-CONTOUR	778	
510	2300	540	700	12200	162000	30	6700	510	1000	366000	380	380	452713.2	747888.4	Point	2043	INT-CONTOUR	778	
1520	4670	785	139	178000	6820000	362	12200	2280	2280	228000	300	200	452871.973	748062.244	Point	2127	INT-CONTOUR	776	
2490	4280	466	602	26200	990000	136	8920	2410	1730	88600	200	200	452837.8072	748012.1922	Point	1893	INT-CONTOUR	776	
1210	3360	408	570	126000	802000	71.7	8420	2280	2160	48100	53	190	452779.549	747977.786	Point	1893	INT-CONTOUR	776	
640	4500	770	50	18800	111000	50	11300	570	1300	41800	59	490	452902.8	748111.9	Point	1895	INT-CONTOUR	772	
697	4700	642	246	18600	213000	97	8500	1230	1160	35400	214	410	452922.4	748125.2	Point	1895	INT-CONTOUR	772	

Exhibit 8-6 IGW Spatial Weighting Output Functional Area 5 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area
7.172216	30	31	748	SOLID	1097.706566	47.427093	32	5	shallow	44	5	104887.6491	252.2545448	2518.573561	0.024012108
2.651694	34	35	752	SOLID	265.722142	117.968272	34	5	shallow	44	5	104887.6491	507.1191137	15324.21104	0.146101197
8.012626	30	31	748	SOLID	1097.706566	56.918377	30	5	shallow	44	5	104887.6491	377.108623	8384.154575	0.079934622
1.578733	30	31	748	SOLID	1097.706566	161.443572	30	5	shallow	44	5	104887.6491	595.1888276	19232.62452	0.183364054
16.02024	32	33	750	SOLID	570.448977	110.688315	32	5	shallow	44	5	104887.6491	142.722067	1092.93263	0.010420032
3.603451	32	33	750	SOLID	570.448977	129.574442	32	5	shallow	44	5	104887.6491	256.5805139	2809.78191	0.026788492
2.227113	34	35	752	SOLID	265.722142	152.409086	30	5	shallow	44	5	104887.6491	340.4301003	4410.48962	0.042049657
24.172624	32	33	750	SOLID	570.448977	99.044347	30	5	shallow	44	5	104887.6491	213.1498394	2690.385489	0.025650165
2.432751	34	35	752	SOLID	265.722142	107.557209	28	5	shallow	44	5	104887.6491	454.8922838	12937.63949	0.123347597
8.367049	34	35	752	SOLID	265.722142	106.878149	28	5	shallow	44	5	104887.6491	286.4418946	4361.641791	0.041583941
7.072152	32	33	750	SOLID	570.448977	88.755583	28	5	shallow	44	5	104887.6491	234.6154527	3055.270195	0.02912898
13.464442	32	33	750	SOLID	570.448977	70.545319	28	5	shallow	44	5	104887.6491	111.7122219	752.323426	0.00717266
3.574356	34	35	752	SOLID	265.722142	74.947527	26	5	shallow	44	5	104887.6491	248.4672427	2893.397501	0.027585684
27.077981	32	33	750	SOLID	570.448977	64.973818	26	5	shallow	44	5	104887.6491	154.9310111	1508.836462	0.014385263
4.410022	32	33	750	SOLID	570.448977	78.988339	26	5	shallow	44	5	104887.6491	160.9139019	1441.714999	0.013745327
10.078761	34	35	752	SOLID	265.722142	111.931329	24	5	shallow	44	5	104887.6491	248.1088444	3620.418462	0.034517109
6.024991	32	33	750	SOLID	570.448977	64.839754	22	5	shallow	44	5	104887.6491	255.4238	2778.940817	0.026494452
7.053132	32	33	750	SOLID	570.448977	68.346513	22	5	shallow	44	5	104887.6491	506.4679374	15074.27995	0.143718351
														SUM:	

Exhibit 8-6 IGW Spatial Weighting Output Functional Area 5 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_Lead
3841.937284
33164.97162
600309.0104
284214.2832
2438.28742
225023.3296
10512.41413
6156.03956
30096.8137
902.3715152
480.6281639
1929.44549
4468.88074
98107.49652
13607.87338
27682.72176
2940.884205
30612.00871
1376489.397

Exhibit 8-7 IGW Spatial Weighting Output Functional Area5 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA5_shallow_NB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	3	45	928	361	713	TP-RD-B10-13	2017-10-13 8:15	1.0-1.5 ft	TP-RD-B10-13(01.0-01.5)	<Null>	ug/kg	110
2	6	44	927	360	712	A11-570-05	1999-10-14	0.0-1.0 ft	A11-570-051N	<Null>	ug/kg	<Null>
3	7	40	909	302	732	B10-20-01	1999-10-15	0.0-1.0 ft	B10-20-011FD	B10-20-011N	ug/kg	<Null>
4	8	37	878	1024	417	TP-RD-B10-14A	2017-10-16 10:40	1.0-1.5 ft	TP-RD-B10-14A(01.0-01.5)	<Null>	ug/kg	110
5	9	36	877	1023	42	B10-506-02	1999-10-14	0.0-1.0 ft	B10-506-021N	<Null>	ug/kg	210
6	10	34	875	978	693	TP-RD-B10-06	2017-10-04 8:45	5.0-5.5 ft	TP-RD-B10-06(05.0-05.5)	<Null>	ug/kg	120
7	11	29	870	868	503	TP-RD-B10-07	2017-10-03	2.5-3.0 ft	BD100317A	TP-RD-B10-07(02.5-03.0)	ug/kg	120
8	12	24	864	860	695	C10-440-02	1999-10-08	0.0-2.0 ft	C10-440-022N	<Null>	ug/kg	200
9	13	22	857	799	415	TP-RD-B10-14	2017-10-12 15:06	1.0-1.5 ft	TP-RD-B10-14(01.0-01.5)	<Null>	ug/kg	120
10	14	21	851	665	700	B10-503-06	1999-10-12	0.0-2.0 ft	B10-503-062N	<Null>	ug/kg	217.4
11	15	20	850	664	699	B10-506-04	2000-07-21	0.0-2.0 ft	B10-506-042N	<Null>	ug/kg	821
12	16	12	828	252	421	B10-503-02	1999-10-11	0.0-1.0 ft	B10-503-021N	<Null>	ug/kg	230
13	17	2	736	389	39	B10-3-03	1999-10-15	0.0-2.0 ft	B10-3-032N	<Null>	ug/kg	<Null>
14	18	1	735	388	38	B10-3-01	2000-06-16	0.0-1.0 ft	B10-3-011N	<Null>	ug/kg	<Null>

Exhibit 8-7 IGW Spatial Weighting Output Functional Area5 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452668.71	747956.68	Point	2039	INT-CONTOUR	786
400	520	4500	610	280	23800	227000	370	10800	1000	940	119000	37	24000	452560.2	747723.6	Point	2039	INT-CONTOUR	786
550	7700	37600	510	8800	177000	8400000	530	34300	12500	25000	4430000	390	550	452814.9	748093.5	Point	1963	INT-CONTOUR	782
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452641.17	747850.66	Point	1963	INT-CONTOUR	782
210	510	4800	500	310	64100	250000	90	10300	1200	1000	50600	23	400	452718.4	748003.2	Point	1963	INT-CONTOUR	782
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452841.71	748123.9	Point	2308	INDEX-CONTOUR	780
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452794.31	748041.87	Point	2226	INDEX-CONTOUR	780
200	470	5400	850	280	18800	1550000	70	11000	1100	950	83000	510	510	453070.9	748375.7	Point	2128	INT-CONTOUR	778
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452659.64	747843.64	Point	2229	INDEX-CONTOUR	780
217.4	470	4000	400	280	18000	244000	110	6500	1100	930	79400	410	410	452676.9	747872.6	Point	2229	INDEX-CONTOUR	780
244	496	5920	735	739	20200	21700	436	11800	1120	827	65400	438	438	452738.2	747962.2	Point	2226	INDEX-CONTOUR	780
230	510	2300	540	700	12200	162000	30	6700	510	1000	366000	380	380	452713.2	747888.4	Point	2043	INT-CONTOUR	778
490	640	4500	770	50	18800	111000	50	11300	570	1300	41800	59	490	452902.8	748111.9	Point	1895	INT-CONTOUR	772
410	697	4700	642	246	18600	213000	97	8500	1230	1160	35400	214	410	452922.4	748125.2	Point	1895	INT-CONTOUR	772

Exhibit 8-7 IGW Spatial Weighting Output Functional Area5 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area
	4.508504	34	35	752	SOLID	265.722142	147.256481	34	5	shallow	44	5	104887.6491	271.4605786	4016.715999	0.038295414
	2.651694	34	35	752	SOLID	265.722142	117.968272	34	5	shallow	44	5	104887.6491	462.6169151	13019.13233	0.124124551
	3.603451	32	33	750	SOLID	570.448977	129.574442	32	5	shallow	44	5	104887.6491	269.221448	3600.451445	0.034326744
	0.555694	34	35	752	SOLID	265.722142	139.686745	30	5	shallow	44	5	104887.6491	388.6831151	9540.005864	0.090954521
	2.227113	34	35	752	SOLID	265.722142	152.409086	30	5	shallow	44	5	104887.6491	236.3293723	3068.487826	0.029254997
	9.694926	32	33	750	SOLID	570.448977	118.267924	30	5	shallow	44	5	104887.6491	279.1002222	3495.149035	0.033322789
	11.807265	32	33	750	SOLID	570.448977	130.061358	30	5	shallow	44	5	104887.6491	348.0309478	7489.561358	0.07140556
	1.578733	30	31	748	SOLID	1097.706566	161.443572	30	5	shallow	44	5	104887.6491	805.7015686	30135.4108	0.287311338
	4.750546	34	35	752	SOLID	265.722142	120.409349	28	5	shallow	44	5	104887.6491	189.3912735	1240.069539	0.011822837
	2.432751	34	35	752	SOLID	265.722142	107.557209	28	5	shallow	44	5	104887.6491	215.3165853	2722.772164	0.02595894
	8.367049	34	35	752	SOLID	265.722142	106.878149	28	5	shallow	44	5	104887.6491	287.4502208	5295.195194	0.050484449
	3.574356	34	35	752	SOLID	265.722142	74.947527	26	5	shallow	44	5	104887.6491	205.6663447	2399.543781	0.022877277
	6.024991	32	33	750	SOLID	570.448977	64.839754	22	5	shallow	44	5	104887.6491	289.9162301	3925.030662	0.037421285
	7.053132	32	33	750	SOLID	570.448977	68.346513	22	5	shallow	44	5	104887.6491	499.0560395	14940.15376	0.14243959
															SUM:	

Exhibit 8-7 IGW Spatial Weighting Output Functional Area5 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_NB
4.212495594
49.64982029
18.87970901
10.00499729
6.143549301
3.998734719
8.568667239
57.46226758
1.418740394
5.643473502
12.3182056
5.261773662
18.33642989
58.40023198
260.2990961

Exhibit 8-8 IGW Spatial Weighting Output Functional Area 5 Shallow (N-Nitrosodiphenylamine)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA5_shallow_NNitro	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	3	24	864	860	695	C10-440-02	1999-10-08	0.0-2.0 ft	C10-440-022N	<Null>	ug/kg	200	200
2	4	44	927	360	712	A11-570-05	1999-10-14	0.0-1.0 ft	A11-570-051N	<Null>	ug/kg	<Null>	400
3	7	42	911	315	322	SB-R-B10-02	2006-05-25	0.5-1.0 ft	SB-R-B10-021.0N	<Null>	ug/kg	380	<Null>
4	8	40	909	302	732	B10-20-01	1999-10-15	0.0-1.0 ft	B10-20-011FD	B10-20-011N	ug/kg	<Null>	550
5	9	36	877	1023	42	B10-506-02	1999-10-14	0.0-1.0 ft	B10-506-021N	<Null>	ug/kg	210	210
6	10	27	868	866	501	TP-R-B10-508-2	2006-08-09	10.5-11.0 ft	TP-R-B10-508-211.0N	<Null>	ug/kg	320	<Null>
7	11	21	851	665	700	B10-503-06	1999-10-12	0.0-2.0 ft	B10-503-062N	<Null>	ug/kg	217.4	217.4
8	12	20	850	664	699	B10-506-04	2000-07-21	0.0-2.0 ft	B10-506-042N	<Null>	ug/kg	821	244
9	13	19	849	663	698	TP-R-B10-508-3	2006-08-09	5.5-6.0 ft	TP-R-B10-508-36.0N	<Null>	ug/kg	40000	<Null>
10	14	15	845	617	809	TP-R-B10-508-1	2006-08-09	10.0-10.5 ft	TP-R-B10-508-110.5N	<Null>	ug/kg	1100	<Null>
11	15	13	829	253	422	B10-503-07	2006-08-11	11.5-12.0 ft	B10-503-0712.0N	<Null>	ug/kg	320	<Null>
12	16	12	828	252	421	B10-503-02	1999-10-11	0.0-1.0 ft	B10-503-021N	<Null>	ug/kg	230	230
13	17	8	824	171	214	TP-R-B10-508-4	2006-08-09	1.5-2.0 ft	TP-R-B10-508-42.0FD	TP-R-B10-508-42.0N	ug/kg	1900	<Null>
14	18	6	822	995	941	TP-R-B10-6-1	2006-08-11	12.0-12.5 ft	TP-R-B10-6-112.5N	<Null>	ug/kg	350	<Null>
15	19	3	789	755	283	TP-R-B10-505-2	2006-08-09	1.5-2.0 ft	TP-R-B10-505-22.0N	<Null>	ug/kg	340	<Null>
16	20	2	736	389	39	B10-3-03	1999-10-15	0.0-2.0 ft	B10-3-032N	<Null>	ug/kg	<Null>	490
17	21	1	735	388	38	B10-3-01	2000-06-16	0.0-1.0 ft	B10-3-011N	<Null>	ug/kg	<Null>	410

Exhibit 8-8 IGW Spatial Weighting Output Functional Area 5 Shallow (N-Nitrosodiphenylamine)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName
470	5400	850	280	18800	1550000	70	11000	1100	950	83000	510	510	453070.9	748375.7	Point	2128	INT-CONTOUR	778	
520	4500	610	280	23800	227000	370	10800	1000	940	119000	37	24000	452560.2	747723.6	Point	2039	INT-CONTOUR	786	
2480	3890	688	621	22400	234000	96.3	14300	2480	2480	82200	210	210	452830.368	748081.338	Point	1963	INT-CONTOUR	782	
7700	37600	510	8800	177000	8400000	530	34300	12500	25000	4430000	390	550	452814.9	748093.5	Point	1963	INT-CONTOUR	782	
510	4800	500	310	64100	250000	90	10300	1200	1000	50600	23	400	452718.4	748003.2	Point	1963	INT-CONTOUR	782	
2080	1630	523	519	17500	10500	105	7050	2080	2080	35800	180	180	452829.285	748046.61	Point	2226	INDEX-CONTOUR	780	
470	4000	400	280	18000	244000	110	6500	1100	930	79400	410	410	452676.9	747872.6	Point	2229	INDEX-CONTOUR	780	
496	5920	735	739	20200	21700	436	11800	1120	827	65400	438	438	452738.2	747962.2	Point	2226	INDEX-CONTOUR	780	
1120	4250	189	576	15500	9780	115	3210	2300	2300	12700	200	200	452861.454	748099.093	Point	2128	INT-CONTOUR	778	
2320	3620	1100	106	23800	71100	123	11300	2320	2320	60500	65	200	452856.125	748037.007	Point	2043	INT-CONTOUR	778	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	180	180	452712	747883	Point	2043	INT-CONTOUR	778	
510	2300	540	700	12200	162000	30	6700	510	1000	366000	380	380	452713.2	747888.4	Point	2043	INT-CONTOUR	778	
1520	4670	785	139	178000	6820000	362	12200	2280	2280	228000	300	200	452871.973	748062.244	Point	2127	INT-CONTOUR	776	
2750	2600	1380	2880	35200	3040	112	15300	2310	2970	76200	980	980	452837.8072	748012.1922	Point	1893	INT-CONTOUR	776	
1210	3360	408	570	126000	802000	71.7	8420	2280	2160	48100	53	190	452779.549	747977.786	Point	1893	INT-CONTOUR	776	
640	4500	770	50	18800	111000	50	11300	570	1300	41800	59	490	452902.8	748111.9	Point	1895	INT-CONTOUR	772	
697	4700	642	246	18600	213000	97	8500	1230	1160	35400	214	410	452922.4	748125.2	Point	1895	INT-CONTOUR	772	

Exhibit 8-8 IGW Spatial Weighting Output Functional Area 5 Shallow (N-Nitrosodiphenylamine)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area
1.578733	30	31	748	SOLID	1097.706566	161.443572	30	5	shallow	44	5	104887.6491	805.701123	30135.34395	0.287310701
2.651694	34	35	752	SOLID	265.722142	117.968272	34	5	shallow	44	5	104887.6491	507.1191137	15324.21104	0.146101197
16.02024	32	33	750	SOLID	570.448977	110.688315	32	5	shallow	44	5	104887.6491	142.722067	1092.93263	0.010420032
3.603451	32	33	750	SOLID	570.448977	129.574442	32	5	shallow	44	5	104887.6491	256.5805139	2809.78191	0.026788492
2.227113	34	35	752	SOLID	265.722142	152.409086	30	5	shallow	44	5	104887.6491	340.4301003	4410.48962	0.042049657
24.172624	32	33	750	SOLID	570.448977	99.044347	30	5	shallow	44	5	104887.6491	213.1498394	2690.385489	0.025650165
2.432751	34	35	752	SOLID	265.722142	107.557209	28	5	shallow	44	5	104887.6491	452.7061652	12888.63637	0.122880401
8.367049	34	35	752	SOLID	265.722142	106.878149	28	5	shallow	44	5	104887.6491	286.4418946	4361.641791	0.041583941
7.072152	32	33	750	SOLID	570.448977	88.755583	28	5	shallow	44	5	104887.6491	234.6154527	3055.270195	0.02912898
13.464442	32	33	750	SOLID	570.448977	70.545319	28	5	shallow	44	5	104887.6491	111.7122219	752.323426	0.00717266
5.396699	34	35	752	SOLID	265.722142	74.680469	26	5	shallow	44	5	104887.6491	89.29304546	383.3805234	0.003655154
3.574356	34	35	752	SOLID	265.722142	74.947527	26	5	shallow	44	5	104887.6491	224.8160732	2559.015968	0.024397686
27.077981	32	33	750	SOLID	570.448977	64.973818	26	5	shallow	44	5	104887.6491	154.9310111	1508.836462	0.014385263
4.410022	32	33	750	SOLID	570.448977	78.988339	26	5	shallow	44	5	104887.6491	160.9139019	1441.714999	0.013745327
10.078761	34	35	752	SOLID	265.722142	111.931329	24	5	shallow	44	5	104887.6491	248.1088444	3620.418462	0.034517109
6.024991	32	33	750	SOLID	570.448977	64.839754	22	5	shallow	44	5	104887.6491	255.4238	2778.940817	0.026494452
7.053132	32	33	750	SOLID	570.448977	68.346513	22	5	shallow	44	5	104887.6491	506.4679374	15074.27995	0.143718351
														SUM:	

Exhibit 8-8 IGW Spatial Weighting Output Functional Area 5 Shallow (N-Nitrosodiphenylamine)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_NN
146.5284573
3506.428717
2.188206659
14.73367039
16.81986261
4.61702967
50.38096435
18.21376607
5.825795926
1.434531963
0.657927742
9.271120823
2.877052684
13.47042012
6.55825079
12.98228163
58.92452381
3871.91258

Exhibit 8-9 IGW Spatial Weighting Output Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA6_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	3	7	621	596	595	C10-12-03	1999-11-16	0.0-1.0 ft	C10-12-031N	<Null>	ug/kg	220
2	4	48	926	343	539	A11-570-01	2000-06-08	0.0-2.0 ft	A11-570-012N	<Null>	ug/kg	
3	7	45	905	293	541	SB-R-C10-03	2006-06-07	0.5-1.0 ft	SB-R-C10-031.0N	<Null>	ug/kg	360
4	8	43	842	582	405	TP-R-C10-439-3	2006-08-11	1.5-2.0 ft	TP-R-C10-439-32.0N	<Null>	ug/kg	
5	9	16	696	676	944	B10-4-01	1999-10-15	0.0-2.0 ft	B10-4-012N	<Null>	ug/kg	
6	10	13	681	616	613	TP-R-B10-2/B10-509-2	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-22.0N	<Null>	ug/kg	340
7	11	12	677	612	609	C10-466-02	1999-10-08	0.0-1.0 ft	C10-466-021N	<Null>	ug/kg	210
8	12	11	649	5	278	B10-4-02	2000-06-16	0.0-2.0 ft	B10-4-022N	<Null>	ug/kg	
9	13	9	647	896	188	TP-R-B10-2/B10-509-3	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-32.0N	<Null>	ug/kg	1000
10	14	8	646	895	187	SD-C10-1-01	2001-04-25	1.5-2.0 ft	SD-C10-1-012N	<Null>	ug/kg	99
11	15	3	586	917	557	TP-R-B10-2/B10-509-8	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-82.0N	<Null>	ug/kg	840
12	16	1	580	819	806	SB-R-C10-01	2006-05-25	0.5-1.0 ft	SB-R-C10-011.0N	<Null>	ug/kg	330
13	17	49	1021	711	857	SO-R2-A-11-1	2013-11-14 15:33	0.2-0.7 ft	SO-R2-A-11-1_20131114	<Null>	ug/kg	340
14	18	47	925	342	538	A11-1-04	1999-10-08	0.0-1.0 ft	A11-1-041N	<Null>	ug/kg	200
15	19	41	787	691	798	TP-R-A11-504-3	2006-08-08	1.5-2.0 ft	TP-R-A11-504-32.0N	<Null>	ug/kg	360
16	20	39	785	689	791	SB-R-B11-03	2006-05-25	0.5-1.0 ft	SB-R-B11-031.0N	<Null>	ug/kg	390
17	21	38	784	688	73	B10-656-02	1999-10-12	0.0-2.0 ft	B10-656-022N	<Null>	ug/kg	208.4
18	22	37	783	687	72	B10-503-01	1999-10-11	0.0-2.0 ft	B10-503-012N	<Null>	ug/kg	220
19	23	35	781	661	624	TP-R-B10-505-3	2006-08-09	1.5-2.0 ft	TP-R-B10-505-32.0N	<Null>	ug/kg	360
20	24	34	749	450	254	TP-R-B10-505-5	2006-08-09	5.5-6.0 ft	TP-R-B10-505-56.0N	<Null>	ug/kg	360
21	25	30	745	433	797	TP-R-B10-502-1	2006-08-08	1.5-2.0 ft	TP-R-B10-502-12.0N	<Null>	ug/kg	
22	26	28	743	401	795	TP-R-B10-501-1	2006-08-08	13.0-13.5 ft	TP-R-B10-501-113.5N	<Null>	ug/kg	
23	27	25	740	398	711	TP-R-A11-504-1	2006-08-08	1.5-2.0 ft	TP-R-A11-504-12.0N	<Null>	ug/kg	720
24	28	22	737	395	708	TP-R-B10-505-4	2006-08-09	1.5-2.0 ft	TP-R-B10-505-42.0N	<Null>	ug/kg	340
25	29	19	708	4	185	TP-R-B10-505-1	2006-08-08	1.5-2.0 ft	TP-R-B10-505-12.0FD	TP-R-B10-505-12.0N	ug/kg	
26	30	17	706	2	282	TP-R-B10-502-2	2006-08-08	1.5-2.0 ft	TP-R-B10-502-22.0N	<Null>	ug/kg	

Exhibit 8-9 IGW Spatial Weighting Output Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
220	590	15000	430	260	20500	1110000	180	8000	1300	860	35100	55	420	453202.5	748262.5	Point	2047	INT-CONTOUR	764
427.591	658.053	2820	930	693	7980	36700	37	4690	1650	1096.755	39600	427.591	427.591	452549.3	747692.5	Point	2039	INT-CONTOUR	786
<Null>	2370	3150	521	592	7080	9250	39.1	5770	2370	2370	27000	200	200	453294.3679	748435.1979	Point	2308	INDEX-CONTOUR	780
<Null>	1320	4080	456	567	14300	1610000	112	7240	2270	2210	57900	<Null>	<Null>	453244.9943	748402.515	Point	2127	INT-CONTOUR	776
440	550	3600	690	330	20600	41700	40	12700	550	1100	37700	440	440	452898.1	747991.8	Point	2319	INDEX-CONTOUR	770
<Null>	3610	6140	714	547	16400	770000	51.1	10400	2190	2190	80300	42	410	452993.615	748073.603	Point	2049	INT-CONTOUR	768
210	1000	6900	300	280	25000	3070000	260	8100	730	930	159000	360	410	453102	748248	Point	2044	INT-CONTOUR	768
390	682	3490	314	123	14700	11600	34	7860	1070	1140	27500	390	390	452898.2	747967.9	Point	2049	INT-CONTOUR	768
<Null>	1250	5360	730	542	31000	199000	497	11500	2170	1550	86700	230	190	453033.535	748119.043	Point	2046	INT-CONTOUR	766
99	770	5700	470	65	26700	840000	350	10900	1400	1000	32500	33	67	453145	748253	Point	2045	INT-CONTOUR	766
<Null>	2210	3100	584	554	16300	337000	229	7880	2210	2210	47200	130	190	453024.409	748094.287	Point	1897	INT-CONTOUR	762
<Null>	2170	2860	569	542	14500	26700	20.8	9660	2170	1670	38700	47	190	453085.2284	748128.5346	Point	1897	INT-CONTOUR	762
340	2250	5980	1850	563	45000	5480	34	19000	1140	805	49500	19	38	452203.0926	747276.9402	Point	1993	INT-CONTOUR	804
200	430	4300	630	260	13100	679000	60	9300	1000	860	157000	460	460	452510.8	747569	Point	1963	INT-CONTOUR	782
<Null>	2320	3980	636	580	15200	587000	53.7	10300	2320	2320	66700	200	200	452616.411	747682.011	Point	1893	INT-CONTOUR	776
<Null>	2550	4360	690	636	11000	35700	72.4	9440	1290	2550	46500	210	210	452657.3604	747775.4305	Point	1893	INT-CONTOUR	776
208.4	500	4000	640	300	16700	7300	20	11300	740	1000	46600	390	390	452663.3	747809.3	Point	1893	INT-CONTOUR	776
220	470	4300	840	30	15700	25100	30	11500	410	930	80400	400	400	452710.3	747862.2	Point	1893	INT-CONTOUR	776
<Null>	2310	3370	934	577	11100	69300	64.3	8310	2310	2310	52600	200	200	452833.813	747972.728	Point	1894	INT-CONTOUR	774
<Null>	2120	3920	571	590	44500	775000	126	10300	2360	2360	71400	200	200	452803.487	747937.044	Point	1894	INT-CONTOUR	774
<Null>	2150	2930	427	2690	16500	8310	29.6	9000	2150	2150	28700	<Null>	<Null>	452745.189	747849.274	Point	1894	INT-CONTOUR	774
<Null>	1010	1410	745	2780	25200	1880000	108	10700	2220	2220	43900	<Null>	<Null>	452768.958	747877.541	Point	1894	INT-CONTOUR	774
<Null>	1740	5620	328	543	12200	1350000	177	8720	1240	2170	42800	160	210	452666.257	747703.125	Point	1894	INT-CONTOUR	774
<Null>	1190	3610	484	557	23200	527000	58	8120	2230	2230	59800	370	190	452823.446	747927.543	Point	1895	INT-CONTOUR	772
<Null>	2020	7010	273	582	8930	276000	58.4	6200	2330	2330	28900	<Null>	<Null>	452808.86	747910.772	Point	1895	INT-CONTOUR	772
<Null>	2240	3540	184	560	14200	216000	60.6	4550	2240	2240	17000	<Null>	<Null>	452749.88	747826.597	Point	1895	INT-CONTOUR	772

Exhibit 8-9 IGW Spatial Weighting Output Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1
	3.671253	30	31	748	SOLID	1097.706566	8.760001	16	1031	C10-12-03	1999-11-16	0.0-1.0 ft	C10-12-031N
	0.573757	34	35	752	SOLID	265.722142	115.335638	34	5	A11-570-01	2000-06-08	0.0-2.0 ft	A11-570-012N
	2.380462	30	31	748	SOLID	1097.706566	56.81124	32	249	SB-R-C10-03	2006-06-07	0.5-1.0 ft	SB-R-C10-031.0N
	0.836367	30	31	748	SOLID	1097.706566	0.166956	28	486	TP-R-C10-439-3	2006-08-11	1.5-2.0 ft	TP-R-C10-439-32.0N
	8.489577	32	33	750	SOLID	570.448977	15.362965	20	42	B10-4-01	1999-10-15	0.0-2.0 ft	B10-4-012N
	8.839991	30	31	748	SOLID	1097.706566	54.196473	20	364	TP-R-B10-2/B10-509-2	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-22.0N
	1.004498	30	31	748	SOLID	1097.706566	61.588871	20	113	C10-466-02	1999-10-08	0.0-1.0 ft	C10-466-021N
	0.189493	32	33	750	SOLID	570.448977	7.209128	18	43	B10-4-02	2000-06-16	0.0-2.0 ft	B10-4-022N
	5.794198	30	31	748	SOLID	1097.706566	45.28362	18	367	TP-R-B10-2/B10-509-3	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-32.0N
	5.855433	30	31	748	SOLID	1097.706566	31.856573	18	1036	SD-C10-1-01	2001-04-25	1.5-2.0 ft	SD-C10-1-012N
	6.706922	30	31	748	SOLID	1097.706566	38.936346	14	379	TP-R-B10-2/B10-509-8	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-82.0N
	7.385368	30	31	748	SOLID	1097.706566	8.169035	14	247	SB-R-C10-01	2006-05-25	0.5-1.0 ft	SB-R-C10-011.0N
	8.188151	22	23	736	SOLID	1931.623271	394.476832	68	296	SO-R2-A-11-1	2013-11-14 15:33	0.2-0.7 ft	SO-R2-A-11-1_20131114
	4.212104	30	31	748	SOLID	1097.706566	123.28542	34	2	A11-1-04	1999-10-08	0.0-1.0 ft	A11-1-041N
	4.449318	34	35	752	SOLID	265.722142	48.583159	24	328	TP-R-A11-504-3	2006-08-08	1.5-2.0 ft	TP-R-A11-504-32.0N
	3.926358	34	35	752	SOLID	265.722142	109.933348	24	221	SB-R-B11-03	2006-05-25	0.5-1.0 ft	SB-R-B11-031.0N
	8.405604	34	35	752	SOLID	265.722142	111.894383	24	51	B10-656-02	1999-10-12	0.0-2.0 ft	B10-656-022N
	3.762256	34	35	752	SOLID	265.722142	72.958583	24	44	B10-503-01	1999-10-11	0.0-2.0 ft	B10-503-012N
	11.881146	32	33	750	SOLID	570.448977	69.65036	24	394	TP-R-B10-505-3	2006-08-09	1.5-2.0 ft	TP-R-B10-505-32.0N
	7.811735	34	35	752	SOLID	265.722142	73.507753	22	401	TP-R-B10-505-5	2006-08-09	5.5-6.0 ft	TP-R-B10-505-56.0N
	8.78755	34	35	752	SOLID	265.722142	36.51778	22	385	TP-R-B10-502-1	2006-08-08	1.5-2.0 ft	TP-R-B10-502-12.0N
	13.0131	34	35	752	SOLID	265.722142	19.545602	22	383	TP-R-B10-501-1	2006-08-08	13.0-13.5 ft	TP-R-B10-501-113.5N
	5.042545	34	35	752	SOLID	265.722142	39.756237	22	320	TP-R-A11-504-1	2006-08-08	1.5-2.0 ft	TP-R-A11-504-12.0N
	9.94047	32	33	750	SOLID	570.448977	65.265221	22	396	TP-R-B10-505-4	2006-08-09	1.5-2.0 ft	TP-R-B10-505-42.0N
	12.680719	34	35	752	SOLID	265.722142	50.891217	20	389	TP-R-B10-505-1	2006-08-08	1.5-2.0 ft	TP-R-B10-505-12.0FD
	9.223307	34	35	752	SOLID	265.722142	28.677728	20	387	TP-R-B10-502-2	2006-08-08	1.5-2.0 ft	TP-R-B10-502-22.0N

Exhibit 8-9 IGW Spatial Weighting Output Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Parent_ID_1	units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1
	ug/kg	220	220	590	15000	430	260	20500	1110000	180	8000	1300	860	35100	55	420
	ug/kg		427.591	658.053	2820	930	693	7980	36700	37	4690	1650	1096.755	39600	427.591	427.591
	ug/kg	360		2370	3150	521	592	7080	9250	39.1	5770	2370	2370	27000	200	200
	ug/kg			1320	4080	456	567	14300	1610000	112	7240	2270	2210	57900		
	ug/kg		440	550	3600	690	330	20600	41700	40	12700	550	1100	37700	440	440
	ug/kg	340		3610	6140	714	547	16400	770000	51.1	10400	2190	2190	80300	42	410
	ug/kg	210	210	1000	6900	300	280	25000	3070000	260	8100	730	930	159000	360	410
	ug/kg		390	682	3490	314	123	14700	11600	34	7860	1070	1140	27500	390	390
	ug/kg	1000		1250	5360	730	542	31000	199000	497	11500	2170	1550	86700	230	190
	ug/kg	99	99	770	5700	470	65	26700	840000	350	10900	1400	1000	32500	33	67
	ug/kg	840		2210	3100	584	554	16300	337000	229	7880	2210	2210	47200	130	190
	ug/kg	330		2170	2860	569	542	14500	26700	20.8	9660	2170	1670	38700	47	190
	ug/kg	340	340	2250	5980	1850	563	45000	5480	34	19000	1140	805	49500	19	38
	ug/kg	200	200	430	4300	630	260	13100	679000	60	9300	1000	860	157000	460	460
	ug/kg	360		2320	3980	636	580	15200	587000	53.7	10300	2320	2320	66700	200	200
	ug/kg	390		2550	4360	690	636	11000	35700	72.4	9440	1290	2550	46500	210	210
	ug/kg	208.4	208.4	500	4000	640	300	16700	7300	20	11300	740	1000	46600	390	390
	ug/kg	220	220	470	4300	840	30	15700	25100	30	11500	410	930	80400	400	400
	ug/kg	360		2310	3370	934	577	11100	69300	64.3	8310	2310	2310	52600	200	200
	ug/kg	360		2120	3920	571	590	44500	775000	126	10300	2360	2360	71400	200	200
	ug/kg			2150	2930	427	2690	16500	8310	29.6	9000	2150	2150	28700		
	ug/kg			1010	1410	745	2780	25200	1880000	108	10700	2220	2220	43900		
	ug/kg	720		1740	5620	328	543	12200	1350000	177	8720	1240	2170	42800	160	210
	ug/kg	340		1190	3610	484	557	23200	527000	58	8120	2230	2230	59800	370	190
TP-R-B10-505-12.0N	ug/kg			2020	7010	273	582	8930	276000	58.4	6200	2330	2330	28900		
	ug/kg			2240	3540	184	560	14200	216000	60.6	4550	2240	2240	17000		

Exhibit 8-9 IGW Spatial Weighting Output Functional Area 6 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord_1	y_coord_1	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
453202.5	748262.5	68	6	147242.112	374.0338051	7250.674107	0.049243209	54659.96209
452549.3	747692.5	68	6	147242.112	374.6539525	6129.641382	0.041629676	1527.809101
453294.3679	748435.1979	68	6	147242.112	261.7477821	3590.697293	0.024386347	225.5737134
453244.9943	748402.515	68	6	147242.112	363.9675354	7662.982366	0.052043415	83789.89843
452898.1	747991.8	68	6	147242.112	322.121949	6639.203121	0.045090382	1880.268942
452993.615	748073.603	68	6	147242.112	345.158713	7505.193424	0.050971786	39248.27523
453102	748248	68	6	147242.112	321.292059	5008.713133	0.034016852	104431.7357
452898.2	747967.9	68	6	147242.112	238.7646459	2843.531503	0.019311945	224.0185568
453033.535	748119.043	68	6	147242.112	305.4397865	5219.859124	0.035450857	7054.720634
453145	748253	68	6	147242.112	341.8846414	5712.846582	0.038798999	32591.15931
453024.409	748094.287	68	6	147242.112	204.971408	1791.040679	0.012163916	4099.239686
453085.2284	748128.5346	68	6	147242.112	299.9585057	4385.898387	0.029786984	795.3124643
452203.0926	747276.9402	68	6	147242.112	686.9562186	22810.97595	0.154921548	848.9700843
452510.8	747569	68	6	147242.112	726.9680703	24348.03278	0.165360524	112279.7957
452616.411	747682.011	68	6	147242.112	331.9946087	5421.912544	0.03682311	21615.1658
452657.3604	747775.4305	68	6	147242.112	316.3231455	5551.543946	0.037703507	1346.015187
452663.3	747809.3	68	6	147242.112	212.7579846	2420.656891	0.016439977	120.0118299
452710.3	747862.2	68	6	147242.112	195.2242316	1827.567972	0.012411992	311.5410087
452833.813	747972.728	68	6	147242.112	216.7679629	2669.471857	0.018129812	1256.395994
452803.487	747937.044	68	6	147242.112	168.4061953	1555.24138	0.010562477	8185.919458
452745.189	747849.274	68	6	147242.112	169.0908868	1351.850045	0.009181137	76.29525086
452768.958	747877.541	68	6	147242.112	251.1081228	3734.270939	0.025361433	47679.4938
452666.257	747703.125	68	6	147242.112	241.4250515	2557.856162	0.01737177	23451.89003
452823.446	747927.543	68	6	147242.112	197.6364548	2552.919109	0.01733824	9137.252599
452808.86	747910.772	68	6	147242.112	220.8849725	2672.490604	0.018150314	5009.486735
452749.88	747826.597	68	6	147242.112	273.5214952	4027.082094	0.02735007	5907.615156
					SUM:			567753.8225

Exhibit 8-10 IGW Spatial Weighting Output Functional Area 7 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA7_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	3	87	505	639	640	B10-2178-03	1999-11-19	0.0-1.0 ft	B10-2178-031N	<Null>	ug/kg
2	4	72	1007	633	630	SB-R-A12-03	2006-05-24	0.5-1.0 ft	SB-R-A12-031.0N	<Null>	ug/kg
3	7	91	556	358	599	C10-432-02	2000-07-13	0.0-1.0 ft	C10-432-021N	<Null>	ug/kg
4	8	90	555	357	598	C10-432-01	2000-09-27	0.0-1.0 ft	C10-432-011N	<Null>	ug/kg
5	9	88	506	735	996	B10-2178-05	1999-11-19	0.0-1.0 ft	B10-2178-051FD	B10-2178-051N	ug/kg
6	10	86	456	422	748	B10-7-02	1999-11-18	0.0-1.0 ft	B10-7-021N	<Null>	ug/kg
7	11	83	559	377	554	SB-R-B11-02	2006-05-25	0.5-1.0 ft	SB-R-B11-021.0N	<Null>	ug/kg
8	12	80	508	759	74	TP-RD-B10-10	2017-10-03	1.0-1.5 ft	BD100317	TP-RD-B10-10(01.0-01.5)	ug/kg
9	13	79	561	406	76	TP-R-B10-2/B10-509-4	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-42.0N	<Null>	ug/kg
10	14	14	626	656	619	TP-RD-B11-20	2017-12-04	1.0-1.5 ft	BD120417	TP-RD-B11-20(01.0-01.5)	ug/kg
11	15	11	584	915	555	TP-R-B10-2/B10-509-5	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-52.0N	<Null>	ug/kg
12	16	10	583	913	8	TP-R-B10-2/B10-509-1	2006-08-10	10.5-11.0 ft	TP-R-B10-2/B10-509-111.0N	<Null>	ug/kg
13	17	6	568	415	738	TP-RD-C10-01	2017-10-16 8:50	1.0-1.5 ft	TP-RD-C10-01(01.0-01.5)	<Null>	ug/kg
14	18	4	566	413	736	TP-RD-B11-07	2017-11-06 11:20	3.0-3.5 ft	TP-RD-B11-07(03.0-03.5)	<Null>	ug/kg
15	19	3	565	412	735	TP-R-B10-2/B10-509-6	2006-08-10	9.5-10.0 ft	TP-R-B10-2/B10-509-610.0N	<Null>	ug/kg
16	20	71	969	247	333	A11-3-03	1999-10-08	0.0-1.0 ft	A11-3-031N	<Null>	ug/kg
17	21	68	953	891	726	TP-RD-A11-15A	2017-10-27 8:10	1.0-1.5 ft	TP-RD-A11-15A(01.0-01.5)	<Null>	ug/kg
18	22	65	950	888	532	SB-R-A11-01	2006-05-23	0.5-1.0 ft	SB-R-A11-011.0FD	SB-R-A11-011.0N	ug/kg
19	23	64	949	887	531	A11-3-05	1999-10-08	0.0-1.0 ft	A11-3-051N	<Null>	ug/kg
20	24	60	901	289	401	TP-RD-A11-15	2017-10-25 13:30	1.0-1.5 ft	TP-RD-A11-15(01.0-01.5)	<Null>	ug/kg
21	25	59	900	288	400	A11-1-01	1999-10-08	0.0-1.0 ft	A11-1-011N	<Null>	ug/kg
22	26	55	896	282	384	TP-RD-A11-02A	2017-10-20 13:10	1.0-1.5 ft	TP-RD-A11-02A(01.0-01.5)	<Null>	ug/kg
23	27	53	894	280	382	TP-RD-A11-02	2017-10-05 10:40	6.0-6.5 ft	TP-RD-A11-02(06.0-06.5)	<Null>	ug/kg
24	28	47	814	987	369	TP-RD-A11-11	2017-10-20	1.0-1.5 ft	BD102017B	TP-RD-A11-11(01.0-01.5)	ug/kg
25	29	44	811	984	218	TP-R-A11-7-1	2006-08-07	6.5-7.0 ft	TP-R-A11-7-17.0N	<Null>	ug/kg
26	30	36	776	650	366	TP-RD-A11-16	2017-10-26 8:25	1.0-1.5 ft	TP-RD-A11-16(01.0-01.5)	<Null>	ug/kg
27	31	28	752	554	303	TP-RD-A11-10	2017-10-20 9:15	1.0-1.5 ft	TP-RD-A11-10(01.0-01.5)	<Null>	ug/kg
28	32	27	705	1	281	TP-R-A11-504-2	2006-08-08	10.0-10.5 ft	TP-R-A11-504-210.5N	<Null>	ug/kg
29	33	22	700	694	79	TP-R-A11-504-1(2017)	2017-10-04 14:05	8.5-9.0 ft	TP-R-A11-504-1(08.5-09.0)	<Null>	ug/kg
30	34	16	690	670	106	TP-RD-A11-01	2017-10-04 12:45	1.0-1.5 ft	TP-RD-A11-01(01.0-01.5)	<Null>	ug/kg

Exhibit 8-10 IGW Spatial Weighting Output Functional Area 7 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID
230	230	3400	14600	570	1300	186000	17200000	2300	25800	850	970	1330000	73	380	452967	747860	Point	1899
320	<Null>	2100	2250	197	524	9340	5740	105	3230	2100	2100	16300	180	180	452346.641	747242.143	Point	2039
250	250	684.288	6290	685	300	22200	107000	97	10400	1370	1140.48	59900	188	394.971	453106	748139	Point	2312
90.9	90.9	910	5160	791	204	12700	96800	100	7750	487	1290	54700	130	446	453110.5	748140.1	Point	2312
5200	410	2200	334000	330	1000	211000	318000	150	10700	1000	820	652000	390	380	452950	747872	Point	1899
643468	643468	510	6100	760	440	22100	1080000	70	10000	850	980	281000	380	380	453033.2	747929	Point	2050
350	<Null>	2280	3150	407	570	15200	173000	52.3	7040	2280	2280	38000	41	190	452897.804	747829.337	Point	2312
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452995.08	747918.34	Point	1899
160	<Null>	2390	2990	557	597	17300	209000	51	8380	2390	2390	56700	49	200	453076.631	748069.481	Point	2312
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452812.38	747760.45	Point	2046
330	<Null>	2160	4360	759	540	20700	137000	55.3	12100	2160	2160	59200	68	190	453021.023	748048.851	Point	1897
340	<Null>	2230	3230	1140	557	21500	3610	107	9460	2230	2230	31500	190	190	452961.271	747988.15	Point	1897
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453127.23	748140.35	Point	2312
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452888.4	747795.42	Point	2312
370	<Null>	1940	3620	1170	609	23300	5660	40.7	12100	2440	1920	51900	200	200	452994.925	747987.457	Point	2312
240	240	520	3200	360	310	56000	305000	50	6200	670	1000	39100	28	490	452458.1	747473.7	Point	1962
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452490.33	747501.79	Point	1963
320	<Null>	2070	2070	518	518	3310	28900	101	1140	2070	2070	3770	180	180	452460.058	747443.307	Point	2230
220	220	540	2100	390	320	7000	136000	30	5700	590	680	30000	380	380	452470.6	747440.7	Point	2230
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452510.19	747498.68	Point	2043
240	240	1000	10100	380	340	19800	1250000	150	10000	1800	2000	424000	35	370	452536.9	747536.1	Point	2043
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452516.51	747450.73	Point	1893
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452526.77	747458.59	Point	1893
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452598.4	747515.24	Point	1895
330	<Null>	2230	1950	94.9	223	8060	396000	107	1040	2230	2230	16500	<Null>	<Null>	452573.465	747489.055	Point	1895
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452604.83	747546.87	Point	1895
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452628.29	747650.21	Point	1894
1400	<Null>	1310	2950	193	669	2600	76100	132	2040	2680	2680	18400	1100	1100	452670.777	747660.129	Point	1895
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452673.64	747682.98	Point	1895
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452693.86	747616.82	Point	2228

Exhibit 8-10 IGW Spatial Weighting Output Functional Area 7 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Layer	Elevation	RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length
INT-CONTOUR	758		15.209582	30	31	748	SOLID	1097.706566	20.682578	10	7	shallow	47	7	129285.7313	165.3629124
INT-CONTOUR	786		5.429383	22	23	736	SOLID	1931.623271	246.790821	50	7	shallow	47	7	129285.7313	578.7904844
INDEX-CONTOUR	760		10.545477	30	31	748	SOLID	1097.706566	3.091611	12	7	shallow	47	7	129285.7313	148.0837803
INDEX-CONTOUR	760		7.481672	30	31	748	SOLID	1097.706566	6.197244	12	7	shallow	47	7	129285.7313	131.1115896
INT-CONTOUR	758		22.668013	30	31	748	SOLID	1097.706566	0.164278	10	7	shallow	47	7	129285.7313	293.2129166
INT-CONTOUR	754		15.371725	28	29	746	SOLID	1303.307369	20.633048	8	7	shallow	47	7	129285.7313	251.0803285
INDEX-CONTOUR	760		2.598052	30	31	748	SOLID	1097.706566	27.141491	12	7	shallow	47	7	129285.7313	335.4120129
INT-CONTOUR	758		12.264525	30	31	748	SOLID	1097.706566	21.231977	10	7	shallow	47	7	129285.7313	232.2465024
INDEX-CONTOUR	760		0.042099	30	31	748	SOLID	1097.706566	18.261759	12	7	shallow	47	7	129285.7313	363.7934376
INT-CONTOUR	766		6.309165	32	33	750	SOLID	570.448977	19.569154	16	7	shallow	47	7	129285.7313	456.1141299
INT-CONTOUR	762		2.606294	30	31	748	SOLID	1097.706566	17.987948	14	7	shallow	47	7	129285.7313	252.7411148
INT-CONTOUR	762		5.633666	30	31	748	SOLID	1097.706566	40.738352	14	7	shallow	47	7	129285.7313	252.0084661
INDEX-CONTOUR	760		6.103496	30	31	748	SOLID	1097.706566	19.976315	12	7	shallow	47	7	129285.7313	296.5265071
INDEX-CONTOUR	760		1.839196	30	31	748	SOLID	1097.706566	19.67793	12	7	shallow	47	7	129285.7313	252.9372613
INDEX-CONTOUR	760		3.411198	30	31	748	SOLID	1097.706566	10.841626	12	7	shallow	47	7	129285.7313	262.7900195
INT-CONTOUR	784		4.877335	28	29	746	SOLID	1303.307369	154.154873	38	7	shallow	47	7	129285.7313	153.5817942
INT-CONTOUR	782		6.836824	28	29	746	SOLID	1303.307369	121.176918	36	7	shallow	47	7	129285.7313	153.6580459
INDEX-CONTOUR	780		10.031338	26	27	744	SOLID	1438.844916	149.882297	36	7	shallow	47	7	129285.7313	396.9907256
INDEX-CONTOUR	780		0.806419	26	27	744	SOLID	1438.844916	139.241432	36	7	shallow	47	7	129285.7313	334.7435356
INT-CONTOUR	778		7.419203	28	29	746	SOLID	1303.307369	101.145811	32	7	shallow	47	7	129285.7313	169.3919119
INT-CONTOUR	778		3.450416	28	29	746	SOLID	1303.307369	86.207124	32	7	shallow	47	7	129285.7313	234.733745
INT-CONTOUR	776		7.590967	26	27	744	SOLID	1438.844916	94.406104	32	7	shallow	47	7	129285.7313	206.6139415
INT-CONTOUR	776		0.327483	26	27	744	SOLID	1438.844916	86.007043	32	7	shallow	47	7	129285.7313	170.0362216
INT-CONTOUR	772		3.954512	28	29	746	SOLID	1303.307369	26.264257	26	7	shallow	47	7	129285.7313	181.1416313
INT-CONTOUR	772		19.3656	28	29	746	SOLID	1303.307369	37.804054	26	7	shallow	47	7	129285.7313	186.9673814
INT-CONTOUR	772		15.167414	30	31	748	SOLID	1097.706566	27.395781	24	7	shallow	47	7	129285.7313	299.3929734
INT-CONTOUR	774		0.492538	34	35	752	SOLID	265.722142	33.839996	22	7	shallow	47	7	129285.7313	246.9738136
INT-CONTOUR	772		4.425402	34	35	752	SOLID	265.722142	3.229724	20	7	shallow	47	7	129285.7313	221.8249515
INT-CONTOUR	772		9.554066	34	35	752	SOLID	265.722142	18.509699	20	7	shallow	47	7	129285.7313	330.7639136
INDEX-CONTOUR	770		5.529903	32	33	750	SOLID	570.448977	5.445175	20	7	shallow	47	7	129285.7313	372.8974714

Exhibit 8-10 IGW Spatial Weighting Output Functional Area 7 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Shape_Area	Fractional_Area	Spatial Weighted_13DNB
728.1934145	0.005632435	1.295459937
18764.36892	0.145138746	46.44439871
1047.610389	0.008103063	2.025765678
364.0824182	0.002816107	0.255984102
5334.33738	0.041260063	214.552326
2746.946968	0.021247101	13671.82947
6729.557609	0.05205182	18.21813698
3459.383466	0.026757659	2.94334245
8482.61975	0.065611415	10.49782637
12750.04031	0.098619083	11.83429
3109.107805	0.024048344	7.935953682
2718.916613	0.021030291	7.150299099
5298.699804	0.040984413	4.508285426
3016.488763	0.023331954	2.799834504
3927.041584	0.030374903	11.23871421
1144.975677	0.008856164	2.12547943
1093.302299	0.008456481	0.930212883
8363.906067	0.064693188	20.70182002
4432.974325	0.034288195	7.543402829
1618.846115	0.01252146	1.502575201
3112.451595	0.024074208	5.777809933
2236.068423	0.017295555	1.902511004
1708.275101	0.013213176	1.453449342
1761.392336	0.013624027	1.498643006
2230.680251	0.017253878	5.693779779
6034.85051	0.046678396	5.601407469
3201.109419	0.024759959	2.7235955
2088.748144	0.016156061	22.61848521
5672.618756	0.043876603	4.826426371
6108.193864	0.047245692	5.669483059
SUM:		14104.09917

Exhibit 8-11 IGW Spatial Weighting Output Functional Area 7 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA7_shallow_metals	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	3	84	553	355	596	C10-438-01	2000-07-21	0.0-2.0 ft	C10-438-012N	<Null>	ug/kg
2	4	71	969	247	333	A11-3-03	1999-10-08	0.0-1.0 ft	A11-3-031N	<Null>	ug/kg
3	7	91	556	358	599	C10-432-02	2000-07-13	0.0-1.0 ft	C10-432-021N	<Null>	ug/kg
4	8	90	555	357	598	C10-432-01	2000-09-27	0.0-1.0 ft	C10-432-011N	<Null>	ug/kg
5	9	88	506	735	996	B10-2178-05	1999-11-19	0.0-1.0 ft	B10-2178-051FD	B10-2178-051N	ug/kg
6	10	87	505	639	640	B10-2178-03	1999-11-19	0.0-1.0 ft	B10-2178-031N	<Null>	ug/kg
7	11	86	456	422	748	B10-7-02	1999-11-18	0.0-1.0 ft	B10-7-021N	<Null>	ug/kg
8	12	85	557	359	600	C10-438-05	1999-10-08	0.0-2.0 ft	C10-438-052N	<Null>	ug/kg
9	13	82	558	376	553	SB-R-B11-02	2006-05-25	0.5-1.0 ft	SB-R-B11-021.0FD	SB-R-B11-021.0N	ug/kg
10	14	79	561	406	76	TP-R-B10-2/B10-509-4	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-42.0N	<Null>	ug/kg
11	15	11	584	915	555	TP-R-B10-2/B10-509-5	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-52.0N	<Null>	ug/kg
12	16	9	582	880	602	TP-R-B10-2/B10-509-1	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-12.0N	<Null>	ug/kg
13	17	1	563	408	78	TP-R-B10-2/B10-509-6	2006-08-10	1.5-2.0 ft	TP-R-B10-2/B10-509-62.0FD	TP-R-B10-2/B10-509-62.0N	ug/kg
14	18	75	1020	710	856	A11-9-04	1999-10-14	0.0-1.0 ft	A11-9-041N	<Null>	ug/kg
15	19	74	1009	678	11	A11-9-03	1999-10-14	0.0-1.3 ft	A11-9-031.3N	<Null>	ug/kg
16	20	72	1007	633	630	SB-R-A12-03	2006-05-24	0.5-1.0 ft	SB-R-A12-031.0N	<Null>	ug/kg
17	21	65	950	888	532	SB-R-A11-01	2006-05-23	0.5-1.0 ft	SB-R-A11-011.0FD	SB-R-A11-011.0N	ug/kg
18	22	64	949	887	531	A11-3-05	1999-10-08	0.0-1.0 ft	A11-3-051N	<Null>	ug/kg
19	23	59	900	288	400	A11-1-01	1999-10-08	0.0-1.0 ft	A11-1-011N	<Null>	ug/kg
20	24	45	812	985	219	TP-R-A11-7-2	2006-08-07	1.5-2.0 ft	TP-R-A11-7-22.0N	<Null>	ug/kg
21	25	43	810	983	111	TP-R-A11-7-1	2006-08-07	1.5-2.0 ft	TP-R-A11-7-12.0N	<Null>	ug/kg
22	26	41	808	981	108	TP-R-A11-2-2	2006-08-08	2.0-2.5 ft	TP-R-A11-2-22.5N	<Null>	ug/kg
23	27	33	773	627	33	TP-R-A11-2-1	2006-08-08	1.5-2.0 ft	TP-R-A11-2-12.0FD	TP-R-A11-2-12.0N	ug/kg
24	28	26	704	900	53	TP-R-A11-504-2	2006-08-08	1.5-2.0 ft	TP-R-A11-504-22.0N	<Null>	ug/kg
25	29	13	625	655	618	B11-2-03	1999-10-12	0.0-2.0 ft	B11-2-032N	<Null>	ug/kg

Exhibit 8-11 IGW Spatial Weighting Output Functional Area 7 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID
<Null>	398	607	4010	933	632	10400	34400	47	8280	1040	1010	53800	398	398	453126	748095	Point	1899
240	240	520	3200	360	310	56000	305000	50	6200	670	1000	39100	28	490	452458.1	747473.7	Point	1962
250	250	684.288	6290	685	300	22200	107000	97	10400	1370	1140.48	59900	188	394.971	453106	748139	Point	2312
90.9	90.9	910	5160	791	204	12700	96800	100	7750	487	1290	54700	130	446	453110.5	748140.1	Point	2312
5200	410	2200	334000	330	1000	211000	318000	150	10700	1000	820	27700000	390	380	452950	747872	Point	1899
230	230	3400	14600	570	1300	186000	17200000	2300	25800	850	970	1330000	73	380	452967	747860	Point	1899
643468	643468	510	6100	760	440	22100	1080000	70	10000	850	980	281000	380	380	453033.2	747929	Point	2050
<Null>	390	210	4200	920	320	10200	29600	40	8400	750	580	54400	390	390	453118	748099	Point	2312
340	<Null>	2230	3060	455	557	16000	183000	50	6890	2230	2230	38700	190	190	452897.804	747829.337	Point	2312
160	<Null>	2390	2990	557	597	17300	209000	51	8380	2390	2390	56700	49	200	453076.631	748069.481	Point	2312
330	<Null>	2160	4360	759	540	20700	137000	113	12100	2160	2160	62500	68	190	453021.023	748048.851	Point	1897
330	<Null>	2150	5060	450	538	15300	60500	41.6	9120	2150	2150	37900	180	180	452961.271	747988.15	Point	1897
330	<Null>	2690	3620	1220	539	39500	617000	24.5	9980	2160	1450	76600	180	180	452994.925	747987.457	Point	2312
<Null>	400	460	3000	490	530	27800	577000	70	8400	790	920	190000	400	500	452269.1	747246.4	Point	2042
<Null>	420	590	5500	720	40	22000	1700000	60	10200	1300	1200	68300	98	420	452305.5	747264.4	Point	1959
320	<Null>	2100	4660	197	524	9340	5740	105	3230	2100	2100	16300	180	180	452346.641	747242.143	Point	2039
320	<Null>	2070	2070	518	518	3310	28900	101	1140	2070	2070	4540	180	180	452460.058	747443.307	Point	2230
220	220	540	2100	390	320	7000	136000	30	5700	590	680	30000	380	380	452470.6	747440.7	Point	2230
240	240	1000	10100	380	340	19800	1250000	150	10000	1800	2000	424000	35	370	452536.9	747536.1	Point	2043
<Null>	<Null>	2230	3770	186	163	7740	1510000	112	4200	2230	11200	33200	<Null>	<Null>	452594.562	747486.279	Point	1895
330	<Null>	2190	3300	174	319	40000	13300000	107	4660	2190	10900	49800	<Null>	<Null>	452573.465	747489.055	Point	1895
<Null>	<Null>	2150	1850	144	324	10200	184000	106	2640	2150	2150	12700	<Null>	<Null>	452605.875	747515.802	Point	1895
<Null>	<Null>	2090	2230	292	411	12300	16500	111	5210	1490	10500	24500	<Null>	<Null>	452596.596	747538.744	Point	1895
350	<Null>	2230	3140	180	559	13100	88100	132	3140	2230	2230	18400	190	190	452670.777	747660.129	Point	1895
<Null>	410	450	3500	440	270	13600	26600	50	5900	740	530	30900	410	410	452768.3	747668.6	Point	2046

Exhibit 8-11 IGW Spatial Weighting Output Functional Area 7 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Layer	Elevation	RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length
INT-CONTOUR	758		11.488961	28	29	746	SOLID	1303.307369	41.08552	12	7	shallow	47	7	129285.7313	300.5851699
INT-CONTOUR	784		4.877335	28	29	746	SOLID	1303.307369	154.154873	38	7	shallow	47	7	129285.7313	224.056945
INDEX-CONTOUR	760		10.545477	30	31	748	SOLID	1097.706566	3.091611	12	7	shallow	47	7	129285.7313	111.8431264
INDEX-CONTOUR	760		7.481672	30	31	748	SOLID	1097.706566	6.197244	12	7	shallow	47	7	129285.7313	171.8351001
INT-CONTOUR	758		22.668013	30	31	748	SOLID	1097.706566	0.164278	10	7	shallow	47	7	129285.7313	317.9758931
INT-CONTOUR	758		15.209582	30	31	748	SOLID	1097.706566	20.682578	10	7	shallow	47	7	129285.7313	199.8835748
INT-CONTOUR	754		15.371725	28	29	746	SOLID	1303.307369	20.633048	8	7	shallow	47	7	129285.7313	318.2918251
INDEX-CONTOUR	760		14.743266	30	31	748	SOLID	1097.706566	35.579441	12	7	shallow	47	7	129285.7313	167.4142226
INDEX-CONTOUR	760		2.598052	30	31	748	SOLID	1097.706566	27.141491	12	7	shallow	47	7	129285.7313	484.5171581
INDEX-CONTOUR	760		0.042099	30	31	748	SOLID	1097.706566	18.261759	12	7	shallow	47	7	129285.7313	314.5992139
INT-CONTOUR	762		2.606294	30	31	748	SOLID	1097.706566	17.987948	14	7	shallow	47	7	129285.7313	252.7411148
INT-CONTOUR	762		5.633666	30	31	748	SOLID	1097.706566	40.738352	14	7	shallow	47	7	129285.7313	268.5516268
INDEX-CONTOUR	760		3.411198	30	31	748	SOLID	1097.706566	10.841626	12	7	shallow	47	7	129285.7313	287.7453134
INT-CONTOUR	798		6.891994	22	23	736	SOLID	1931.623271	323.672463	62	7	shallow	47	7	129285.7313	286.9894772
INT-CONTOUR	792		1.971972	22	23	736	SOLID	1931.623271	292.04359	56	7	shallow	47	7	129285.7313	400.7168568
INT-CONTOUR	786		5.429383	22	23	736	SOLID	1931.623271	246.790821	50	7	shallow	47	7	129285.7313	440.9284878
INDEX-CONTOUR	780		10.031338	26	27	744	SOLID	1438.844916	149.882297	36	7	shallow	47	7	129285.7313	388.1141639
INDEX-CONTOUR	780		0.806419	26	27	744	SOLID	1438.844916	139.241432	36	7	shallow	47	7	129285.7313	392.0936607
INT-CONTOUR	778		3.450416	28	29	746	SOLID	1303.307369	86.207124	32	7	shallow	47	7	129285.7313	289.4797035
INT-CONTOUR	772		0.741633	28	29	746	SOLID	1303.307369	17.619751	26	7	shallow	47	7	129285.7313	103.2388567
INT-CONTOUR	772		19.3656	28	29	746	SOLID	1303.307369	37.804054	26	7	shallow	47	7	129285.7313	248.5005763
INT-CONTOUR	772		2.57089	28	29	746	SOLID	1303.307369	24.113801	26	7	shallow	47	7	129285.7313	211.7905351
INT-CONTOUR	772		16.339405	30	31	748	SOLID	1097.706566	36.706614	24	7	shallow	47	7	129285.7313	345.8500142
INT-CONTOUR	772		4.425402	34	35	752	SOLID	265.722142	3.229724	20	7	shallow	47	7	129285.7313	463.4315129
INT-CONTOUR	766		6.674118	32	33	750	SOLID	570.448977	6.727144	16	7	shallow	47	7	129285.7313	486.7657868

Exhibit 8-11 IGW Spatial Weighting Output Functional Area 7 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead	Spatial Weighted_Mercury	Spatial Weighted_Zinc
5450.913217	0.042161754	169.0686341	1450.364342	1.981602444	2268.302372
2369.799531	0.018329939	58.65580385	5590.631304	0.916496935	716.7006033
556.3338009	0.004303134	27.06671163	460.435317	0.417403979	257.7577149
1745.933668	0.013504458	69.68300086	1307.231489	1.350445753	738.6938269
6261.026974	0.048427827	16174.89407	15400.04884	7.264173983	1341450.796
1008.291447	0.007798938	113.8644998	134141.7395	17.93755819	10372.588
4215.898679	0.032609157	198.9158562	35217.88929	2.282640972	9163.173047
1362.206449	0.010536402	44.25288875	311.8775017	0.421456083	573.1802734
14216.95278	0.109965366	336.4940203	20123.662	5.498268305	4255.659668
6077.629652	0.047009284	140.5577589	9824.940339	2.39747348	2665.426398
3109.107805	0.024048344	104.850782	3294.623195	2.717462928	1503.021531
3232.418845	0.025002131	126.5107849	1512.62895	1.040088667	947.5807806
4197.18592	0.032464417	117.5211902	20030.54541	0.795378221	2486.774357
4233.966104	0.032748905	98.2467143	18896.11805	2.292423334	6222.291906
7734.837153	0.059827462	329.0510399	101706.6851	3.589647708	4086.215641
6936.753711	0.053654442	250.0296974	307.9764943	5.633716359	874.5673966
8222.73637	0.063601267	131.6546235	1838.076628	6.423728007	288.749754
6830.731089	0.052834377	110.952192	7185.475291	1.585031314	1585.031314
4285.931502	0.033150847	334.8235549	41438.55877	4.972627053	14055.95914
461.2744449	0.003567868	13.45086298	5387.480927	0.399601234	118.453223
3796.146029	0.029362452	96.89609026	390520.6062	3.141782321	1462.250089
1547.588014	0.011970292	22.14504104	2202.533812	1.268851	152.0227142
7220.464264	0.055848887	124.5430191	921.5066436	6.199226512	1368.297744
11467.61785	0.088699795	278.5173559	7814.451928	11.70837292	1632.076226
12744.22693	0.098574118	345.0094127	2622.071537	4.928705896	3045.940244
SUM:		19817.65561	829508.1588	97.1641636	1412291.51

Exhibit 8-12 IGW Spatial Weighting Output Functional Area 7 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA7_shallow_NB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	3	84	553	355	596	C10-438-01	2000-07-21	0.0-2.0 ft	C10-438-012N	<Null>	ug/kg	<Null>
2	4	71	969	247	333	A11-3-03	1999-10-08	0.0-1.0 ft	A11-3-031N	<Null>	ug/kg	240
3	7	91	556	358	599	C10-432-02	2000-07-13	0.0-1.0 ft	C10-432-021N	<Null>	ug/kg	250
4	8	90	555	357	598	C10-432-01	2000-09-27	0.0-1.0 ft	C10-432-011N	<Null>	ug/kg	90.9
5	9	88	506	735	996	B10-2178-05	1999-11-19	0.0-1.0 ft	B10-2178-051FD	B10-2178-051N	ug/kg	5200
6	10	87	505	639	640	B10-2178-03	1999-11-19	0.0-1.0 ft	B10-2178-031N	<Null>	ug/kg	230
7	11	86	456	422	748	B10-7-02	1999-11-18	0.0-1.0 ft	B10-7-021N	<Null>	ug/kg	643468
8	12	85	557	359	600	C10-438-05	1999-10-08	0.0-2.0 ft	C10-438-052N	<Null>	ug/kg	<Null>
9	13	78	510	774	255	TP-RD-B10-10	2017-10-10 9:15	1.5-2.0 ft	TP-RD-B10-10(01.5-02.0)	<Null>	ug/kg	120
10	14	6	568	415	738	TP-RD-C10-01	2017-10-16 8:50	1.0-1.5 ft	TP-RD-C10-01(01.0-01.5)	<Null>	ug/kg	110
11	15	4	566	413	736	TP-RD-B11-07	2017-11-06 11:20	3.0-3.5 ft	TP-RD-B11-07(03.0-03.5)	<Null>	ug/kg	120
12	16	75	1020	710	856	A11-9-04	1999-10-14	0.0-1.0 ft	A11-9-041N	<Null>	ug/kg	<Null>
13	17	74	1009	678	11	A11-9-03	1999-10-14	0.0-1.3 ft	A11-9-031.3N	<Null>	ug/kg	<Null>
14	18	69	954	892	727	TP-RD-A11-15A	2017-10-27 8:10	3.0-3.5 ft	TP-RD-A11-15A(03.0-03.5)	<Null>	ug/kg	110
15	19	64	949	887	531	A11-3-05	1999-10-08	0.0-1.0 ft	A11-3-051N	<Null>	ug/kg	220
16	20	59	900	288	400	A11-1-01	1999-10-08	0.0-1.0 ft	A11-1-011N	<Null>	ug/kg	240
17	21	55	896	282	384	TP-RD-A11-02A	2017-10-20 13:10	1.0-1.5 ft	TP-RD-A11-02A(01.0-01.5)	<Null>	ug/kg	110
18	22	53	894	280	382	TP-RD-A11-02	2017-10-05 10:40	6.0-6.5 ft	TP-RD-A11-02(06.0-06.5)	<Null>	ug/kg	110
19	23	47	814	987	369	TP-RD-A11-11	2017-10-20	1.0-1.5 ft	BD102017B	TP-RD-A11-11(01.0-01.5)	ug/kg	110
20	24	36	776	650	366	TP-RD-A11-16	2017-10-26 8:25	1.0-1.5 ft	TP-RD-A11-16(01.0-01.5)	<Null>	ug/kg	120
21	25	32	756	562	681	TP-RD-A11-10	2017-10-20 9:15	8.0-8.5 ft	TP-RD-A11-10(08.0-08.5)	<Null>	ug/kg	110
22	26	25	703	758	286	TP-R-A11-504-1(2017)	2017-10-17 8:35	12.0-12.5 ft	TP-R-A11-504-1(12.0-12.5)	<Null>	ug/kg	110
23	27	16	690	670	106	TP-RD-A11-01	2017-10-04 12:45	1.0-1.5 ft	TP-RD-A11-01(01.0-01.5)	<Null>	ug/kg	120
24	28	14	626	656	619	TP-RD-B11-20	2017-12-04	1.0-1.5 ft	BD120417	TP-RD-B11-20(01.0-01.5)	ug/kg	120
25	29	13	625	655	618	B11-2-03	1999-10-12	0.0-2.0 ft	B11-2-032N	<Null>	ug/kg	<Null>

Exhibit 8-12 IGW Spatial Weighting Output Functional Area 7 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
398	607	4010	933	632	10400	34400	47	8280	1040	1010	53800	398	398	453126	748095	Point	1899	INT-CONTOUR	758
240	520	3200	360	310	56000	305000	50	6200	670	1000	39100	28	490	452458.1	747473.7	Point	1962	INT-CONTOUR	784
250	684.288	6290	685	300	22200	107000	97	10400	1370	1140.48	59900	188	394.971	453106	748139	Point	2312	INDEX-CONTOUR	760
90.9	910	5160	791	204	12700	96800	100	7750	487	1290	54700	130	446	453110.5	748140.1	Point	2312	INDEX-CONTOUR	760
410	2200	334000	330	1000	211000	318000	150	10700	1000	820	652000	390	380	452950	747872	Point	1899	INT-CONTOUR	758
230	3400	14600	570	1300	186000	17200000	2300	25800	850	970	1330000	73	380	452967	747860	Point	1899	INT-CONTOUR	758
643468	510	6100	760	440	22100	1080000	70	10000	850	980	281000	380	380	453033.2	747929	Point	2050	INT-CONTOUR	754
390	210	4200	920	320	10200	29600	40	8400	750	580	54400	390	390	453118	748099	Point	2312	INDEX-CONTOUR	760
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452995.08	747918.34	Point	1899	INT-CONTOUR	758
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120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452888.4	747795.42	Point	2312	INDEX-CONTOUR	760
400	460	3000	490	530	27800	577000	70	8400	790	920	190000	400	500	452269.1	747246.4	Point	2042	INT-CONTOUR	798
420	590	5500	720	40	22000	1700000	60	10200	1300	1200	68300	98	420	452305.5	747264.4	Point	1959	INT-CONTOUR	792
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452490.33	747501.79	Point	1963	INT-CONTOUR	782
220	540	2100	390	320	7000	136000	30	5700	590	680	30000	380	380	452470.6	747440.7	Point	2230	INDEX-CONTOUR	780
240	1000	10100	380	340	19800	1250000	150	10000	1800	2000	424000	35	370	452536.9	747536.1	Point	2043	INT-CONTOUR	778
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452516.51	747450.73	Point	1893	INT-CONTOUR	776
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452526.77	747458.59	Point	1893	INT-CONTOUR	776
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452598.4	747515.24	Point	1895	INT-CONTOUR	772
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410	450	3500	440	270	13600	26600	50	5900	740	530	30900	410	410	452768.3	747668.6	Point	2046	INT-CONTOUR	766

Exhibit 8-12 IGW Spatial Weighting Output Functional Area 7 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area
	11.488961	28	29	746	SOLID	1303.307369	41.08552	12	7	shallow	47	7	129285.7313	367.8924768	6623.956881	0.051235019
	4.877335	28	29	746	SOLID	1303.307369	154.154873	38	7	shallow	47	7	129285.7313	206.2281348	1529.526099	0.011830587
	10.545477	30	31	748	SOLID	1097.706566	3.091611	12	7	shallow	47	7	129285.7313	123.3979303	572.4214734	0.004427569
	7.481672	30	31	748	SOLID	1097.706566	6.197244	12	7	shallow	47	7	129285.7313	83.12334632	282.6366304	0.002186139
	22.668013	30	31	748	SOLID	1097.706566	0.164278	10	7	shallow	47	7	129285.7313	352.573787	7723.829525	0.05974232
	15.209582	30	31	748	SOLID	1097.706566	20.682578	10	7	shallow	47	7	129285.7313	185.4841517	765.3367338	0.005919731
	15.371725	28	29	746	SOLID	1303.307369	20.633048	8	7	shallow	47	7	129285.7313	377.151376	7907.572701	0.061163538
	14.743266	30	31	748	SOLID	1097.706566	35.579441	12	7	shallow	47	7	129285.7313	343.6928543	6249.379218	0.048337733
	12.264525	30	31	748	SOLID	1097.706566	21.231977	10	7	shallow	47	7	129285.7313	354.3439544	7133.577877	0.055176838
	6.103496	30	31	748	SOLID	1097.706566	19.976315	12	7	shallow	47	7	129285.7313	203.9897109	2114.160194	0.016352618
	1.839196	30	31	748	SOLID	1097.706566	19.67793	12	7	shallow	47	7	129285.7313	357.7023227	7539.236818	0.058314531
	6.891994	22	23	736	SOLID	1931.623271	323.672463	62	7	shallow	47	7	129285.7313	293.3527242	4376.833662	0.033853958
	1.971972	22	23	736	SOLID	1931.623271	292.04359	56	7	shallow	47	7	129285.7313	492.7230569	14343.69188	0.110945668
	6.836824	28	29	746	SOLID	1303.307369	121.176918	36	7	shallow	47	7	129285.7313	177.7109505	1985.203646	0.015355164
	0.806419	26	27	744	SOLID	1438.844916	139.241432	36	7	shallow	47	7	129285.7313	446.4904593	12456.25673	0.096346724
	3.450416	28	29	746	SOLID	1303.307369	86.207124	32	7	shallow	47	7	129285.7313	256.1290655	3740.955059	0.02893556
	7.590967	26	27	744	SOLID	1438.844916	94.406104	32	7	shallow	47	7	129285.7313	209.0875635	2254.393515	0.017437296
	0.327483	26	27	744	SOLID	1438.844916	86.007043	32	7	shallow	47	7	129285.7313	209.8700707	2856.622192	0.022095417
	3.954512	28	29	746	SOLID	1303.307369	26.264257	26	7	shallow	47	7	129285.7313	228.3174779	2923.842702	0.022615355
	15.167414	30	31	748	SOLID	1097.706566	27.395781	24	7	shallow	47	7	129285.7313	299.3929734	6034.85051	0.046678396
	0.492538	34	35	752	SOLID	265.722142	33.839996	22	7	shallow	47	7	129285.7313	255.1330261	3572.59509	0.027633329
	9.554066	34	35	752	SOLID	265.722142	18.509699	20	7	shallow	47	7	129285.7313	302.6952391	4890.407536	0.037826352
	5.529903	32	33	750	SOLID	570.448977	5.445175	20	7	shallow	47	7	129285.7313	297.3966804	5376.602745	0.041586977
	6.309165	32	33	750	SOLID	570.448977	19.569154	16	7	shallow	47	7	129285.7313	414.4192347	10481.82189	0.081074855
	6.674118	32	33	750	SOLID	570.448977	6.727144	16	7	shallow	47	7	129285.7313	315.901663	5550.152488	0.042929351
															SUM:	

Exhibit 8-12 IGW Spatial Weighting Output Functional Area 7 Shallow (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_NB
20.3915375
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1.798787994
6.997743747
13.54158302
46.59718073
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21.19627938
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2.430495909
2.487689043
5.601407469
3.039666139
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4.990437248
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17.60103374
39583.36847

Exhibit 8-13 IGW Spatial Weighting Output Functional Area 8 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA8_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	3	94	324	468	264	TP-RD-B10-09	2017-10-03 9:15	1.0-1.5 ft	TP-RD-B10-09(01.0-01.5)	<Null>	ug/kg	110
2	4	57	923	340	536	TP-RD-A11-19A	2017-11-06 11:10	7.0-7.5 ft	TP-RD-A11-19A(07.0-07.5)	<Null>	ug/kg	110
3	7	110	468	826	59	B11-602C-07	1999-10-14	0.0-1.0 ft	B11-602C-071N	<Null>	ug/kg	240
4	8	107	328	785	841	B10-7-10	1999-11-18	0.0-1.0 ft	B10-7-101N	<Null>	ug/kg	700869
5	9	106	422	1036	971	C10-2176-01	1999-11-19	0.0-1.5 ft	C10-2176-011.5N	<Null>	ug/kg	250
6	10	104	465	651	614	B10-511-03	1999-11-19	0.0-2.0 ft	B10-511-032N	<Null>	ug/kg	270
7	11	93	459	425	751	TP-RD-B10-12	2017-10-10 9:30	1.5-2.0 ft	TP-RD-B10-12(01.5-02.0)	<Null>	ug/kg	120000
8	12	89	473	263	581	TP-RD-B11-14	2017-11-29 10:45	3.0-3.5 ft	TP-RD-B11-14(03.0-03.5)	<Null>	ug/kg	110
9	13	88	471	261	579	TP-RD-B11-11	2017-11-29 10:00	3.0-3.5 ft	TP-RD-B11-11(03.0-03.5)	<Null>	ug/kg	110
10	14	87	467	761	115	TP-RD-B11-13	2017-11-29 10:30	3.0-3.5 ft	TP-RD-B11-13(03.0-03.5)	<Null>	ug/kg	110
11	15	83	464	587	523	TP-RD-C10-02	2017-10-17 13:20	3.5-4.0 ft	TP-RD-C10-02(03.5-04.0)	<Null>	ug/kg	110
12	16	81	454	405	75	TP-RD-B11-05B	2017-10-18 8:00	5.0-5.5 ft	TP-RD-B11-05B(05.0-05.5)	<Null>	ug/kg	110
13	17	80	451	245	331	TP-RD-B11-05A	2017-10-16 9:50	5.0-5.5 ft	TP-RD-B11-05A(05.0-05.5)	<Null>	ug/kg	110
14	18	76	985	382	607	TP-RD-A11-18	2017-11-03 8:20	3.0-3.5 ft	TP-RD-A11-18(03.0-03.5)	<Null>	ug/kg	120
15	19	70	979	337	528	TP-RD-A11-04	2017-10-06 9:15	1.0-1.5 ft	TP-RD-A11-04(01.0-01.5)	<Null>	ug/kg	100
16	20	68	964	73	773	TP-RD-A11-18A	2017-11-06 11:00	1.0-1.5 ft	TP-RD-A11-18A(01.0-01.5)	<Null>	ug/kg	110
17	21	66	960	57	576	TP-R-A11-5-1	2006-08-07	1.5-2.0 ft	TP-R-A11-5-12.0N	<Null>	ug/kg	330
18	22	64	939	570	724	TP-RD-A11-19	2017-11-03 9:30	7.0-7.5 ft	TP-RD-A11-19(07.0-07.5)	<Null>	ug/kg	110
19	23	59	934	556	6	TP-R-A11-5-2	2006-08-07	1.5-2.0 ft	TP-R-A11-5-22.0N	<Null>	ug/kg	520
20	24	49	889	271	729	TP-RD-A11-20A	2017-11-03 9:05	1.0-1.5 ft	TP-RD-A11-20A(01.0-01.5)	<Null>	ug/kg	120
21	25	43	879	1025	418	TP-RD-A11-06	2017-10-12	1.0-1.5 ft	BD10122017	TP-RD-A11-06(01.0-01.5)	ug/kg	120
22	26	36	839	455	212	TP-R-A11-4-2	2006-08-07	1.5-2.0 ft	TP-R-A11-4-22.0N	<Null>	ug/kg	1300
23	27	28	800	969	682	TP-RD-A11-03	2017-10-06 8:15	1.0-1.5 ft	TP-RD-A11-03(01.0-01.5)	<Null>	ug/kg	120000
24	28	27	772	626	32	TP-RD-A11-3A	2017-10-13 10:30	8.5-9.0 ft	TP-RD-A11-3A(08.5-09.0)	<Null>	ug/kg	110
25	29	18	685	643	787	TP-RD-A11-7A	2017-10-13 9:30	1.0-1.5 ft	TP-RD-A11-7A(01.0-01.5)	<Null>	ug/kg	120
26	30	15	675	604	217	TP-RD-A11-23	2017-11-29 8:20	2.0-2.5 ft	TP-RD-A11-23(02.0-02.5)	<Null>	ug/kg	120
27	31	11	671	589	563	TP-RD-A11-22	2017-11-29 8:00	1.0-1.5 ft	TP-RD-A11-22(01.0-01.5)	<Null>	ug/kg	120
28	32	10	670	588	562	SB-R-B11-01	2006-05-23	4.0-4.5 ft	SB-R-B11-014.5N	<Null>	ug/kg	330
29	33	5	642	877	518	TP-RD-B11-10	2017-11-29	2.0-2.5 ft	BD112917A	TP-RD-B11-10(02.0-02.5)	ug/kg	120
30	34	2	639	874	515	TP-RD-B11-09	2017-11-29 8:40	1.0-1.5 ft	TP-RD-B11-09(01.0-01.5)	<Null>	ug/kg	120

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453121.41	747907.69	Point	2009	INT-CONTOUR	748
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700869	570	5400	450	50	37900	658000	60	7500	640	820	76100	380	380	453087.6	747926.7	Point	2235	INDEX-CONTOUR	750
250	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453161.1	748036.6	Point	2055	INT-CONTOUR	752
240	440	6200	800	260	33100	1160000	170	10600	720	870	57500	3900	3900	453031.8	747849.1	Point	2051	INT-CONTOUR	754
120000	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453059.44	747893.32	Point	2050	INT-CONTOUR	754
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110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452851.56	747658.02	Point	1900	INT-CONTOUR	756
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120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452488.72	747281.44	Point	1893	INT-CONTOUR	776
100	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452451.9	747319.73	Point	2043	INT-CONTOUR	778
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452490.35	747270.72	Point	1894	INT-CONTOUR	774
<Null>	1160	1800	703	585	13700	411000	31.3	8920	1720	10800	123000	180	180	452488.804	747299.791	Point	1893	INT-CONTOUR	776
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452481.76	747346.89	Point	1893	INT-CONTOUR	776
<Null>	2130	2130	73.6	214	3090	77900	106	971	2130	2130	7620	180	180	452481.97	747335.022	Point	1893	INT-CONTOUR	776
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452531.74	747321.3	Point	1895	INT-CONTOUR	772
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452560.24	747382.38	Point	1895	INT-CONTOUR	772
<Null>	2130	2290	352	490	13200	3790000	46	4850	2130	10700	46300	<Null>	<Null>	452563.541	747431.233	Point	1895	INT-CONTOUR	772
120000	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452607.07	747449.96	Point	2228	INDEX-CONTOUR	770
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452622.54	747423.43	Point	2049	INT-CONTOUR	768
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452671.86	747545.18	Point	2049	INT-CONTOUR	768
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452697.39	747519.32	Point	2046	INT-CONTOUR	766
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452709.61	747538.65	Point	2046	INT-CONTOUR	766
<Null>	2150	1500	210	538	8440	4860	12.5	2890	2150	2150	10100	180	180	452714.5804	747520.1345	Point	2046	INT-CONTOUR	766
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452730.53	747523.45	Point	2048	INT-CONTOUR	764
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452719.24	747506.27	Point	2048	INT-CONTOUR	764

Exhibit 8-13 IGW Spatial Weighting Output Functional Area 8 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area
	4.16555	26	27	744	SOLID	1438.844916	0.681154	4	8	shallow	69	8	100733.2588	307.4559653	4173.162618	0.041427853
	7.013186	26	27	744	SOLID	1438.844916	153.000754	34	8	shallow	69	8	100733.2588	159.9600776	930.8935843	0.009241174
	1.504231	30	31	748	SOLID	1097.706566	10.728905	8	8	shallow	69	8	100733.2588	309.9233939	3489.60463	0.034642031
	6.384953	28	29	746	SOLID	1303.307369	26.863853	4	8	shallow	69	8	100733.2588	280.7196235	4567.622585	0.045343739
	1.190064	28	29	746	SOLID	1303.307369	22.972761	6	8	shallow	69	8	100733.2588	345.7149386	7093.168006	0.070415353
	17.735304	28	29	746	SOLID	1303.307369	19.024222	8	8	shallow	69	8	100733.2588	336.7547234	6691.526383	0.066428173
	1.495212	28	29	746	SOLID	1303.307369	20.079859	8	8	shallow	69	8	100733.2588	264.9915933	4093.374081	0.040635775
	18.600205	30	31	748	SOLID	1097.706566	19.969104	8	8	shallow	69	8	100733.2588	303.7492958	5247.92623	0.052097255
	15.891687	30	31	748	SOLID	1097.706566	1.3512	8	8	shallow	69	8	100733.2588	229.612733	1899.219712	0.018853949
	13.766911	30	31	748	SOLID	1097.706566	17.175856	8	8	shallow	69	8	100733.2588	352.567788	7284.170885	0.072311479
	8.132728	28	29	746	SOLID	1303.307369	18.359222	8	8	shallow	69	8	100733.2588	279.5055689	4100.559938	0.040707111
	6.249461	26	27	744	SOLID	1438.844916	20.296057	8	8	shallow	69	8	100733.2588	280.7513811	3737.294913	0.037100903
	3.589547	26	27	744	SOLID	1438.844916	23.865212	8	8	shallow	69	8	100733.2588	327.7020035	5621.120881	0.055802035
	7.145487	22	23	736	SOLID	1931.623271	135.393511	40	8	shallow	69	8	100733.2588	188.1956071	1124.18071	0.011159976
	9.295825	21	22	738	SOLID	1783.579742	182.470225	40	8	shallow	69	8	100733.2588	187.7697105	2080.718778	0.020655728
	3.929323	22	23	736	SOLID	1931.623271	127.060691	38	8	shallow	69	8	100733.2588	201.5733511	1692.294102	0.016799755
	2.345184	21	22	738	SOLID	1783.579742	141.659443	38	8	shallow	69	8	100733.2588	154.5539158	1268.584726	0.012593504
	10.594718	39	40	742	SOLID	1513.916495	153.593516	34	8	shallow	69	8	100733.2588	147.508893	823.9707233	0.008179729
	12.477883	39	40	742	SOLID	1513.916495	156.817647	34	8	shallow	69	8	100733.2588	132.2889721	952.1203789	0.009451897
	2.049248	24	25	740	SOLID	1629.58447	108.502015	32	8	shallow	69	8	100733.2588	227.0378575	3091.301761	0.030687995
	14.988134	39	40	742	SOLID	1513.916495	70.19777	30	8	shallow	69	8	100733.2588	271.0003104	4880.352678	0.048448276
	3.268687	26	27	744	SOLID	1438.844916	46.469283	28	8	shallow	69	8	100733.2588	199.9547634	2039.527799	0.020246816
	1.489466	26	27	744	SOLID	1438.844916	14.182308	26	8	shallow	69	8	100733.2588	254.3778934	3912.195555	0.038837179
	6.540958	26	27	744	SOLID	1438.844916	15.237064	24	8	shallow	69	8	100733.2588	280.4040259	4205.826327	0.041752112
	3.860821	30	31	748	SOLID	1097.706566	9.215089	20	8	shallow	69	8	100733.2588	247.5090363	2363.160149	0.023459582
	7.398466	28	29	746	SOLID	1303.307369	5.375847	20	8	shallow	69	8	100733.2588	205.0028094	2481.123853	0.024630632
	7.966738	28	29	746	SOLID	1303.307369	18.35624	20	8	shallow	69	8	100733.2588	286.4192957	4589.933131	0.04556522
	5.996669	28	29	746	SOLID	1303.307369	0.550541	20	8	shallow	69	8	100733.2588	68.21389154	285.4148469	0.002833373
	0.536265	28	29	746	SOLID	1303.307369	4.201374	18	8	shallow	69	8	100733.2588	278.0823666	4155.091142	0.041248454
	3.413081	28	29	746	SOLID	1303.307369	15.097603	18	8	shallow	69	8	100733.2588	196.9461535	1857.81133	0.018442879
															SUM:	

Exhibit 8-13 IGW Spatial Weighting Output Functional Area 8 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_13DNB
4.557063809
1.016529153
8.314087337
31780.02094
17.60383832
17.93560682
4876.29305
5.730698006
2.073934377
7.954262644
4.4777822
4.081099385
6.138223903
1.339197072
2.065572784
1.847973087
4.155856413
0.899770152
4.914986401
3.682559422
5.813793065
26.32086136
4660.461423
4.592732346
2.815149845
2.955675871
5.467826439
0.93501293
4.949814421
2.213145513
41471.62846

Exhibit 8-14 IGW Spatial Weighting Output Functional Area 8 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA8_shallow_metals	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	66	960	57	576	TP-R-A11-5-1	2006-08-07	1.5-2.0 ft	TP-R-A11-5-12.0N	<Null>	ug/kg	330	<Null>	1160
2	3	1	589	920	560	B11-523-01	2000-06-08	0.0-2.0 ft	B11-523-012N	<Null>	ug/kg	<Null>	421.82	633.152
3	7	59	934	556	6	TP-R-A11-5-2	2006-08-07	1.5-2.0 ft	TP-R-A11-5-22.0N	<Null>	ug/kg	520	<Null>	2130
4	8	112	457	423	749	C10-2179-03	1999-11-19	0.0-0.5 ft	C10-2179-030.5N	<Null>	ug/kg	<Null>	4000	490
5	9	111	469	827	60	B11-602C-08	1999-10-14	0.0-1.0 ft	B11-602C-081N	<Null>	ug/kg	<Null>	390	2300
6	10	109	448	864	192	B11-9-03	2000-06-30	0.0-1.0 ft	B11-9-031N	<Null>	ug/kg	<Null>	409	478
7	11	108	420	1034	969	C10-2176-02	1999-11-19	0.0-1.0 ft	C10-2176-021N	<Null>	ug/kg	<Null>	400	490
8	12	107	328	785	841	B10-7-10	1999-11-18	0.0-1.0 ft	B10-7-101N	<Null>	ug/kg	700869	700869	570
9	13	105	554	356	597	B11-523-03	1999-10-12	0.0-2.0 ft	B11-523-032N	<Null>	ug/kg	<Null>	410	290
10	14	104	465	651	614	B10-511-03	1999-11-19	0.0-2.0 ft	B10-511-032N	<Null>	ug/kg	270	240	440
11	15	103	421	1035	970	B11-9-02	1999-11-05	0.0-2.0 ft	B11-9-022N	<Null>	ug/kg	<Null>	460	230
12	16	41	862	858	408	TP-R-A11-4-1	2006-08-07	1.5-2.0 ft	TP-R-A11-4-12.0N	<Null>	ug/kg	<Null>	<Null>	2280
13	17	36	839	455	212	TP-R-A11-4-2	2006-08-07	1.5-2.0 ft	TP-R-A11-4-22.0N	<Null>	ug/kg	1300	<Null>	2130
14	18	9	669	578	1	SB-R-B11-01	2006-05-23	0.5-1.0 ft	SB-R-B11-011.0N	<Null>	ug/kg	220	<Null>	2220

Exhibit 8-14 IGW Spatial Weighting Output Functional Area 8 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance
2160	703	585	13700	411000	101	8920	1720	10800	123000	180	180	452488.804	747299.791	Point	1893	INT-CONTOUR	776		2.345184
3000	527	283	10300	72400	143	5990	717	1055.253	37500	1160	421.82	452787.5	747672.6	Point	2048	INT-CONTOUR	764		6.513073
2130	73.6	214	3090	77900	106	971	2130	2130	7620	180	180	452481.97	747335.022	Point	1893	INT-CONTOUR	776		12.477883
274000	500	290	56000	603000	120	11100	900	980	183000	4000	4000	453176.6	748063.5	Point	2050	INT-CONTOUR	754		4.519551
7000	500	13100	34700	858000	110	10500	1300	4500	3990000	520	78	452846	747682.7	Point	2053	INT-CONTOUR	756		14.680146
5450	536	2000	21200	212000	111	9470	1100	797	929000	154	409	453037	747824	Point	2055	INT-CONTOUR	752		3.501604
207000	370	300	28500	377000	310	8900	850	990	101000	1100	100	453176.6	748053.9	Point	2054	INT-CONTOUR	752		4.369671
5400	450	50	37900	658000	60	7500	640	820	76100	380	380	453087.6	747926.7	Point	2235	INDEX-CONTOUR	750		6.384953
5800	470	310	35500	279000	3100	9100	720	1000	55000	410	410	452789.3	747622.7	Point	2312	INDEX-CONTOUR	760		6.870205
6200	800	260	33100	1160000	170	10600	720	870	57500	3900	3900	453031.8	747849.1	Point	2051	INT-CONTOUR	754		17.735304
4800	680	70	13500	103000	140	18200	1000	900	70500	320	460	453020.8	747824	Point	2055	INT-CONTOUR	752		6.52553
2170	598	541	14100	6680	99.6	10400	2280	11400	35700	<Null>	<Null>	452534.728	747416.571	Point	1894	INT-CONTOUR	774		15.643998
2290	352	490	13200	3790000	107	4850	2130	10700	46300	<Null>	<Null>	452563.541	747431.233	Point	1895	INT-CONTOUR	772		3.268687
3090	318	554	8010	242000	36	5220	2220	2220	23900	190	190	452714.5804	747520.1345	Point	2046	INT-CONTOUR	766		5.996669

Exhibit 8-14 IGW Spatial Weighting Output Functional Area 8 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	FA	S_D	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area
21	22	738	SOLID	1783.579742	141.659443	38	8	shallow	69	8	100733.2588	398.2961781	6956.619523	0.069059808
32	33	750	SOLID	570.448977	6.367068	14	8	shallow	69	8	100733.2588	195.7682833	1708.922629	0.01696483
39	40	742	SOLID	1513.916495	156.817647	34	8	shallow	69	8	100733.2588	350.6583636	4714.837586	0.046805173
28	29	746	SOLID	1303.307369	17.900213	8	8	shallow	69	8	100733.2588	172.5097264	1276.368971	0.01267078
30	31	748	SOLID	1097.706566	2.509957	8	8	shallow	69	8	100733.2588	465.1117566	13094.13152	0.129988166
26	27	744	SOLID	1438.844916	19.675413	8	8	shallow	69	8	100733.2588	168.1497672	1078.865989	0.010710127
28	29	746	SOLID	1303.307369	24.091675	6	8	shallow	69	8	100733.2588	386.9018255	9308.976183	0.092412142
28	29	746	SOLID	1303.307369	26.863853	4	8	shallow	69	8	100733.2588	436.6699761	11444.6471	0.113613391
30	31	748	SOLID	1097.706566	2.073838	12	8	shallow	69	8	100733.2588	364.8186738	8422.05135	0.083607454
28	29	746	SOLID	1303.307369	19.024222	8	8	shallow	69	8	100733.2588	305.8444768	5359.689947	0.053206756
28	29	746	SOLID	1303.307369	23.007386	6	8	shallow	69	8	100733.2588	394.1628802	10100.67341	0.100271485
26	27	744	SOLID	1438.844916	77.514676	30	8	shallow	69	8	100733.2588	273.3430322	3915.665076	0.038871621
26	27	744	SOLID	1438.844916	46.469283	28	8	shallow	69	8	100733.2588	407.9266955	9893.781331	0.098217624
28	29	746	SOLID	1303.307369	0.550541	20	8	shallow	69	8	100733.2588	483.2246901	13458.03298	0.133600691
													SUM:	

Exhibit 8-14 IGW Spatial Weighting Output Functional Area 8 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_Arsenic	Spatial Weighted_Cadmium	Spatial Weighted_Lead	Spatial Weighted_Mercury	Spatial Weighted_Zinc
149.1691855	40.39998775	28383.58114	6.97504062	8494.356399
50.89449055	4.801046941	1228.253705	2.425970716	636.1811318
99.69501811	10.01630698	3646.122963	4.961348319	356.6554169
3471.793747	3.674526229	7640.4804	1.520493612	2318.752758
909.9171589	1702.844969	111529.846	14.29869821	518652.7806
58.37019183	21.42025388	2270.546912	1.188824091	9949.707929
19129.31333	27.7236425	34839.37741	28.64776392	9333.62631
613.5123105	5.680669541	74757.61116	6.81680345	8645.979042
484.9232361	25.91831089	23326.4798	259.1831089	4598.409997
329.8818888	13.83375663	61719.83725	9.045148563	3059.388484
481.3031264	7.019003927	10327.96292	14.03800785	7069.139669
84.35141797	21.02954706	259.6624295	3.87161347	1387.716876
224.9183588	48.12663574	372244.7948	10.50928576	4547.475989
412.8261352	74.01478281	32331.36722	4.809624876	3193.056515
26500.86959	2006.50344	764505.9241	368.2917324	582243.2271

Exhibit 8-15 IGW Spatial Weighting Output Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA9_deep	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	3	122	14	437	B11-1-11	1999-11-10	0.0-1.0 ft	B11-1-111N	<Null>	ug/kg	220	220	2200	53800
2	6	6	183	145	926	SB-R-C11-03	2006-06-01	0.5-1.0 ft	SB-R-C11-031.0N	<Null>	ug/kg	350		1180	6270
3	7	5	126	18	445	C10-3-02	1999-11-22	0.0-1.0 ft	C10-3-021N	<Null>	ug/kg	140	130	290	7800
4	8	2	120	1030	471	C11-12-02	1999-11-10	0.0-1.0 ft	C11-12-021N	<Null>	ug/kg	240	240	1400	20200
5	9	1	125	17	444	B11-11-05	1999-11-10	0.0-0.5 ft	B11-11-050.5N	<Null>	ug/kg	210	120	1300	12900

Exhibit 8-15 IGW Spatial Weighting Output Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
220	260	17800	33800000	1200	2800	13800	1300	20200	150	440	453105.4	747745.4	Point	2317	INDEX-CONTOUR	740		3.291709	24
749	571	18400	473000	137	8230	1570	2280	40100	970	190	453143.3523	747886.9146	Point	2008	INT-CONTOUR	746		10.098521	26
260	130	39700	971000	320	5800	450	900	69200	99	390	453245.2	747994.5	Point	2317	INDEX-CONTOUR	740		21.207015	39
140	110	16900	2470000	610	3100	5000	1100	32600	2100	460	453199.5	747824.6	Point	1850	INT-CONTOUR	736		5.337369	24
210	80	12700	7320000	240	3800	1200	1200	48300	360	430	453138.4	747818.8	Point	2187	INT-CONTOUR	742		5.720618	39

Exhibit 8-15 IGW Spatial Weighting Output Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
25	740	SOLID	1629.58447	23.508542	0	56	B11-1-11	1999-11-10	0.0-1.0 ft	B11-1-111N		ug/kg	220
27	744	SOLID	1438.844916	29.244696	2	258	SB-R-C11-03	2006-06-01	0.5-1.0 ft	SB-R-C11-031.0N		ug/kg	350
40	742	SOLID	1513.916495	23.20359	0	107	C10-3-02	1999-11-22	0.0-1.0 ft	C10-3-021N		ug/kg	140
25	740	SOLID	1629.58447	3.798255	0	116	C11-12-02	1999-11-10	0.0-1.0 ft	C11-12-021N		ug/kg	240
40	742	SOLID	1513.916495	8.528174	0	55	B11-11-05	1999-11-10	0.0-0.5 ft	B11-11-050.5N		ug/kg	210

Exhibit 8-15 IGW Spatial Weighting Output Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
220	2200	53800	220	260	17800	33800000	1200	2800	13800	1300	20200	150	440	453105.4	747745.4	75
	1180	6270	749	571	18400	473000	137	8230	1570	2280	40100	970	190	453143.3523	747886.9146	75
130	290	7800	260	130	39700	971000	320	5800	450	900	69200	99	390	453245.2	747994.5	75
240	1400	20200	140	110	16900	2470000	610	3100	5000	1100	32600	2100	460	453199.5	747824.6	75
120	1300	12900	210	80	12700	7320000	240	3800	1200	1200	48300	360	430	453138.4	747818.8	75

Exhibit 8-15 IGW Spatial Weighting Output Functional Area 9 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead	Spatial Weighted_Mercury
9	142632.4389	2521.296276	115730.6798	0.811391018	43652.83678	27425016.42	973.6692219
9	142632.4389	347.1830608	6113.753829	0.042863698	268.7553884	20274.5293	5.872326668
9	142632.4389	376.8653479	9199.444707	0.064497563	503.0809912	62627.13364	20.63922015
9	142632.4389	334.4583222	4898.787078	0.034345533	693.7797584	84833.46551	20.95077488
9	142632.4389	329.6191574	6689.769497	0.04690216	605.0378665	343323.8126	11.25651845
				SUM:	45723.49079	27936075.36	1032.388062

Exhibit 8-16 IGW Spatial Weighting Output Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA9_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	46	1017	707	853	SB-R-A12-02	2006-05-24	0.5-1.0 ft	SB-R-A12-021.0FD	SB-R-A12-021.0N	ug/kg	330	<Null>	2120
2	6	66	418	1032	967	B11-513-02	1999-10-14	0.0-2.0 ft	B11-513-022N	<Null>	ug/kg		390	530
3	7	41	962	71	771	SB-R-A12-04	2006-05-24	0.5-1.0 ft	SB-R-A12-041.0N	<Null>	ug/kg	340	<Null>	935
4	8	25	661	347	548	A11-8-03	1999-10-14	0.0-2.0 ft	A11-8-032N	<Null>	ug/kg	240	240	430
5	9	24	638	873	514	A11-8-02	2000-06-08	0.0-1.5 ft	A11-8-021.5N	<Null>	ug/kg	250	250	633.1

Exhibit 8-16 IGW Spatial Weighting Output Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
3320	220	531	7470	3740	106	3850	2120	2120	13700	180	180	452336.0023	746946.4522	Point	2232	INDEX-CONTOUR	790		6.445543	8
4300	480	150	25400	90300	110	8300	1200	1100	79100	390	390	452983.6	747674.5	Point	2195	INDEX-CONTOUR	750		27.535189	26
2630	194	557	5980	22000	47.3	3000	2230	2230	14700	190	190	452512.541	747228.011	Point	1894	INT-CONTOUR	774		15.21224	22
2400	250	260	27600	14100	40	4300	830	870	25900	400	2200	452703.4	747376.5	Point	2240	INDEX-CONTOUR	760		12.185292	24
2060	126	316.55	5410	13900	37.6	2490	606	1055.166	11800	390.411	390.411	452726.4	747345.2	Point	1899	INT-CONTOUR	758		4.498592	24

Exhibit 8-16 IGW Spatial Weighting Output Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
9	728	SOLID	4732.765771	165.529632	62	193	SB-R-A12-02	2006-05-24	0.5-1.0 ft	SB-R-A12-021.0FD	SB-R-A12-021.0N	ug/kg	330
27	744	SOLID	1438.844916	22.239608	6	68	B11-513-02	1999-10-14	0.0-2.0 ft	B11-513-022N		ug/kg	
23	736	SOLID	1931.623271	84.630039	38	198	SB-R-A12-04	2006-05-24	0.5-1.0 ft	SB-R-A12-041.0N		ug/kg	340
25	740	SOLID	1629.58447	17.509685	20	8	A11-8-03	1999-10-14	0.0-2.0 ft	A11-8-032N		ug/kg	240
25	740	SOLID	1629.58447	20.828883	18	7	A11-8-02	2000-06-08	0.0-1.5 ft	A11-8-021.5N		ug/kg	250

Exhibit 8-16 IGW Spatial Weighting Output Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	2120	3320	220	531	7470	3740	106	3850	2120	2120	13700	180	180	452336.0023	746946.4522	75
390	530	4300	480	150	25400	90300	110	8300	1200	1100	79100	390	390	452983.6	747674.5	75
	935	2630	194	557	5980	22000	47.3	3000	2230	2230	14700	190	190	452512.541	747228.011	75
240	430	2400	250	260	27600	14100	40	4300	830	870	25900	400	2200	452703.4	747376.5	75
250	633.1	2060	126	316.55	5410	13900	37.6	2490	606	1055.166	11800	390.411	390.411	452726.4	747345.2	75

Exhibit 8-16 IGW Spatial Weighting Output Functional Area 9 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
9	142632.4389	558.3323976	17795.06724	0.124761712	466.6088025
9	142632.4389	1478.36626	63916.87067	0.44812296	40465.50327
9	142632.4389	765.853038	28258.09497	0.198118291	4358.602393
9	142632.4389	807.5187565	27093.89332	0.18995604	2678.38017
9	142632.4389	573.985082	5568.279108	0.03903936	542.647102
				SUM:	48511.74174

Exhibit 8-17 IGW Spatial Weighting Output Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA10_deep	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	3	95	940	488	B11-2044-04	1999-11-09	0.0-1.3 ft	B11-2044-041.3FD	B11-2044-041.3N	ug/kg	160	160	470	7000
2	6	7	323	467	263	SB-R-B11-04	2006-05-31	3.5-4.0 ft	SB-R-B11-044.0N	<Null>	ug/kg	350		1330	3710
3	7	5	93	938	268	C11-10-01	1999-11-09	0.0-2.0 ft	C11-10-012N	<Null>	ug/kg	<Null>	390	500	69400
4	8	2	121	13	436	B11-1-08	1999-11-10	0.0-1.0 ft	B11-1-081N	<Null>	ug/kg	250	250	2000	64400
5	9	1	94	939	269	C11-1-17	1999-11-18	0.0-1.0 ft	C11-1-171N	<Null>	ug/kg	<Null>	1900	1600	38600

Exhibit 8-17 IGW Spatial Weighting Output Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
690	280	16400	39400	30	7700	110	940	68800	440	440	453035.2	747525.3	Point	2192	INDEX-CONTOUR	730		2.25857	21
748	2790	18500	5910	30.6	14400	2230	2230	32700	190	190	452964.274	747577.0209	Point	2011	INT-CONTOUR	744		7.194052	24
380	300	14800	2090000	210	3300	3800	990	22700	99	390	453233.5	747805	Point	2121	INT-CONTOUR	734		4.340432	21
510	250	46000	16900000	960	7800	4600	3000	41800	390	480	453109.4	747717.9	Point	2317	INDEX-CONTOUR	740		4.772981	24
490	260	26200	10900000	340	5700	3000	860	215000	8200	1900	453173.1	747733.8	Point	2121	INT-CONTOUR	734		8.620488	21

Exhibit 8-17 IGW Spatial Weighting Output Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
22	738	SOLID	1783.579742	20.853935	0	59	B11-2044-04	1999-11-09	0.0-1.3 ft	B11-2044-041.3FD	B11-2044-041.3N	ug/kg	160
25	740	SOLID	1629.58447	21.538563	4	224	SB-R-B11-04	2006-05-31	3.5-4.0 ft	SB-R-B11-044.0N		ug/kg	350
22	738	SOLID	1783.579742	19.50194	0	114	C11-10-01	1999-11-09	0.0-2.0 ft	C11-10-012N		ug/kg	
25	740	SOLID	1629.58447	3.309145	0	54	B11-1-08	1999-11-10	0.0-1.0 ft	B11-1-081N		ug/kg	250
22	738	SOLID	1783.579742	15.293547	0	115	C11-1-17	1999-11-18	0.0-1.0 ft	C11-1-171N		ug/kg	

Exhibit 8-17 IGW Spatial Weighting Output Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
160	470	7000	690	280	16400	39400	30	7700	110	940	68800	440	440	453035.2	747525.3	76
	1330	3710	748	2790	18500	5910	30.6	14400	2230	2230	32700	190	190	452964.274	747577.0209	76
390	500	69400	380	300	14800	2090000	210	3300	3800	990	22700	99	390	453233.5	747805	76
250	2000	64400	510	250	46000	16900000	960	7800	4600	3000	41800	390	480	453109.4	747717.9	76
1900	1600	38600	490	260	26200	10900000	340	5700	3000	860	215000	8200	1900	453173.1	747733.8	76

Exhibit 8-17 IGW Spatial Weighting Output Functional Area 10 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead	Spatial Weighted_Mercury	Spatial Weighted_Benzoapyrene
10	98365.01744	1017.81995	16475.05234	0.167488938	1172.422569	6599.064172	5.024668151	73.69513288
10	98365.01744	1555.87446	55454.48396	0.563762254	2091.557963	3331.834922	17.25112498	107.1148283
10	98365.01744	338.9352702	6932.573969	0.070478043	4891.176212	147299.1107	14.80038912	6.977326297
10	98365.01744	420.7465154	10369.03746	0.105413873	6788.653425	1781494.455	101.1973181	41.1114105
10	98365.01744	400.0744608	9133.792868	0.09285611	3584.245841	1012131.598	31.57107736	761.420101
				SUM:	18528.05601	2950856.062	169.8445777	990.318799

Exhibit 8-18 IGW Spatial Weighting Output Functional Area 10 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA10_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	1	40	948	886	530	TP-RD-A12-02A	2017-10-11 9:18	1.0-1.5 ft	TP-RD-A12-02A(01.0-01.5)	<Null>	ug/kg	120	120
2	3	1	596	257	509	TP-RD-B11-04	2017-10-12 15:08	1.0-1.5 ft	TP-RD-B11-04(01.0-01.5)	<Null>	ug/kg	120	120
3	7	37	945	580	47	TP-RD-A12-02	2017-10-06 10:30	1.0-1.5 ft	TP-RD-A12-02(01.0-01.5)	<Null>	ug/kg	110	110
4	8	33	886	243	329	TP-R-A12-1-1	2006-08-14	2.0-2.5 ft	TP-R-A12-1-12.5N	<Null>	ug/kg	9300	<Null>
5	9	31	838	453	36	A12-7-03	1999-10-14	0.0-1.0 ft	A12-7-031N	<Null>	ug/kg	220	220
6	10	43	322	364	15	SB-R-B11-04	2006-05-31	0.5-1.0 ft	SB-R-B11-041.0N	<Null>	ug/kg	350	<Null>
7	11	42	417	1031	966	TP-RD-B11-22	2017-12-04 12:03	1.0-1.5 ft	TP-RD-B11-22(01.0-01.5)	<Null>	ug/kg	110	110
8	12	41	416	1022	835	TP-RD-B11-23	2017-12-04 13:40	1.0-1.5 ft	TP-RD-B11-23(01.0-01.5)	<Null>	ug/kg	110	110
9	13	36	944	579	45	A12-8-05	1999-10-14	0.0-2.0 ft	A12-8-052N	<Null>	ug/kg	3100	220
10	14	25	832	305	40	TP-RD-A12-03	2017-10-18 14:00	1.0-1.5 ft	TP-RD-A12-03(01.0-01.5)	<Null>	ug/kg	110	110
11	15	24	831	286	395	A12-7-04	1999-11-19	0.0-2.0 ft	A12-7-042N11/19/1999	<Null>	ug/kg	240	240
12	16	20	797	966	676	TP-RD-A12-03A	2017-10-26 13:20	1.0-1.5 ft	TP-RD-A12-03A(01.0-01.5)	<Null>	ug/kg	120	120
13	17	19	660	346	547	TP-RD-B11-02	2017-10-12 11:30	1.0-1.5 ft	TP-RD-B11-02(01.0-01.5)	<Null>	ug/kg	120	120
14	18	17	658	344	545	SB-R-B12-02	2006-05-23	0.5-1.0 ft	SB-R-B12-021.0N	<Null>	ug/kg	350	<Null>
15	19	15	656	323	336	TP-RD-A11-12	2017-10-19 10:30	1.0-1.5 ft	TP-RD-A11-12(01.0-01.5)	<Null>	ug/kg	110	110
16	20	10	632	701	768	TP-RD-B11-03	2017-10-12 12:10	1.0-1.5 ft	TP-RD-B11-03(01.0-01.5)	<Null>	ug/kg	110	110
17	21	9	631	700	767	B11-663-04	1999-10-15	0.0-1.0 ft	B11-663-041N	<Null>	ug/kg	220	220
18	22	6	608	430	782	B11-663-06	2000-06-08	0.0-4.0 ft	B11-663-064N	<Null>	ug/kg	945	184

Exhibit 8-18 IGW Spatial Weighting Output Functional Area 10 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452573.32	747140.85	Point	2228	INDEX-CONTOUR	770	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452759.04	747371.1	Point	1682	DEP-CONTOUR	756	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452584.59	747143.85	Point	2228	INDEX-CONTOUR	770	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	1700	1700	452646.1474	747169.8399	Point	2046	INT-CONTOUR	766	
510	2700	100	310	8000	75700	30	2200	1000	1000	9900	63	380	452678	747175.6	Point	1897	INT-CONTOUR	762	
2300	4410	593	575	10300	61000	54.4	6430	2300	2300	43600	200	200	452964.274	747577.0209	Point	2011	INT-CONTOUR	744	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452888.78	747465.57	Point	2007	INT-CONTOUR	746	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452973.8	747492.84	Point	2011	INT-CONTOUR	744	
560	6300	670	340	874000	1290000	210	17200	1100	1100	211000	880000	880000	452605.6	747214	Point	1895	INT-CONTOUR	772	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452668.84	747239.07	Point	2048	INT-CONTOUR	764	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452659.7	747203.2	Point	2048	INT-CONTOUR	764	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452679.79	747249.27	Point	1897	INT-CONTOUR	762	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452831.63	747342.56	Point	1900	INT-CONTOUR	756	
2290	1740	169	572	3710	2610	17.4	2560	2290	2290	9570	190	190	452769.8785	747287.9052	Point	1900	INT-CONTOUR	756	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452730.9	747339.65	Point	1899	INT-CONTOUR	758	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452843.32	747391.84	Point	1900	INT-CONTOUR	756	
520	3800	240	80	21400	176000	80	6200	640	1000	134000	580	420	452830.4	747362.7	Point	1900	INT-CONTOUR	756	
612.104	3520	254	343	99100	128000	36	4960	754	1020.173	54100	401.268	401.268	452817	747394	Point	1900	INT-CONTOUR	756	

Exhibit 8-18 IGW Spatial Weighting Output Functional Area 10 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1
2.728854	23	24	734	SOLID	2025.530951	32.300969	36	635	TP-RD-A12-02A	2017-10-11 9:18	1.0-1.5 ft	TP-RD-A12-02A(01.0-01.5)		ug/kg
1.91857	24	25	740	SOLID	1629.58447	13.799455	16	752	TP-RD-B11-04	2017-10-12 15:08	1.0-1.5 ft	TP-RD-B11-04(01.0-01.5)		ug/kg
6.552872	23	24	734	SOLID	2025.530951	24.514707	36	632	TP-RD-A12-02	2017-10-06 10:30	1.0-1.5 ft	TP-RD-A12-02(01.0-01.5)		ug/kg
4.927758	23	24	734	SOLID	2025.530951	19.446415	32	339	TP-R-A12-1-1	2006-08-14	2.0-2.5 ft	TP-R-A12-1-12.5N		ug/kg
2.509046	23	24	734	SOLID	2025.530951	11.030545	28	22	A12-7-03	1999-10-14	0.0-1.0 ft	A12-7-031N		ug/kg
7.194052	24	25	740	SOLID	1629.58447	21.538563	4	223	SB-R-B11-04	2006-05-31	0.5-1.0 ft	SB-R-B11-041.0N		ug/kg
1.629512	24	25	740	SOLID	1629.58447	6.849564	6	812	TP-RD-B11-22	2017-12-04 12:03	1.0-1.5 ft	TP-RD-B11-22(01.0-01.5)		ug/kg
4.277394	21	22	738	SOLID	1783.579742	0.108978	6	813	TP-RD-B11-23	2017-12-04 13:40	1.0-1.5 ft	TP-RD-B11-23(01.0-01.5)		ug/kg
3.584687	22	23	736	SOLID	1931.623271	16.883746	36	25	A12-8-05	1999-10-14	0.0-2.0 ft	A12-8-052N		ug/kg
0.168477	22	23	736	SOLID	1931.623271	13.05959	28	636	TP-RD-A12-03	2017-10-18 14:00	1.0-1.5 ft	TP-RD-A12-03(01.0-01.5)		ug/kg
6.874897	22	23	736	SOLID	1931.623271	15.139739	28	24	A12-7-04	1999-11-19	0.0-2.0 ft	A12-7-042N11/19/1999		ug/kg
6.549199	22	23	736	SOLID	1931.623271	17.58769	26	641	TP-RD-A12-03A	2017-10-26 13:20	1.0-1.5 ft	TP-RD-A12-03A(01.0-01.5)		ug/kg
0.301726	22	23	736	SOLID	1931.623271	21.429825	20	746	TP-RD-B11-02	2017-10-12 11:30	1.0-1.5 ft	TP-RD-B11-02(01.0-01.5)		ug/kg
2.776046	22	23	736	SOLID	1931.623271	11.6082	20	227	SB-R-B12-02	2006-05-23	0.5-1.0 ft	SB-R-B12-021.0N		ug/kg
0.242031	21	22	738	SOLID	1783.579742	21.639649	20	551	TP-RD-A11-12	2017-10-19 10:30	1.0-1.5 ft	TP-RD-A11-12(01.0-01.5)		ug/kg
4.181407	21	22	738	SOLID	1783.579742	7.127072	18	747	TP-RD-B11-03	2017-10-12 12:10	1.0-1.5 ft	TP-RD-B11-03(01.0-01.5)		ug/kg
17.11289	21	22	738	SOLID	1783.579742	8.646094	18	75	B11-663-04	1999-10-15	0.0-1.0 ft	B11-663-041N		ug/kg
14.932869	24	25	740	SOLID	1629.58447	22.312152	16	76	B11-663-06	2000-06-08	0.0-4.0 ft	B11-663-064N		ug/kg

Exhibit 8-18 IGW Spatial Weighting Output Functional Area 10 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
120	120														452573.32	747140.85
120	120														452759.04	747371.1
110	110														452584.59	747143.85
9300													1700	1700	452646.1474	747169.8399
220	220	510	2700	100	310	8000	75700	30	2200	1000	1000	9900	63	380	452678	747175.6
350		2300	4410	593	575	10300	61000	54.4	6430	2300	2300	43600	200	200	452964.274	747577.0209
110	110														452888.78	747465.57
110	110														452973.8	747492.84
3100	220	560	6300	670	340	874000	1290000	210	17200	1100	1100	211000	880000	880000	452605.6	747214
110	110														452668.84	747239.07
240	240														452659.7	747203.2
120	120														452679.79	747249.27
120	120														452831.63	747342.56
350		2290	1740	169	572	3710	2610	17.4	2560	2290	2290	9570	190	190	452769.8785	747287.9052
110	110														452730.9	747339.65
110	110														452843.32	747391.84
220	220	520	3800	240	80	21400	176000	80	6200	640	1000	134000	580	420	452830.4	747362.7
945	184	612.104	3520	254	343	99100	128000	36	4960	754	1020.173	54100	401.268	401.268	452817	747394

Exhibit 8-18 IGW Spatial Weighting Output Functional Area 10 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
76	10	98365.01744	225.762531	1984.793016	0.020177834	2.421340107
76	10	98365.01744	176.2642493	1895.827314	0.01927339	2.312806763
76	10	98365.01744	273.653542	3977.942191	0.040440619	4.448468088
76	10	98365.01744	228.474943	3218.624054	0.032721227	304.3074101
76	10	98365.01744	236.0368535	2457.622679	0.024984723	5.496638982
76	10	98365.01744	1024.157119	38380.79076	0.390187404	136.5655912
76	10	98365.01744	369.099957	7760.667561	0.078896622	8.678628377
76	10	98365.01744	440.8041308	8520.617551	0.086622437	9.528468098
76	10	98365.01744	195.167245	1914.954034	0.019467836	60.35029181
76	10	98365.01744	192.7927743	1695.836501	0.01724024	1.896426391
76	10	98365.01744	183.5727219	1791.356869	0.018211321	4.370716946
76	10	98365.01744	277.7880809	4709.219236	0.047874939	5.744992712
76	10	98365.01744	250.7953501	3119.826438	0.031716829	3.80601948
76	10	98365.01744	318.212263	6101.367913	0.062027823	21.70973813
76	10	98365.01744	215.5567102	2459.845365	0.025007319	2.750805085
76	10	98365.01744	282.3026758	4552.163895	0.046278281	5.090610884
76	10	98365.01744	204.0809581	1554.193502	0.015800267	3.476058657
76	10	98365.01744	212.4069821	2269.292368	0.023070116	21.80125967
					SUM:	604.7562715

Exhibit 8-19 IGW Spatial Weighting Output Functional Area 10 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA10_shallow_Lead	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	31	838	453	36	A12-7-03	1999-10-14	0.0-1.0 ft	A12-7-031N	<Null>	ug/kg	220	220	510
2	6	43	322	364	15	SB-R-B11-04	2006-05-31	0.5-1.0 ft	SB-R-B11-041.0N	<Null>	ug/kg	350	<Null>	2300
3	7	36	944	579	45	A12-8-05	1999-10-14	0.0-2.0 ft	A12-8-052N	<Null>	ug/kg	3100	220	560
4	8	23	830	285	394	A12-7-04	1999-10-14	0.0-2.0 ft	A12-7-042N10/14/1999	<Null>	ug/kg		400	580
5	9	18	659	345	546	SB-R-B12-02	2006-05-23	2.5-3.0 ft	SB-R-B12-023.0N	<Null>	ug/kg	340	<Null>	1050
6	10	9	631	700	767	B11-663-04	1999-10-15	0.0-1.0 ft	B11-663-041N	<Null>	ug/kg	220	220	520
7	11	6	608	430	782	B11-663-06	2000-06-08	0.0-4.0 ft	B11-663-064N	<Null>	ug/kg	945	184	612.104

Exhibit 8-19 IGW Spatial Weighting Output Functional Area 10 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
2700	100	310	8000	75700	30	2200	1000	1000	9900	63	380	452678	747175.6	Point	1897	INT-CONTOUR	762		2.509046	23
4410	593	575	10300	61000	54.4	6430	2300	2300	43600	200	200	452964.274	747577.0209	Point	2011	INT-CONTOUR	744		7.194052	24
6300	670	340	874000	1290000	210	17200	1100	1100	211000	880000	880000	452605.6	747214	Point	1895	INT-CONTOUR	772		3.584687	22
5200	850	350	16800	26900	<Null>	14700	930	1200	89800	200	400	452659.7	747203.2	Point	2048	INT-CONTOUR	764		6.874897	22
3020	671	2780	12800	2850	109	8360	2220	2220	30000	190	190	452769.8785	747287.9052	Point	1900	INT-CONTOUR	756		2.776046	22
3800	240	80	21400	176000	80	6200	640	1000	134000	580	420	452830.4	747362.7	Point	1900	INT-CONTOUR	756		17.11289	21
3520	254	343	99100	128000	36	4960	754	1020.173	54100	401.268	401.268	452817	747394	Point	1900	INT-CONTOUR	756		14.932869	24

Exhibit 8-19 IGW Spatial Weighting Output Functional Area 10 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
24	734	SOLID	2025.530951	11.030545	28	22	A12-7-03	1999-10-14	0.0-1.0 ft	A12-7-031N		ug/kg	220
25	740	SOLID	1629.58447	21.538563	4	223	SB-R-B11-04	2006-05-31	0.5-1.0 ft	SB-R-B11-041.0N		ug/kg	350
23	736	SOLID	1931.623271	16.883746	36	25	A12-8-05	1999-10-14	0.0-2.0 ft	A12-8-052N		ug/kg	3100
23	736	SOLID	1931.623271	15.139739	28	23	A12-7-04	1999-10-14	0.0-2.0 ft	A12-7-042N10/14/1999		ug/kg	
23	736	SOLID	1931.623271	11.6082	20	228	SB-R-B12-02	2006-05-23	2.5-3.0 ft	SB-R-B12-023.0N		ug/kg	340
22	738	SOLID	1783.579742	8.646094	18	75	B11-663-04	1999-10-15	0.0-1.0 ft	B11-663-041N		ug/kg	220
25	740	SOLID	1629.58447	22.312152	16	76	B11-663-06	2000-06-08	0.0-4.0 ft	B11-663-064N		ug/kg	945

Exhibit 8-19 IGW Spatial Weighting Output Functional Area 10 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
220	510	2700	100	310	8000	75700	30	2200	1000	1000	9900	63	380	452678	747175.6	76
	2300	4410	593	575	10300	61000	54.4	6430	2300	2300	43600	200	200	452964.274	747577.0209	76
220	560	6300	670	340	874000	1290000	210	17200	1100	1100	211000	880000	880000	452605.6	747214	76
400	580	5200	850	350	16800	26900		14700	930	1200	89800	200	400	452659.7	747203.2	76
	1050	3020	671	2780	12800	2850	109	8360	2220	2220	30000	190	190	452769.8785	747287.9052	76
220	520	3800	240	80	21400	176000	80	6200	640	1000	134000	580	420	452830.4	747362.7	76
184	612.104	3520	254	343	99100	128000	36	4960	754	1020.173	54100	401.268	401.268	452817	747394	76

Exhibit 8-19 IGW Spatial Weighting Output Functional Area 10 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
10	98365.01744	443.1627663	6761.590793	0.068739792	5203.602219
10	98365.01744	1176.749398	48832.36312	0.496440344	30282.861
10	98365.01744	397.4182818	6688.202035	0.067993706	87711.8802
10	98365.01744	356.3497355	6447.95082	0.06555126	1763.32889
10	98365.01744	421.3933014	11343.05843	0.115315981	328.6505445
10	98365.01744	475.1596722	7858.46527	0.079890854	14060.79035
10	98365.01744	508.5127367	10433.31341	0.106067316	13576.61647
				SUM:	152927.7297

Exhibit 8-20 IGW Spatial Weighting Output Functional Area 11 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA11_deep_metals	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	1	97	942	490	B11-2044-03	1999-11-09	0.0-0.5 ft	B11-2044-030.5N	<Null>	ug/kg	150	150	540
2	3	9	98	943	491	C11-8-05	1999-11-09	0.0-2.0 ft	C11-8-052N	<Null>	ug/kg	<Null>	420	3200
3	7	10	103	948	496	SB-R-C11-01	2006-05-31	0.5-1.0 ft	SB-R-C11-011.0FD	SB-R-C11-011.0N	ug/kg	390		2570
4	8	8	119	1029	470	C11-30-05	1999-11-05	0.0-1.0 ft	C11-30-051N	<Null>	ug/kg	150	150	490
5	9	7	118	1028	469	C11-30-01	1999-11-05	0.0-1.0 ft	C11-30-011N	<Null>	ug/kg	150	150	480
6	10	6	101	946	494	B11-6-03	1999-11-09	0.0-1.0 ft	B11-6-031N	<Null>	ug/kg	<Null>	390	520
7	11	5	102	947	495	B11-2044-08	1999-11-09	0.0-0.8 ft	B11-2044-080.8N	<Null>	ug/kg	130	130	390
8	12	4	107	952	1012	B11-2044-06	1999-11-09	0.0-0.7 ft	B11-2044-060.7N	<Null>	ug/kg	140	140	480
9	13	2	106	951	499	B11-2044-05	1999-11-09	0.0-0.5 ft	B11-2044-050.5N	<Null>	ug/kg	130	130	320
10	14	3	108	953	1013	C11-9-04	1999-11-18	0.0-0.5 ft	C11-9-040.5N	<Null>	ug/kg	<Null>	5500	27000

Exhibit 8-20 IGW Spatial Weighting Output Functional Area 11 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance
20000	680	330	19900	63800	40	7800	240	1100	129000	410	410	453071.5	747504.7	Point	2005	INT-CONTOUR	728		5.15479
61400	120	320	30300	4930000	1500	2600	9200	1100	13800	670	420	453254.5	747701.1	Point	2018	INT-CONTOUR	728		4.651618
26300	349	3210	18300	110000	119	7410	2020	2570	48300	590	210	453202.4936	747633.7706	Point	2122	INT-CONTOUR	732		6.702557
56800	420	290	20700	176000	50	5900	17300	980	37700	410	410	453195.1	747607.1	Point	2122	INT-CONTOUR	732		3.744142
9400	500	290	18600	126000	120	7900	1800	960	65000	95	400	453197.6	747566.8	Point	2122	INT-CONTOUR	732		2.375339
5100	530	310	24500	450000	50	8300	950	1000	54500	45	390	453102.3	747575.4	Point	2121	INT-CONTOUR	734		26.049233
3400	510	290	17200	37500	70	7500	170	780	239000	360	360	453087.8	747536.4	Point	2122	INT-CONTOUR	732		9.725118
10400	810	1000	36000	489000	470	9100	260	970	340000	400	380	453105	747503.3	Point	2057	INT-CONTOUR	726		3.356194
3700	410	190	16200	74500	60	5000	380	650	68300	370	370	453098	747497.9	Point	2057	INT-CONTOUR	726		4.889969
115000	450	100	88600	11800000	10300	6300	5900	970	266000	3200	440	453318.4	747723.3	Point	2057	INT-CONTOUR	726		15.778432

Exhibit 8-20 IGW Spatial Weighting Output Functional Area 11 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
22	23	736	SOLID	1931.623271	17.630465	0	58	B11-2044-03	1999-11-09	0.0-0.5 ft	B11-2044-030.5N		ug/kg	150
22	23	736	SOLID	1931.623271	14.987705	0	135	C11-8-05	1999-11-09	0.0-2.0 ft	C11-8-052N		ug/kg	
22	23	736	SOLID	1931.623271	23.960061	0	255	SB-R-C11-01	2006-05-31	0.5-1.0 ft	SB-R-C11-011.0FD	SB-R-C11-011.0N	ug/kg	390
23	24	734	SOLID	2025.530951	10.601333	0	120	C11-30-05	1999-11-05	0.0-1.0 ft	C11-30-051N		ug/kg	150
23	24	734	SOLID	2025.530951	19.147422	0	119	C11-30-01	1999-11-05	0.0-1.0 ft	C11-30-011N		ug/kg	150
22	23	736	SOLID	1931.623271	8.986938	0	74	B11-6-03	1999-11-09	0.0-1.0 ft	B11-6-031N		ug/kg	
22	23	736	SOLID	1931.623271	7.275782	0	63	B11-2044-08	1999-11-09	0.0-0.8 ft	B11-2044-080.8N		ug/kg	130
23	24	734	SOLID	2025.530951	2.124	0	62	B11-2044-06	1999-11-09	0.0-0.7 ft	B11-2044-060.7N		ug/kg	140
23	24	734	SOLID	2025.530951	3.536404	0	61	B11-2044-05	1999-11-09	0.0-0.5 ft	B11-2044-050.5N		ug/kg	130
23	24	734	SOLID	2025.530951	10.36243	0	136	C11-9-04	1999-11-18	0.0-0.5 ft	C11-9-040.5N		ug/kg	

Exhibit 8-20 IGW Spatial Weighting Output Functional Area 11 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
150	540	20000	680	330	19900	63800	40	7800	240	1100	129000	410	410	453071.5	747504.7	77
420	3200	61400	120	320	30300	4930000	1500	2600	9200	1100	13800	670	420	453254.5	747701.1	77
	2570	26300	349	3210	18300	110000	119	7410	2020	2570	48300	590	210	453202.4936	747633.7706	77
150	490	56800	420	290	20700	176000	50	5900	17300	980	37700	410	410	453195.1	747607.1	77
150	480	9400	500	290	18600	126000	120	7900	1800	960	65000	95	400	453197.6	747566.8	77
390	520	5100	530	310	24500	450000	50	8300	950	1000	54500	45	390	453102.3	747575.4	77
130	390	3400	510	290	17200	37500	70	7500	170	780	239000	360	360	453087.8	747536.4	77
140	480	10400	810	1000	36000	489000	470	9100	260	970	340000	400	380	453105	747503.3	77
130	320	3700	410	190	16200	74500	60	5000	380	650	68300	370	370	453098	747497.9	77
5500	27000	115000	450	100	88600	11800000	10300	6300	5900	970	266000	3200	440	453318.4	747723.3	77

Exhibit 8-20 IGW Spatial Weighting Output Functional Area 11 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Antimony	Spatial Weighted_Arsenic	Spatial Weighted_Lead	Spatial Weighted_Mercury	Spatial Weighted_Selenium
11	110323.4322	1666.338246	72213.76804	0.65456419	353.4646626	13091.2838	41761.19532	26.1825676	157.0954056
11	110323.4322	337.9717353	6290.024147	0.057014399	182.4460758	3500.684079	281080.9855	85.52159801	524.5324678
11	110323.4322	316.6653861	5069.321173	0.045949633	118.0905557	1208.475336	5054.459582	5.468006275	92.81825777
11	110323.4322	291.4564645	3614.142295	0.032759516	16.05216307	1860.740536	5765.674899	1.637975824	566.739635
11	110323.4322	311.6479845	4797.874045	0.043489166	20.87479963	408.7981594	5479.634902	5.218699907	78.2804986
11	110323.4322	221.6063177	2681.561626	0.024306365	12.63930987	123.9624622	10937.86431	1.215318257	23.09104688
11	110323.4322	182.5910789	1745.092557	0.015817968	6.169007648	53.78109232	593.1738123	1.107257783	2.689054616
11	110323.4322	232.714568	3407.517508	0.030886616	14.82557577	321.2208084	15103.55532	14.51670961	8.030520211
11	110323.4322	305.8950771	3561.994493	0.032286835	10.33178732	119.4612909	2405.369235	1.937210122	12.26899744
11	110323.4322	350.2680731	6942.256062	0.062926397	1699.012711	7236.535622	742531.4812	648.1418862	371.2657406
				SUM:	2433.906649	27924.94319	1110713.394	790.9472296	1836.811625

Exhibit 8-21 IGW Spatial Weighting Output Functional Area 11 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA11_deep_Nitrobenzene	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	3	14	112	957	1017	TP-RD-C11-07	2017-11-30	1.0-1.5 ft	BD113017B	TP-RD-C11-07(01.0-01.5)	ug/kg
2	4	6	101	946	494	B11-6-03	1999-11-09	0.0-1.0 ft	B11-6-031N	<Null>	ug/kg
3	7	16	115	960	1020	TP-RD-C11-09	2017-11-30 10:46	1.0-1.5 ft	TP-RD-C11-09(01.0-01.5)	<Null>	ug/kg
4	8	13	110	955	1015	TP-RD-C11-06	2017-11-30 8:55	1.0-1.5 ft	TP-RD-C11-06(01.0-01.5)	<Null>	ug/kg
5	9	12	99	944	492	TP-RD-C11-08	2017-11-30 9:42	1.0-1.5 ft	TP-RD-C11-08(01.0-01.5)	<Null>	ug/kg
6	10	9	98	943	491	C11-8-05	1999-11-09	0.0-2.0 ft	C11-8-052N	<Null>	ug/kg
7	11	3	108	953	1013	C11-9-04	1999-11-18	0.0-0.5 ft	C11-9-040.5N	<Null>	ug/kg
8	12	8	119	1029	470	C11-30-05	1999-11-05	0.0-1.0 ft	C11-30-051N	<Null>	ug/kg
9	13	7	118	1028	469	C11-30-01	1999-11-05	0.0-1.0 ft	C11-30-011N	<Null>	ug/kg
10	14	5	102	947	495	B11-2044-08	1999-11-09	0.0-0.8 ft	B11-2044-080.8N	<Null>	ug/kg
11	15	4	107	952	1012	B11-2044-06	1999-11-09	0.0-0.7 ft	B11-2044-060.7N	<Null>	ug/kg
12	16	2	106	951	499	B11-2044-05	1999-11-09	0.0-0.5 ft	B11-2044-050.5N	<Null>	ug/kg
13	17	1	97	942	490	B11-2044-03	1999-11-09	0.0-0.5 ft	B11-2044-030.5N	<Null>	ug/kg

Exhibit 8-21 IGW Spatial Weighting Output Functional Area 11 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453345.97	747727.85	Point	2057
<Null>	390	520	5100	530	310	24500	450000	50	8300	950	1000	54500	45	390	453102.3	747575.4	Point	2121
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453292.35	747714.35	Point	2057
130	130	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453330.71	747697.53	Point	2057
130	240	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453312.66	747746.42	Point	2057
<Null>	420	3200	61400	120	320	30300	4930000	1500	2600	9200	1100	13800	670	420	453254.5	747701.1	Point	2018
<Null>	5500	27000	115000	450	100	88600	11800000	10300	6300	5900	970	266000	3200	440	453318.4	747723.3	Point	2057
150	150	490	56800	420	290	20700	176000	50	5900	17300	980	37700	410	410	453195.1	747607.1	Point	2122
150	150	480	9400	500	290	18600	126000	120	7900	1800	960	65000	95	400	453197.6	747566.8	Point	2122
130	130	390	3400	510	290	17200	37500	70	7500	170	780	239000	360	360	453087.8	747536.4	Point	2122
140	140	480	10400	810	1000	36000	489000	470	9100	260	970	340000	400	380	453105	747503.3	Point	2057
130	130	320	3700	410	190	16200	74500	60	5000	380	650	68300	370	370	453098	747497.9	Point	2057
150	150	540	20000	680	330	19900	63800	40	7800	240	1100	129000	410	410	453071.5	747504.7	Point	2005

Exhibit 8-21 IGW Spatial Weighting Output Functional Area 11 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Layer	Elevation	RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1
INT-CONTOUR	726		25.121798	23	24	734	SOLID	2025.530951	4.293331	0	993	TP-RD-C11-07	2017-11-30	1.0-1.5 ft
INT-CONTOUR	734		26.049233	22	23	736	SOLID	1931.623271	8.986938	0	74	B11-6-03	1999-11-09	0.0-1.0 ft
INT-CONTOUR	726		11.536445	23	24	734	SOLID	2025.530951	21.292353	0	998	TP-RD-C11-09	2017-11-30 10:46	1.0-1.5 ft
INT-CONTOUR	726		3.294471	23	24	734	SOLID	2025.530951	17.020924	0	991	TP-RD-C11-06	2017-11-30 8:55	1.0-1.5 ft
INT-CONTOUR	726		3.716775	22	23	736	SOLID	1931.623271	22.990758	0	996	TP-RD-C11-08	2017-11-30 9:42	1.0-1.5 ft
INT-CONTOUR	728		4.651618	22	23	736	SOLID	1931.623271	14.987705	0	135	C11-8-05	1999-11-09	0.0-2.0 ft
INT-CONTOUR	726		15.778432	23	24	734	SOLID	2025.530951	10.36243	0	136	C11-9-04	1999-11-18	0.0-0.5 ft
INT-CONTOUR	732		3.744142	23	24	734	SOLID	2025.530951	10.601333	0	120	C11-30-05	1999-11-05	0.0-1.0 ft
INT-CONTOUR	732		2.375339	23	24	734	SOLID	2025.530951	19.147422	0	119	C11-30-01	1999-11-05	0.0-1.0 ft
INT-CONTOUR	732		9.725118	22	23	736	SOLID	1931.623271	7.275782	0	63	B11-2044-08	1999-11-09	0.0-0.8 ft
INT-CONTOUR	726		3.356194	23	24	734	SOLID	2025.530951	2.124	0	62	B11-2044-06	1999-11-09	0.0-0.7 ft
INT-CONTOUR	726		4.889969	23	24	734	SOLID	2025.530951	3.536404	0	61	B11-2044-05	1999-11-09	0.0-0.5 ft
INT-CONTOUR	728		5.15479	22	23	736	SOLID	1931.623271	17.630465	0	58	B11-2044-03	1999-11-09	0.0-0.5 ft

Exhibit 8-21 IGW Spatial Weighting Output Functional Area 11 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1
BD113017B	TP-RD-C11-07(01.0-01.5)	ug/kg	120	120												
B11-6-031N		ug/kg		390	520	5100	530	310	24500	450000	50	8300	950	1000	54500	45
TP-RD-C11-09(01.0-01.5)		ug/kg	120	120												
TP-RD-C11-06(01.0-01.5)		ug/kg	130	130												
TP-RD-C11-08(01.0-01.5)		ug/kg	130	240												
C11-8-052N		ug/kg		420	3200	61400	120	320	30300	4930000	1500	2600	9200	1100	13800	670
C11-9-040.5N		ug/kg		5500	27000	115000	450	100	88600	11800000	10300	6300	5900	970	266000	3200
C11-30-051N		ug/kg	150	150	490	56800	420	290	20700	176000	50	5900	17300	980	37700	410
C11-30-011N		ug/kg	150	150	480	9400	500	290	18600	126000	120	7900	1800	960	65000	95
B11-2044-080.8N		ug/kg	130	130	390	3400	510	290	17200	37500	70	7500	170	780	239000	360
B11-2044-060.7N		ug/kg	140	140	480	10400	810	1000	36000	489000	470	9100	260	970	340000	400
B11-2044-050.5N		ug/kg	130	130	320	3700	410	190	16200	74500	60	5000	380	650	68300	370
B11-2044-030.5N		ug/kg	150	150	540	20000	680	330	19900	63800	40	7800	240	1100	129000	410

Exhibit 8-21 IGW Spatial Weighting Output Functional Area 11 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Nitrobenzene
	453345.97	747727.85	77	11	110323.4322	143.1928692	1124.452927	0.010192331	1.223079708
390	453102.3	747575.4	77	11	110323.4322	221.6063177	2681.561626	0.024306365	9.479482402
	453292.35	747714.35	77	11	110323.4322	212.5609624	2177.650892	0.019738788	2.368654616
	453330.71	747697.53	77	11	110323.4322	249.8086816	2816.121293	0.025526049	3.318386319
	453312.66	747746.42	77	11	110323.4322	168.6640674	1786.987935	0.016197719	3.887452518
420	453254.5	747701.1	77	11	110323.4322	325.9278878	5724.783648	0.051890913	21.79418356
440	453318.4	747723.3	77	11	110323.4322	108.7670179	730.1648421	0.006618402	36.40121188
410	453195.1	747607.1	77	11	110323.4322	358.1347818	7555.541339	0.068485372	10.27280586
400	453197.6	747566.8	77	11	110323.4322	311.6482381	4797.877417	0.043489196	6.523379468
360	453087.8	747536.4	77	11	110323.4322	182.5910789	1745.092557	0.015817968	2.056335883
380	453105	747503.3	77	11	110323.4322	232.714568	3407.517508	0.030886616	4.324126267
370	453098	747497.9	77	11	110323.4322	305.8950771	3561.994493	0.032286835	4.197288598
410	453071.5	747504.7	77	11	110323.4322	1666.338246	72213.76804	0.65456419	98.1846285
								SUM:	204.0310156

Exhibit 8-22 IGW Spatial Weighting Output Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA11_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	28	977	335	526	SB-R-A12-01	2006-05-24	0.5-1.0 ft	SB-R-A12-011.0N	<Null>	ug/kg	330	<Null>	2190	1740
2	6	20	795	808	482	A12-6-02	2000-06-08	0.0-2.0 ft	A12-6-022FD	A12-6-022N	ug/kg	217	217	651	2030
3	7	19	794	804	295	A12-6-01	1999-10-14	0.0-2.0 ft	A12-6-012N	<Null>	ug/kg		440	580	3200
4	8	14	761	573	305	A12-3-03	1999-11-18	0.0-1.5 ft	A12-3-0311/18/1999	<Null>	ug/kg		<Null>	<Null>	<Null>

Exhibit 8-22 IGW Spatial Weighting Output Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
203	548	7450	1900	103	3420	2190	2190	12000	180	180	452572.711	747014.047	Point	2228	INDEX-CONTOUR	770		7.311252	9
119	325.548	5500	11300	1320	3600	447	1090	11200	402	402	452758	747158	Point	1900	INT-CONTOUR	756		8.697936	41
130	350	7200	91100	1800	2100	730	1200	12600	170	440	452764	747170	Point	1900	INT-CONTOUR	756		17.444972	41
1000	<Null>	<Null>	5400	30	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452807.6	747191.6	Point	2051	INT-CONTOUR	754		2.853069	41

Exhibit 8-22 IGW Spatial Weighting Output Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
10	730	SOLID	4929.874247	54.429204	40	191	SB-R-A12-01	2006-05-24	0.5-1.0 ft	SB-R-A12-011.0N		ug/kg	330
42	732	SOLID	7162.121151	17.925285	24	19	A12-6-02	2000-06-08	0.0-2.0 ft	A12-6-022FD	A12-6-022N	ug/kg	217
42	732	SOLID	7162.121151	25.166989	24	18	A12-6-01	1999-10-14	0.0-2.0 ft	A12-6-012N		ug/kg	
42	732	SOLID	7162.121151	19.278288	22	13	A12-3-03	1999-11-18	0.0-1.5 ft	A12-3-0311/18/1999		ug/kg	

Exhibit 8-22 IGW Spatial Weighting Output Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	2190	1740	203	548	7450	1900	103	3420	2190	2190	12000	180	180	452572.711	747014.047	77
217	651	2030	119	325.548	5500	11300	1320	3600	447	1090	11200	402	402	452758	747158	77
440	580	3200	130	350	7200	91100	1800	2100	730	1200	12600	170	440	452764	747170	77
			1000			5400	30							452807.6	747191.6	77

Exhibit 8-22 IGW Spatial Weighting Output Functional Area 11 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead	Spatial Weighted_Mercury
11	110323.4322	514.1235749	15663.20939	0.141975364	269.7531907	14.62346244
11	110323.4322	453.8883935	12531.6216	0.113589845	1283.565252	149.9385958
11	110323.4322	263.278776	3007.369875	0.027259575	2483.347283	49.067235
11	110323.4322	1787.238058	79121.12086	0.717174215	3872.74076	21.51522644
				SUM:	7909.406485	235.1445197

Exhibit 8-23 IGW Spatial Weighting Output Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA12_deep	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic	Beryllium
1	1	1	78	223	930	C11-7-02	1999-11-12	0.0-1.0 ft	C11-7-021N	<Null>	ug/kg	2500	2500	450	6900	260
2	6	2	127	19	446	C11-30-06	1999-11-12	0.0-1.0 ft	C11-30-061N	<Null>	ug/kg	220	220	520	104000	1700

Exhibit 8-23 IGW Spatial Weighting Output Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1	OBJECTID_2
270	9300	57200	30	2100	450	910	24000	370	370	453233.6	747516.8	Point	2018	INT-CONTOUR	728		2.246206	9	10
1400	38900	159000	260	13600	9500	3400	443000	47	420	453225.6	747535.6	Point	2239	INDEX-CONTOUR	730		11.535815	41	42

Exhibit 8-23 IGW Spatial Weighting Output Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1
730	SOLID	4929.874247	13.139925	0	130	C11-7-02	1999-11-12	0.0-1.0 ft	C11-7-021N		ug/kg	2500	2500	450
732	SOLID	7162.121151	14.183785	0	121	C11-30-06	1999-11-12	0.0-1.0 ft	C11-30-061N		ug/kg	220	220	520

Exhibit 8-23 IGW Spatial Weighting Output Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW	Functional_Area	FA_Area_SF
6900	260	270	9300	57200	30	2100	450	910	24000	370	370	453233.6	747516.8	78	12	138160.2889
104000	1700	1400	38900	159000	260	13600	9500	3400	443000	47	420	453225.6	747535.6	78	12	138160.2889

Exhibit 8-23 IGW Spatial Weighting Output Functional Area 12 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Shape_Length	**Shape_Area**	**Fractional_Area**	Spatial Weighted_Arsenic	Spatial Weighted_Beryllium	Spatial Weighted_Lead	Spatial Weighted_Thallium
2870.49939	126396.775	0.914856042	6312.506687	237.8625708	52329.76558	832.5189978
595.41849	11763.51625	0.085143975	8854.973446	144.7447582	13537.8921	289.4895165
		SUM:	15167.48013	382.6073291	65867.65767	1122.008514

Exhibit 8-24 IGW Spatial Weighting Output Functional Area 12 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA12_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	1	7	1005	631	628	SB-R-A13-03	2006-05-19	0.5-1.0 ft	SB-R-A13-031.0N	<Null>	ug/kg	350	<Null>
2	6	23	524	715	136	B12-237-01	1999-10-14	0.0-1.5 ft	B12-237-011.5N	<Null>	ug/kg	870	230
3	7	22	525	729	990	TP-R-B12-1-1	2006-08-14	0.5-1.0 ft	TP-R-B12-1-11.0N	<Null>	ug/kg	340	<Null>
4	8	21	480	299	644	SB-R-B12-04	2006-05-24	0.5-1.0 ft	SB-R-B12-041.0N	<Null>	ug/kg	350	<Null>
5	9	13	447	863	191	TP-RD-B12-01	2017-10-18 13:30	5.0-5.5 ft	TP-RD-B12-01(05.0-05.5)	<Null>	ug/kg	110	110
6	10	11	546	65	758	TP-RD-B12-02A	2017-10-18 10:30	9.0-9.5 ft	TP-RD-B12-02A(09.0-09.5)	<Null>	ug/kg	120	120
7	11	10	534	772	119	TP-RD-B12-03	2017-10-23 13:50	9.0-9.5 ft	TP-RD-B12-03(09.0-09.5)	<Null>	ug/kg	120	120
8	12	4	941	575	209	A12-4-02	2000-06-08	0.0-1.3 ft	A12-4-021.25N	<Null>	ug/kg	250	250
9	13	1	575	536	224	SB-R-B12-03	2006-05-24	0.5-1.0 ft	SB-R-B12-031.0N	<Null>	ug/kg	350	<Null>

Exhibit 8-24 IGW Spatial Weighting Output Functional Area 12 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName
2220	4220	443	2770	21400	3510	14.8	9730	2220	1610	30600	190	190	452394.7165	746687.4182	Point	1893	INT-CONTOUR	776	
5700	28300	460	1600	644000	1540000	80	50200	6300	11400	2720000	1500	460	452996.4	747196.1	Point	2317	INDEX-CONTOUR	740	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	2000	190	453002.138	747216.306	Point	2317	INDEX-CONTOUR	740	
1070	4250	384	579	15300	19700	38.4	5120	2320	2320	24100	190	190	453024.7537	747346.2276	Point	2317	INDEX-CONTOUR	740	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452995.78	747267.54	Point	1849	INT-CONTOUR	738	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452934.85	747186.39	Point	2187	INT-CONTOUR	742	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452972.42	747188.39	Point	2317	INDEX-CONTOUR	740	
773.616	3430	189	252	7650	37800	35	4230	767	1289.359	18200	71.1	433.362	452633.5	746854.1	Point	1897	INT-CONTOUR	762	
2340	3000	247	586	7270	3550	114	3940	2340	2340	15600	200	200	452855.613	747055.083	Point	2187	INT-CONTOUR	742	

Exhibit 8-24 IGW Spatial Weighting Output Functional Area 12 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1
5.161209	7	8	726	SOLID	5330.996176	6.559595	50	204	SB-R-A13-03	2006-05-19	0.5-1.0 ft	SB-R-A13-031.0N		ug/kg
18.121909	8	9	728	SOLID	4732.765771	15.309759	12	81	B12-237-01	1999-10-14	0.0-1.5 ft	B12-237-011.5N		ug/kg
0.041567	8	9	728	SOLID	4732.765771	24.777169	12	423	TP-R-B12-1-1	2006-08-14	0.5-1.0 ft	TP-R-B12-1-11.0N		ug/kg
0.143347	41	42	732	SOLID	7162.121151	3.412812	8	231	SB-R-B12-04	2006-05-24	0.5-1.0 ft	SB-R-B12-041.0N		ug/kg
5.107165	9	10	730	SOLID	4929.874247	10.211308	8	819	TP-RD-B12-01	2017-10-18 13:30	5.0-5.5 ft	TP-RD-B12-01(05.0-05.5)		ug/kg
22.00192	9	10	730	SOLID	4929.874247	5.625039	12	826	TP-RD-B12-02A	2017-10-18 10:30	9.0-9.5 ft	TP-RD-B12-02A(09.0-09.5)		ug/kg
3.436753	8	9	728	SOLID	4732.765771	27.207356	12	829	TP-RD-B12-03	2017-10-23 13:50	9.0-9.5 ft	TP-RD-B12-03(09.0-09.5)		ug/kg
4.242696	7	8	726	SOLID	5330.996176	34.854002	36	15	A12-4-02	2000-06-08	0.0-1.3 ft	A12-4-021.25N		ug/kg
8.489752	8	9	728	SOLID	4732.765771	1.491403	14	229	SB-R-B12-03	2006-05-24	0.5-1.0 ft	SB-R-B12-031.0N		ug/kg

Exhibit 8-24 IGW Spatial Weighting Output Functional Area 12 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
350		2220	4220	443	2770	21400	3510	14.8	9730	2220	1610	30600	190	190	452394.7165	746687.4182
870	230	5700	28300	460	1600	644000	1540000	80	50200	6300	11400	2720000	1500	460	452996.4	747196.1
340													2000	190	453002.138	747216.306
350		1070	4250	384	579	15300	19700	38.4	5120	2320	2320	24100	190	190	453024.7537	747346.2276
110	110														452995.78	747267.54
120	120														452934.85	747186.39
120	120														452972.42	747188.39
250	250	773.616	3430	189	252	7650	37800	35	4230	767	1289.359	18200	71.1	433.362	452633.5	746854.1
350		2340	3000	247	586	7270	3550	114	3940	2340	2340	15600	200	200	452855.613	747055.083

Exhibit 8-24 IGW Spatial Weighting Output Functional Area 12 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
78	12	138160.2889	528.8444718	16360.57851	0.118417373	41.44608065
78	12	138160.2889	105.252423	531.8259305	0.00384934	3.348925824
78	12	138160.2889	239.6068438	2442.079255	0.017675696	6.00973661
78	12	138160.2889	1151.971834	47380.03815	0.342935286	120.02735
78	12	138160.2889	375.9070772	7540.30213	0.054576479	6.003412707
78	12	138160.2889	417.8754625	10666.59324	0.07720448	9.264537581
78	12	138160.2889	213.0711903	1967.29367	0.014239212	1.708705463
78	12	138160.2889	792.0651245	29549.71276	0.213879929	53.46998219
78	12	138160.2889	636.5842733	21721.635	0.157220538	55.0271884
					SUM:	296.3059194

Exhibit 8-25 IGW Spatial Weighting Output Functional Area 12 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA12_shallow_metals	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	4	941	575	209	A12-4-02	2000-06-08	0.0-1.3 ft	A12-4-021.25N	<Null>	ug/kg	250	250	773.616
2	6	23	524	715	136	B12-237-01	1999-10-14	0.0-1.5 ft	B12-237-011.5N	<Null>	ug/kg	870	230	5700
3	7	21	480	299	644	SB-R-B12-04	2006-05-24	0.5-1.0 ft	SB-R-B12-041.0N	<Null>	ug/kg	350	<Null>	1070
4	8	7	1005	631	628	SB-R-A13-03	2006-05-19	0.5-1.0 ft	SB-R-A13-031.0N	<Null>	ug/kg	350	<Null>	2220
5	9	3	919	327	389	A12-4-01	1999-10-15	0.0-1.0 ft	A12-4-011N	<Null>	ug/kg		430	620
6	10	1	575	536	224	SB-R-B12-03	2006-05-24	0.5-1.0 ft	SB-R-B12-031.0N	<Null>	ug/kg	350	<Null>	2340

Exhibit 8-25 IGW Spatial Weighting Output Functional Area 12 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance
3430	189	252	7650	37800	35	4230	767	1289.359	18200	71.1	433.362	452633.5	746854.1	Point	1897	INT-CONTOUR	762		4.242696
28300	460	1600	644000	1540000	80	50200	6300	11400	2720000	1500	460	452996.4	747196.1	Point	2317	INDEX-CONTOUR	740		18.121909
4250	384	579	15300	19700	38.4	5120	2320	2320	24100	190	190	453024.7537	747346.2276	Point	2317	INDEX-CONTOUR	740		0.143347
4220	443	2770	21400	3510	14.8	9730	2220	1610	30600	190	190	452394.7165	746687.4182	Point	1893	INT-CONTOUR	776		5.161209
4000	220	220	9200	57900	110	4600	570	1200	49600	80	430	452630.7	746855.1	Point	2240	INDEX-CONTOUR	760		6.626459
3000	247	586	7270	3550	114	3940	2340	2340	15600	200	200	452855.613	747055.083	Point	2187	INT-CONTOUR	742		8.489752

Exhibit 8-25 IGW Spatial Weighting Output Functional Area 12 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
7	8	726	SOLID	5330.996176	34.854002	36	15	A12-4-02	2000-06-08	0.0-1.3 ft	A12-4-021.25N		ug/kg	250
8	9	728	SOLID	4732.765771	15.309759	12	81	B12-237-01	1999-10-14	0.0-1.5 ft	B12-237-011.5N		ug/kg	870
41	42	732	SOLID	7162.121151	3.412812	8	231	SB-R-B12-04	2006-05-24	0.5-1.0 ft	SB-R-B12-041.0N		ug/kg	350
7	8	726	SOLID	5330.996176	6.559595	50	204	SB-R-A13-03	2006-05-19	0.5-1.0 ft	SB-R-A13-031.0N		ug/kg	350
7	8	726	SOLID	5330.996176	37.215581	34	14	A12-4-01	1999-10-15	0.0-1.0 ft	A12-4-011N		ug/kg	
8	9	728	SOLID	4732.765771	1.491403	14	229	SB-R-B12-03	2006-05-24	0.5-1.0 ft	SB-R-B12-031.0N		ug/kg	350

Exhibit 8-25 IGW Spatial Weighting Output Functional Area 12 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
250	773.616	3430	189	252	7650	37800	35	4230	767	1289.359	18200	71.1	433.362	452633.5	746854.1	78
230	5700	28300	460	1600	644000	1540000	80	50200	6300	11400	2720000	1500	460	452996.4	747196.1	78
	1070	4250	384	579	15300	19700	38.4	5120	2320	2320	24100	190	190	453024.7537	747346.2276	78
	2220	4220	443	2770	21400	3510	14.8	9730	2220	1610	30600	190	190	452394.7165	746687.4182	78
430	620	4000	220	220	9200	57900	110	4600	570	1200	49600	80	430	452630.7	746855.1	78
	2340	3000	247	586	7270	3550	114	3940	2340	2340	15600	200	200	452855.613	747055.083	78

Exhibit 8-25 IGW Spatial Weighting Output Functional Area 12 Shallow (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_lead	Spatial Weighted_Nickel	Spatial Weighted_Zinc
12	138160.2889	538.5343147	10164.01374	0.073566825	252.3342082	2780.825968	311.1876679	1338.916207
12	138160.2889	546.389532	16321.0702	0.118131413	3343.118997	181922.3765	5930.196948	321317.4442
12	138160.2889	1236.318602	51082.70114	0.369735049	1571.373956	7283.780456	1893.043448	8910.614669
12	138160.2889	526.9873334	16275.34989	0.117800491	497.1180726	413.4797239	1146.198779	3604.695029
12	138160.2889	722.2914291	19470.93931	0.140930071	563.7202834	8159.851102	648.2783259	6990.131514
12	138160.2889	695.9511267	24846.1016	0.179835333	539.5059997	638.415433	708.551213	2805.431199
				SUM:	6767.171517	201198.7292	10637.45638	344967.2328

Exhibit 8-26 IGW Spatial Weighting Output Functional Area 13 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA13_deep_metals	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	7	41	165	1026	B11-2044C-05	1999-11-05	0.0-2.0 ft	B11-2044C-052N	<Null>	ug/kg	<Null>	390	540
2	6	10	39	163	1010	SB-R-C12-02	2006-05-31	0.5-1.0 ft	SB-R-C12-021.0N	<Null>	ug/kg	320		1090
3	7	9	61	206	169	C11-4-19	1999-11-11	0.0-2.0 ft	C11-4-192N	<Null>	ug/kg	<Null>	440	1800
4	8	8	48	193	95	B11-2044C-01	1999-11-05	0.0-2.0 ft	B11-2044C-012N	<Null>	ug/kg	<Null>	370	530
5	9	6	27	133	893	C12-418-01	2000-09-27	0.0-2.0 ft	C12-418-012N	<Null>	ug/kg	100	100	704
6	10	5	36	160	156	C12-418-04	2000-07-12	0.0-1.5 ft	C12-418-041.5N	<Null>	ug/kg	192.3	192.3	650.459
7	11	3	59	204	164	C11-27-02	1999-11-12	0.0-1.0 ft	C11-27-021N	<Null>	ug/kg	<Null>	85	300
8	12	4	62	207	173	C11-4-20	1999-11-11	0.0-1.0 ft	C11-4-201N	<Null>	ug/kg	190	190	580
9	13	2	47	192	92	C11-4-13	1999-11-11	0.0-1.0 ft	C11-4-131N	<Null>	ug/kg	240	240	550

Exhibit 8-26 IGW Spatial Weighting Output Functional Area 13 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance
4500	790	320	15300	24500	50	6700	950	1100	79500	40	390	453230	747396.2	Point	2004	INT-CONTOUR	726		11.115856
3710	472	513	14300	16100	104	6480	2050	2050	82600	180	180	453254.6164	747400.2862	Point	1964	INT-CONTOUR	726		0.929982
11800	320	270	52100	2070000	240	36700	1400	1100	142000	43	440	453509.3	747669.7	Point	2080	INT-CONTOUR	724		16.403037
6100	630	40	18100	30600	30	7600	820	1100	123000	370	370	453238.3	747415.3	Point	1964	INT-CONTOUR	726		19.457339
5630	790	155	16600	56100	46	7730	586	1170	139000	396	396	453295.3	747358.9	Point	2080	INT-CONTOUR	724		2.280874
5100	614	293	12100	17300	32	7830	1420	1084.099	54700	379.055	379.055	453330.7	747433.8	Point	1675	DEP-CONTOUR	722		7.471527
7300	270	350	13700	319000	220	3300	1000	1200	26500	80	410	453425.9	747581.5	Point	2080	INT-CONTOUR	724		20.773065
10800	280	130	17100	380000	210	6900	1100	1200	42900	170	390	453549.8	747662	Point	2080	INT-CONTOUR	724		3.738076
11900	210	90	17400	492000	470	4100	1200	1100	67800	130	430	453559.5	747628.3	Point	1712	INT-CONTOUR	722		1.923065

Exhibit 8-26 IGW Spatial Weighting Output Functional Area 13 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
7	8	726	SOLID	5330.996176	22.990734	0	65	B11-2044C-05	1999-11-05	0.0-2.0 ft	B11-2044C-052N		ug/kg	
7	8	726	SOLID	5330.996176	8.587644	0	263	SB-R-C12-02	2006-05-31	0.5-1.0 ft	SB-R-C12-021.0N		ug/kg	320
8	9	728	SOLID	4732.765771	28.10938	0	125	C11-4-19	1999-11-11	0.0-2.0 ft	C11-4-192N		ug/kg	
8	9	728	SOLID	4732.765771	17.335072	0	64	B11-2044C-01	1999-11-05	0.0-2.0 ft	B11-2044C-012N		ug/kg	
6	7	724	SOLID	5236.783423	4.30817	0	146	C12-418-01	2000-09-27	0.0-2.0 ft	C12-418-012N		ug/kg	100
7	8	726	SOLID	5330.996176	15.292909	0	147	C12-418-04	2000-07-12	0.0-1.5 ft	C12-418-041.5N		ug/kg	192.3
8	9	728	SOLID	4732.765771	2.439157	0	117	C11-27-02	1999-11-12	0.0-1.0 ft	C11-27-021N		ug/kg	
8	9	728	SOLID	4732.765771	2.069741	0	126	C11-4-20	1999-11-11	0.0-1.0 ft	C11-4-201N		ug/kg	190
8	9	728	SOLID	4732.765771	34.753408	0	124	C11-4-13	1999-11-11	0.0-1.0 ft	C11-4-131N		ug/kg	240

Exhibit 8-26 IGW Spatial Weighting Output Functional Area 13 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
390	540	4500	790	320	15300	24500	50	6700	950	1100	79500	40	390	453230	747396.2	79
	1090	3710	472	513	14300	16100	104	6480	2050	2050	82600	180	180	453254.6164	747400.2862	79
440	1800	11800	320	270	52100	2070000	240	36700	1400	1100	142000	43	440	453509.3	747669.7	79
370	530	6100	630	40	18100	30600	30	7600	820	1100	123000	370	370	453238.3	747415.3	79
100	704	5630	790	155	16600	56100	46	7730	586	1170	139000	396	396	453295.3	747358.9	79
192.3	650.459	5100	614	293	12100	17300	32	7830	1420	1084.099	54700	379.055	379.055	453330.7	747433.8	79
85	300	7300	270	350	13700	319000	220	3300	1000	1200	26500	80	410	453425.9	747581.5	79
190	580	10800	280	130	17100	380000	210	6900	1100	1200	42900	170	390	453549.8	747662	79
240	550	11900	210	90	17400	492000	470	4100	1200	1100	67800	130	430	453559.5	747628.3	79

Exhibit 8-26 IGW Spatial Weighting Output Functional Area 13 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead	Spatial Weighted_Mercury
13	136824.822	2005.019219	88686.17697	0.648173158	15880.24238	32.40865791
13	136824.822	220.5861149	2570.274663	0.018785149	302.4408984	1.953655493
13	136824.822	325.6508591	5379.959026	0.039320051	81392.5063	9.436812325
13	136824.822	185.0878893	1447.252012	0.010577408	323.6686949	0.31732225
13	136824.822	486.3737224	5668.454581	0.041428554	2324.141902	1.905713503
13	136824.822	430.5862125	12040.56025	0.087999824	1522.396955	2.815994368
13	136824.822	480.0901451	14281.083	0.104374943	33295.60683	22.96248747
13	136824.822	255.0054627	3120.490688	0.022806466	8666.457185	4.789357918
13	136824.822	305.8333717	3630.650398	0.026535027	13055.23347	12.47146287
				SUM:	156762.6946	89.06146411

Exhibit 8-27 IGW Spatial Weighting Output Functional Area 13 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA13_deep_Nitrobenzene	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units
1	1	22	443	822	823	TP-RD-B12-04	2017-11-02 9:25	7.0-7.5 ft	TP-RD-B12-04(07.0-07.5)	<Null>	ug/kg
2	3	16	70	215	275	TP-RD-C11-14	2017-11-30 14:14	1.0-1.5 ft	TP-RD-C11-14(01.0-01.5)	<Null>	ug/kg
3	4	23	502	636	637	TP-RD-B12-08	2017-11-07 10:00	9.0-9.5 ft	TP-RD-B12-08(09.0-09.5)	<Null>	ug/kg
4	8	19	409	1015	828	TP-RD-B12-05	2017-11-02 9:45	5.0-5.5 ft	TP-RD-B12-05(05.0-05.5)	<Null>	ug/kg
5	9	20	412	1018	831	TP-RD-B12-06	2017-11-30	5.0-5.5 ft	BD113017A	TP-RD-B12-06(05.0-05.5)	ug/kg
6	10	18	320	238	204	TP-RD-B12-09	2017-11-30 8:26	3.0-3.5 ft	TP-RD-B12-09(03.0-03.5)	<Null>	ug/kg
7	11	17	180	142	923	TP-RD-B12-15	2017-12-05 8:20	1.0-1.5 ft	TP-RD-B12-15(01.0-01.5)	<Null>	ug/kg
8	12	15	68	213	246	TP-RD-C11-13	2017-11-30 13:34	1.0-1.5 ft	TP-RD-C11-13(01.0-01.5)	<Null>	ug/kg
9	13	14	66	211	183	TP-RD-C11-12	2017-11-30 12:42	1.0-1.5 ft	TP-RD-C11-12(01.0-01.5)	<Null>	ug/kg
10	14	13	64	209	181	TP-RD-C11-11	2017-11-30 11:12	1.0-1.5 ft	TP-RD-C11-11(01.0-01.5)	<Null>	ug/kg
11	15	12	43	167	1028	TP-RD-C11-02A	2017-10-27 9:30	1.0-1.5 ft	TP-RD-C11-02A(01.0-01.5)	<Null>	ug/kg
12	16	11	32	138	919	TP-RD-C11-02B	2017-11-06 13:45	1.0-1.5 ft	TP-RD-C11-02B(01.0-01.5)	<Null>	ug/kg
13	17	9	61	206	169	C11-4-19	1999-11-11	0.0-2.0 ft	C11-4-192N	<Null>	ug/kg
14	18	8	48	193	95	B11-2044C-01	1999-11-05	0.0-2.0 ft	B11-2044C-012N	<Null>	ug/kg
15	19	7	41	165	1026	B11-2044C-05	1999-11-05	0.0-2.0 ft	B11-2044C-052N	<Null>	ug/kg
16	20	6	27	133	893	C12-418-01	2000-09-27	0.0-2.0 ft	C12-418-012N	<Null>	ug/kg
17	21	5	36	160	156	C12-418-04	2000-07-12	0.0-1.5 ft	C12-418-041.5N	<Null>	ug/kg
18	22	4	62	207	173	C11-4-20	1999-11-11	0.0-1.0 ft	C11-4-201N	<Null>	ug/kg
19	23	3	59	204	164	C11-27-02	1999-11-12	0.0-1.0 ft	C11-27-021N	<Null>	ug/kg
20	24	2	47	192	92	C11-4-13	1999-11-11	0.0-1.0 ft	C11-4-131N	<Null>	ug/kg
21	25	1	60	205	168	C11-27-03	1999-11-12	0.0-0.5 ft	C11-27-030.5N	<Null>	ug/kg

Exhibit 8-27 IGW Spatial Weighting Output Functional Area 13 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452959.64	747104.13	Point	1850
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453565.49	747676.96	Point	2080
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453025.66	747207.84	Point	1849
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453037.36	747141.65	Point	2122
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453097.28	747236.77	Point	2122
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453101.09	747289.31	Point	2122
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453210.59	747333.73	Point	2005
130	130	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453561.67	747650.77	Point	2080
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453536.94	747653.49	Point	2080
130	130	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453539.07	747675.51	Point	2080
120	120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453274.82	747454.92	Point	1670
110	110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453289.95	747447.08	Point	1670
<Null>	440	1800	11800	320	270	52100	2070000	240	36700	1400	1100	142000	43	440	453509.3	747669.7	Point	2080
<Null>	370	530	6100	630	40	18100	30600	30	7600	820	1100	123000	370	370	453238.3	747415.3	Point	1964
<Null>	390	540	4500	790	320	15300	24500	50	6700	950	1100	79500	40	390	453230	747396.2	Point	2004
100	100	704	5630	790	155	16600	56100	46	7730	586	1170	139000	396	396	453295.3	747358.9	Point	2080
192.3	192.3	650.459	5100	614	293	12100	17300	32	7830	1420	1084.099	54700	379.055	379.055	453330.7	747433.8	Point	1675
190	190	580	10800	280	130	17100	380000	210	6900	1100	1200	42900	170	390	453549.8	747662	Point	2080
<Null>	85	300	7300	270	350	13700	319000	220	3300	1000	1200	26500	80	410	453425.9	747581.5	Point	2080
240	240	550	11900	210	90	17400	492000	470	4100	1200	1100	67800	130	430	453559.5	747628.3	Point	1712
240	570	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453447.2	747601.1	Point	2080

Exhibit 8-27 IGW Spatial Weighting Output Functional Area 13 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Layer	Elevation	RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1
INT-CONTOUR	736		0.097581	8	9	728	SOLID	4732.765771	26.417574	8	839	TP-RD-B12-04	2017-11-02 9:25	7.0-7.5 ft
INT-CONTOUR	724		0.084904	8	9	728	SOLID	4732.765771	0.15161	0	1008	TP-RD-C11-14	2017-11-30 14:14	1.0-1.5 ft
INT-CONTOUR	738		0.948878	8	9	728	SOLID	4732.765771	1.680593	10	862	TP-RD-B12-08	2017-11-07 10:00	9.0-9.5 ft
INT-CONTOUR	732		0.500277	7	8	726	SOLID	5330.996176	8.385969	6	843	TP-RD-B12-05	2017-11-02 9:45	5.0-5.5 ft
INT-CONTOUR	732		11.437394	7	8	726	SOLID	5330.996176	23.316569	6	846	TP-RD-B12-06	2017-11-30	5.0-5.5 ft
INT-CONTOUR	732		23.589633	8	9	728	SOLID	4732.765771	0.263469	4	864	TP-RD-B12-09	2017-11-30 8:26	3.0-3.5 ft
INT-CONTOUR	728		2.757031	7	8	726	SOLID	5330.996176	6.04836	2	871	TP-RD-B12-15	2017-12-05 8:20	1.0-1.5 ft
INT-CONTOUR	724		3.473886	8	9	728	SOLID	4732.765771	18.239345	0	1006	TP-RD-C11-13	2017-11-30 13:34	1.0-1.5 ft
INT-CONTOUR	724		4.706226	8	9	728	SOLID	4732.765771	1.143446	0	1004	TP-RD-C11-12	2017-11-30 12:42	1.0-1.5 ft
INT-CONTOUR	724		13.373788	8	9	728	SOLID	4732.765771	15.182904	0	1002	TP-RD-C11-11	2017-11-30 11:12	1.0-1.5 ft
DEP-CONTOUR	724		9.881846	8	9	728	SOLID	4732.765771	11.37226	0	972	TP-RD-C11-02A	2017-10-27 9:30	1.0-1.5 ft
DEP-CONTOUR	724		0.057195	7	8	726	SOLID	5330.996176	19.639234	0	976	TP-RD-C11-02B	2017-11-06 13:45	1.0-1.5 ft
INT-CONTOUR	724		16.403037	8	9	728	SOLID	4732.765771	28.10938	0	125	C11-4-19	1999-11-11	0.0-2.0 ft
INT-CONTOUR	726		19.457339	8	9	728	SOLID	4732.765771	17.335072	0	64	B11-2044C-01	1999-11-05	0.0-2.0 ft
INT-CONTOUR	726		11.115856	7	8	726	SOLID	5330.996176	22.990734	0	65	B11-2044C-05	1999-11-05	0.0-2.0 ft
INT-CONTOUR	724		2.280874	6	7	724	SOLID	5236.783423	4.30817	0	146	C12-418-01	2000-09-27	0.0-2.0 ft
DEP-CONTOUR	722		7.471527	7	8	726	SOLID	5330.996176	15.292909	0	147	C12-418-04	2000-07-12	0.0-1.5 ft
INT-CONTOUR	724		3.738076	8	9	728	SOLID	4732.765771	2.069741	0	126	C11-4-20	1999-11-11	0.0-1.0 ft
INT-CONTOUR	724		20.773065	8	9	728	SOLID	4732.765771	2.439157	0	117	C11-27-02	1999-11-12	0.0-1.0 ft
INT-CONTOUR	722		1.923065	8	9	728	SOLID	4732.765771	34.753408	0	124	C11-4-13	1999-11-11	0.0-1.0 ft
INT-CONTOUR	724		23.322207	8	9	728	SOLID	4732.765771	6.652514	0	118	C11-27-03	1999-11-12	0.0-0.5 ft

Exhibit 8-27 IGW Spatial Weighting Output Functional Area 13 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1
TP-RD-B12-04(07.0-07.5)		ug/kg	120	120												
TP-RD-C11-14(01.0-01.5)		ug/kg	120	120												
TP-RD-B12-08(09.0-09.5)		ug/kg	110	110												
TP-RD-B12-05(05.0-05.5)		ug/kg	120	120												
BD113017A	TP-RD-B12-06(05.0-05.5)	ug/kg	110	110												
TP-RD-B12-09(03.0-03.5)		ug/kg	120	120												
TP-RD-B12-15(01.0-01.5)		ug/kg	110	110												
TP-RD-C11-13(01.0-01.5)		ug/kg	130	130												
TP-RD-C11-12(01.0-01.5)		ug/kg	120	120												
TP-RD-C11-11(01.0-01.5)		ug/kg	130	130												
TP-RD-C11-02A(01.0-01.5)		ug/kg	120	120												
TP-RD-C11-02B(01.0-01.5)		ug/kg	110	110												
C11-4-192N		ug/kg		440	1800	11800	320	270	52100	2070000	240	36700	1400	1100	142000	43
B11-2044C-012N		ug/kg		370	530	6100	630	40	18100	30600	30	7600	820	1100	123000	370
B11-2044C-052N		ug/kg		390	540	4500	790	320	15300	24500	50	6700	950	1100	79500	40
C12-418-012N		ug/kg	100	100	704	5630	790	155	16600	56100	46	7730	586	1170	139000	396
C12-418-041.5N		ug/kg	192.3	192.3	650.459	5100	614	293	12100	17300	32	7830	1420	1084.099	54700	379.055
C11-4-201N		ug/kg	190	190	580	10800	280	130	17100	380000	210	6900	1100	1200	42900	170
C11-27-021N		ug/kg		85	300	7300	270	350	13700	319000	220	3300	1000	1200	26500	80
C11-4-131N		ug/kg	240	240	550	11900	210	90	17400	492000	470	4100	1200	1100	67800	130
C11-27-030.5N		ug/kg	240	570												

Exhibit 8-27 IGW Spatial Weighting Output Functional Area 13 Deep (Nitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_NB
	452959.64	747104.13	79 13	136824.822	1327.422564	56095.29433	0.409978932	49.1974718	
	453565.49	747676.96	79 13	136824.822	165.0303837	1067.884534	0.007804757	0.936570881	
	453025.66	747207.84	79 13	136824.822	275.1219106	3258.674527	0.023816399	2.619803869	
	453037.36	747141.65	79 13	136824.822	373.8675058	7661.204162	0.055992795	6.719135361	
	453097.28	747236.77	79 13	136824.822	374.6198193	8747.873125	0.06393484	7.03283242	
	453101.09	747289.31	79 13	136824.822	290.1481701	3975.299232	0.029053933	3.486471979	
	453210.59	747333.73	79 13	136824.822	376.7751141	9384.041549	0.068584351	7.544278557	
	453561.67	747650.77	79 13	136824.822	133.0770415	952.4759666	0.006961281	0.904966466	
	453536.94	747653.49	79 13	136824.822	168.9345913	1560.760099	0.011406995	1.368839435	
	453539.07	747675.51	79 13	136824.822	161.7400593	1635.632715	0.01195421	1.554047357	
	453274.82	747454.92	79 13	136824.822	199.5798069	1112.346474	0.008129713	0.975565507	
	453289.95	747447.08	79 13	136824.822	310.1358403	3186.254654	0.02328711	2.561582079	
440	453509.3	747669.7	79 13	136824.822	239.3446064	3079.742088	0.02250865	9.903806191	
370	453238.3	747415.3	79 13	136824.822	165.3196096	1593.431285	0.011645776	4.308937275	
390	453230	747396.2	79 13	136824.822	213.601975	2619.919986	0.019147988	7.46771514	
396	453295.3	747358.9	79 13	136824.822	260.3335442	3726.46126	0.027235272	2.723527213	
379.055	453330.7	747433.8	79 13	136824.822	405.1824011	9052.098324	0.066158305	12.72224208	
390	453549.8	747662	79 13	136824.822	70.81409913	309.4266313	0.00226148	0.429681246	
410	453425.9	747581.5	79 13	136824.822	398.9719361	9850.822564	0.071995873	6.119649242	
430	453559.5	747628.3	79 13	136824.822	223.5799974	2190.25634	0.016007741	3.841857889	
	453447.2	747601.1	79 13	136824.822	306.2330196	5764.994836	0.04213413	24.0164541	
							SUM:	156.4354361	

Exhibit 8-28 IGW Spatial Weighting Output Functional Area 13 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA13_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	1	5	628	697	764	SB-R-A13-04	2006-05-23	0.5-1.0 ft	SB-R-A13-041.0FD	SB-R-A13-041.0N	ug/kg	340
2	6	29	311	932	1034	B12-3-01	1999-10-13	0.0-0.3 ft	B12-3-010.25N	<Null>	ug/kg	192.3
3	7	28	439	717	954	B12-450-03	1999-10-15	0.0-2.0 ft	B12-450-032N	<Null>	ug/kg	250
4	8	27	312	933	1035	B12-3-02	1999-10-13	0.0-2.0 ft	B12-3-022N	<Null>	ug/kg	227.2
5	9	26	530	734	995	TP-R-B12-1-3	2006-08-14	0.5-1.0 ft	TP-R-B12-1-31.0N	<Null>	ug/kg	340
6	10	24	498	574	10	TP-RD-B12-08	2017-11-07 10:00	1.0-1.5 ft	TP-RD-B12-08(01.0-01.5)	<Null>	ug/kg	120
7	11	23	440	718	955	TP-RD-B12-04	2017-11-02 9:25	1.0-1.5 ft	TP-RD-B12-04(01.0-01.5)	<Null>	ug/kg	120
8	12	22	413	1019	832	TP-RD-B12-06	2017-11-30 8:00	1.0-1.5 ft	TP-RD-B12-06(01.0-01.5)	<Null>	ug/kg	130
9	13	21	407	1011	429	TP-RD-B12-05	2017-11-02 9:45	1.0-1.5 ft	TP-RD-B12-05(01.0-01.5)	<Null>	ug/kg	120
10	14	20	319	150	129	TP-RD-B12-09	2017-11-30 8:26	1.0-1.5 ft	TP-RD-B12-09(01.0-01.5)	<Null>	ug/kg	120
11	15	19	316	37	979	TP-R-B12-234-2	2006-08-11	1.0-1.5 ft	TP-R-B12-234-21.5N	<Null>	ug/kg	340
12	16	18	313	34	976	TP-R-B12-234-1	2006-08-11	1.0-1.5 ft	TP-R-B12-234-11.5N	<Null>	ug/kg	350
13	17	17	528	732	993	TP-R-B12-1-2	2006-08-14	2.8-3.3 ft	TP-R-B12-1-23.25N	<Null>	ug/kg	5100
14	18	3	594	255	507	TP-R-A12-426-2	2006-08-16	0.5-1.0 ft	TP-R-A12-426-21.0N	<Null>	ug/kg	350
15	19	1	573	524	812	TP-R-A12-426-1	2006-08-15	0.5-1.0 ft	TP-R-A12-426-11.0N	<Null>	ug/kg	350

Exhibit 8-28 IGW Spatial Weighting Output Functional Area 13 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
<Null>	1010	2690	378	534	9960	4750	19.2	7190	2140	1450	25700	190	190	452657.6	746745.38	Point	2187	INT-CONTOUR	742
192.3	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	77	460	453082.7	747245.5	Point	2122	INT-CONTOUR	732
250	640	5400	800	110	23500	158000	60	10200	500	1300	77100	480	480	452956	747115	Point	1850	INT-CONTOUR	736
227.2	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	420	420	453080.7	747237	Point	2122	INT-CONTOUR	732
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	190	190	452997.727	747161.065	Point	2317	INDEX-CONTOUR	740
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453025.66	747207.84	Point	1849	INT-CONTOUR	738
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452959.64	747104.13	Point	1850	INT-CONTOUR	736
130	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453097.28	747236.77	Point	2122	INT-CONTOUR	732
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453037.36	747141.65	Point	2122	INT-CONTOUR	732
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453101.09	747289.31	Point	2122	INT-CONTOUR	732
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	190	190	453043.3601	747232.8687	Point	2122	INT-CONTOUR	732
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	190	190	453072.7533	747217.4827	Point	2122	INT-CONTOUR	732
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	570	2000	453000.22	747187.231	Point	2317	INDEX-CONTOUR	740
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	190	190	452753.1835	746872.4231	Point	2187	INT-CONTOUR	742
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	190	190	452788.8111	746889.744	Point	2317	INDEX-CONTOUR	740

Exhibit 8-28 IGW Spatial Weighting Output Functional Area 13 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1
3.345682	6	7	724	SOLID	5236.783423	29.164736	18	206	SB-R-A13-04	2006-05-23	0.5-1.0 ft	SB-R-A13-041.0FD	SB-R-A13-041.0N
16.726476	8	9	728	SOLID	4732.765771	14.279524	4	82	B12-3-01	1999-10-13	0.0-0.3 ft	B12-3-010.25N	
3.610252	8	9	728	SOLID	4732.765771	15.962926	8	86	B12-450-03	1999-10-15	0.0-2.0 ft	B12-450-032N	
22.913604	8	9	728	SOLID	4732.765771	18.469968	4	83	B12-3-02	1999-10-13	0.0-2.0 ft	B12-3-022N	
1.338022	8	9	728	SOLID	4732.765771	10.000821	12	428	TP-R-B12-1-3	2006-08-14	0.5-1.0 ft	TP-R-B12-1-31.0N	
0.948878	8	9	728	SOLID	4732.765771	1.680593	10	858	TP-RD-B12-08	2017-11-07 10:00	1.0-1.5 ft	TP-RD-B12-08(01.0-01.5)	
0.097581	8	9	728	SOLID	4732.765771	26.417574	8	836	TP-RD-B12-04	2017-11-02 9:25	1.0-1.5 ft	TP-RD-B12-04(01.0-01.5)	
11.437394	7	8	726	SOLID	5330.996176	23.316569	6	847	TP-RD-B12-06	2017-11-30 8:00	1.0-1.5 ft	TP-RD-B12-06(01.0-01.5)	
0.500277	7	8	726	SOLID	5330.996176	8.385969	6	841	TP-RD-B12-05	2017-11-02 9:45	1.0-1.5 ft	TP-RD-B12-05(01.0-01.5)	
23.589633	8	9	728	SOLID	4732.765771	0.263469	4	863	TP-RD-B12-09	2017-11-30 8:26	1.0-1.5 ft	TP-RD-B12-09(01.0-01.5)	
14.085533	8	9	728	SOLID	4732.765771	5.704416	4	433	TP-R-B12-234-2	2006-08-11	1.0-1.5 ft	TP-R-B12-234-21.5N	
26.772201	8	9	728	SOLID	4732.765771	26.109887	4	430	TP-R-B12-234-1	2006-08-11	1.0-1.5 ft	TP-R-B12-234-11.5N	
10.694887	8	9	728	SOLID	4732.765771	6.465295	12	426	TP-R-B12-1-2	2006-08-14	2.8-3.3 ft	TP-R-B12-1-23.25N	
8.324978	7	8	726	SOLID	5330.996176	17.667979	16	346	TP-R-A12-426-2	2006-08-16	0.5-1.0 ft	TP-R-A12-426-21.0N	
9.28559	7	8	726	SOLID	5330.996176	22.173642	14	344	TP-R-A12-426-1	2006-08-15	0.5-1.0 ft	TP-R-A12-426-11.0N	

Exhibit 8-28 IGW Spatial Weighting Output Functional Area 13 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
ug/kg	340		1010	2690	378	534	9960	4750	19.2	7190	2140	1450	25700	190	190	452657.6	746745.38
ug/kg	192.3	192.3												77	460	453082.7	747245.5
ug/kg	250	250	640	5400	800	110	23500	158000	60	10200	500	1300	77100	480	480	452956	747115
ug/kg	227.2	227.2												420	420	453080.7	747237
ug/kg	340													190	190	452997.727	747161.065
ug/kg	120	120														453025.66	747207.84
ug/kg	120	120														452959.64	747104.13
ug/kg	130	130														453097.28	747236.77
ug/kg	120	120														453037.36	747141.65
ug/kg	120	120														453101.09	747289.31
ug/kg	340													190	190	453043.3601	747232.8687
ug/kg	350													190	190	453072.7533	747217.4827
ug/kg	5100													570	2000	453000.22	747187.231
ug/kg	350													190	190	452753.1835	746872.4231
ug/kg	350													190	190	452788.8111	746889.744

Exhibit 8-28 IGW Spatial Weighting Output Functional Area 13 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
79	13	136824.822	465.3862842	13224.47317	0.096652588	32.86187998
79	13	136824.822	114.0608773	791.7494954	0.005786593	1.112761747
79	13	136824.822	223.1364597	1816.977037	0.013279586	3.319896586
79	13	136824.822	87.99102912	408.7855151	0.002987656	0.678795468
79	13	136824.822	186.2302253	2045.328122	0.014948517	5.082495644
79	13	136824.822	140.8102757	1304.076689	0.009530995	1.143719395
79	13	136824.822	500.7531953	15095.25489	0.110325412	13.23904947
79	13	136824.822	321.1670113	5650.999106	0.041300979	5.369127277
79	13	136824.822	317.3364914	5840.516329	0.042686088	5.122330506
79	13	136824.822	1433.538595	60744.03731	0.443954806	53.27457674
79	13	136824.822	103.8136175	549.0807746	0.00401302	1.364426868
79	13	136824.822	230.566609	3324.911802	0.024300502	8.505175553
79	13	136824.822	113.7990887	639.8590065	0.004676483	23.85006526
79	13	136824.822	406.1088181	9957.318672	0.072774213	25.47097438
79	13	136824.822	515.2595613	15431.66493	0.112784104	39.47443636
					SUM:	219.8697112

Exhibit 8-29 IGW Spatial Weighting Output Functional Area 13 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA13_shallow_Lead	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	1	5	628	697	764	SB-R-A13-04	2006-05-23	0.5-1.0 ft	SB-R-A13-041.0FD	SB-R-A13-041.0N	ug/kg	340	<Null>
2	6	28	439	717	954	B12-450-03	1999-10-15	0.0-2.0 ft	B12-450-032N	<Null>	ug/kg	250	250

Exhibit 8-29 IGW Spatial Weighting Output Functional Area 13 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance
1010	2690	378	534	9960	4750	19.2	7190	2140	1450	25700	190	190	452657.6	746745.38	Point	2187	INT-CONTOUR	742		3.345682
640	5400	800	110	23500	158000	60	10200	500	1300	77100	480	480	452956	747115	Point	1850	INT-CONTOUR	736		3.610252

Exhibit 8-29 IGW Spatial Weighting Output Functional Area 13 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
6	7	724	SOLID	5236.783423	29.164736	18	206	SB-R-A13-04	2006-05-23	0.5-1.0 ft	SB-R-A13-041.0FD	SB-R-A13-041.0N	ug/kg	340
8	9	728	SOLID	4732.765771	15.962926	8	86	B12-450-03	1999-10-15	0.0-2.0 ft	B12-450-032N		ug/kg	250

Exhibit 8-29 IGW Spatial Weighting Output Functional Area 13 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	1010	2690	378	534	9960	4750	19.2	7190	2140	1450	25700	190	190	452657.6	746745.38	79
250	640	5400	800	110	23500	158000	60	10200	500	1300	77100	480	480	452956	747115	79

Exhibit 8-29 IGW Spatial Weighting Output Functional Area 13 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
13	136824.822	783.1939013	29134.97151	0.212936301	1011.447431
13	136824.822	2354.293709	107689.9038	0.787064089	124356.126
				SUM:	125367.5735

Exhibit 8-30 IGW Spatial Weighting Output Functional Area 14 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA14_deep_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	1	11	497	559	197	TP-RD-A13-02	2017-11-02 7:45	8.0-8.5 ft	TP-RD-A13-02(08.0-08.5)	<Null>	ug/kg	110
2	6	13	490	445	9	TP-R-A13-625-2	2006-08-16	9.0-9.5 ft	TP-R-A13-625-29.5FD	TP-R-A13-625-29.5N	ug/kg	320
3	7	12	488	410	228	TP-R-A13-625-1	2006-08-16	8.5-9.0 ft	TP-R-A13-625-19.0N	<Null>	ug/kg	320
4	8	8	404	1008	426	TP-RD-A12-05	2017-11-01 14:10	5.0-5.5 ft	TP-RD-A12-05(05.0-05.5)	<Null>	ug/kg	110
5	9	7	399	899	195	SB-R-B12-01	2006-05-23	4.0-4.5 ft	SB-R-B12-014.5N	<Null>	ug/kg	330
6	10	6	29	135	895	SB-R-C12-03	2006-06-06	1.0-1.5 ft	SB-R-C12-031.5N	<Null>	ug/kg	360
7	11	2	28	134	894	C11-4-09	1999-11-11	0.0-1.5 ft	C11-4-091.5N	<Null>	ug/kg	230
8	12	1	26	132	892	C11-4-02	1999-11-11	0.0-1.0 ft	C11-4-021N	<Null>	ug/kg	510

Exhibit 8-30 IGW Spatial Weighting Output Functional Area 14 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452789.51	746749.8	Point	1902	INT-CONTOUR	734
	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	180	180	452794.7143	746780.3063	Point	1902	INT-CONTOUR	734
	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	180	180	452827.2974	746754.8881	Point	2122	INT-CONTOUR	732
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452875.74	746819.24	Point	2192	INDEX-CONTOUR	730
	2090	1610	369	522	10700	1680	105	3620	2090	2090	37100	180	180	453079.7083	747101.2559	Point	2192	INDEX-CONTOUR	730
	2290	2420	369	375	10200	50500	27.3	5590	2290	2290	32900	200	<Null>	453510.9151	747457.3925	Point	2267	INDEX-CONTOUR	720
230	1800	11500	490	430	109000	662000	990	31200	2400	1200	235000	56	490	453512.5	747508.5	Point	2267	INDEX-CONTOUR	720
240	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453414.2	747461.3	Point	1712	INT-CONTOUR	722

Exhibit 8-30 IGW Spatial Weighting Output Functional Area 14 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1
	6.103494	6	7	724	SOLID	5236.783423	50.2442	10	665	TP-RD-A13-02	2017-11-02 7:45	8.0-8.5 ft	TP-RD-A13-02(08.0-08.5)
	19.601399	6	7	724	SOLID	5236.783423	29.293604	10	351	TP-R-A13-625-2	2006-08-16	9.0-9.5 ft	TP-R-A13-625-29.5FD
	6.819842	5	6	722	SOLID	5019.812078	47.26436	10	349	TP-R-A13-625-1	2006-08-16	8.5-9.0 ft	TP-R-A13-625-19.0N
	13.124234	6	7	724	SOLID	5236.783423	42.723649	6	649	TP-RD-A12-05	2017-11-01 14:10	5.0-5.5 ft	TP-RD-A12-05(05.0-05.5)
	2.948172	6	7	724	SOLID	5236.783423	18.327844	6	226	SB-R-B12-01	2006-05-23	4.0-4.5 ft	SB-R-B12-014.5N
	14.982299	6	7	724	SOLID	5236.783423	17.314282	0	1033	SB-R-C12-03	2006-06-06	1.0-1.5 ft	SB-R-C12-031.5N
	2.301907	6	7	724	SOLID	5236.783423	29.721299	0	123	C11-4-09	1999-11-11	0.0-1.5 ft	C11-4-091.5N
	8.156272	6	7	724	SOLID	5236.783423	21.251613	0	122	C11-4-02	1999-11-11	0.0-1.0 ft	C11-4-021N

Exhibit 8-30 IGW Spatial Weighting Output Functional Area 14 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Parent_ID_1	units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1
	ug/kg	110	110													
TP-R-A13-625-29.5N	ug/kg	320													180	180
	ug/kg	320													180	180
	ug/kg	110	110													
	ug/kg	330		2090	1610	369	522	10700	1680	105	3620	2090	2090	37100	180	180
	ug/kg	360		2290	2420	369	375	10200	50500	27.3	5590	2290	2290	32900	200	
	ug/kg	230	230	1800	11500	490	430	109000	662000	990	31200	2400	1200	235000	56	490
	ug/kg	510	240													

Exhibit 8-30 IGW Spatial Weighting Output Functional Area 14 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord_1	y_coord_1	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
452789.51	746749.8	81	14	163308.5585	1126.858139	46873.80981	0.287026046	31.57286505
452794.7143	746780.3063	81	14	163308.5585	295.64763	4774.622199	0.029236816	9.355780968
452827.2974	746754.8881	81	14	163308.5585	215.8082154	2467.310497	0.015108274	4.834647775
452875.74	746819.24	81	14	163308.5585	609.3297108	20810.04847	0.127427789	14.01705674
453079.7083	747101.2559	81	14	163308.5585	1037.412996	41808.72438	0.256010614	84.48350271
453510.9151	747457.3925	81	14	163308.5585	378.2681722	6098.486492	0.037343337	13.44360122
453512.5	747508.5	81	14	163308.5585	489.9642625	14130.86381	0.086528618	19.90158205
453414.2	747461.3	81	14	163308.5585	753.0474256	26344.93712	0.161320003	82.27320142
							SUM:	259.8822379

Exhibit 8-31 IGW Spatial Weighting Output Functional Area 14 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA14_deep_metals	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	7	399	899	195	SB-R-B12-01	2006-05-23	4.0-4.5 ft	SB-R-B12-014.5N	<Null>	ug/kg	330		2090	1610
2	6	6	29	135	895	SB-R-C12-03	2006-06-06	1.0-1.5 ft	SB-R-C12-031.5N	<Null>	ug/kg	360		2290	2420
3	7	5	42	166	1027	C11-4A-01	1999-11-05	0.0-2.0 ft	C11-4A-012N	<Null>	ug/kg	<Null>	390	470	2900
4	8	4	38	162	288	C11-4B-01	1999-11-05	0.0-2.0 ft	C11-4B-012N	<Null>	ug/kg	<Null>	410	850	8800
5	9	3	37	161	287	C11-4A-02	2000-06-30	0.0-2.0 ft	C11-4A-022N	<Null>	ug/kg	<Null>	391	697	7960
6	10	2	28	134	894	C11-4-09	1999-11-11	0.0-1.5 ft	C11-4-091.5N	<Null>	ug/kg	230	230	1800	11500

Exhibit 8-31 IGW Spatial Weighting Output Functional Area 14 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
369	522	10700	1680	105	3620	2090	2090	37100	180	180	453079.7083	747101.2559	Point	2192	INDEX-CONTOUR	730		2.948172	6
369	375	10200	50500	27.3	5590	2290	2290	32900	200	<Null>	453510.9151	747457.3925	Point	2267	INDEX-CONTOUR	720		14.982299	6
200	430	12200	53900	30	8400	640	940	123000	390	390	453544	747597.2	Point	2080	INT-CONTOUR	724		8.408176	7
240	200	39200	379000	170	11900	1700	1100	117000	410	410	453516.9	747538.7	Point	1712	INT-CONTOUR	722		6.684291	7
104	377	11800	52000	323	9680	767	1160	101000	391	391	453556.6	747591.3	Point	1712	INT-CONTOUR	722		9.880415	7
490	430	109000	662000	990	31200	2400	1200	235000	56	490	453512.5	747508.5	Point	2267	INDEX-CONTOUR	720		2.301907	6

Exhibit 8-31 IGW Spatial Weighting Output Functional Area 14 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
7	724	SOLID	5236.783423	18.327844	6	226	SB-R-B12-01	2006-05-23	4.0-4.5 ft	SB-R-B12-014.5N		ug/kg	330
7	724	SOLID	5236.783423	17.314282	0	1033	SB-R-C12-03	2006-06-06	1.0-1.5 ft	SB-R-C12-031.5N		ug/kg	360
8	726	SOLID	5330.996176	19.314843	0	127	C11-4A-01	1999-11-05	0.0-2.0 ft	C11-4A-012N		ug/kg	
8	726	SOLID	5330.996176	17.979475	0	129	C11-4B-01	1999-11-05	0.0-2.0 ft	C11-4B-012N		ug/kg	
8	726	SOLID	5330.996176	7.572943	0	128	C11-4A-02	2000-06-30	0.0-2.0 ft	C11-4A-022N		ug/kg	
7	724	SOLID	5236.783423	29.721299	0	123	C11-4-09	1999-11-11	0.0-1.5 ft	C11-4-091.5N		ug/kg	230

Exhibit 8-31 IGW Spatial Weighting Output Functional Area 14 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	2090	1610	369	522	10700	1680	105	3620	2090	2090	37100	180	180	453079.7083	747101.2559	81
	2290	2420	369	375	10200	50500	27.3	5590	2290	2290	32900	200		453510.9151	747457.3925	81
390	470	2900	200	430	12200	53900	30	8400	640	940	123000	390	390	453544	747597.2	81
410	850	8800	240	200	39200	379000	170	11900	1700	1100	117000	410	410	453516.9	747538.7	81
391	697	7960	104	377	11800	52000	323	9680	767	1160	101000	391	391	453556.6	747591.3	81
230	1800	11500	490	430	109000	662000	990	31200	2400	1200	235000	56	490	453512.5	747508.5	81

Exhibit 8-31 IGW Spatial Weighting Output Functional Area 14 Deep (Metals)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead	Spatial Weighted_mercury
14	163308.5585	2597.389944	119844.1206	0.733850826	1232.869388	77.05433677
14	163308.5585	817.2322552	29010.58494	0.177642771	8970.959957	4.84964766
14	163308.5585	127.4974532	494.8132151	0.003029928	163.3131327	0.090897848
14	163308.5585	292.9182089	3507.15321	0.021475624	8139.261522	3.650856091
14	163308.5585	298.0060279	5253.237183	0.032167556	1672.712906	10.39012055
14	163308.5585	364.7056568	5198.694672	0.031833571	21073.82432	31.51523577
				SUM:	41252.94123	127.5510947

Exhibit 8-32 IGW Spatial Weighting Output Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA14_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	15	428	542	132	SB-R-B13-04	2006-05-23	0.5-1.0 ft	SB-R-B13-041.0N	<Null>	ug/kg	370	<Null>	1260
2	6	22	400	999	81	SO-R2-B-12-1	2013-11-14 14:24	0.2-0.7 ft	SO-R2-B-12-1_20131114	<Null>	ug/kg	360	360	2300
3	7	21	303	837	299	B12-422-06	1999-11-03	0.0-2.0 ft	B12-422-062N	<Null>	ug/kg	230	230	500
4	8	20	302	836	298	B12-422-04	2000-06-22	0.0-2.0 ft	B12-422-042N	<Null>	ug/kg	250	250	588.365
5	9	14	398	898	194	SB-R-B12-01	2006-05-23	0.5-1.0 ft	SB-R-B12-011.0N	<Null>	ug/kg	320	<Null>	1540
6	10	2	765	600	690	SB-R-A13-02	2006-05-19	2.0-2.5 ft	SB-R-A13-022.5N	<Null>	ug/kg	350	<Null>	1060

Exhibit 8-32 IGW Spatial Weighting Output Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
23100	648	616	28500	38400	123	11400	2460	2460	24100	190	210	452881.7551	746801.5279	Point	2192	INDEX-CONTOUR	730		0.302783	5
7580	801	575	11500	11700	26.4	11300	1370	3450	56500	20	39	452994.5445	746958.831	Point	2192	INDEX-CONTOUR	730		10.202902	6
3800	750	230	14300	8500	30	7000	950	1000	48400	390	390	453210.2	747150.7	Point	1964	INT-CONTOUR	726		36.0983	5
3010	574	294.182	14600	13500	76	9430	334	980.608	45200	405.317	405.317	453223.3	747191.5	Point	1964	INT-CONTOUR	726		29.438796	5
1870	484	511	14600	4370	104	8090	2050	1790	31200	180	180	453079.7083	747101.2559	Point	2192	INDEX-CONTOUR	730		2.948172	6
4170	611	2880	11000	5170	29	8620	2300	2300	26200	190	190	452444.4791	746460.0442	Point	2007	INT-CONTOUR	746		3.227731	5

Exhibit 8-32 IGW Spatial Weighting Output Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
6	722	SOLID	5019.812078	45.689907	8	241	SB-R-B13-04	2006-05-23	0.5-1.0 ft	SB-R-B13-041.0N		ug/kg	370
7	724	SOLID	5236.783423	15.655395	6	298	SO-R2-B-12-1	2013-11-14 14:24	0.2-0.7 ft	SO-R2-B-12-1_20131114		ug/kg	360
6	722	SOLID	5019.812078	15.667578	4	85	B12-422-06	1999-11-03	0.0-2.0 ft	B12-422-062N		ug/kg	230
6	722	SOLID	5019.812078	23.342551	4	84	B12-422-04	2000-06-22	0.0-2.0 ft	B12-422-042N		ug/kg	250
7	724	SOLID	5236.783423	18.327844	6	225	SB-R-B12-01	2006-05-23	0.5-1.0 ft	SB-R-B12-011.0N		ug/kg	320
6	722	SOLID	5019.812078	54.008494	24	203	SB-R-A13-02	2006-05-19	2.0-2.5 ft	SB-R-A13-022.5N		ug/kg	350

Exhibit 8-32 IGW Spatial Weighting Output Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	1260	23100	648	616	28500	38400	123	11400	2460	2460	24100	190	210	452881.7551	746801.5279	81
360	2300	7580	801	575	11500	11700	26.4	11300	1370	3450	56500	20	39	452994.5445	746958.831	81
230	500	3800	750	230	14300	8500	30	7000	950	1000	48400	390	390	453210.2	747150.7	81
250	588.365	3010	574	294.182	14600	13500	76	9430	334	980.608	45200	405.317	405.317	453223.3	747191.5	81
	1540	1870	484	511	14600	4370	104	8090	2050	1790	31200	180	180	453079.7083	747101.2559	81
	1060	4170	611	2880	11000	5170	29	8620	2300	2300	26200	190	190	452444.4791	746460.0442	81

Exhibit 8-32 IGW Spatial Weighting Output Functional Area 14 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic
14	163308.5585	935.1150431	36651.69956	0.224432203	5184.38389
14	163308.5585	569.6345717	18270.3103	0.111876012	848.020173
14	163308.5585	371.6984871	7481.606117	0.045812701	174.0882627
14	163308.5585	1362.614303	57525.26707	0.352248943	1060.269317
14	163308.5585	493.4806992	14027.57622	0.085896149	160.625798
14	163308.5585	787.8676244	29352.14605	0.179734279	749.4919442
				SUM:	8176.879385

Exhibit 8-33 IGW Spatial Weighting Output Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA15_deep	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic	Beryllium
1	1	4	175	126	479	C12-275-01	2000-06-22	0.0-2.0 ft	C12-275-012N	<Null>	ug/kg	238.1	238.1	488.807	3510	617
2	6	3	173	124	473	C12-274-01	1999-10-21	0.0-2.0 ft	C12-274-012N	<Null>	ug/kg	220	220	460	3500	580
3	7	2	19	110	271	C12-4-01	1999-10-19	0.0-2.0 ft	C12-4-012N	<Null>	ug/kg	<Null>	390	520	2400	450
4	8	1	174	125	474	C12-274-05	1999-10-21	0.0-1.0 ft	C12-274-051N	<Null>	ug/kg	200	200	430	4000	580

Exhibit 8-33 IGW Spatial Weighting Output Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1	OBJECTID_2
318	23200	61200	91	7510	626	814.678	384000	410.054	410.054	453370.1	747264.4	Point	1712	INT-CONTOUR	722		64.328234	4	5
40	1930000	50100	130	7700	160	920	43400	55	450	453405.1	747290.1	Point	1712	INT-CONTOUR	722		22.024457	4	5
310	10300	1360000	80	5400	520	1000	109000	390	390	453512.7	747335.5	Point	2267	INDEX-CONTOUR	720		24.368296	4	5
110	19300	3770000	90	15700	480	850	144000	120	430	453407.3	747262	Point	1712	INT-CONTOUR	722		35.123388	4	5

Exhibit 8-33 IGW Spatial Weighting Output Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1
720	SOLID	4720.719407	13.392144	2	141	C12-275-01	2000-06-22	0.0-2.0 ft	C12-275-012N		ug/kg	238.1	238.1	488.807
720	SOLID	4720.719407	14.585909	2	139	C12-274-01	1999-10-21	0.0-2.0 ft	C12-274-012N		ug/kg	220	220	460
720	SOLID	4720.719407	54.709481	0	145	C12-4-01	1999-10-19	0.0-2.0 ft	C12-4-012N		ug/kg		390	520
720	SOLID	4720.719407	12.472813	2	140	C12-274-05	1999-10-21	0.0-1.0 ft	C12-274-051N		ug/kg	200	200	430

Exhibit 8-33 IGW Spatial Weighting Output Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW	Functional_Area	FA_Area_SF
3510	617	318	23200	61200	91	7510	626	814.678	384000	410.054	410.054	453370.1	747264.4	57	15	133975.4776
3500	580	40	1930000	50100	130	7700	160	920	43400	55	450	453405.1	747290.1	57	15	133975.4776
2400	450	310	10300	1360000	80	5400	520	1000	109000	390	390	453512.7	747335.5	57	15	133975.4776
4000	580	110	19300	3770000	90	15700	480	850	144000	120	430	453407.3	747262	57	15	133975.4776

Exhibit 8-33 IGW Spatial Weighting Output Functional Area 15 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Shape_Length	**Shape_Area**	**Fractional_Area**	Spatial Weighted_Lead
2452.238135	112869.2376	0.842461916	51558.66925
272.3162899	4006.13182	0.029901978	1498.089111
393.0432145	9541.900726	0.071221248	96860.89737
394.9856785	7558.184887	0.056414689	212683.3771
		SUM:	362601.0328

Exhibit 8-34 IGW Spatial Weighting Output Functional Area 15 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA15_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	1	27	483	304	25	A13-753-01	1999-10-15	0.0-2.0 ft	A13-753-0110/15/1999	<Null>	ug/kg	240
2	2	19	272	778	349	SB-R-C12-01	2006-05-31	0.5-1.0 ft	SB-R-C12-011.0FD	SB-R-C12-011.0N	ug/kg	330
3	3	22	262	519	913	C12-275-02	1999-10-20	0.0-2.0 ft	C12-275-022FD	C12-275-022N	ug/kg	230
4	7	26	379	750	1005	B13-8-05	2000-07-21	0.0-2.0 ft	B13-8-052N	<Null>	ug/kg	227
5	8	25	378	749	1004	B13-8-04	1999-10-08	0.0-2.0 ft	B13-8-042N	<Null>	ug/kg	230
6	9	24	297	811	206	A13-1-01	1999-10-14	0.0-2.0 ft	A13-1-012N	<Null>	ug/kg	250
7	10	17	435	550	950	TP-R-A13-625-6	2006-08-16	1.0-1.5 ft	TP-R-A13-625-61.5N	<Null>	ug/kg	4800
8	11	16	432	547	947	TP-R-A13-625-4	2006-08-16	1.0-1.5 ft	TP-R-A13-625-41.5N	<Null>	ug/kg	350
9	12	15	426	540	130	SB-R-A13-01	2006-05-19	1.0-1.5 ft	SB-R-A13-011.5N	<Null>	ug/kg	350
10	13	12	383	754	1009	TP-RD-A13-01A	2017-11-01 13:15	1.0-1.5 ft	TP-RD-A13-01A(01.0-01.5)	<Null>	ug/kg	140
11	14	11	381	752	1007	SD-B13-1-01	2001-05-01	1.0-1.5 ft	SD-B13-1-011.5N	<Null>	ug/kg	120
12	15	10	307	846	650	TP-RD-B13-02	2017-10-30 14:00	1.0-1.5 ft	TP-RD-B13-02(01.0-01.5)	<Null>	ug/kg	130
13	16	9	304	843	647	TP-RD-B12-10	2017-12-05 9:25	1.0-1.5 ft	TP-RD-B12-10(01.0-01.5)	<Null>	ug/kg	120
14	17	8	298	812	207	TP-RD-A13-04	2017-12-01 11:13	1.0-1.5 ft	TP-RD-A13-04(01.0-01.5)	<Null>	ug/kg	110
15	18	7	438	716	953	TP-RD-A13-05	2017-12-01 10:52	3.0-3.5 ft	TP-RD-A13-05(03.0-03.5)	<Null>	ug/kg	110
16	19	6	393	795	864	TP-RD-B13-10	2017-11-01 14:35	3.0-3.5 ft	TP-RD-B13-10(03.0-03.5)	<Null>	ug/kg	1200
17	20	5	389	782	433	TP-RD-B13-01	2017-10-30 14:45	3.0-3.5 ft	TP-RD-B13-01(03.0-03.5)	<Null>	ug/kg	130
18	21	2	376	747	1002	TP-RD-A13-03	2017-12-01 11:34	3.0-3.5 ft	TP-RD-A13-03(03.0-03.5)	<Null>	ug/kg	110

Exhibit 8-34 IGW Spatial Weighting Output Functional Area 15 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
240	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452675.5	746483.1	Point	2122	INT-CONTOUR	732
<Null>	1400	4650	680	2640	16800	6120	22.8	8060	2110	2110	37100	180	180	453326.173	747152.14	Point	1705	INT-CONTOUR	724
230	530	4500	850	1700	17000	70500	60	6300	960	1100	282000	420	420	453366.4	747254.3	Point	1705	INT-CONTOUR	724
227	584	4160	652	702	57400	75100	84	9940	1080	973	118000	124	403	452898.6	746747	Point	2005	INT-CONTOUR	728
230	480	3800	610	60	12000	21700	40	7900	780	960	153000	370	370	452903.6	746752.6	Point	2005	INT-CONTOUR	728
250	520	5900	710	310	23300	417000	60	10700	1000	1000	59600	580	400	452747.2	746528.6	Point	1686	DEP-CONTOUR	726
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	49	180	452878.821	746778.11	Point	2192	INDEX-CONTOUR	730
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	190	190	452860.4567	746730.0642	Point	2192	INDEX-CONTOUR	730
<Null>	2280	3180	857	2850	10200	8810	26.3	8500	2280	2280	50100	200	200	452708.244	746505.208	Point	2192	INDEX-CONTOUR	730
140	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452865.41	746686.44	Point	2005	INT-CONTOUR	728
120	760	5700	650	64	21700	44400	30	11800	2100	2000	62600	40	40	452911	746769	Point	2005	INT-CONTOUR	728
130	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452976.93	746746.78	Point	1964	INT-CONTOUR	726
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453038.82	746865.78	Point	1964	INT-CONTOUR	726
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452741.91	746545.8	Point	1686	DEP-CONTOUR	726
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452722.49	746518.02	Point	2192	INDEX-CONTOUR	730
1200	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452918.43	746774.32	Point	2005	INT-CONTOUR	728
130	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453007.82	746784.59	Point	2005	INT-CONTOUR	728
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452748.44	746527.47	Point	1685	DEP-CONTOUR	728

Exhibit 8-34 IGW Spatial Weighting Output Functional Area 15 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1
	3.640302	5	6	722	SOLID	5019.812078	56.979192	10	27	A13-753-01	1999-10-15	0.0-2.0 ft	A13-753-0110/15/1999	
	10.685701	4	5	720	SOLID	4720.719407	13.020538	4	260	SB-R-C12-01	2006-05-31	0.5-1.0 ft	SB-R-C12-011.0FD	SB-R-C12-011.0N
	61.82509	4	5	720	SOLID	4720.719407	10.580779	4	142	C12-275-02	1999-10-20	0.0-2.0 ft	C12-275-022FD	C12-275-022N
	8.110918	5	6	722	SOLID	5019.812078	5.113225	6	102	B13-8-05	2000-07-21	0.0-2.0 ft	B13-8-052N	
	1.200849	5	6	722	SOLID	5019.812078	4.316435	6	101	B13-8-04	1999-10-08	0.0-2.0 ft	B13-8-042N	
	3.379344	5	6	722	SOLID	5019.812078	66.991345	4	26	A13-1-01	1999-10-14	0.0-2.0 ft	A13-1-012N	
	3.355634	5	6	722	SOLID	5019.812078	31.22489	8	360	TP-R-A13-625-6	2006-08-16	1.0-1.5 ft	TP-R-A13-625-61.5N	
	5.896948	5	6	722	SOLID	5019.812078	6.797456	8	355	TP-R-A13-625-4	2006-08-16	1.0-1.5 ft	TP-R-A13-625-41.5N	
	16.732953	5	6	722	SOLID	5019.812078	60.998512	8	200	SB-R-A13-01	2006-05-19	1.0-1.5 ft	SB-R-A13-011.5N	
	10.30262	5	6	722	SOLID	5019.812078	29.060202	6	655	TP-RD-A13-01A	2017-11-01 13:15	1.0-1.5 ft	TP-RD-A13-01A(01.0-01.5)	
	5.72563	5	6	722	SOLID	5019.812078	2.018045	6	290	SD-B13-1-01	2001-05-01	1.0-1.5 ft	SD-B13-1-011.5N	
	7.592777	5	6	722	SOLID	5019.812078	60.8778	4	877	TP-RD-B13-02	2017-10-30 14:00	1.0-1.5 ft	TP-RD-B13-02(01.0-01.5)	
	6.990226	5	6	722	SOLID	5019.812078	23.589798	4	866	TP-RD-B12-10	2017-12-05 9:25	1.0-1.5 ft	TP-RD-B12-10(01.0-01.5)	
	8.621209	5	6	722	SOLID	5019.812078	50.221381	4	668	TP-RD-A13-04	2017-12-01 11:13	1.0-1.5 ft	TP-RD-A13-04(01.0-01.5)	
	0.054812	5	6	722	SOLID	5019.812078	59.985931	8	671	TP-RD-A13-05	2017-12-01 10:52	3.0-3.5 ft	TP-RD-A13-05(03.0-03.5)	
	0.306676	5	6	722	SOLID	5019.812078	0.410938	6	909	TP-RD-B13-10	2017-11-01 14:35	3.0-3.5 ft	TP-RD-B13-10(03.0-03.5)	
	2.735838	5	6	722	SOLID	5019.812078	55.005974	6	873	TP-RD-B13-01	2017-10-30 14:45	3.0-3.5 ft	TP-RD-B13-01(03.0-03.5)	
	2.784247	5	6	722	SOLID	5019.812078	68.646989	6	666	TP-RD-A13-03	2017-12-01 11:34	3.0-3.5 ft	TP-RD-A13-03(03.0-03.5)	

Exhibit 8-34 IGW Spatial Weighting Output Functional Area 15 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
ug/kg	240	240														452675.5	746483.1
ug/kg	330		1400	4650	680	2640	16800	6120	22.8	8060	2110	2110	37100	180	180	453326.173	747152.14
ug/kg	230	230	530	4500	850	1700	17000	70500	60	6300	960	1100	282000	420	420	453366.4	747254.3
ug/kg	227	227	584	4160	652	702	57400	75100	84	9940	1080	973	118000	124	403	452898.6	746747
ug/kg	230	230	480	3800	610	60	12000	21700	40	7900	780	960	153000	370	370	452903.6	746752.6
ug/kg	250	250	520	5900	710	310	23300	417000	60	10700	1000	1000	59600	580	400	452747.2	746528.6
ug/kg	4800													49	180	452878.821	746778.11
ug/kg	350													190	190	452860.4567	746730.0642
ug/kg	350		2280	3180	857	2850	10200	8810	26.3	8500	2280	2280	50100	200	200	452708.244	746505.208
ug/kg	140	140														452865.41	746686.44
ug/kg	120	120	760	5700	650	64	21700	44400	30	11800	2100	2000	62600	40	40	452911	746769
ug/kg	130	130														452976.93	746746.78
ug/kg	120	120														453038.82	746865.78
ug/kg	110	110														452741.91	746545.8
ug/kg	110	110														452722.49	746518.02
ug/kg	1200	1200														452918.43	746774.32
ug/kg	130	130														453007.82	746784.59
ug/kg	110	110														452748.44	746527.47

Exhibit 8-34 IGW Spatial Weighting Output Functional Area 15 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
57	15	133975.4776	418.5740247	10833.00727	0.080858135	19.40595243
57	15	133975.4776	732.1695834	26598.11535	0.19852973	65.51481078
57	15	133975.4776	697.3407705	24911.11259	0.185937852	42.76570607
57	15	133975.4776	199.792682	2185.428391	0.016312152	3.702858564
57	15	133975.4776	153.9307622	947.0929756	0.007069152	1.625904892
57	15	133975.4776	83.14421131	273.1984441	0.002039168	0.509791883
57	15	133975.4776	159.398331	1102.208097	0.008226939	39.48930773
57	15	133975.4776	249.9524019	2959.548252	0.022090224	7.731578246
57	15	133975.4776	254.7924922	2608.01791	0.019466383	6.813233919
57	15	133975.4776	436.190262	11033.19341	0.082352335	11.5293269
57	15	133975.4776	116.8267584	512.5701817	0.003825851	0.45910209
57	15	133975.4776	223.6441474	2341.204981	0.017474877	2.271733999
57	15	133975.4776	715.0442952	25852.9762	0.192967972	23.15615663
57	15	133975.4776	413.3663932	10760.92735	0.080320127	8.835213949
57	15	133975.4776	228.924862	1833.929413	0.013688545	1.505739998
57	15	133975.4776	270.2657151	4156.307396	0.031022897	37.22747598
57	15	133975.4776	283.7758774	4468.849923	0.03335573	4.336244963
57	15	133975.4776	141.3542386	597.7258935	0.004461457	0.49076032
					SUM:	277.3708994

Exhibit 8-35 IGW Spatial Weighting Output Functional Area 15 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA15_shallow_Lead	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	1	29	485	384	642	A13-753-01	1999-11-18	0.0-2.0 ft	A13-753-0111/18/1999	<Null>	ug/kg		<Null>
2	6	26	379	750	1005	B13-8-05	2000-07-21	0.0-2.0 ft	B13-8-052N	<Null>	ug/kg	227	227
3	7	25	378	749	1004	B13-8-04	1999-10-08	0.0-2.0 ft	B13-8-042N	<Null>	ug/kg	230	230
4	8	24	297	811	206	A13-1-01	1999-10-14	0.0-2.0 ft	A13-1-012N	<Null>	ug/kg	250	250
5	9	22	262	519	913	C12-275-02	1999-10-20	0.0-2.0 ft	C12-275-022FD	C12-275-022N	ug/kg	230	230
6	10	19	272	778	349	SB-R-C12-01	2006-05-31	0.5-1.0 ft	SB-R-C12-011.0FD	SB-R-C12-011.0N	ug/kg	330	<Null>
7	11	15	426	540	130	SB-R-A13-01	2006-05-19	1.0-1.5 ft	SB-R-A13-011.5N	<Null>	ug/kg	350	<Null>
8	12	11	381	752	1007	SD-B13-1-01	2001-05-01	1.0-1.5 ft	SD-B13-1-011.5N	<Null>	ug/kg	120	120

Exhibit 8-35 IGW Spatial Weighting Output Functional Area 15 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName
<Null>	<Null>	730	<Null>	<Null>	334000	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	452675.5	746483.1	Point	2122	INT-CONTOUR	732	
584	4160	652	702	57400	75100	84	9940	1080	973	118000	124	403	452898.6	746747	Point	2005	INT-CONTOUR	728	
480	3800	610	60	12000	21700	40	7900	780	960	153000	370	370	452903.6	746752.6	Point	2005	INT-CONTOUR	728	
520	5900	710	310	23300	417000	60	10700	1000	1000	59600	580	400	452747.2	746528.6	Point	1686	DEP-CONTOUR	726	
530	4500	850	1700	17000	70500	60	6300	960	1100	282000	420	420	453366.4	747254.3	Point	1705	INT-CONTOUR	724	
1400	4650	680	2640	16800	6120	22.8	8060	2110	2110	37100	180	180	453326.173	747152.14	Point	1705	INT-CONTOUR	724	
2280	3180	857	2850	10200	8810	26.3	8500	2280	2280	50100	200	200	452708.244	746505.208	Point	2192	INDEX-CONTOUR	730	
760	5700	650	64	21700	44400	30	11800	2100	2000	62600	40	40	452911	746769	Point	2005	INT-CONTOUR	728	

Exhibit 8-35 IGW Spatial Weighting Output Functional Area 15 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1
3.640302	5	6	722	SOLID	5019.812078	56.979192	10	29	A13-753-01	1999-11-18	0.0-2.0 ft	A13-753-0111/18/1999		ug/kg
8.110918	5	6	722	SOLID	5019.812078	5.113225	6	102	B13-8-05	2000-07-21	0.0-2.0 ft	B13-8-052N		ug/kg
1.200849	5	6	722	SOLID	5019.812078	4.316435	6	101	B13-8-04	1999-10-08	0.0-2.0 ft	B13-8-042N		ug/kg
3.379344	5	6	722	SOLID	5019.812078	66.991345	4	26	A13-1-01	1999-10-14	0.0-2.0 ft	A13-1-012N		ug/kg
61.82509	4	5	720	SOLID	4720.719407	10.580779	4	142	C12-275-02	1999-10-20	0.0-2.0 ft	C12-275-022FD	C12-275-022N	ug/kg
10.685701	4	5	720	SOLID	4720.719407	13.020538	4	260	SB-R-C12-01	2006-05-31	0.5-1.0 ft	SB-R-C12-011.0FD	SB-R-C12-011.0N	ug/kg
16.732953	5	6	722	SOLID	5019.812078	60.998512	8	200	SB-R-A13-01	2006-05-19	1.0-1.5 ft	SB-R-A13-011.5N		ug/kg
5.72563	5	6	722	SOLID	5019.812078	2.018045	6	290	SD-B13-1-01	2001-05-01	1.0-1.5 ft	SD-B13-1-011.5N		ug/kg

Exhibit 8-35 IGW Spatial Weighting Output Functional Area 15 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
				730			334000								452675.5	746483.1
227	227	584	4160	652	702	57400	75100	84	9940	1080	973	118000	124	403	452898.6	746747
230	230	480	3800	610	60	12000	21700	40	7900	780	960	153000	370	370	452903.6	746752.6
250	250	520	5900	710	310	23300	417000	60	10700	1000	1000	59600	580	400	452747.2	746528.6
230	230	530	4500	850	1700	17000	70500	60	6300	960	1100	282000	420	420	453366.4	747254.3
330		1400	4650	680	2640	16800	6120	22.8	8060	2110	2110	37100	180	180	453326.173	747152.14
350		2280	3180	857	2850	10200	8810	26.3	8500	2280	2280	50100	200	200	452708.244	746505.208
120	120	760	5700	650	64	21700	44400	30	11800	2100	2000	62600	40	40	452911	746769

Exhibit 8-35 IGW Spatial Weighting Output Functional Area 15 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
57	15	133975.4776	418.5740247	10833.00727	0.080858135	27006.61714
57	15	133975.4776	479.1411027	13912.09698	0.103840622	7798.430744
57	15	133975.4776	242.2967313	1653.194227	0.012339529	267.767769
57	15	133975.4776	490.3782528	14309.78803	0.106809009	44539.35686
57	15	133975.4776	697.3407705	24911.11259	0.185937852	13108.6186
57	15	133975.4776	891.1278438	34738.07011	0.259286779	1586.83509
57	15	133975.4776	296.0059996	4523.217329	0.033761532	297.4390939
57	15	133975.4776	782.2495022	29094.97877	0.217166449	9642.190351
					SUM:	104247.2556

Exhibit 8-36 IGW Spatial Weighting Output Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA16_deep	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	6	253	510	872	TP-R-B13-1-5	2006-08-07	2.0-2.5 ft	TP-R-B13-1-52.5N	<Null>	ug/kg	320		1160	1060
2	6	5	22	122	465	SB-R-C12-04	2006-06-06	0.5-1.0 ft	SB-R-C12-041.0N	<Null>	ug/kg	350		1880	133000
3	7	4	176	127	480	C12-5-02	1999-10-20	0.0-2.0 ft	C12-5-022N	<Null>	ug/kg	<Null>	390	23600	23600
4	8	3	18	109	270	C12-3-03	1999-10-19	0.0-2.0 ft	C12-3-032N	<Null>	ug/kg	<Null>	430	28800	28800
5	9	2	17	103	235	C12-1-04	1999-10-19	0.0-2.0 ft	C12-1-042N	<Null>	ug/kg	<Null>	420	2300	8900
6	10	1	16	102	234	C12-1-03	1999-10-19	0.0-2.0 ft	C12-1-032N	<Null>	ug/kg	<Null>	370	430	1800

Exhibit 8-36 IGW Spatial Weighting Output Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
253	398	6890	658000	27.8	2570	2140	2140	21200	180	180	453021.865	746701.462	Point	1668	DEP-CONTOUR	724		8.633186	4
542	2850	15500	15500	45.9	8710	2280	2280	42700	190	190	453568.9782	747206.2039	Point	2267	INDEX-CONTOUR	720		27.645157	4
860	1900	47000000	1630000	40	205000	7000	47200	3000000	390	390	453452.8	747210.4	Point	1712	INT-CONTOUR	722		7.789696	4
17300	2200	130000	93300000	2100	11300	28800	57700	2880000	380	430	453541	747303	Point	2267	INDEX-CONTOUR	720		19.986181	4
650	300	79200	43900	80	12500	500	1000	106000	420	420	453568.3	747239.9	Point	2267	INDEX-CONTOUR	720		4.828087	4
600	260	12200	10400	30	7300	430	870	47800	370	370	453571.6	747268.6	Point	2267	INDEX-CONTOUR	720		7.590117	4

Exhibit 8-36 IGW Spatial Weighting Output Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
5	720	SOLID	4720.719407	18.669808	4	451	TP-R-B13-1-5	2006-08-07	2.0-2.5 ft	TP-R-B13-1-52.5N		ug/kg	320
5	720	SOLID	4720.719407	76.279672	0	265	SB-R-C12-04	2006-06-06	0.5-1.0 ft	SB-R-C12-041.0N		ug/kg	350
5	720	SOLID	4720.719407	71.467805	2	148	C12-5-02	1999-10-20	0.0-2.0 ft	C12-5-022N		ug/kg	
5	720	SOLID	4720.719407	21.502408	0	144	C12-3-03	1999-10-19	0.0-2.0 ft	C12-3-032N		ug/kg	
5	720	SOLID	4720.719407	42.582701	0	138	C12-1-04	1999-10-19	0.0-2.0 ft	C12-1-042N		ug/kg	
5	720	SOLID	4720.719407	14.033263	0	137	C12-1-03	1999-10-19	0.0-2.0 ft	C12-1-032N		ug/kg	

Exhibit 8-36 IGW Spatial Weighting Output Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	1160	1060	253	398	6890	658000	27.8	2570	2140	2140	21200	180	180	453021.865	746701.462	83
	1880	133000	542	2850	15500	15500	45.9	8710	2280	2280	42700	190	190	453568.9782	747206.2039	83
390	23600	23600	860	1900	47000000	1630000	40	205000	7000	47200	3000000	390	390	453452.8	747210.4	83
430	28800	28800	17300	2200	130000	93300000	2100	11300	28800	57700	2880000	380	430	453541	747303	83
420	2300	8900	650	300	79200	43900	80	12500	500	1000	106000	420	420	453568.3	747239.9	83
370	430	1800	600	260	12200	10400	30	7300	430	870	47800	370	370	453571.6	747268.6	83

Exhibit 8-36 IGW Spatial Weighting Output Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Cadmium	Spatial Weighted_Copper	Spatial Weighted_Lead	Spatial Weighted_Mercury	Spatial Weighted_Nickel
16	121726.8996	1681.188917	74042.90356	0.608270677	644.7669171	242.0917293	4190.984961	400242.1052	16.90992481	1563.255639
16	121726.8996	310.3381899	4030.880394	0.03311413	4404.179308	94.37527089	513.2690171	513.2690171	1.519938573	288.4240735
16	121726.8996	941.9529154	36362.86185	0.298724949	7049.908793	567.5774029	14040072.6	486921.6667	11.94899795	61238.61452
16	121726.8996	205.5393872	1854.355921	0.01523374	438.7317077	33.51422767	1980.386181	1421307.928	31.99085369	172.1412603
16	121726.8996	272.2383488	3314.798332	0.027231436	242.3597845	8.169430939	2156.729768	1195.460061	2.178514917	340.3929558
16	121726.8996	226.5953323	2121.255613	0.01742635	31.36743084	4.530851121	212.6014757	181.2340448	0.522790514	127.2123584
				SUM:	12811.31394	950.2589127	14049126.57	2310361.663	65.07102045	63730.04081

Exhibit 8-36 IGW Spatial Weighting Output Functional Area 16 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Spatial Weighted_Zinc
12895.33834
1413.973357
896174.8466
43873.17077
2886.532265
832.9795522
958076.8409

Exhibit 8-37 IGW Spatial Weighting Output Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA16_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	11	281	840	357	TP-R-B13-2-2	2006-08-02	1.5-2.0 ft	TP-R-B13-2-22.0N	<Null>	ug/kg	340	<Null>	2250
2	6	23	357	188	840	SD-B13-3-01	2001-05-01	0.0-0.5 ft	SD-B13-3-010.5N	<Null>	ug/kg	1000000	1000000	940
3	7	22	261	518	912	B13-7-06	1999-11-02	0.0-1.0 ft	B13-7-061N	<Null>	ug/kg		500	1500
4	8	21	260	517	911	B13-7-01	1999-11-02	0.0-2.0 ft	B13-7-012N	<Null>	ug/kg		410	440
5	9	20	354	185	837	SB-R-B13-03	2006-05-19	0.5-1.0 ft	SB-R-B13-031.0N	<Null>	ug/kg	350	<Null>	1080
6	10	19	275	832	241	SO-R2-C-12-1	2013-11-14 15:12	0.5-1.0 ft	SO-R2-C-12-1_20131114	<Null>	ug/kg	360	360	2390
7	11	18	270	768	30	SB-R-B13-02	2006-05-18	1.2-1.7 ft	SB-R-B13-021.67N	<Null>	ug/kg	340	<Null>	2190
8	12	10	248	504	655	TP-R-B13-1-4	2006-08-04	1.5-2.0 ft	TP-R-B13-1-42.0N	<Null>	ug/kg	320	<Null>	1590
9	13	9	245	501	289	TP-R-B13-1-3	2006-08-04	1.5-2.0 ft	TP-R-B13-1-32.0N	<Null>	ug/kg	220	<Null>	1270
10	14	8	242	482	880	TP-R-B13-1-1	2006-08-04	1.5-2.0 ft	TP-R-B13-1-12.0N	<Null>	ug/kg	180	<Null>	1570
11	15	7	359	621	16	TP-R-B13-1-2	2006-08-04	2.0-2.5 ft	TP-R-B13-1-22.5N	<Null>	ug/kg	160	<Null>	1120

Exhibit 8-37 IGW Spatial Weighting Output Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance
5500	755	563	18600	42900	2440	10900	2250	2250	85600	280	190	452929.971	746562.439	Point	1705	INT-CONTOUR	724		32.471882
4900	210	55	9300	3260000	130	3000	480	850	21900	330	330	453018.5	746767.9	Point	1964	INT-CONTOUR	726		3.689638
8800	780	2500	34200	355000	140	12200	1200	1300	768000	110	500	453194.9	746872.7	Point	1705	INT-CONTOUR	724		12.906959
5000	760	260	10600	13700	40	9900	440	870	58800	410	410	453205	746837.6	Point	1705	INT-CONTOUR	724		0.350313
3750	759	2830	15200	12000	40.4	9280	2270	2270	58300	41	190	453131.3557	746859.1903	Point	1964	INT-CONTOUR	726		32.159771
6600	709	599	12500	19100	39.9	7020	1240	3590	48100	20	40	453423.0339	747052.6569	Point	1705	INT-CONTOUR	724		57.907843
3460	510	2740	12000	74200	64	6960	2190	2190	38000	190	190	452936.4185	746568.0468	Point	1705	INT-CONTOUR	724		32.275922
3930	710	525	20500	47400	31.2	9650	2100	1420	61100	180	180	452992.026	746715.373	Point	1668	DEP-CONTOUR	724		1.856523
4210	236	542	9550	243000	13	3970	2170	2170	23900	180	180	452976.473	746676.342	Point	1668	DEP-CONTOUR	724		14.881535
1900	293	513	5240	352000	30.5	2320	2050	2050	20900	180	180	452999.835	746682.19	Point	1668	DEP-CONTOUR	724		14.22126
2280	163	531	5370	247000	13.8	2360	2120	2120	23700	180	180	452994.691	746653.777	Point	1964	INT-CONTOUR	726		7.825282

Exhibit 8-37 IGW Spatial Weighting Output Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1
4	5	720	SOLID	4720.719407	5.218666	4	457	TP-R-B13-2-2	2006-08-02	1.5-2.0 ft	TP-R-B13-2-22.0N		ug/kg
4	5	720	SOLID	4720.719407	61.797862	6	293	SD-B13-3-01	2001-05-01	0.0-0.5 ft	SD-B13-3-010.5N		ug/kg
4	5	720	SOLID	4720.719407	18.62657	4	94	B13-7-06	1999-11-02	0.0-1.0 ft	B13-7-061N		ug/kg
4	5	720	SOLID	4720.719407	50.331675	4	93	B13-7-01	1999-11-02	0.0-2.0 ft	B13-7-012N		ug/kg
4	5	720	SOLID	4720.719407	18.625783	6	238	SB-R-B13-03	2006-05-19	0.5-1.0 ft	SB-R-B13-031.0N		ug/kg
4	5	720	SOLID	4720.719407	114.392926	4	306	SO-R2-C-12-1	2013-11-14 15:12	0.5-1.0 ft	SO-R2-C-12-1_20131114		ug/kg
4	5	720	SOLID	4720.719407	6.045511	4	236	SB-R-B13-02	2006-05-18	1.2-1.7 ft	SB-R-B13-021.67N		ug/kg
4	5	720	SOLID	4720.719407	50.767988	4	446	TP-R-B13-1-4	2006-08-04	1.5-2.0 ft	TP-R-B13-1-42.0N		ug/kg
4	5	720	SOLID	4720.719407	38.345671	4	443	TP-R-B13-1-3	2006-08-04	1.5-2.0 ft	TP-R-B13-1-32.0N		ug/kg
4	5	720	SOLID	4720.719407	24.048234	4	436	TP-R-B13-1-1	2006-08-04	1.5-2.0 ft	TP-R-B13-1-12.0N		ug/kg
4	5	720	SOLID	4720.719407	9.880561	6	441	TP-R-B13-1-2	2006-08-04	2.0-2.5 ft	TP-R-B13-1-22.5N		ug/kg

Exhibit 8-37 IGW Spatial Weighting Output Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
340		2250	5500	755	563	18600	42900	2440	10900	2250	2250	85600	280	190	452929.971	746562.439
1000000	1000000	940	4900	210	55	9300	3260000	130	3000	480	850	21900	330	330	453018.5	746767.9
	500	1500	8800	780	2500	34200	355000	140	12200	1200	1300	768000	110	500	453194.9	746872.7
	410	440	5000	760	260	10600	13700	40	9900	440	870	58800	410	410	453205	746837.6
350		1080	3750	759	2830	15200	12000	40.4	9280	2270	2270	58300	41	190	453131.3557	746859.1903
360	360	2390	6600	709	599	12500	19100	39.9	7020	1240	3590	48100	20	40	453423.0339	747052.6569
340		2190	3460	510	2740	12000	74200	64	6960	2190	2190	38000	190	190	452936.4185	746568.0468
320		1590	3930	710	525	20500	47400	31.2	9650	2100	1420	61100	180	180	452992.026	746715.373
220		1270	4210	236	542	9550	243000	13	3970	2170	2170	23900	180	180	452976.473	746676.342
180		1570	1900	293	513	5240	352000	30.5	2320	2050	2050	20900	180	180	452999.835	746682.19
160		1120	2280	163	531	5370	247000	13.8	2360	2120	2120	23700	180	180	452994.691	746653.777

Exhibit 8-37 IGW Spatial Weighting Output Functional Area 16 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead	Spatial Weight_Mercury
83	16	121726.8996	701.4305268	25058.95921	0.205862133	8831.485513	502.3036049
83	16	121726.8996	374.8286858	8570.47729	0.070407423	229528.1985	9.152964969
83	16	121726.8996	515.8237404	16003.64908	0.131471755	46672.47291	18.40604565
83	16	121726.8996	308.9901265	2862.377778	0.023514751	322.1520937	0.940590054
83	16	121726.8996	405.1700059	8901.440974	0.073126326	877.5159152	2.954303581
83	16	121726.8996	1039.905494	41959.79212	0.344704353	6583.853135	13.75370367
83	16	121726.8996	283.8744854	4209.800169	0.034583976	2566.131017	2.213374462
83	16	121726.8996	256.0929497	3082.625025	0.025324107	1200.36267	0.790112137
83	16	121726.8996	278.0849717	4697.258922	0.038588504	9377.006413	0.501650549
83	16	121726.8996	248.8066075	3213.348842	0.026398018	9292.102209	0.805139538
83	16	121726.8996	245.3139087	3167.366265	0.026020266	6427.005619	0.359079666

Exhibit 8-38 IGW Spatial Weighting Output Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA17_deep	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	9	362	720	957	TP-R-B13-2-3	2006-08-02	5.5-6.0 ft	TP-R-B13-2-36.0N	<Null>	ug/kg	310		966	1810
2	6	6	165	113	453	TP-R-B13-2-8	2006-08-02	1.5-2.0 ft	TP-R-B13-2-82.0N	<Null>	ug/kg	350		2090	36100
3	7	4	178	140	921	SB-R-C13-04	2006-06-02	0.5-1.0 ft	SB-R-C13-041.0N	<Null>	ug/kg	340		1560	4190
4	8	3	172	123	472	B13-262A-01	1999-11-02	0.0-2.0 ft	B13-262A-012N	<Null>	ug/kg	250	250	380	1700
5	9	2	21	121	464	C12-8229-03	1999-10-20	0.0-2.0 ft	C12-8229-032N	<Null>	ug/kg	<Null>	400	520	3300
6	10	1	20	120	463	C12-8229-01	2000-06-22	0.0-2.0 ft	C12-8229-012N	<Null>	ug/kg	<Null>	383.229	615.905	4680

Exhibit 8-38 IGW Spatial Weighting Output Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
639	521	13800	3650	12	6190	2080	2080	48700	170	170	453055.99	746625.959	Point	1964	INT-CONTOUR	726		31.937175	4
650	78.7	33900	104000	1470	9380	2250	2250	425000	620	220	452971.05	746520.023	Point	1673	DEP-CONTOUR	722		14.800182	4
704	2770	13900	6060	31.5	8000	2210	2210	46900	190	190	453369.1144	746910.4873	Point	1712	INT-CONTOUR	722		5.152401	4
520	230	12700	3600	30	6700	380	750	32300	350	350	453318.1	746861.5	Point	1712	INT-CONTOUR	722		13.054789	4
620	310	10900	11500	60	7400	520	1000	48600	400	400	453634.7	747100.7	Point	2267	INDEX-CONTOUR	720		3.937612	4
513	307.953	16400	20700	113	6060	513.254	1026.509	49500	243	383.229	453631.7	747129.5	Point	2267	INDEX-CONTOUR	720		11.007101	4

Exhibit 8-38 IGW Spatial Weighting Output Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
5	720	SOLID	4720.719407	54.996792	6	461	TP-R-B13-2-3	2006-08-02	5.5-6.0 ft	TP-R-B13-2-36.0N		ug/kg	310
5	720	SOLID	4720.719407	64.210457	2	475	TP-R-B13-2-8	2006-08-02	1.5-2.0 ft	TP-R-B13-2-82.0N		ug/kg	350
5	720	SOLID	4720.719407	127.201103	2	272	SB-R-C13-04	2006-06-02	0.5-1.0 ft	SB-R-C13-041.0N		ug/kg	340
5	720	SOLID	4720.719407	116.906623	2	87	B13-262A-01	1999-11-02	0.0-2.0 ft	B13-262A-012N		ug/kg	250
5	720	SOLID	4720.719407	184.143263	0	150	C12-8229-03	1999-10-20	0.0-2.0 ft	C12-8229-032N		ug/kg	
5	720	SOLID	4720.719407	155.240484	0	149	C12-8229-01	2000-06-22	0.0-2.0 ft	C12-8229-012N		ug/kg	

Exhibit 8-38 IGW Spatial Weighting Output Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	966	1810	639	521	13800	3650	12	6190	2080	2080	48700	170	170	453055.99	746625.959	59
	2090	36100	650	78.7	33900	104000	1470	9380	2250	2250	425000	620	220	452971.05	746520.023	59
	1560	4190	704	2770	13900	6060	31.5	8000	2210	2210	46900	190	190	453369.1144	746910.4873	59
250	380	1700	520	230	12700	3600	30	6700	380	750	32300	350	350	453318.1	746861.5	59
400	520	3300	620	310	10900	11500	60	7400	520	1000	48600	400	400	453634.7	747100.7	59
383.229	615.905	4680	513	307.953	16400	20700	113	6060	513.254	1026.509	49500	243	383.229	453631.7	747129.5	59

Exhibit 8-38 IGW Spatial Weighting Output Functional Area 17 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead	Spatial Weighted_Mercury
17	108551.6712	678.680621	23897.58104	0.220149361	398.4703431	803.545167	2.64179233
17	108551.6712	667.7477984	23358.85156	0.215186476	7768.231771	22379.39347	316.3241192
17	108551.6712	599.419556	19899.2254	0.183315698	768.0927751	1110.893131	5.774444491
17	108551.6712	624.9156521	21236.52374	0.195635162	332.5797746	704.2865815	5.869054846
17	108551.6712	524.1555563	13230.35472	0.12188071	402.2063416	1401.62816	7.312842574
17	108551.6712	396.7273586	6929.344808	0.063834529	298.7455958	1321.374751	7.213301779
				SUM:	9968.326601	27721.12126	345.1355552

Exhibit 8-39 IGW Spatial Weighting Output Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA17_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	1	277	834	243	TP-R-B13-2-1	2006-08-02	1.5-2.0 ft	TP-R-B13-2-12.0N	<Null>	ug/kg	320	<Null>	1350	1570
2	6	11	268	766	28	C13-2-19	2000-04-18	0.0-1.0 ft	C13-2-191N	<Null>	ug/kg	39		600	3900
3	7	10	267	765	27	C13-2-15	2000-04-18	0.0-1.5 ft	C13-2-151.5N	<Null>	ug/kg	41		600	4500
4	8	9	269	767	29	C13-2-20	2000-04-18	0.0-2.0 ft	C13-2-202N	<Null>	ug/kg	40		700	4300
5	9	8	265	762	358	C13-2-10	1999-10-29	0.0-2.0 ft	C13-2-102N	<Null>	ug/kg	240	240	510	3700
6	10	7	259	516	910	B13-262A-05	1999-11-02	0.0-2.0 ft	B13-262A-052N	<Null>	ug/kg	230	230	500	17000
7	11	4	361	719	956	TP-R-B13-2-3	2006-08-02	1.5-2.0 ft	TP-R-B13-2-32.0N	<Null>	ug/kg	340	<Null>	1580	4600
8	12	3	287	434	350	TP-R-B13-2-9	2006-08-02	1.5-2.0 ft	TP-R-B13-2-92.0N	<Null>	ug/kg	330	<Null>	1170	11100
9	13	2	284	848	670	TP-R-B13-2-7	2006-08-03	1.5-2.0 ft	TP-R-B13-2-72.0N	<Null>	ug/kg	340	<Null>	1350	20800

Exhibit 8-39 IGW Spatial Weighting Output Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
681	522	15100	4700	12.6	9470	2090	2090	44700	180	180	452903.482	746431.205	Point	1705	INT-CONTOUR	724		7.292451	4
680	700	12500	126000	0	6600	1100	1000	50800	31	39	453314	746776.5	Point	1705	INT-CONTOUR	724		25.912337	4
710	740	14100	23700	0	9800	840	1000	69600	61	100	453208.6	746718.5	Point	1705	INT-CONTOUR	724		74.476652	4
730	560	11100	11300	0	7900	950	1000	56100	40	40	453212.7	746754.6	Point	1705	INT-CONTOUR	724		49.320801	4
810	500	18000	28200	60	7700	510	1000	78300	4000	910	453211.2	746691.3	Point	1705	INT-CONTOUR	724		47.396902	4
550	490	19300	47300	90	10100	1200	990	75500	34	390	453297.8	746876	Point	1705	INT-CONTOUR	724		4.698028	4
852	556	14400	8490	30.7	11100	2220	1520	72600	190	190	453055.99	746625.959	Point	1964	INT-CONTOUR	726		31.937175	4
608	542	24900	59400	744	32100	2170	2170	142000	400	180	452932.94	746505.893	Point	1705	INT-CONTOUR	724		16.859127	4
832	548	36000	121000	303	12100	2190	2190	109000	470	530	453077.365	746540.912	Point	1705	INT-CONTOUR	724		24.616435	4

Exhibit 8-39 IGW Spatial Weighting Output Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
5	720	SOLID	4720.719407	77.576194	4	453	TP-R-B13-2-1	2006-08-02	1.5-2.0 ft	TP-R-B13-2-12.0N		ug/kg	320
5	720	SOLID	4720.719407	171.106443	4	176	C13-2-19	2000-04-18	0.0-1.0 ft	C13-2-191N		ug/kg	
5	720	SOLID	4720.719407	124.911219	4	172	C13-2-15	2000-04-18	0.0-1.5 ft	C13-2-151.5N		ug/kg	
5	720	SOLID	4720.719407	109.154712	4	177	C13-2-20	2000-04-18	0.0-2.0 ft	C13-2-202N		ug/kg	
5	720	SOLID	4720.719407	141.31294	4	167	C13-2-10	1999-10-29	0.0-2.0 ft	C13-2-102N		ug/kg	240
5	720	SOLID	4720.719407	92.068337	4	88	B13-262A-05	1999-11-02	0.0-2.0 ft	B13-262A-052N		ug/kg	230
5	720	SOLID	4720.719407	54.996792	6	460	TP-R-B13-2-3	2006-08-02	1.5-2.0 ft	TP-R-B13-2-32.0N		ug/kg	340
5	720	SOLID	4720.719407	46.239368	4	479	TP-R-B13-2-9	2006-08-02	1.5-2.0 ft	TP-R-B13-2-92.0N		ug/kg	330
5	720	SOLID	4720.719407	127.076325	4	472	TP-R-B13-2-7	2006-08-03	1.5-2.0 ft	TP-R-B13-2-72.0N		ug/kg	340

Exhibit 8-39 IGW Spatial Weighting Output Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	1350	1570	681	522	15100	4700	12.6	9470	2090	2090	44700	180	180	452903.482	746431.205	59
39	600	3900	680	700	12500	126000	0	6600	1100	1000	50800	31	39	453314	746776.5	59
41	600	4500	710	740	14100	23700	0	9800	840	1000	69600	61	100	453208.6	746718.5	59
40	700	4300	730	560	11100	11300	0	7900	950	1000	56100	40	40	453212.7	746754.6	59
240	510	3700	810	500	18000	28200	60	7700	510	1000	78300	4000	910	453211.2	746691.3	59
230	500	17000	550	490	19300	47300	90	10100	1200	990	75500	34	390	453297.8	746876	59
	1580	4600	852	556	14400	8490	30.7	11100	2220	1520	72600	190	190	453055.99	746625.959	59
	1170	11100	608	542	24900	59400	744	32100	2170	2170	142000	400	180	452932.94	746505.893	59
	1350	20800	832	548	36000	121000	303	12100	2190	2190	109000	470	530	453077.365	746540.912	59

Exhibit 8-39 IGW Spatial Weighting Output Functional Area 17 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic	Spatial Weighted_Lead	Spatial Weighted_Mercury
17	108551.6712	406.5651646	9884.090548	0.091054246	142.9551658	427.9549549	1.147283496
17	108551.6712	397.5147939	6701.978153	0.061739981	240.7859271	7779.237644	0
17	108551.6712	353.6471581	4690.618712	0.04321093	194.4491868	1024.099051	0
17	108551.6712	348.8027095	6225.038436	0.057346316	246.5891586	648.0133702	0
17	108551.6712	387.4764456	6683.896321	0.061573408	227.8216088	1736.3701	3.694404468
17	108551.6712	1175.198162	46799.09343	0.431122735	7329.086501	20392.10538	38.80104618
17	108551.6712	468.4274054	10101.77572	0.093059606	428.0741862	790.0760523	2.856929895
17	108551.6712	397.7896815	9060.921458	0.083471045	926.5286018	4958.180085	62.10245764
17	108551.6712	461.9976392	8404.17461	0.07742096	1610.35597	9367.936174	23.45855092
				SUM:	11346.64631	47123.97281	132.0606726

Exhibit 8-40 IGW Spatial Weighting Output Functional Area 18 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA18_deep_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	1	4	13	94	165	TP-R-B13-2-6	2006-08-02	1.5-2.0 ft	TP-R-B13-2-62.0N	<Null>	ug/kg	5400
2	6	10	341	1004	345	TP-R-B13-2-4	2006-08-02	5.5-6.0 ft	TP-R-B13-2-46.0N	<Null>	ug/kg	310
3	7	9	353	184	836	TP-RD-B13-12	2017-12-01 8:20	5.0-5.5 ft	TP-RD-B13-12(05.0-05.5)	<Null>	ug/kg	110
4	8	8	349	178	860	TP-RD-B13-06	2017-11-08 11:00	5.0-5.5 ft	TP-RD-B13-06(05.0-05.5)	<Null>	ug/kg	110
5	9	6	343	31	973	TP-RD-B13-05	2017-12-01	5.0-5.5 ft	BD120117B	TP-RD-B13-05(05.0-05.5)	ug/kg	110
6	10	5	195	469	293	TP-RD-B13-11	2017-12-01 8:00	3.0-3.5 ft	TP-RD-B13-11(03.0-03.5)	<Null>	ug/kg	110
7	11	2	25	131	891	C13-262B-05	1999-11-01	0.0-2.0 ft	C13-262B-052N	<Null>	ug/kg	240
8	12	1	24	130	890	C13-262B-01	1999-11-01	0.0-2.0 ft	C13-262B-012N	<Null>	ug/kg	220

Exhibit 8-40 IGW Spatial Weighting Output Functional Area 18 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
	1020	2390	537	563	46800	16100	32.8	7160	2250	2250	76700	960	960	453023.334	746422.866	Point	2389	DEP-CONTOUR	718
	2080	1820	648	520	14400	2670	14.8	5860	2080	2080	42400	170	170	453102.222	746515.373	Point	1705	INT-CONTOUR	724
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453125.02	746498.33	Point	1705	INT-CONTOUR	724
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453156.18	746474.04	Point	1705	INT-CONTOUR	724
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453024.56	746391.72	Point	1705	INT-CONTOUR	724
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453106.23	746437.91	Point	1673	DEP-CONTOUR	722
240	490	2000	770	290	24600	13200	30	10500	460	970	77900	350	350	453478.6	746865.3	Point	2268	INDEX-CONTOUR	720
220	420	22700	390	250	24800	51900	80	4800	360	840	132000	350	350	453495.1	746857.5	Point	2268	INDEX-CONTOUR	720

Exhibit 8-40 IGW Spatial Weighting Output Functional Area 18 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1
DTICKL	2.927548	3	4	718	SOLID	4337.774375	64.736292	0	469	TP-R-B13-2-6	2006-08-02	1.5-2.0 ft	TP-R-B13-2-62.0N
	3.271296	3	4	718	SOLID	4337.774375	101.470087	6	464	TP-R-B13-2-4	2006-08-02	5.5-6.0 ft	TP-R-B13-2-46.0N
	18.911673	3	4	718	SOLID	4337.774375	75.901801	6	920	TP-RD-B13-12	2017-12-01 8:20	5.0-5.5 ft	TP-RD-B13-12(05.0-05.5)
	56.916083	3	4	718	SOLID	4337.774375	40.143113	6	895	TP-RD-B13-06	2017-11-08 11:00	5.0-5.5 ft	TP-RD-B13-06(05.0-05.5)
	2.116778	3	4	718	SOLID	4337.774375	41.817203	6	889	TP-RD-B13-05	2017-12-01	5.0-5.5 ft	BD120117B
	62.121512	3	4	718	SOLID	4337.774375	30.98857	4	916	TP-RD-B13-11	2017-12-01 8:00	3.0-3.5 ft	TP-RD-B13-11(03.0-03.5)
	9.480825	4	5	720	SOLID	4720.719407	243.658055	0	179	C13-262B-05	1999-11-01	0.0-2.0 ft	C13-262B-052N
	5.176407	4	5	720	SOLID	4720.719407	261.78143	0	178	C13-262B-01	1999-11-01	0.0-2.0 ft	C13-262B-012N

Exhibit 8-40 IGW Spatial Weighting Output Functional Area 18 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Parent_ID_1	units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1
	ug/kg	5400		1020	2390	537	563	46800	16100	32.8	7160	2250	2250	76700	960	960
	ug/kg	310		2080	1820	648	520	14400	2670	14.8	5860	2080	2080	42400	170	170
	ug/kg	110	110													
	ug/kg	110	110													
TP-RD-B13-05(05.0-05.5)	ug/kg	110	110													
	ug/kg	110	110													
	ug/kg	240	240	490	2000	770	290	24600	13200	30	10500	460	970	77900	350	350
	ug/kg	220	220	420	22700	390	250	24800	51900	80	4800	360	840	132000	350	350

Exhibit 8-40 IGW Spatial Weighting Output Functional Area 18 Deep (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

x_coord_1	y_coord_1	FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
453023.334	746422.866	60	18	72988.28162	308.7902617	4646.733165	0.063664099	343.786133
453102.222	746515.373	60	18	72988.28162	671.4871161	7026.573135	0.09626988	29.84366289
453125.02	746498.33	60	18	72988.28162	652.5820689	10468.75929	0.143430686	15.77737544
453156.18	746474.04	60	18	72988.28162	656.1629139	12289.1329	0.168371314	18.52084456
453024.56	746391.72	60	18	72988.28162	355.8635462	7342.856239	0.100603221	11.06635433
453106.23	746437.91	60	18	72988.28162	272.2021686	4498.987168	0.061639856	6.780384159
453478.6	746865.3	60	18	72988.28162	689.4974857	22876.15563	0.313422307	75.22135375
453495.1	746857.5	60	18	72988.28162	355.7069245	3838.974232	0.052597131	11.57136889
							SUM:	512.567477

Exhibit 8-41 IGW Spatial Weighting Output Functional Area 18 Deep Arsenic
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA18_deep_Arsenic	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	10	341	1004	345	TP-R-B13-2-4	2006-08-02	5.5-6.0 ft	TP-R-B13-2-46.0N	<Null>	ug/kg	310		2080
2	6	4	13	94	165	TP-R-B13-2-6	2006-08-02	1.5-2.0 ft	TP-R-B13-2-62.0N	<Null>	ug/kg	5400		1020
3	7	3	177	128	481	C13-2-18	2000-04-18	0.0-2.0 ft	C13-2-182N	<Null>	ug/kg	<Null>	41	700
4	8	2	25	131	891	C13-262B-05	1999-11-01	0.0-2.0 ft	C13-262B-052N	<Null>	ug/kg	240	240	490
5	9	1	24	130	890	C13-262B-01	1999-11-01	0.0-2.0 ft	C13-262B-012N	<Null>	ug/kg	220	220	420

Exhibit 8-41 IGW Spatial Weighting Output Functional Area 18 Deep Arsenic
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
1820	648	520	14400	2670	14.8	5860	2080	2080	42400	170	170	453102.222	746515.373	Point	1705	INT-CONTOUR	724		3.271296	3
2390	537	563	46800	16100	32.8	7160	2250	2250	76700	960	960	453023.334	746422.866	Point	2389	DEP-CONTOUR	718	DTICKL	2.927548	3
2900	760	690	14300	13700	0	7800	790	1000	67700	41	210	453423	746771.5	Point	1712	INT-CONTOUR	722		6.883847	4
2000	770	290	24600	13200	30	10500	460	970	77900	350	350	453478.6	746865.3	Point	2268	INDEX-CONTOUR	720		9.480825	4
22700	390	250	24800	51900	80	4800	360	840	132000	350	350	453495.1	746857.5	Point	2268	INDEX-CONTOUR	720		5.176407	4

Exhibit 8-41 IGW Spatial Weighting Output Functional Area 18 Deep Arsenic
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
4	718	SOLID	4337.774375	101.470087	6	464	TP-R-B13-2-4	2006-08-02	5.5-6.0 ft	TP-R-B13-2-46.0N		ug/kg	310
4	718	SOLID	4337.774375	64.736292	0	469	TP-R-B13-2-6	2006-08-02	1.5-2.0 ft	TP-R-B13-2-62.0N		ug/kg	5400
5	720	SOLID	4720.719407	255.122906	2	175	C13-2-18	2000-04-18	0.0-2.0 ft	C13-2-182N		ug/kg	
5	720	SOLID	4720.719407	243.658055	0	179	C13-262B-05	1999-11-01	0.0-2.0 ft	C13-262B-052N		ug/kg	240
5	720	SOLID	4720.719407	261.78143	0	178	C13-262B-01	1999-11-01	0.0-2.0 ft	C13-262B-012N		ug/kg	220

Exhibit 8-41 IGW Spatial Weighting Output Functional Area 18 Deep Arsenic
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	2080	1820	648	520	14400	2670	14.8	5860	2080	2080	42400	170	170	453102.222	746515.373	60
	1020	2390	537	563	46800	16100	32.8	7160	2250	2250	76700	960	960	453023.334	746422.866	60
41	700	2900	760	690	14300	13700	0	7800	790	1000	67700	41	210	453423	746771.5	60
240	490	2000	770	290	24600	13200	30	10500	460	970	77900	350	350	453478.6	746865.3	60
220	420	22700	390	250	24800	51900	80	4800	360	840	132000	350	350	453495.1	746857.5	60

Exhibit 8-41 IGW Spatial Weighting Output Functional Area 18 Deep Arsenic
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Arsenic
18	72988.28162	725.5610454	26230.30471	0.359376932	654.066016
18	72988.28162	487.6280563	14367.11574	0.196841403	470.4509527
18	72988.28162	709.1667778	25485.20007	0.34916838	1012.588303
18	72988.28162	268.2785232	4355.040715	0.05966767	119.3353404
18	72988.28162	209.748353	2550.599727	0.034945332	793.2590346

Exhibit 8-42 IGW Spatial Weighting Output Functional Area 18 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA18_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene
1	1	1	345	33	975	TP-RD-B13-05	2017-12-01 9:45	3.0-3.5 ft	TP-RD-B13-05(03.0-03.5)	<Null>	ug/kg	120
2	6	14	266	763	359	C13-2-14	1999-10-29	0.0-2.0 ft	C13-2-142N	<Null>	ug/kg	220
3	7	12	189	156	175	B13-757-04	1999-10-08	0.0-2.0 ft	B13-757-042FD	B13-757-040.2N	ug/kg	1700
4	8	11	335	792	848	SB-R-B13-01	2006-05-18	0.5-1.0 ft	SB-R-B13-011.0N	<Null>	ug/kg	360
5	9	7	194	466	240	TP-RD-B13-11	2017-12-01 8:00	1.0-1.5 ft	TP-RD-B13-11(01.0-01.5)	<Null>	ug/kg	110
6	10	6	340	1003	344	TP-R-B13-2-4	2006-08-02	1.5-2.0 ft	TP-R-B13-2-42.0N	<Null>	ug/kg	330
7	11	3	352	182	86	TP-RD-B13-12	2017-12-01 8:20	3.0-3.5 ft	TP-RD-B13-12(03.0-03.5)	<Null>	ug/kg	110
8	12	2	348	177	859	TP-RD-B13-06	2017-11-08 11:00	3.0-3.5 ft	TP-RD-B13-06(03.0-03.5)	<Null>	ug/kg	120

Exhibit 8-42 IGW Spatial Weighting Output Functional Area 18 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene	Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453024.56	746391.72	Point	1705	INT-CONTOUR	724
220	520	4500	750	290	18100	29500	70	7900	720	1000	73300	4100	890	453311.4	746711.3	Point	1705	INT-CONTOUR	724
200	450	5100	480	270	14900	110000	30	8800	800	890	72100	110	370	453069.9	746439.6	Point	1673	DEP-CONTOUR	722
<Null>	2330	3210	729	2920	10300	8860	45.3	9590	2330	2330	51400	200	200	453183.587	746614.023	Point	1705	INT-CONTOUR	724
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453106.23	746437.91	Point	1673	DEP-CONTOUR	722
<Null>	2150	2650	802	537	16000	6150	35.4	10400	2150	1920	106000	180	180	453102.222	746515.373	Point	1705	INT-CONTOUR	724
110	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453125.02	746498.33	Point	1705	INT-CONTOUR	724
120	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453156.18	746474.04	Point	1705	INT-CONTOUR	724

Exhibit 8-42 IGW Spatial Weighting Output Functional Area 18 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

RefName	Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1
	2.116778	3	4	718	SOLID	4337.774375	41.817203	6	891	TP-RD-B13-05	2017-12-01 9:45	3.0-3.5 ft	TP-RD-B13-05(03.0-03.5)	
	6.158928	4	5	720	SOLID	4720.719407	214.231035	4	171	C13-2-14	1999-10-29	0.0-2.0 ft	C13-2-142N	
	27.310935	3	4	718	SOLID	4337.774375	50.396683	4	100	B13-757-04	1999-10-08	0.0-2.0 ft	B13-757-042FD	B13-757-040.2N
	6.079543	3	4	718	SOLID	4337.774375	161.397427	6	233	SB-R-B13-01	2006-05-18	0.5-1.0 ft	SB-R-B13-011.0N	
	62.121512	3	4	718	SOLID	4337.774375	30.98857	4	915	TP-RD-B13-11	2017-12-01 8:00	1.0-1.5 ft	TP-RD-B13-11(01.0-01.5)	
	3.271296	3	4	718	SOLID	4337.774375	101.470087	6	463	TP-R-B13-2-4	2006-08-02	1.5-2.0 ft	TP-R-B13-2-42.0N	
	18.911673	3	4	718	SOLID	4337.774375	75.901801	6	919	TP-RD-B13-12	2017-12-01 8:20	3.0-3.5 ft	TP-RD-B13-12(03.0-03.5)	
	56.916083	3	4	718	SOLID	4337.774375	40.143113	6	894	TP-RD-B13-06	2017-11-08 11:00	3.0-3.5 ft	TP-RD-B13-06(03.0-03.5)	

Exhibit 8-42 IGW Spatial Weighting Output Functional Area 18 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

units_1	F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
ug/kg	120	120														453024.56	746391.72
ug/kg	220	220	520	4500	750	290	18100	29500	70	7900	720	1000	73300	4100	890	453311.4	746711.3
ug/kg	1700	200	450	5100	480	270	14900	110000	30	8800	800	890	72100	110	370	453069.9	746439.6
ug/kg	360		2330	3210	729	2920	10300	8860	45.3	9590	2330	2330	51400	200	200	453183.587	746614.023
ug/kg	110	110														453106.23	746437.91
ug/kg	330		2150	2650	802	537	16000	6150	35.4	10400	2150	1920	106000	180	180	453102.222	746515.373
ug/kg	110	110														453125.02	746498.33
ug/kg	120	120														453156.18	746474.04

Exhibit 8-42 IGW Spatial Weighting Output Functional Area 18 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weight_13DNB
60	18	72988.28162	385.9307519	9295.16011	0.127351404	15.28216843
60	18	72988.28162	849.749849	32439.09407	0.444442496	97.77734914
60	18	72988.28162	296.3402371	5044.645425	0.069115827	117.4969054
60	18	72988.28162	453.1112346	12766.00227	0.17490482	62.96573525
60	18	72988.28162	227.7741135	2562.698524	0.035111095	3.862220502
60	18	72988.28162	290.4894619	3843.610385	0.05266065	17.37801465
60	18	72988.28162	269.6578366	3402.805601	0.046621259	5.128338519
60	18	72988.28162	294.4325664	3634.27373	0.049792565	5.975107755
					SUM:	325.8658397

Exhibit 8-43 IGW Spatial Weighting Output Functional Area 18 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA18_shallow_Lead	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	12	189	156	175	B13-757-04	1999-10-08	0.0-2.0 ft	B13-757-042FD	B13-757-040.2N	ug/kg	1700	200	450
2	6	16	334	791	847	C13-2-09	1999-10-29	0.0-2.0 ft	C13-2-092N	<Null>	ug/kg		400	510
3	7	15	332	789	845	C13-2-04	2000-04-18	0.0-2.0 ft	C13-2-042N	<Null>	ug/kg		40	600
4	8	14	266	763	359	C13-2-14	1999-10-29	0.0-2.0 ft	C13-2-142N	<Null>	ug/kg	220	220	520
5	9	13	264	523	203	C13-2-05	2000-04-18	0.0-2.0 ft	C13-2-052N	<Null>	ug/kg		40	600
6	10	11	335	792	848	SB-R-B13-01	2006-05-18	0.5-1.0 ft	SB-R-B13-011.0N	<Null>	ug/kg	360	<Null>	2330
7	11	6	340	1003	344	TP-R-B13-2-4	2006-08-02	1.5-2.0 ft	TP-R-B13-2-42.0N	<Null>	ug/kg	330	<Null>	2150

Exhibit 8-43 IGW Spatial Weighting Output Functional Area 18 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
5100	480	270	14900	110000	30	8800	800	890	72100	110	370	453069.9	746439.6	Point	1673	DEP-CONTOUR	722		27.310935	3
3800	780	470	14700	13000	40	7000	480	1000	54400	400	400	453318.1	746674	Point	1705	INT-CONTOUR	724		11.944171	3
4700	800	910	17200	14800	0	7500	1400	1000	72300	40	40	453320	746626.7	Point	1705	INT-CONTOUR	724		22.617325	3
4500	750	290	18100	29500	70	7900	720	1000	73300	4100	890	453311.4	746711.3	Point	1705	INT-CONTOUR	724		6.158928	4
4700	810	900	18200	10100	0	9300	1200	1000	64200	40	40	453209.9	746650	Point	1705	INT-CONTOUR	724		6.266484	4
3210	729	2920	10300	8860	45.3	9590	2330	2330	51400	200	200	453183.587	746614.023	Point	1705	INT-CONTOUR	724		6.079543	3
2650	802	537	16000	6150	35.4	10400	2150	1920	106000	180	180	453102.222	746515.373	Point	1705	INT-CONTOUR	724		3.271296	3

Exhibit 8-43 IGW Spatial Weighting Output Functional Area 18 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
4	718	SOLID	4337.774375	50.396683	4	100	B13-757-04	1999-10-08	0.0-2.0 ft	B13-757-042FD	B13-757-040.2N	ug/kg	1700
4	718	SOLID	4337.774375	197.151139	6	166	C13-2-09	1999-10-29	0.0-2.0 ft	C13-2-092N		ug/kg	
4	718	SOLID	4337.774375	149.813032	6	161	C13-2-04	2000-04-18	0.0-2.0 ft	C13-2-042N		ug/kg	
5	720	SOLID	4720.719407	214.231035	4	171	C13-2-14	1999-10-29	0.0-2.0 ft	C13-2-142N		ug/kg	220
5	720	SOLID	4720.719407	162.606349	4	162	C13-2-05	2000-04-18	0.0-2.0 ft	C13-2-052N		ug/kg	
4	718	SOLID	4337.774375	161.397427	6	233	SB-R-B13-01	2006-05-18	0.5-1.0 ft	SB-R-B13-011.0N		ug/kg	360
4	718	SOLID	4337.774375	101.470087	6	463	TP-R-B13-2-4	2006-08-02	1.5-2.0 ft	TP-R-B13-2-42.0N		ug/kg	330

Exhibit 8-43 IGW Spatial Weighting Output Functional Area 18 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
200	450	5100	480	270	14900	110000	30	8800	800	890	72100	110	370	453069.9	746439.6	60
400	510	3800	780	470	14700	13000	40	7000	480	1000	54400	400	400	453318.1	746674	60
40	600	4700	800	910	17200	14800	0	7500	1400	1000	72300	40	40	453320	746626.7	60
220	520	4500	750	290	18100	29500	70	7900	720	1000	73300	4100	890	453311.4	746711.3	60
40	600	4700	810	900	18200	10100	0	9300	1200	1000	64200	40	40	453209.9	746650	60
	2330	3210	729	2920	10300	8860	45.3	9590	2330	2330	51400	200	200	453183.587	746614.023	60
	2150	2650	802	537	16000	6150	35.4	10400	2150	1920	106000	180	180	453102.222	746515.373	60

Exhibit 8-43 IGW Spatial Weighting Output Functional Area 18 Shallow (Lead)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
18	72988.28162	545.9645098	16917.51804	0.23178403	25496.24327
18	72988.28162	341.337677	4753.251139	0.065123483	846.6052829
18	72988.28162	294.4501605	3683.485573	0.050466808	746.9087541
18	72988.28162	734.732932	24735.77044	0.338900573	9997.566893
18	72988.28162	276.3191715	4211.307469	0.057698405	582.7538955
18	72988.28162	364.6188707	8674.649474	0.118849893	1053.010054
18	72988.28162	408.2850963	10012.32262	0.137177125	843.6393177
				SUM:	39566.72747

Exhibit 8-44 IGW Spatial Weighting Output Functional Area 19 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA19_shallow_13DNB	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene
1	1	2	190	157	272	TP-R-B13-2-5	2006-08-02	1.5-2.0 ft	TP-R-B13-2-52.0N	<Null>	ug/kg	340	<Null>
2	6	16	198	472	442	B13-682-03	1999-10-08	0.0-0.8 ft	B13-682-030.8N	<Null>	ug/kg	230	230
3	7	15	201	475	462	B13-682-06	1999-10-08	0.0-1.0 ft	B13-682-061N	<Null>	ug/kg	1000	250
4	8	14	200	474	461	B13-682-04	1999-10-08	0.0-1.3 ft	B13-682-041.3N	<Null>	ug/kg	3900	210
5	9	10	205	486	888	B13-724-05	1999-10-08	0.0-2.0 ft	B13-724-052N	<Null>	ug/kg	250	250
6	10	7	202	483	885	B13-724-01	2000-07-21	0.0-2.0 ft	B13-724-012FD	B13-724-012N	ug/kg	9850	238
7	11	5	338	817	347	SB-R-C13-02	2006-05-19	0.5-1.0 ft	SB-R-C13-021.0N	<Null>	ug/kg	380	<Null>
8	12	4	235	463	85	TP-RD-B14-02	2017-11-08 13:15	1.0-1.5 ft	TP-RD-B14-02(01.0-01.5)	<Null>	ug/kg	120	120
9	13	3	229	82	669	TP-RD-B13-07	2017-11-08 14:12	1.0-1.5 ft	TP-RD-B13-07(01.0-01.5)	<Null>	ug/kg	120	120

Exhibit 8-44 IGW Spatial Weighting Output Functional Area 19 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Antimony	Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName
1190	3520	853	541	15100	6990	66.9	9510	2170	2170	49700	190	190	453085.96	746361.985	Point	1673	DEP-CONTOUR	722	
530	5200	630	990	33600	156000	3800	11700	1100	1100	983000	150	400	453212	746435.4	Point	1869	INT-CONTOUR	722	
380	2700	640	230	122000	74500	20	7500	530	500	80400	460	460	453240.9	746415.3	Point	1869	INT-CONTOUR	722	
690	17000	880	410	43100	82500	490	15500	1700	1400	127000	57	560	453241.6	746449.7	Point	1869	INT-CONTOUR	722	
540	5300	820	320	17400	21400	60	9100	1500	1100	93500	390	390	453163.6	746437.8	Point	1869	INT-CONTOUR	722	
493	3830	697	1130	17900	43900	158	7110	1100	821	342000	40100	40100	453160.1	746459.3	Point	1869	INT-CONTOUR	722	
2470	3520	810	643	9500	17700	31.9	7030	2470	2470	53000	210	210	453428.8332	746652.0589	Point	1705	INT-CONTOUR	724	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453167.85	746338.87	Point	1869	INT-CONTOUR	722	
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453270.67	746443.58	Point	1869	INT-CONTOUR	722	

Exhibit 8-44 IGW Spatial Weighting Output Functional Area 19 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Distance	FID_1	OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1
47.135055	3	4	718	SOLID	4337.774375	22.214853	4	466	TP-R-B13-2-5	2006-08-02	1.5-2.0 ft	TP-R-B13-2-52.0N		ug/kg
20.871798	3	4	718	SOLID	4337.774375	17.542411	4	89	B13-682-03	1999-10-08	0.0-0.8 ft	B13-682-030.8N		ug/kg
17.875095	3	4	718	SOLID	4337.774375	45.41105	4	92	B13-682-06	1999-10-08	0.0-1.0 ft	B13-682-061N		ug/kg
48.229983	3	4	718	SOLID	4337.774375	12.179475	4	91	B13-682-04	1999-10-08	0.0-1.3 ft	B13-682-041.3N		ug/kg
39.846863	3	4	718	SOLID	4337.774375	4.458759	4	98	B13-724-05	1999-10-08	0.0-2.0 ft	B13-724-052N		ug/kg
57.767793	3	4	718	SOLID	4337.774375	25.208718	4	95	B13-724-01	2000-07-21	0.0-2.0 ft	B13-724-012FD	B13-724-012N	ug/kg
63.829008	3	4	718	SOLID	4337.774375	176.984911	6	270	SB-R-C13-02	2006-05-19	0.5-1.0 ft	SB-R-C13-021.0N		ug/kg
1.591242	3	4	718	SOLID	4337.774375	85.378039	4	933	TP-RD-B14-02	2017-11-08 13:15	1.0-1.5 ft	TP-RD-B14-02(01.0-01.5)		ug/kg
57.094357	3	4	718	SOLID	4337.774375	23.473336	4	897	TP-RD-B13-07	2017-11-08 14:12	1.0-1.5 ft	TP-RD-B13-07(01.0-01.5)		ug/kg

Exhibit 8-44 IGW Spatial Weighting Output Functional Area 19 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
340		1190	3520	853	541	15100	6990	66.9	9510	2170	2170	49700	190	190	453085.96	746361.985
230	230	530	5200	630	990	33600	156000	3800	11700	1100	1100	983000	150	400	453212	746435.4
1000	250	380	2700	640	230	122000	74500	20	7500	530	500	80400	460	460	453240.9	746415.3
3900	210	690	17000	880	410	43100	82500	490	15500	1700	1400	127000	57	560	453241.6	746449.7
250	250	540	5300	820	320	17400	21400	60	9100	1500	1100	93500	390	390	453163.6	746437.8
9850	238	493	3830	697	1130	17900	43900	158	7110	1100	821	342000	40100	40100	453160.1	746459.3
380		2470	3520	810	643	9500	17700	31.9	7030	2470	2470	53000	210	210	453428.8332	746652.0589
120	120														453167.85	746338.87
120	120														453270.67	746443.58

Exhibit 8-44 IGW Spatial Weighting Output Functional Area 19 Shallow (1,3-Dinitrobenzene)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_13DNB
61	19	74390.13019	354.3906904	6809.729941	0.091540772	31.12386245
61	19	74390.13019	236.9516551	2707.790616	0.036399864	8.371968702
61	19	74390.13019	186.091711	1704.759416	0.022916473	22.91647308
61	19	74390.13019	374.7434916	5992.788256	0.080558916	314.1797728
61	19	74390.13019	239.2842813	3641.401567	0.048950063	12.23751577
61	19	74390.13019	194.1037228	1303.43806	0.017521653	172.5882836
61	19	74390.13019	959.3138987	37920.41699	0.509750647	193.7052458
61	19	74390.13019	349.291011	5400.619473	0.072598602	8.71183227
61	19	74390.13019	434.0942367	8909.114472	0.11976205	14.37144597
					SUM:	778.2064005

Exhibit 8-45 IGW Spatial Weighting Output Functional Area 19 Shallow (Mercury)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA19_shallow_Mercury	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	1	2	190	157	272	TP-R-B13-2-5	2006-08-02	1.5-2.0 ft	TP-R-B13-2-52.0N	<Null>	ug/kg	340	<Null>	1190
2	2	11	217	926	145	C13-2-17	2000-04-18	0.0-2.0 ft	C13-2-172N	<Null>	ug/kg		41	700
3	6	16	198	472	442	B13-682-03	1999-10-08	0.0-0.8 ft	B13-682-030.8N	<Null>	ug/kg	230	230	530
4	7	15	201	475	462	B13-682-06	1999-10-08	0.0-1.0 ft	B13-682-061N	<Null>	ug/kg	1000	250	380
5	8	14	200	474	461	B13-682-04	1999-10-08	0.0-1.3 ft	B13-682-041.3N	<Null>	ug/kg	3900	210	690
6	9	13	333	790	846	C13-2-08	2000-04-18	0.0-2.0 ft	C13-2-082N	<Null>	ug/kg		41	600
7	10	12	331	788	844	C13-2-03	1999-10-29	0.0-2.0 ft	C13-2-032N	<Null>	ug/kg		510	410
8	11	10	205	486	888	B13-724-05	1999-10-08	0.0-2.0 ft	B13-724-052N	<Null>	ug/kg	250	250	540
9	12	8	203	484	886	B13-724-01	2000-07-21	0.0-2.0 ft	B13-724-012N	<Null>	ug/kg	9110	250	671
10	13	6	197	471	441	C13-2-13	2000-04-18	0.0-2.0 ft	C13-2-132N	<Null>	ug/kg		42	700
11	14	1	339	914	14	SB-R-C13-02	2006-05-19	2.5-3.0 ft	SB-R-C13-023.0N	<Null>	ug/kg	320	<Null>	991

Exhibit 8-45 IGW Spatial Weighting Output Functional Area 19 Shallow (Mercury)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
3520	853	541	15100	6990	66.9	9510	2170	2170	49700	190	190	453085.96	746361.985	Point	1673	DEP-CONTOUR	722		47.135055	3
4500	810	840	14300	13200	0	9400	1000	1000	63700	41	41	453570.6	746747.7	Point	1869	INT-CONTOUR	722		7.323778	3
5200	630	990	33600	156000	3800	11700	1100	1100	983000	150	400	453212	746435.4	Point	1869	INT-CONTOUR	722		20.871798	3
2700	640	230	122000	74500	20	7500	530	500	80400	460	460	453240.9	746415.3	Point	1869	INT-CONTOUR	722		17.875095	3
17000	880	410	43100	82500	490	15500	1700	1400	127000	57	560	453241.6	746449.7	Point	1869	INT-CONTOUR	722		48.229983	3
4300	630	710	10800	8100	0	6200	1100	1000	39800	41	41	453426.6	746661.5	Point	1705	INT-CONTOUR	724		72.914102	3
4100	890	440	11600	24400	40	7100	690	830	54700	510	510	453429.3	746615.2	Point	1705	INT-CONTOUR	724		27.322025	3
5300	820	320	17400	21400	60	9100	1500	1100	93500	390	390	453163.6	746437.8	Point	1869	INT-CONTOUR	722		39.846863	3
4310	761	1360	31300	67000	210	7970	1070	1120	136000	4100	4100	453160.1	746459.3	Point	1869	INT-CONTOUR	722		57.767793	3
3500	790	790	12400	11000	0	6300	730	1000	48300	42	42	453417.9	746706.2	Point	1712	INT-CONTOUR	722		69.326282	3
1470	442	2610	10000	2210	99.4	5990	2090	2090	32700	180	180	453428.8332	746652.0589	Point	1705	INT-CONTOUR	724		63.829008	3

Exhibit 8-45 IGW Spatial Weighting Output Functional Area 19 Shallow (Mercury)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
4	718	SOLID	4337.774375	22.214853	4	466	TP-R-B13-2-5	2006-08-02	1.5-2.0 ft	TP-R-B13-2-52.0N		ug/kg	340
4	718	SOLID	4337.774375	180.106788	4	174	C13-2-17	2000-04-18	0.0-2.0 ft	C13-2-172N		ug/kg	
4	718	SOLID	4337.774375	17.542411	4	89	B13-682-03	1999-10-08	0.0-0.8 ft	B13-682-030.8N		ug/kg	230
4	718	SOLID	4337.774375	45.41105	4	92	B13-682-06	1999-10-08	0.0-1.0 ft	B13-682-061N		ug/kg	1000
4	718	SOLID	4337.774375	12.179475	4	91	B13-682-04	1999-10-08	0.0-1.3 ft	B13-682-041.3N		ug/kg	3900
4	718	SOLID	4337.774375	186.388782	6	165	C13-2-08	2000-04-18	0.0-2.0 ft	C13-2-082N		ug/kg	
4	718	SOLID	4337.774375	140.138445	6	160	C13-2-03	1999-10-29	0.0-2.0 ft	C13-2-032N		ug/kg	
4	718	SOLID	4337.774375	4.458759	4	98	B13-724-05	1999-10-08	0.0-2.0 ft	B13-724-052N		ug/kg	250
4	718	SOLID	4337.774375	25.208718	4	96	B13-724-01	2000-07-21	0.0-2.0 ft	B13-724-012N		ug/kg	9110
4	718	SOLID	4337.774375	230.812524	4	170	C13-2-13	2000-04-18	0.0-2.0 ft	C13-2-132N		ug/kg	
4	718	SOLID	4337.774375	176.984911	6	271	SB-R-C13-02	2006-05-19	2.5-3.0 ft	SB-R-C13-023.0N		ug/kg	320

Exhibit 8-45 IGW Spatial Weighting Output Functional Area 19 Shallow (Mercury)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	1190	3520	853	541	15100	6990	66.9	9510	2170	2170	49700	190	190	453085.96	746361.985	61
41	700	4500	810	840	14300	13200	0	9400	1000	1000	63700	41	41	453570.6	746747.7	61
230	530	5200	630	990	33600	156000	3800	11700	1100	1100	983000	150	400	453212	746435.4	61
250	380	2700	640	230	122000	74500	20	7500	530	500	80400	460	460	453240.9	746415.3	61
210	690	17000	880	410	43100	82500	490	15500	1700	1400	127000	57	560	453241.6	746449.7	61
41	600	4300	630	710	10800	8100	0	6200	1100	1000	39800	41	41	453426.6	746661.5	61
510	410	4100	890	440	11600	24400	40	7100	690	830	54700	510	510	453429.3	746615.2	61
250	540	5300	820	320	17400	21400	60	9100	1500	1100	93500	390	390	453163.6	746437.8	61
250	671	4310	761	1360	31300	67000	210	7970	1070	1120	136000	4100	4100	453160.1	746459.3	61
42	700	3500	790	790	12400	11000	0	6300	730	1000	48300	42	42	453417.9	746706.2	61
	991	1470	442	2610	10000	2210	99.4	5990	2090	2090	32700	180	180	453428.8332	746652.0589	61

Exhibit 8-45 IGW Spatial Weighting Output Functional Area 19 Shallow (Mercury)
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Mercury
19	74390.13019	406.0914942	10382.9249	0.139573958	9.33749778
19	74390.13019	498.6374373	14627.52009	0.196632538	0
19	74390.13019	271.4816559	2858.613811	0.038427326	146.0238402
19	74390.13019	278.269798	2350.909463	0.031602438	0.632048756
19	74390.13019	449.3696066	13192.60157	0.17734344	86.89828549
19	74390.13019	402.7469501	4386.905371	0.058971605	0
19	74390.13019	476.0797214	11648.08435	0.156581045	6.263241814
19	74390.13019	295.1900478	4759.728961	0.06398334	3.839000374
19	74390.13019	194.1037228	1303.43806	0.017521653	3.679547163
19	74390.13019	371.4238816	5687.323339	0.07645266	0
19	74390.13019	394.3261314	3192.04477	0.04290952	4.265206275
				SUM:	260.9386678

Exhibit 8-46 IGW Spatial Weighting Output Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA21_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	1	225	76	666	SB-R-C14-02	2006-05-18	0.8-1.3 ft	SB-R-C14-021.25N	<Null>	ug/kg	360	<Null>	1110	3680
2	6	7	220	929	265	C13-742-05	1999-10-29	0.0-2.0 ft	C13-742-052N	<Null>	ug/kg	200	200	500	3800
3	7	5	218	927	149	C13-742-01	1999-10-29	0.0-2.0 ft	C13-742-012FD	C13-742-012N	ug/kg	220	220	470	4300
4	8	4	210	491	904	C13-2-01	1999-10-29	0.0-2.0 ft	C13-2-012N	<Null>	ug/kg		390	440	4100
5	9	2	207	488	901	C13-1-08	1999-11-02	0.0-2.0 ft	C13-1-082N	<Null>	ug/kg		400	510	5100

Exhibit 8-46 IGW Spatial Weighting Output Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
698	2870	10900	6150	26	9120	2290	2290	42000	200	200	453484.1155	746419.7318	Point	1869	INT-CONTOUR	722		89.948521	3
780	390	11700	18200	40	8900	660	990	54300	390	390	453663.5	746590.1	Point	1869	INT-CONTOUR	722		44.334352	3
810	420	11200	16100	50	7900	620	930	53600	410	410	453651.2	746607.2	Point	1869	INT-CONTOUR	722		37.040896	3
790	400	19700	159000	280	8900	460	880	196000	130	390	453680.1	746628.2	Point	1869	INT-CONTOUR	722		72.090724	3
840	560	54300	13600	40	9500	880	1000	189000	400	400	453583.1	746458	Point	1869	INT-CONTOUR	722		50.147563	3

Exhibit 8-46 IGW Spatial Weighting Output Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
4	718	SOLID	4337.774375	55.717981	4	276	SB-R-C14-02	2006-05-18	0.8-1.3 ft	SB-R-C14-021.25N		ug/kg	360
4	718	SOLID	4337.774375	46.47421	4	183	C13-742-05	1999-10-29	0.0-2.0 ft	C13-742-052N		ug/kg	200
4	718	SOLID	4337.774375	65.979927	4	181	C13-742-01	1999-10-29	0.0-2.0 ft	C13-742-012FD	C13-742-012N	ug/kg	220
4	718	SOLID	4337.774375	49.159765	4	158	C13-2-01	1999-10-29	0.0-2.0 ft	C13-2-012N		ug/kg	
4	718	SOLID	4337.774375	27.529448	4	152	C13-1-08	1999-11-02	0.0-2.0 ft	C13-1-082N		ug/kg	

Exhibit 8-46 IGW Spatial Weighting Output Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
	1110	3680	698	2870	10900	6150	26	9120	2290	2290	42000	200	200	453484.1155	746419.7318	63
200	500	3800	780	390	11700	18200	40	8900	660	990	54300	390	390	453663.5	746590.1	63
220	470	4300	810	420	11200	16100	50	7900	620	930	53600	410	410	453651.2	746607.2	63
390	440	4100	790	400	19700	159000	280	8900	460	880	196000	130	390	453680.1	746628.2	63
400	510	5100	840	560	54300	13600	40	9500	880	1000	189000	400	400	453583.1	746458	63

Exhibit 8-46 IGW Spatial Weighting Output Functional Area 21 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weighted_Lead
21	47478.57128	395.8393747	9294.527082	0.195762569	1203.939799
21	47478.57128	372.6052469	7820.306514	0.164712339	2997.764564
21	47478.57128	274.9735709	2803.189698	0.059041155	950.5625995
21	47478.57128	505.2754365	15633.28314	0.329270294	52353.97678
21	47478.57128	449.9558461	11927.22611	0.251212827	3416.494447
				SUM:	60922.73819

Exhibit 8-47 IGW Spatial Weighting Output Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA22_deep	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony
1	2	5	152	93	162	TP-R-C13-666-5	2006-08-17	0.5-1.0 ft	TP-R-C13-666-51.0N	<Null>	ug/kg	2300		<Null>
2	6	11	224	1027	439	SB-R-C14-01	2006-05-18	2.0-2.5 ft	SB-R-C14-012.5N	<Null>	ug/kg	320		1080
3	7	10	164	112	307	TP-RD-C13-04A	2017-12-04 10:00	1.0-1.5 ft	TP-RD-C13-04A(01.0-01.5)	<Null>	ug/kg	120	120	<Null>
4	8	9	160	106	260	TP-RD-C13-04	2017-11-08 8:30	1.0-1.5 ft	TP-RD-C13-04(01.0-01.5)	<Null>	ug/kg	130	130	<Null>
5	9	8	154	97	171	TP-RD-C13-02	2017-11-07 14:30	1.0-1.5 ft	TP-RD-C13-02(01.0-01.5)	<Null>	ug/kg	130	130	<Null>
6	10	7	145	78	672	TP-R-C13-666-2	2006-08-17	1.0-1.5 ft	TP-R-C13-666-21.5N	<Null>	ug/kg	300		<Null>
7	11	6	142	51	927	TP-R-C13-666-1	2006-08-17	1.0-1.5 ft	TP-R-C13-666-11.5N	<Null>	ug/kg	980		<Null>
8	12	4	149	87	94	TP-R-C13-666-4	2006-08-17	0.5-1.0 ft	TP-R-C13-666-41.0N	<Null>	ug/kg	180		<Null>
9	13	3	147	85	88	TP-R-C13-666-3	2006-08-16	0.5-1.0 ft	TP-R-C13-666-31.0N	<Null>	ug/kg	340		<Null>

Exhibit 8-47 IGW Spatial Weighting Output Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Arsenic	Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	420	170	453875.117	746575.693	Point	2269	INDEX-CONTOUR	720		21.062745	3
1720	645	2600	15200	2910	5	8420	2080	2080	32800	180	180	453741.724	746489.671	Point	1869	INT-CONTOUR	722		11.593214	3
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453783.4	746570.16	Point	2269	INDEX-CONTOUR	720		59.731432	3
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453800.96	746578.96	Point	2269	INDEX-CONTOUR	720		47.279637	3
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	453856.54	746552.02	Point	2269	INDEX-CONTOUR	720		13.600252	3
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	42000	42000	453873.607	746628.439	Point	2269	INDEX-CONTOUR	720		8.241553	3
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	300	200	453847.549	746605.038	Point	2269	INDEX-CONTOUR	720		16.376423	3
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	180	180	453820.109	746576.678	Point	2269	INDEX-CONTOUR	720		28.974883	3
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	190	190	453824.465	746617.291	Point	2269	INDEX-CONTOUR	720		5.332758	3

Exhibit 8-47 IGW Spatial Weighting Output Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1
4	718	SOLID	4337.774375	152.301679	2	498	TP-R-C13-666-5	2006-08-17	0.5-1.0 ft	TP-R-C13-666-51.0N		ug/kg
4	718	SOLID	4337.774375	77.459086	4	275	SB-R-C14-01	2006-05-18	2.0-2.5 ft	SB-R-C14-012.5N		ug/kg
4	718	SOLID	4337.774375	68.21774	2	1022	TP-RD-C13-04A	2017-12-04 10:00	1.0-1.5 ft	TP-RD-C13-04A(01.0-01.5)		ug/kg
4	718	SOLID	4337.774375	81.289686	2	1018	TP-RD-C13-04	2017-11-08 8:30	1.0-1.5 ft	TP-RD-C13-04(01.0-01.5)		ug/kg
4	718	SOLID	4337.774375	142.783234	2	1012	TP-RD-C13-02	2017-11-07 14:30	1.0-1.5 ft	TP-RD-C13-02(01.0-01.5)		ug/kg
4	718	SOLID	4337.774375	139.641419	2	491	TP-R-C13-666-2	2006-08-17	1.0-1.5 ft	TP-R-C13-666-21.5N		ug/kg
4	718	SOLID	4337.774375	118.26102	2	488	TP-R-C13-666-1	2006-08-17	1.0-1.5 ft	TP-R-C13-666-11.5N		ug/kg
4	718	SOLID	4337.774375	100.026197	2	495	TP-R-C13-666-4	2006-08-17	0.5-1.0 ft	TP-R-C13-666-41.0N		ug/kg
4	718	SOLID	4337.774375	92.911449	2	493	TP-R-C13-666-3	2006-08-16	0.5-1.0 ft	TP-R-C13-666-31.0N		ug/kg

Exhibit 8-47 IGW Spatial Weighting Output Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

F1_3_Dinitrobenzene_1	Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1
2300													420	170	453875.117	746575.693
320		1080	1720	645	2600	15200	2910	5	8420	2080	2080	32800	180	180	453741.724	746489.671
120	120														453783.4	746570.16
130	130														453800.96	746578.96
130	130														453856.54	746552.02
300													42000	42000	453873.607	746628.439
980													300	200	453847.549	746605.038
180													180	180	453820.109	746576.678
340													190	190	453824.465	746617.291

Exhibit 8-47 IGW Spatial Weighting Output Functional Area 22 Deep
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

FID_FunctionalArealGW	Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weight_13DNB
65	22	41529.00308	165.7757394	1370.566312	0.03300263	75.90604837
65	22	41529.00308	471.3632805	13645.88922	0.328586968	105.1478299
65	22	41529.00308	275.4227273	4067.248259	0.097937537	11.75250439
65	22	41529.00308	164.104729	1169.615213	0.028163816	3.661296118
65	22	41529.00308	210.2983389	1886.688802	0.045430631	5.905981989
65	22	41529.00308	469.5827691	14296.77387	0.344259982	103.2779947
65	22	41529.00308	143.0239716	1241.912611	0.029904706	29.30661148
65	22	41529.00308	182.9186966	1605.732627	0.03866533	6.959759478
65	22	41529.00308	201.6184997	2244.600597	0.054048988	18.37665599
					SUM:	360.2946824

Exhibit 8-48 IGW Spatial Weighting Output Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID	FID_ThiessenPoly_FA22_shallow	Input_FID	OBJECTID_12_13__	OBJECTID_12	OBJECTID_1	Location	Sample_Date	Sample_Depths	Sample_ID	Parent_ID	units	F1_3_Dinitrobenzene	Nitrobenzene	Antimony	Arsenic
1	1	2	206	487	900	C13-1-01	1999-11-02	0.0-2.0 ft	C13-1-012N	<Null>	ug/kg		390	460	4900
2	6	1	223	935	179	SB-R-C14-01	2006-05-18	0.5-1.0 ft	SB-R-C14-011.0N	<Null>	ug/kg	330	<Null>	1540	2660

Exhibit 8-48 IGW Spatial Weighting Output Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Beryllium	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Thallium	Zinc	BenzoApyrene	N_Nitrosodiphenylamine	x_coord	y_coord	Shape__	SiteTopo_OBJECTID	Layer	Elevation	RefName	Distance	FID_1
680	1000	438000	51700	30	9700	700	930	960000	390	390	453725.9	746458.3	Point	1869	INT-CONTOUR	722		5.00477	3
654	2790	14200	4870	17.5	11700	2230	2230	50500	190	190	453741.724	746489.671	Point	1869	INT-CONTOUR	722		11.593214	3

Exhibit 8-48 IGW Spatial Weighting Output Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

OBJECTID_2	GROUNDWATER_2019_01_SHALLOW_Elevation	TYPE_	Shape_Leng	Distance_1	DTW	OBJECTID_12_13	Location_1	Sample_Date_1	Sample_Depths_1	Sample_ID_1	Parent_ID_1	units_1	F1_3_Dinitrobenzene_1
4	718	SOLID	4337.774375	88.792769	4	151	C13-1-01	1999-11-02	0.0-2.0 ft	C13-1-012N		ug/kg	
4	718	SOLID	4337.774375	77.459086	4	274	SB-R-C14-01	2006-05-18	0.5-1.0 ft	SB-R-C14-011.0N		ug/kg	330

Exhibit 8-48 IGW Spatial Weighting Output Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Nitrobenzene_1	Antimony_1	Arsenic_1	Beryllium_1	Cadmium_1	Copper_1	Lead_1	Mercury_1	Nickel_1	Selenium_1	Thallium_1	Zinc_1	BenzoApyrene_1	N_Nitrosodiphenylamine_1	x_coord_1	y_coord_1	FID_FunctionalArealGW
390	460	4900	680	1000	438000	51700	30	9700	700	930	960000	390	390	453725.9	746458.3	65
	1540	2660	654	2790	14200	4870	17.5	11700	2230	2230	50500	190	190	453741.724	746489.671	65

Exhibit 8-48 IGW Spatial Weighting Output Functional Area 22 Shallow
TNT Project Area Soil Secondary Constituents of Concern
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Functional_Area	FA_Area_SF	Shape_Length	Shape_Area	Fractional_Area	Spatial Weight_Zinc
22	41529.00308	346.8664935	7114.18054	0.171306316	164454.0637
22	41529.00308	892.87887	34414.80961	0.828693372	41849.0153
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Exhibit 9

Spatial Weighting Figures – Impact to Groundwater

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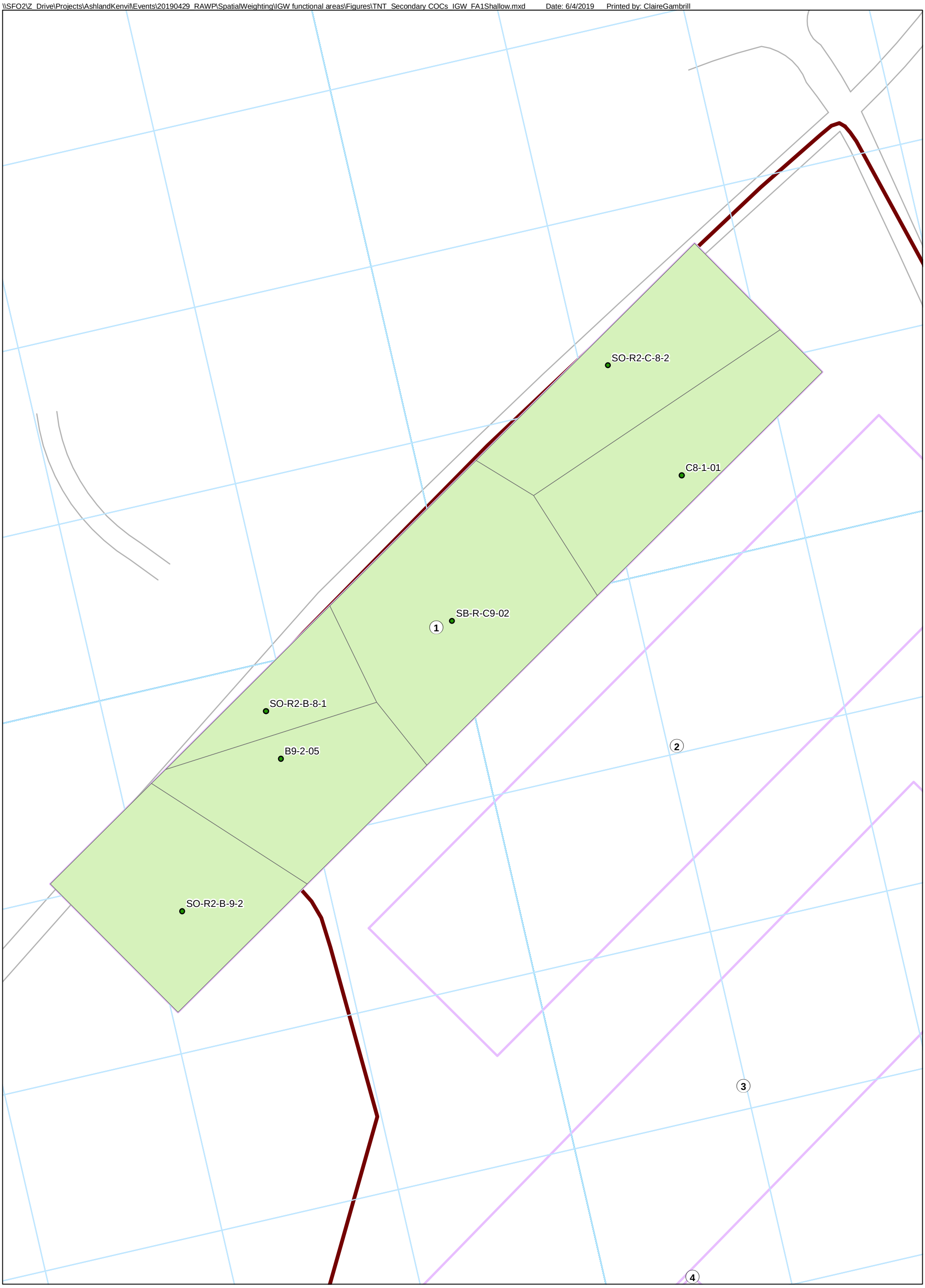

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 1 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-1

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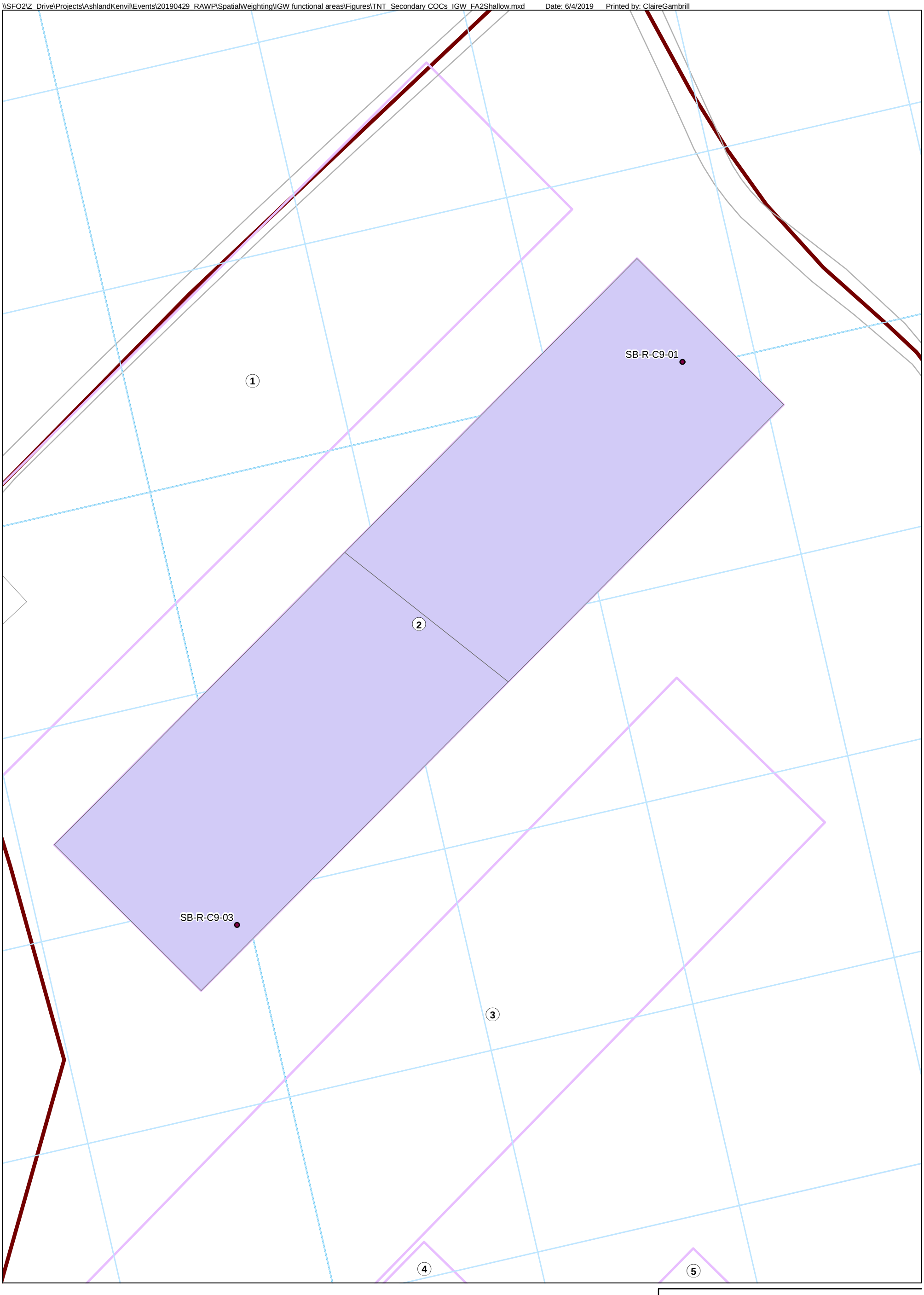

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 2 SHALLOW

HERCULES

KJ Kennedy Jenks

EXHIBIT

9-2

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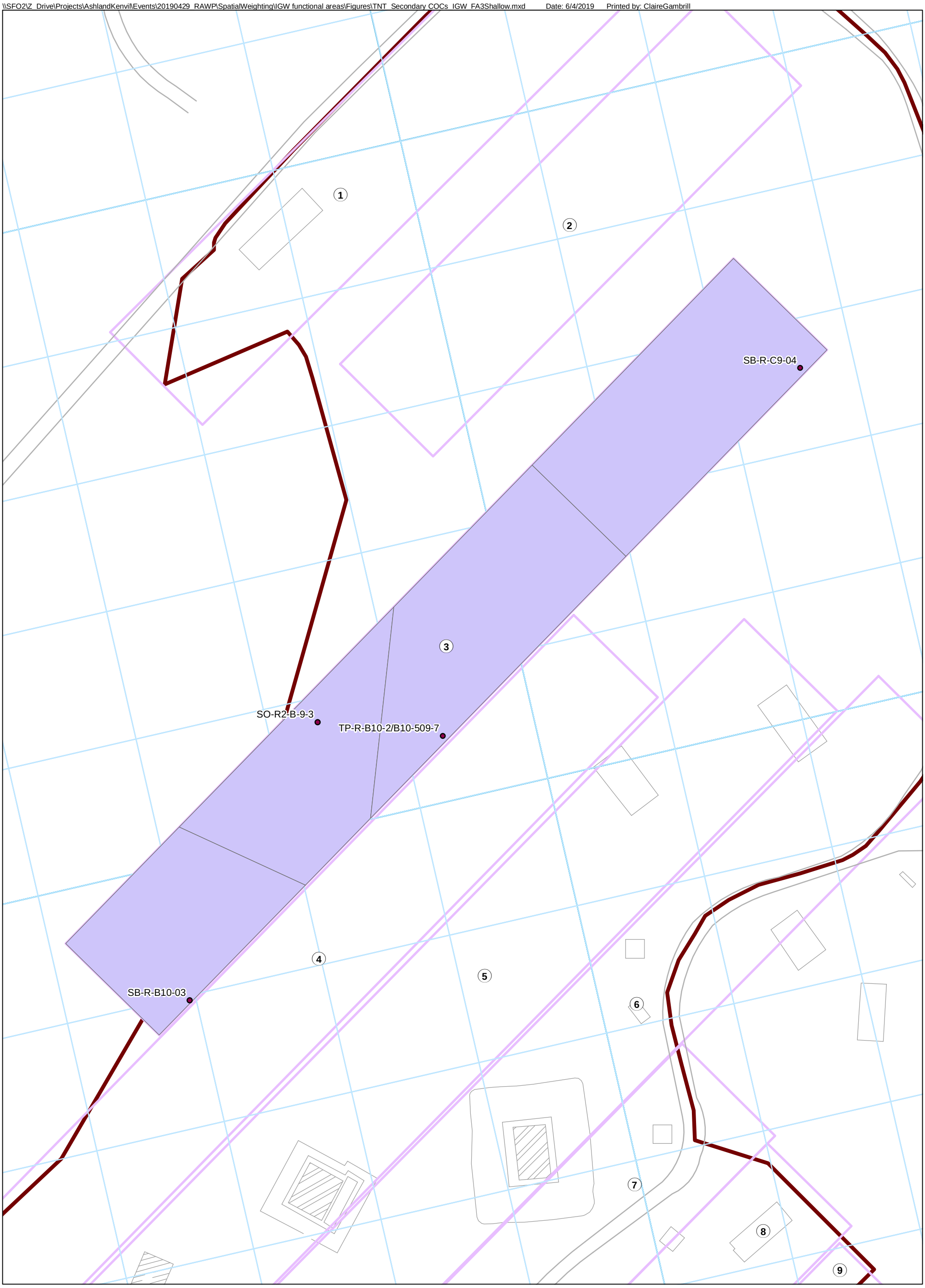

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 3 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-3

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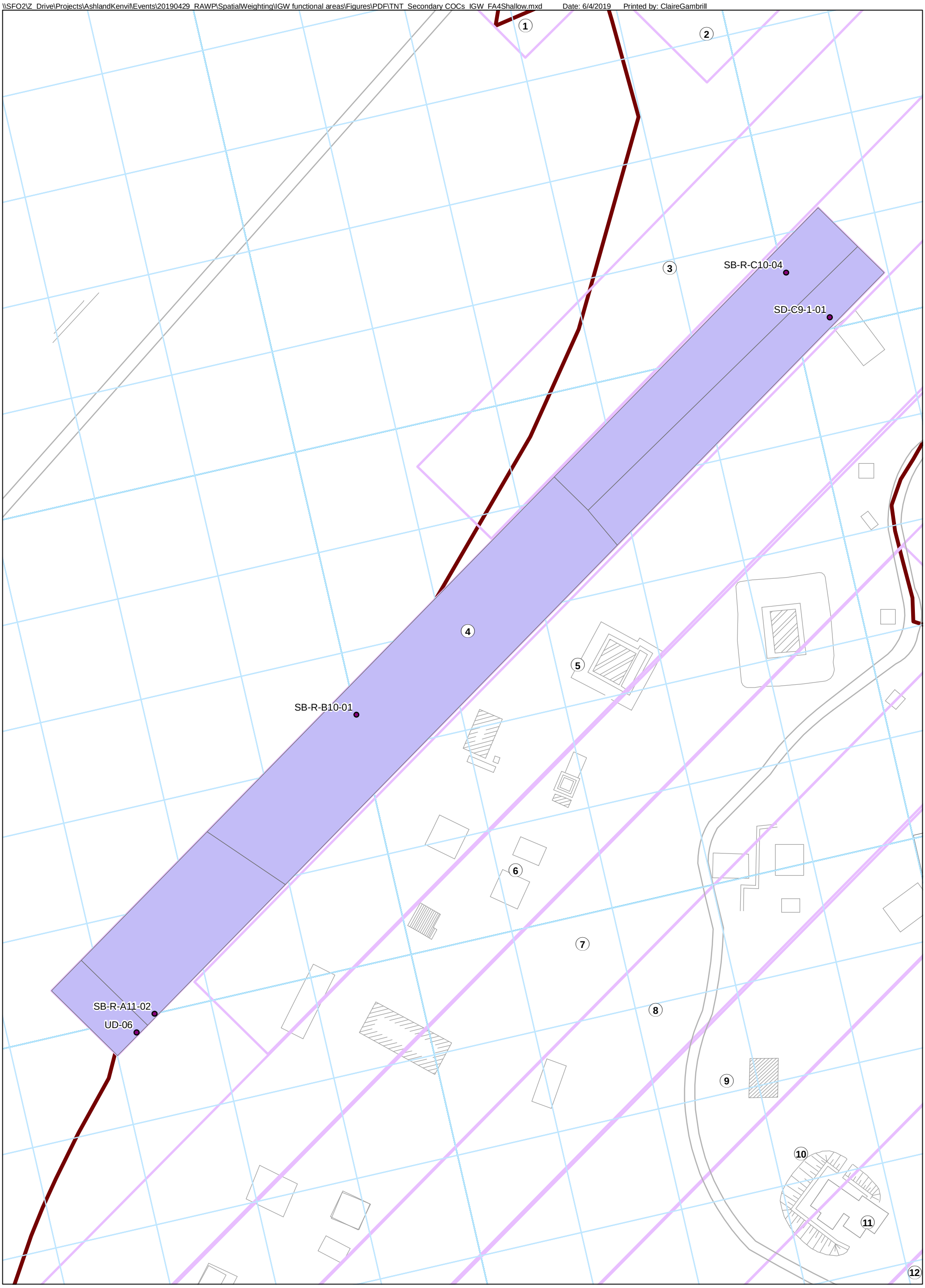

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 4 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-4

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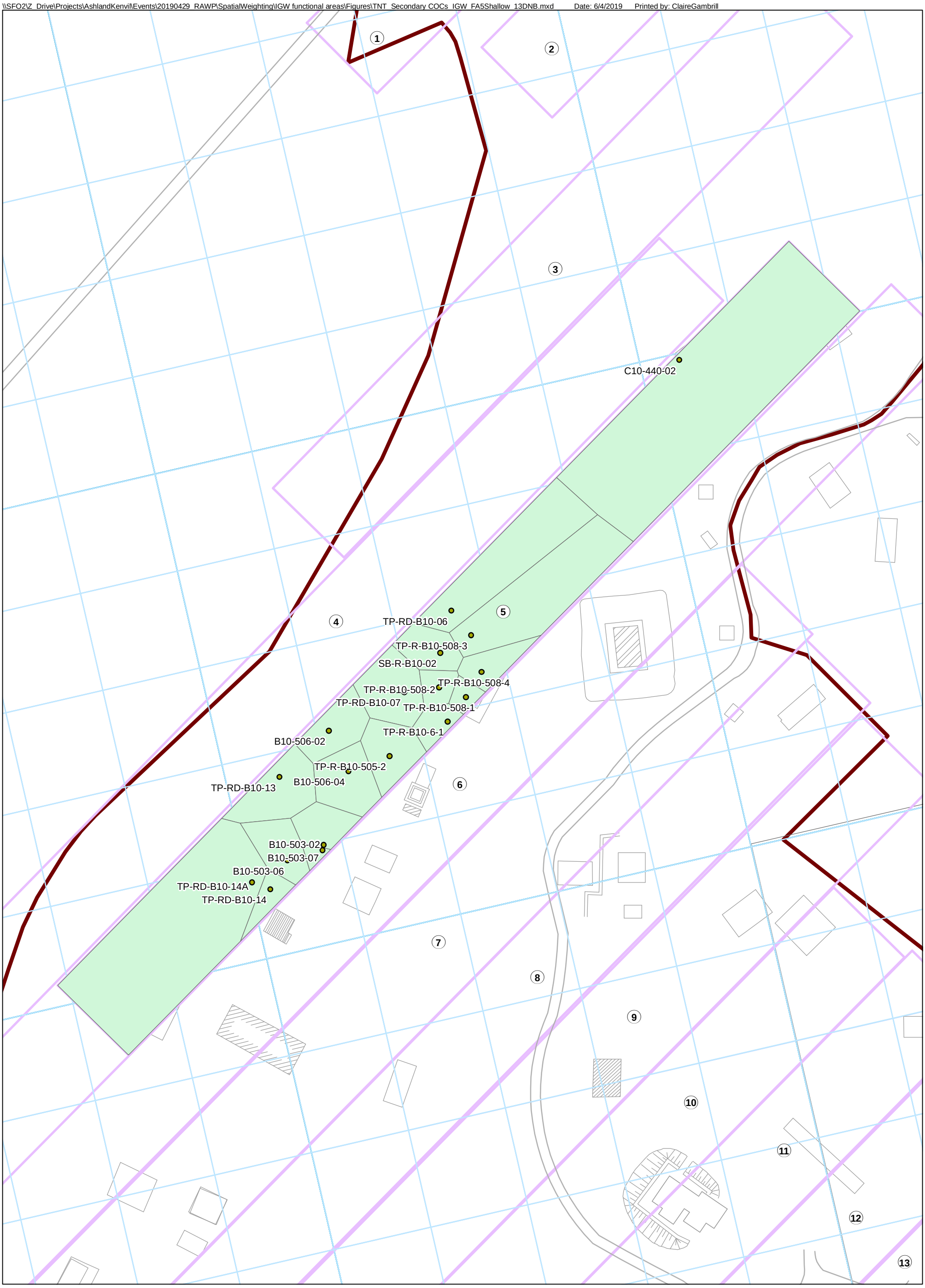

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 5 SHALLOW (1,3-DINITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-5

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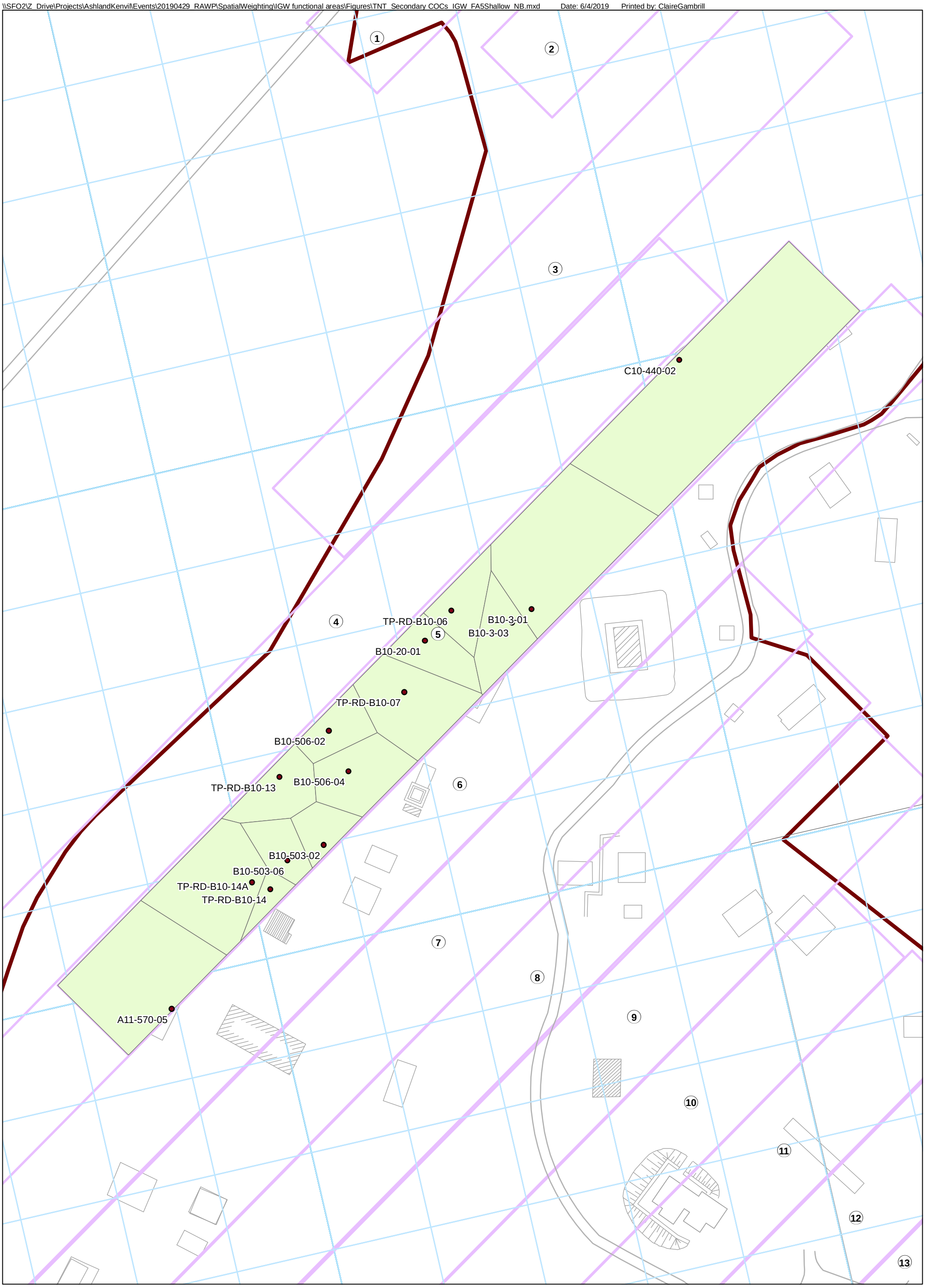

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 5 SHALLOW (NITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-6

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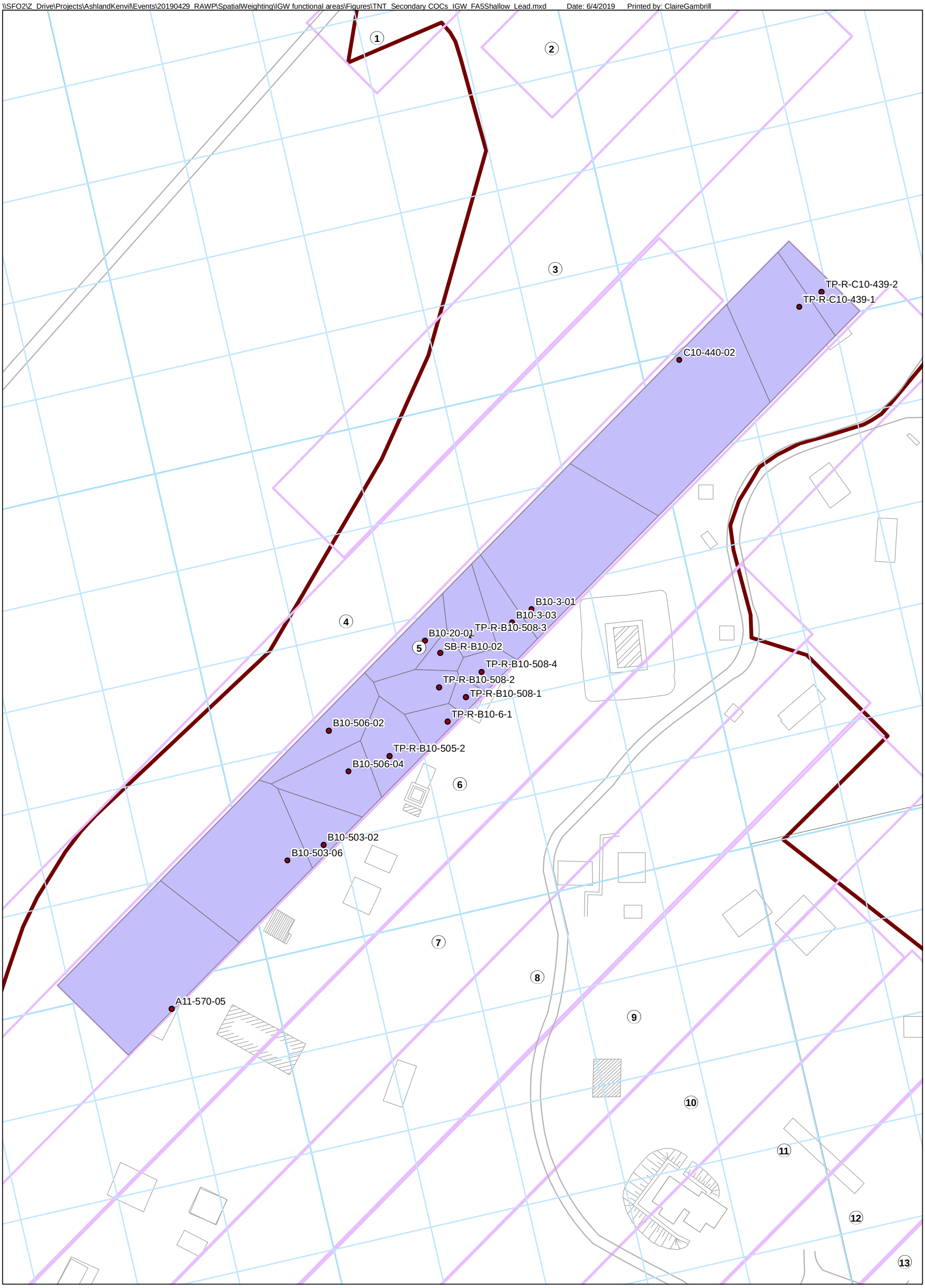

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 5 SHALLOW (LEAD)

HERCULES

Kennedy Jenks

EXHIBIT

9-7

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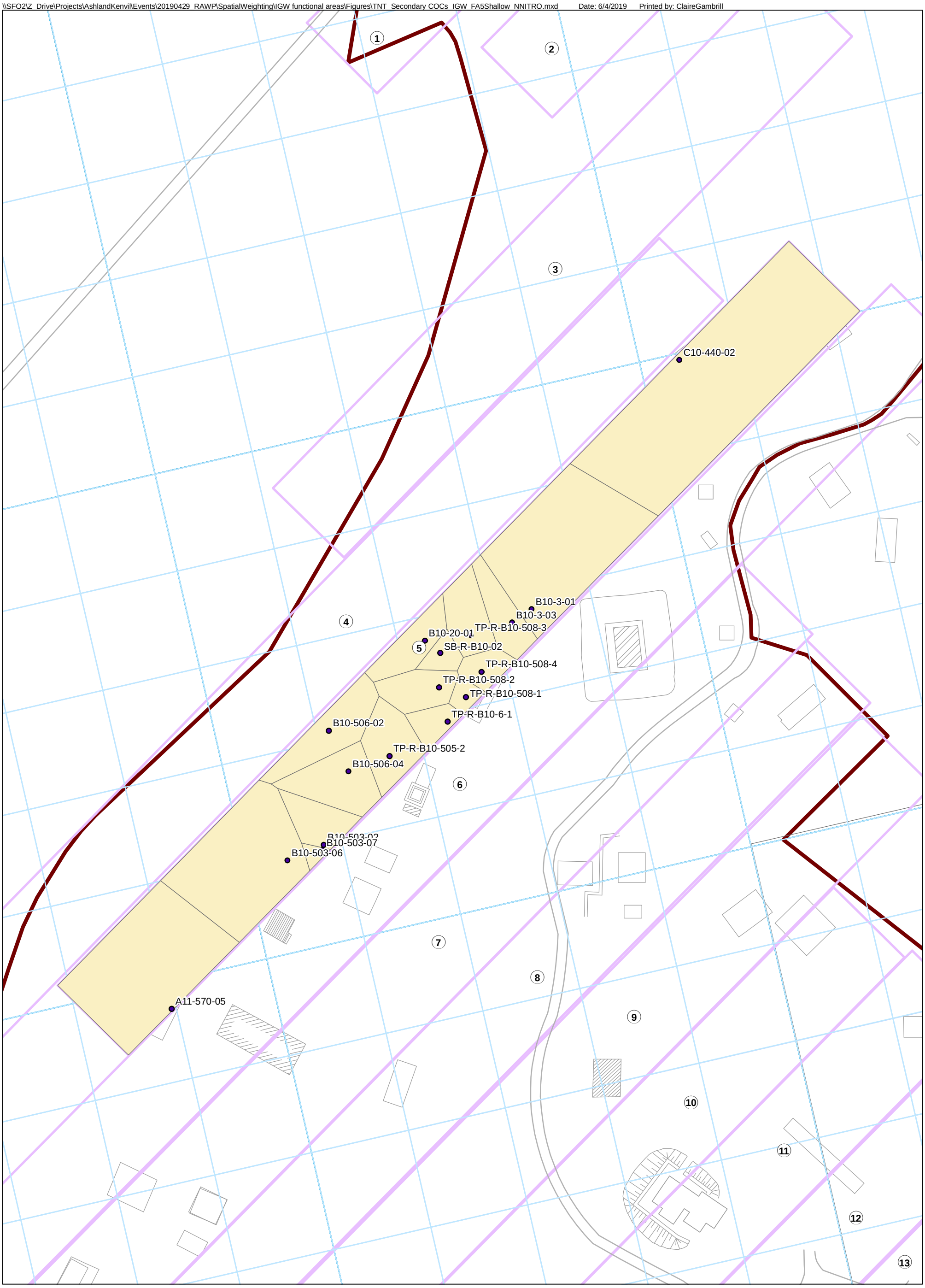

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 5 SHALLOW (N-NITROSODIPHENYLAMINE)

HERCULES

Kennedy Jenks

EXHIBIT

9-8

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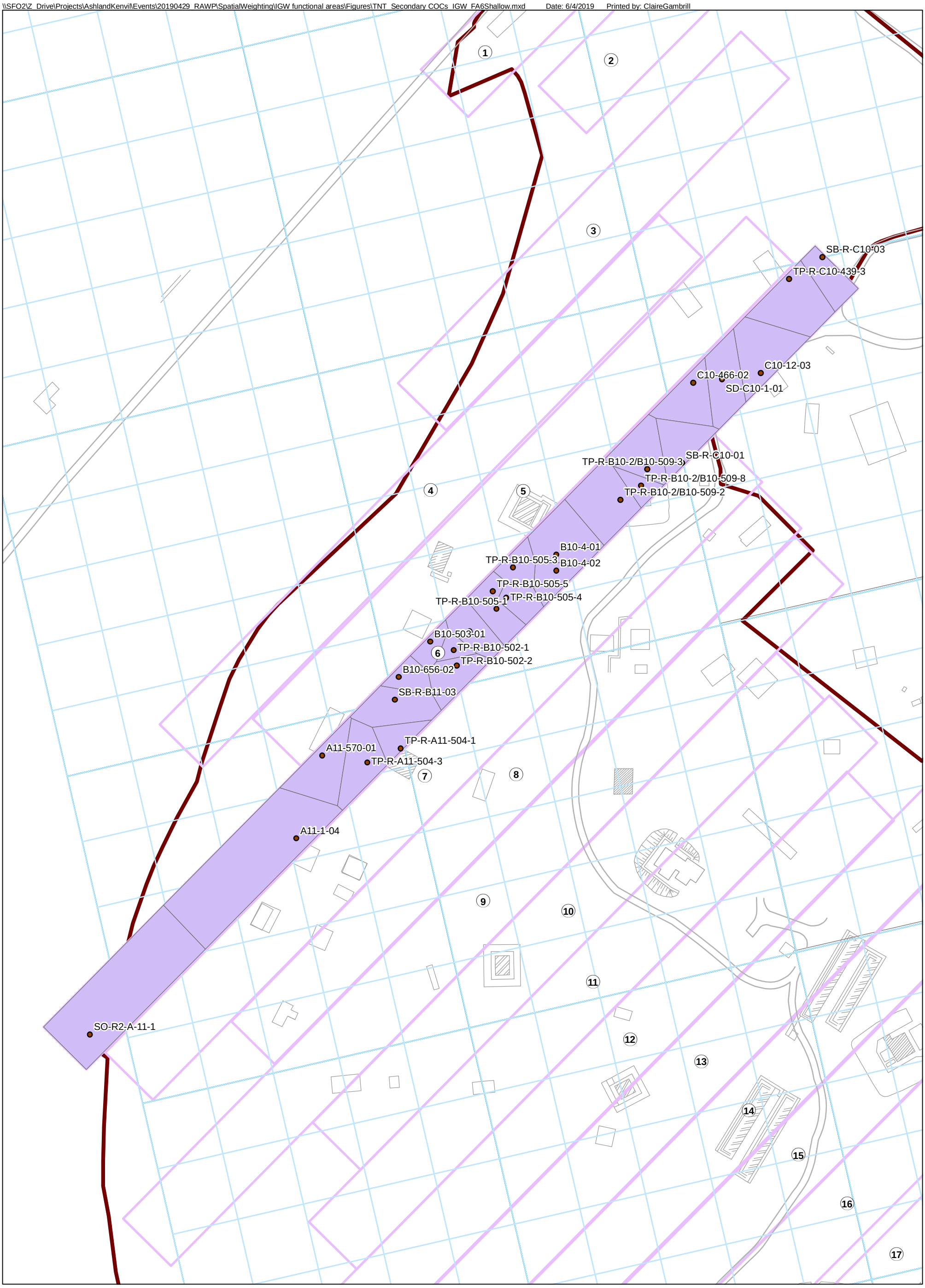

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 6 SHALLOW

HERCULES

KJ Kennedy Jenks

EXHIBIT

9-9

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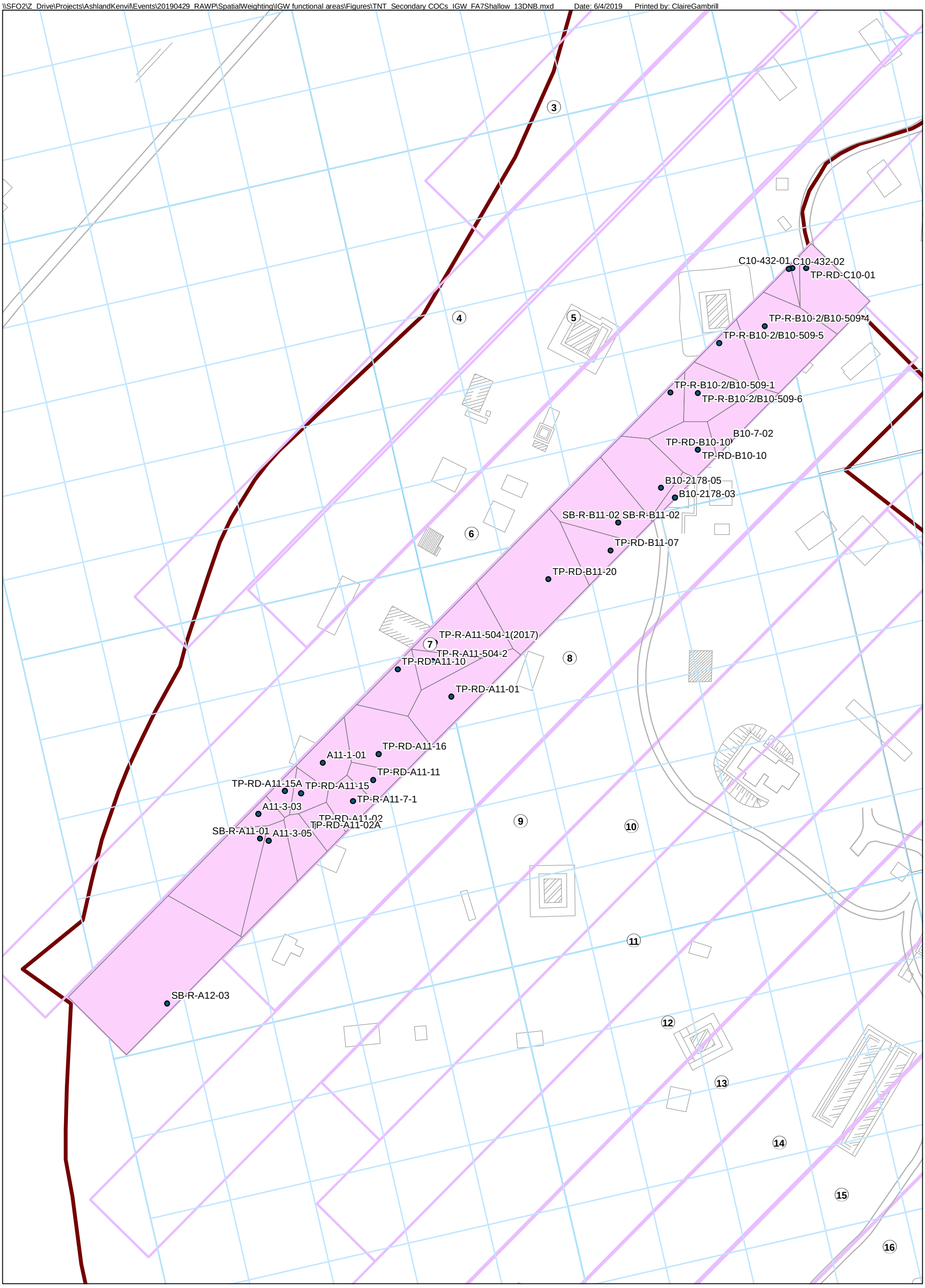


Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 7 SHALLOW (1,3-DINITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-10

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA7Shallow_NB.mxd Date: 6/4/2019 Printed by: ClaireGambrill

C10-432-01
C10-432-02
TP-RD-C10-01
C10-438-05
C10-438-01
B10-7-02
TP-RD-B10-10
B10-2178-05
B10-2178-03
TP-RD-B11-07
TP-RD-B11-20
TP-R-A11-504-1(2017)
B11-2-03
TP-RD-A11-10
TP-RD-A11-01
TP-RD-A11-16
A11-1-01
TP-RD-A11-11
TP-RD-A11-15A
A11-3-03
TP-RD-A11-02
TP-RD-A11-02A
A11-3-05
A11-9-03
A11-9-04
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 7 SHALLOW (NITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-11

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA7Shallow_METALS.mxd Date: 6/4/2019 Printed by: ClaireGambrill

C10-432-01
C10-432-02
C10-438-05
C10-438-01
TP-R-B10-2/B10-509-4
TP-R-B10-2/B10-509-5
TP-R-B10-2/B10-509-1
TP-R-B10-2/B10-509-6
B10-7-02
B10-2178-05
B10-2178-03
SB-R-B11-02
TP-R-A11-504-2
B11-2-03
A11-1-01
TP-R-A11-2-1
TP-R-A11-2-2
TP-R-A11-7-1
TP-R-A11-7-2
A11-3-03
SB-R-A11-01
A11-3-05
A11-9-03
A11-9-04
SB-R-A12-03

3 4 5 6 7 8 9 10 11 12 13 14 15 16

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 7 SHALLOW (METALS)

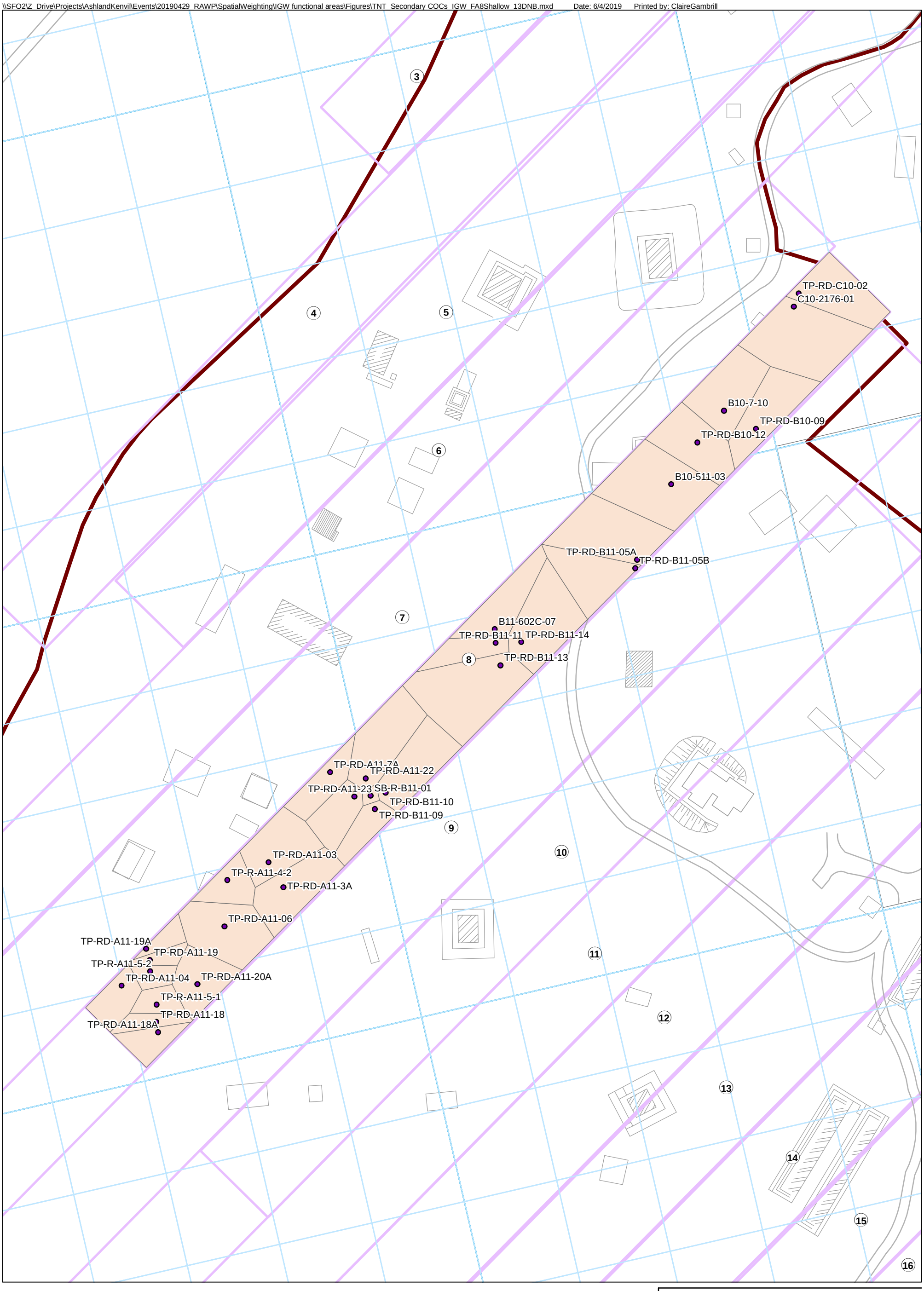
HERCULES

Kennedy Jenks

EXHIBIT

9-12

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA8Shallow_13DNB.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 8 SHALLOW (1,3-DINITROBENZENE)

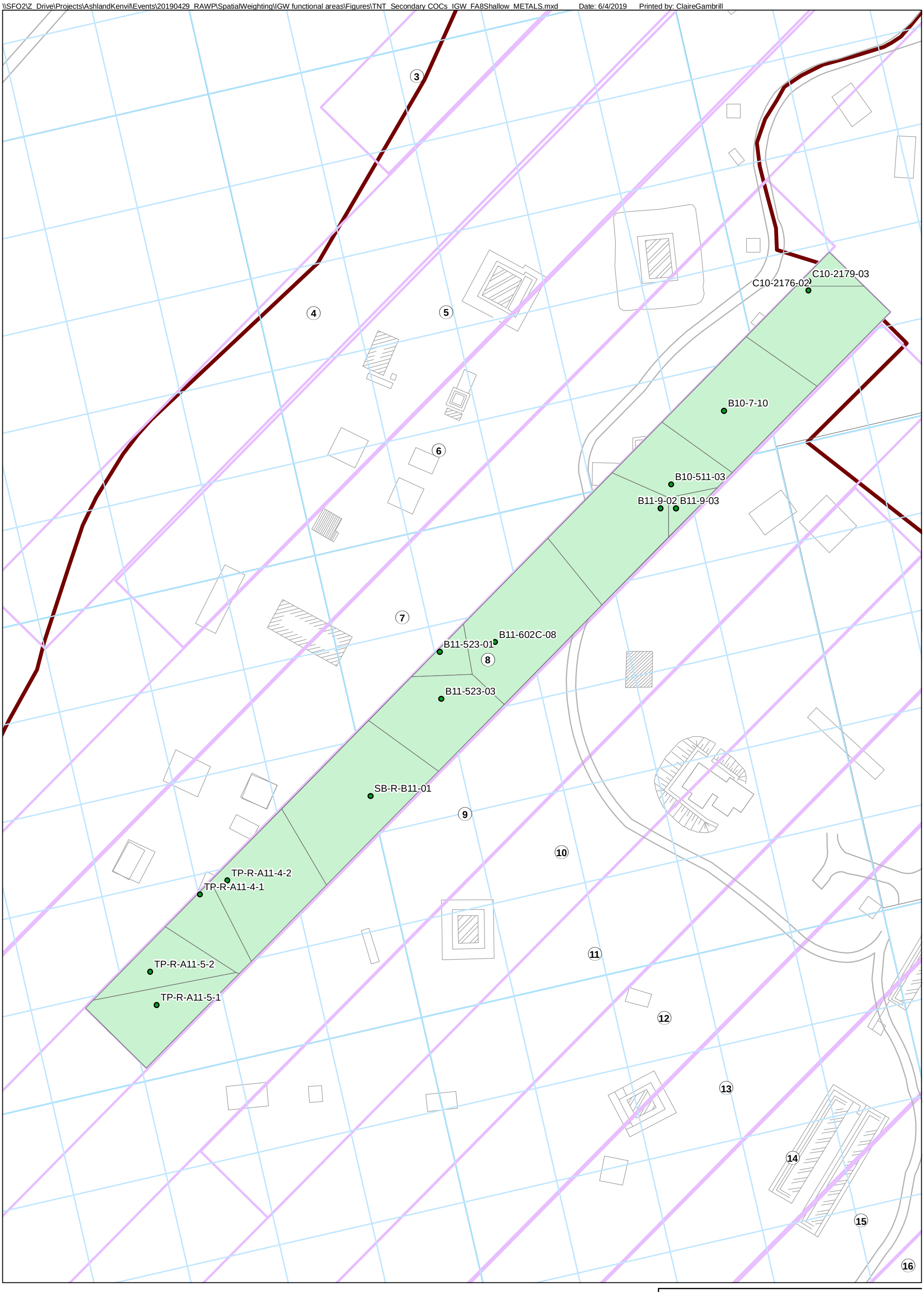
HERCULES

Kennedy Jenks

EXHIBIT

9-13

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA8Shallow_METALS.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 8 SHALLOW (METALS)

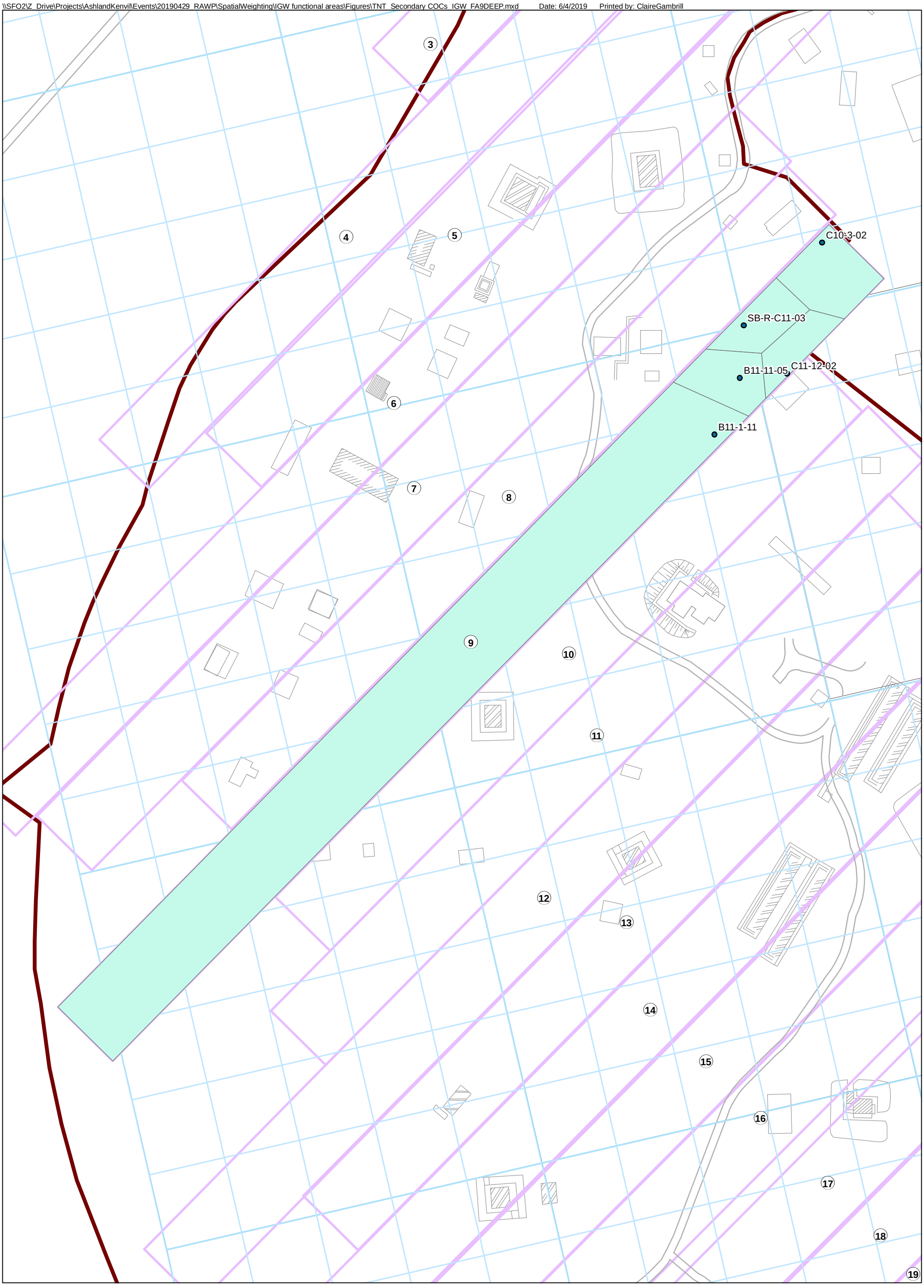
HERCULES

Kennedy Jenks

EXHIBIT

9-14

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA9DEEP.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 9 DEEP

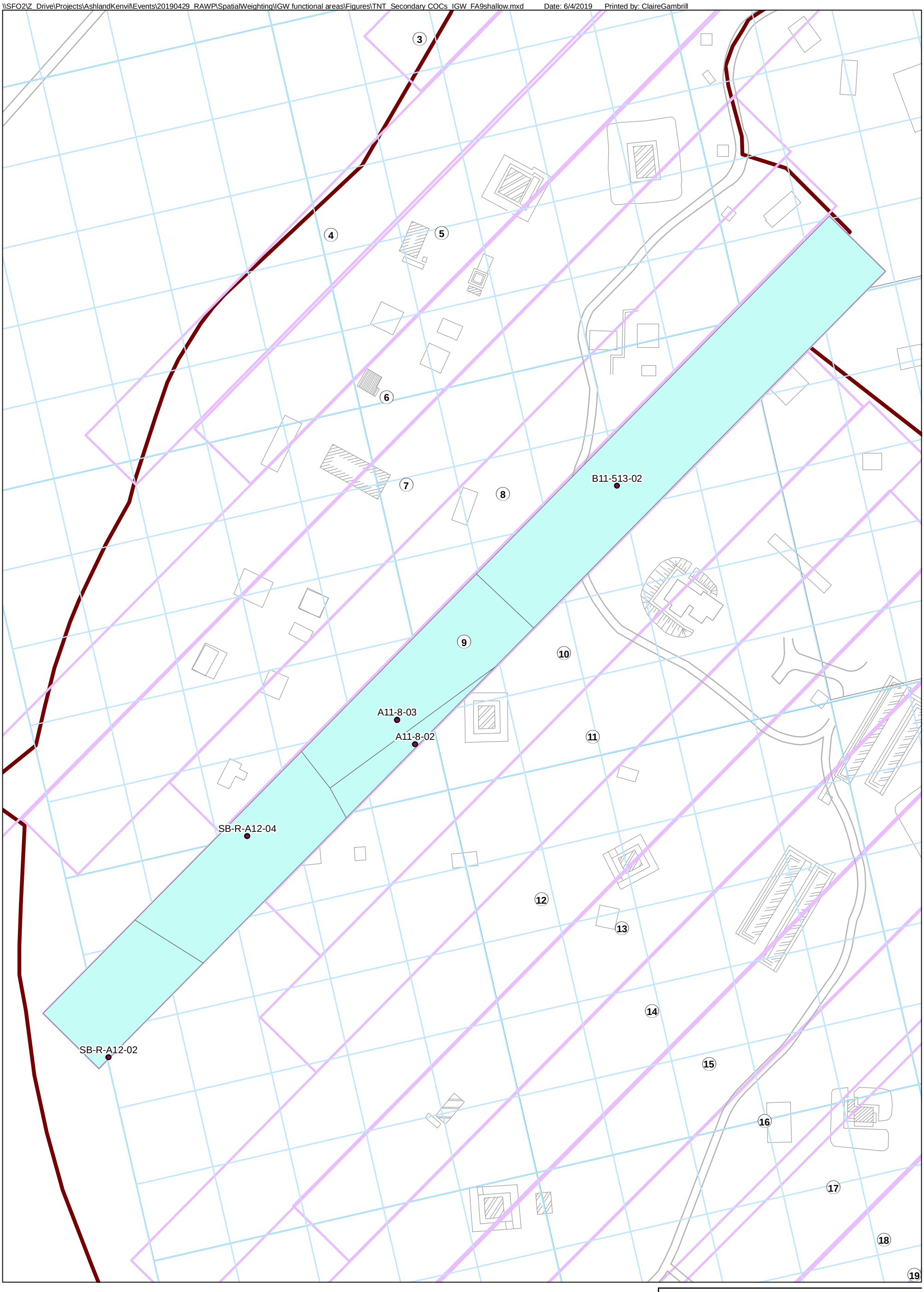
HERCULES

Kennedy Jenks

EXHIBIT

9-15

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA9shallow.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 9 SHALLOW

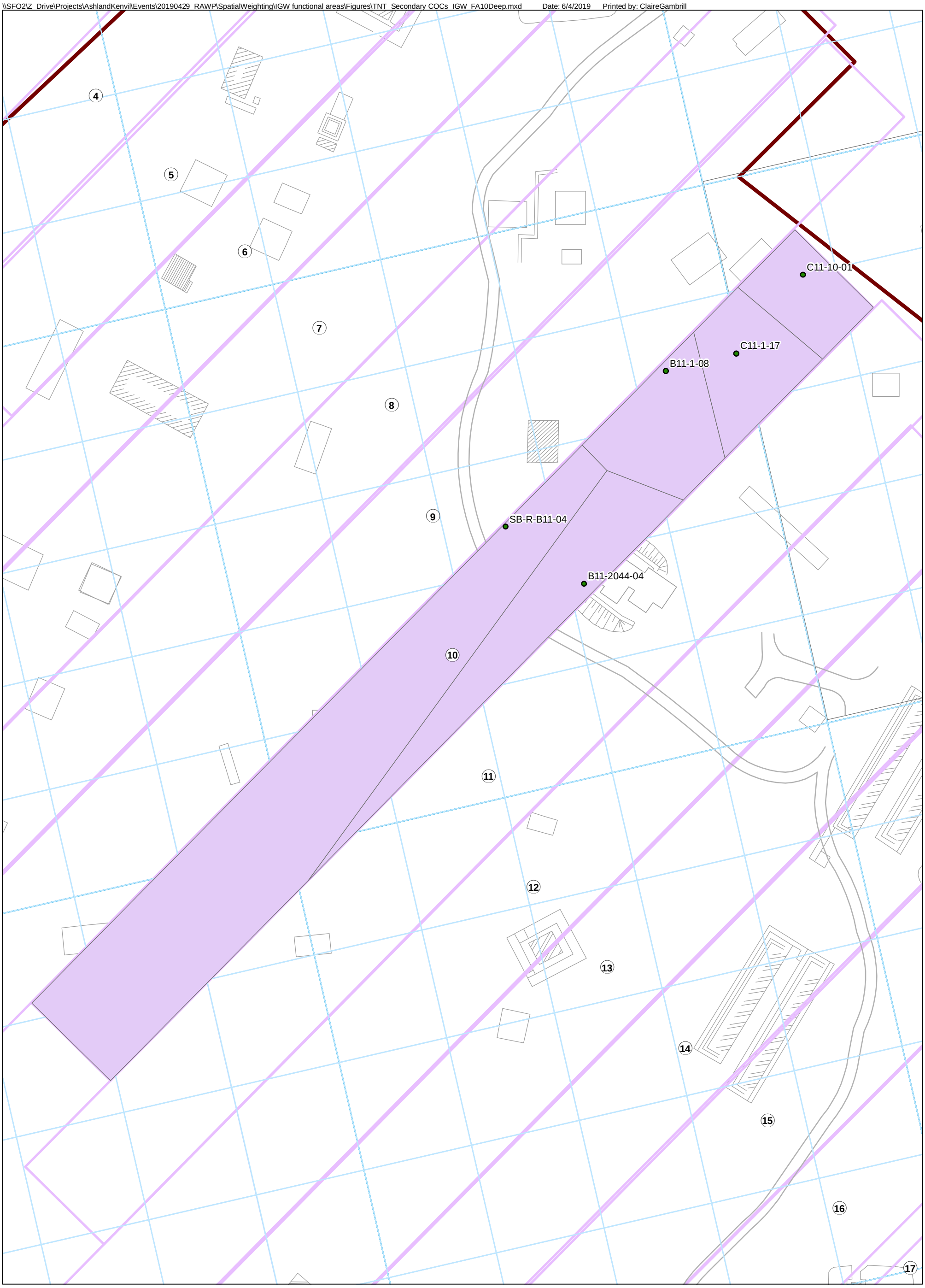
HERCULES

Kennedy Jenks

EXHIBIT

9-16

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA10Deep.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 10 DEEP

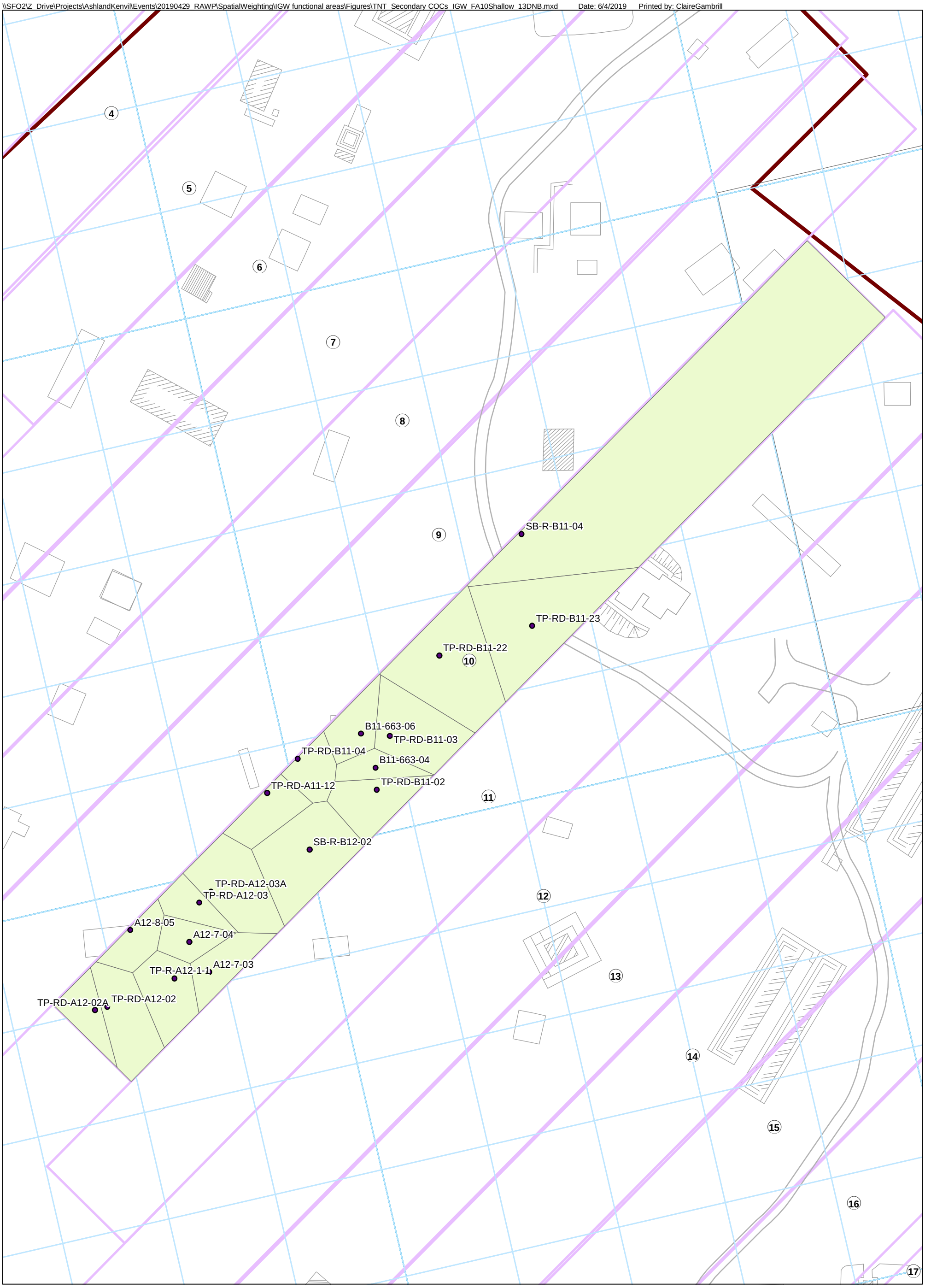
HERCULES

Kennedy Jenks

EXHIBIT

9-17

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA10Shallow_13DNB.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 10 SHALLOW (1,3-DINITROBENZENE)

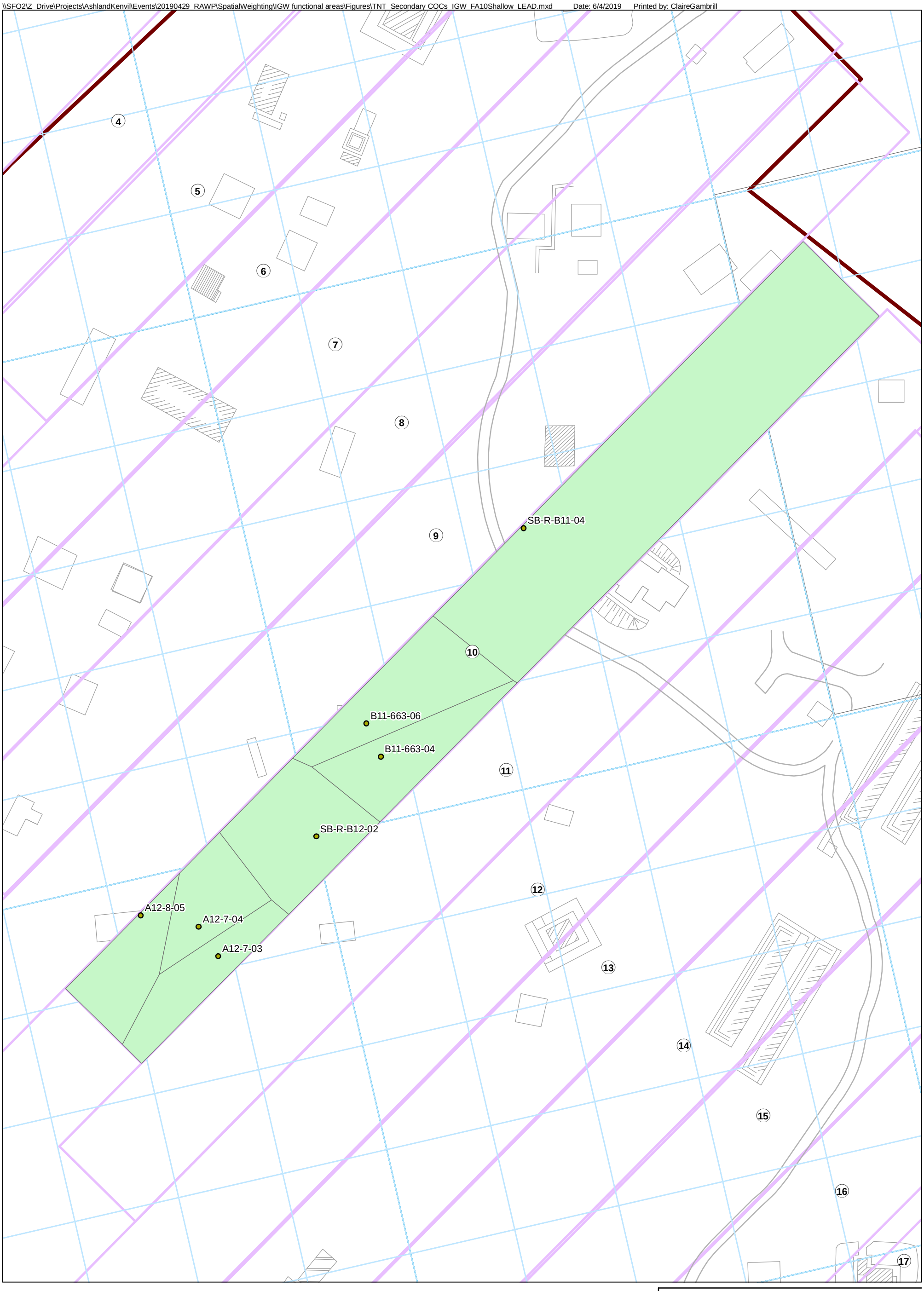
HERCULES

Kennedy Jenks

EXHIBIT

9-18

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA10Shallow_LEAD.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 10 SHALLOW (LEAD)

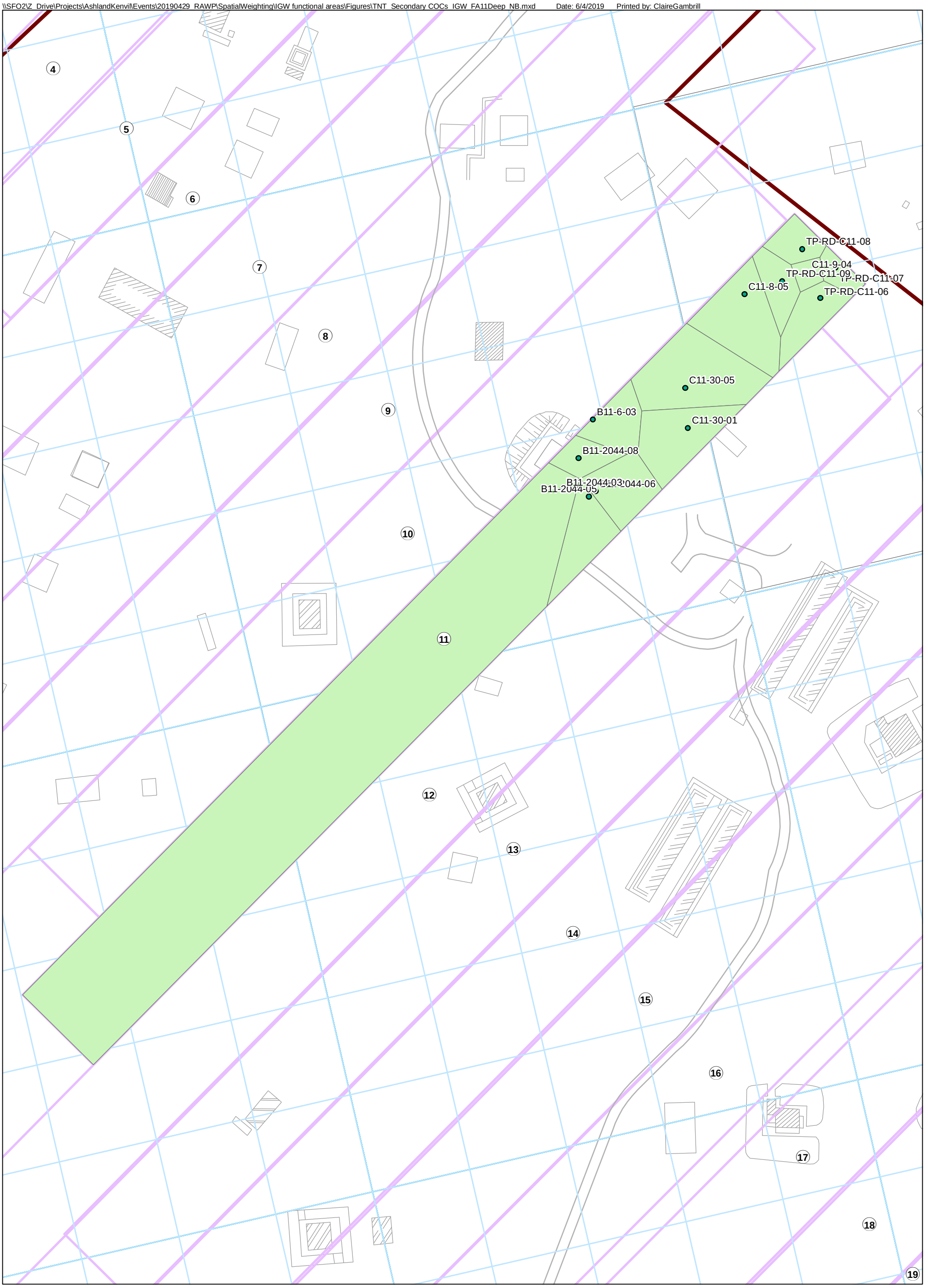
HERCULES

Kennedy Jenks

EXHIBIT

9-19

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA11Deep_NB.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 11 DEEP (NITROBENZENE)

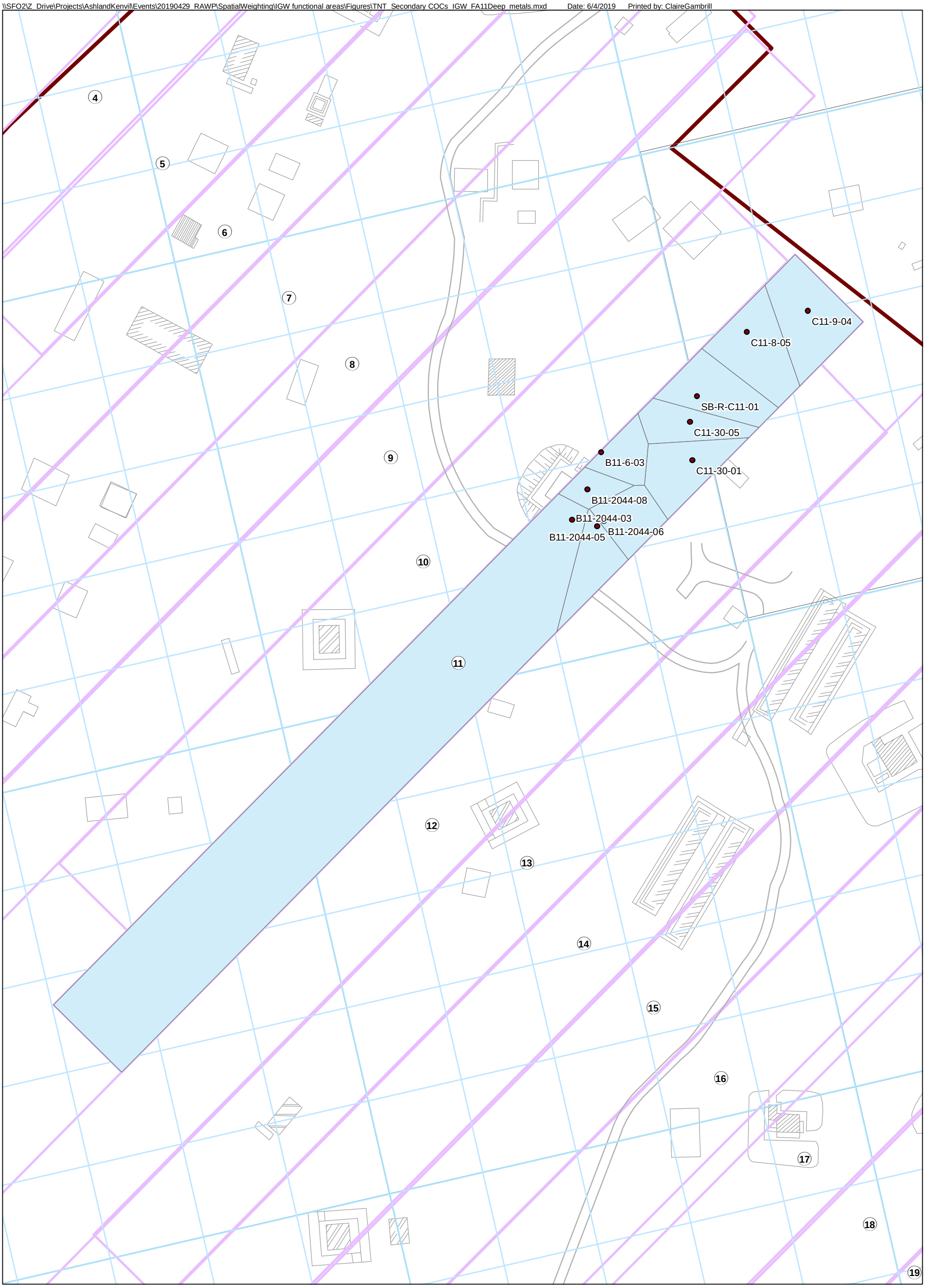
HERCULES

KJ Kennedy Jenks

EXHIBIT

9-20

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA11Deep_metals.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 11 DEEP (METALS)

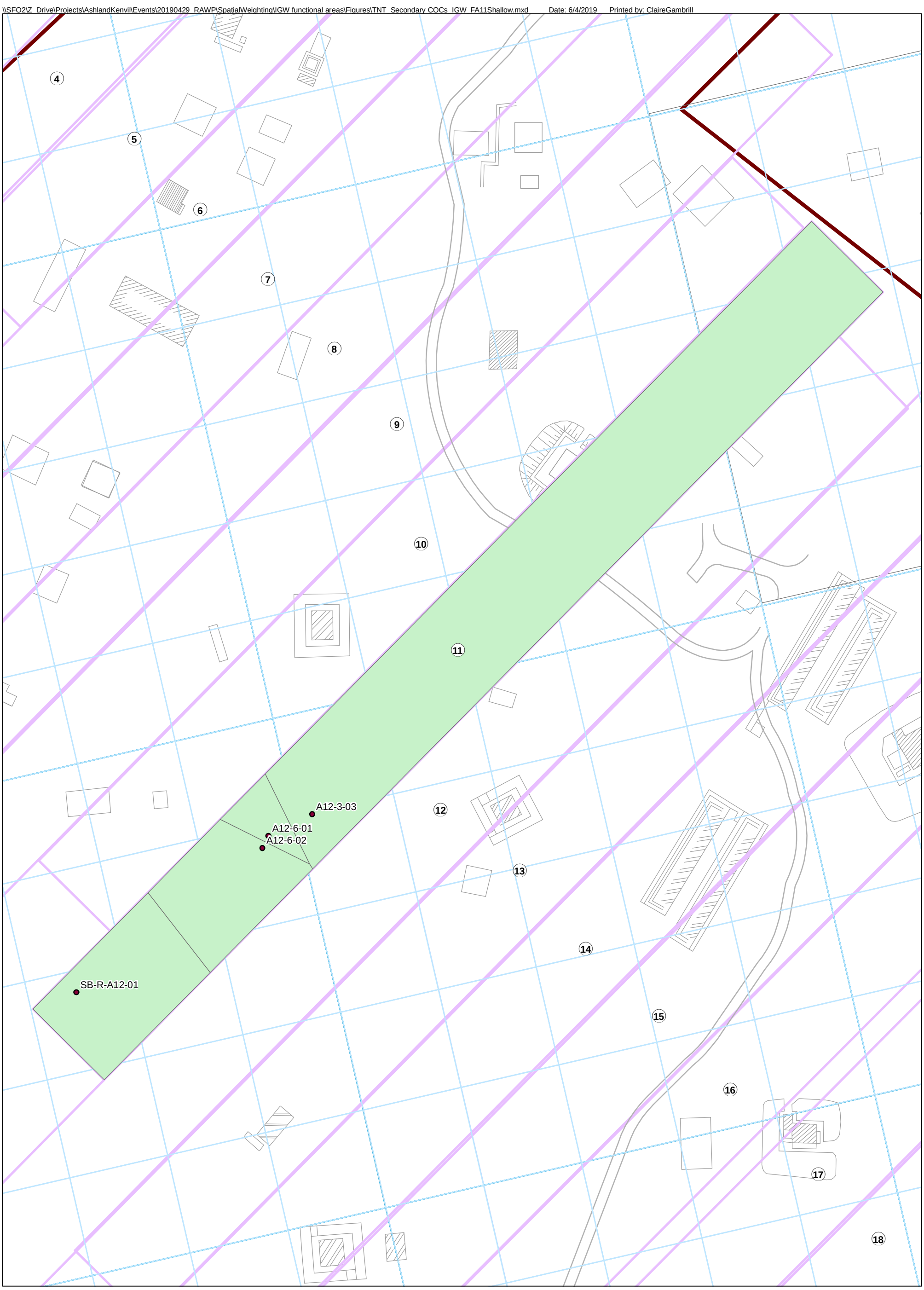
HERCULES

Kennedy Jenks

EXHIBIT

9-21

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA11Shallow.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 11 SHALLOW

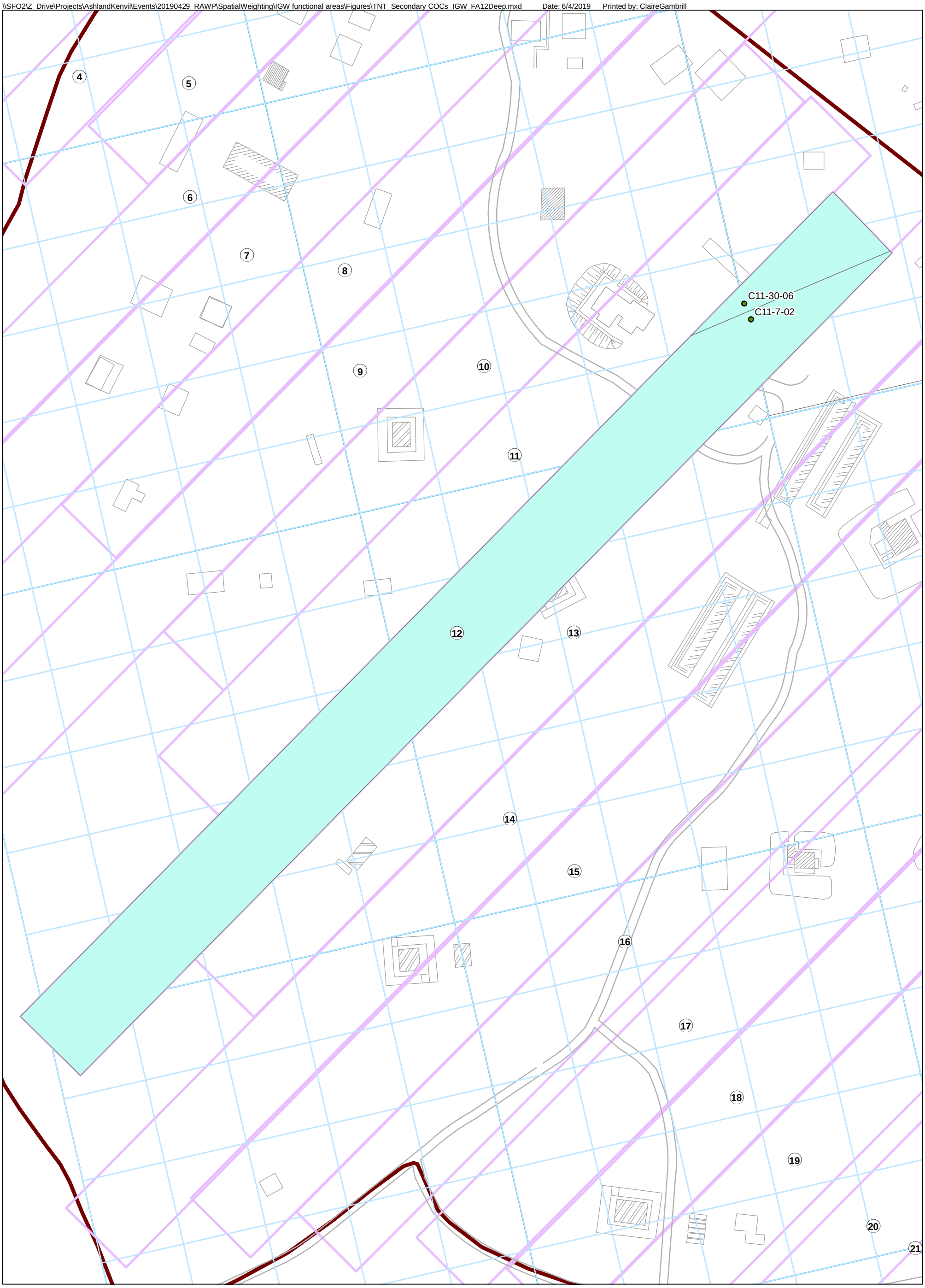
HERCULES

Kennedy Jenks

EXHIBIT

9-22

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA12Deep.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 12 DEEP

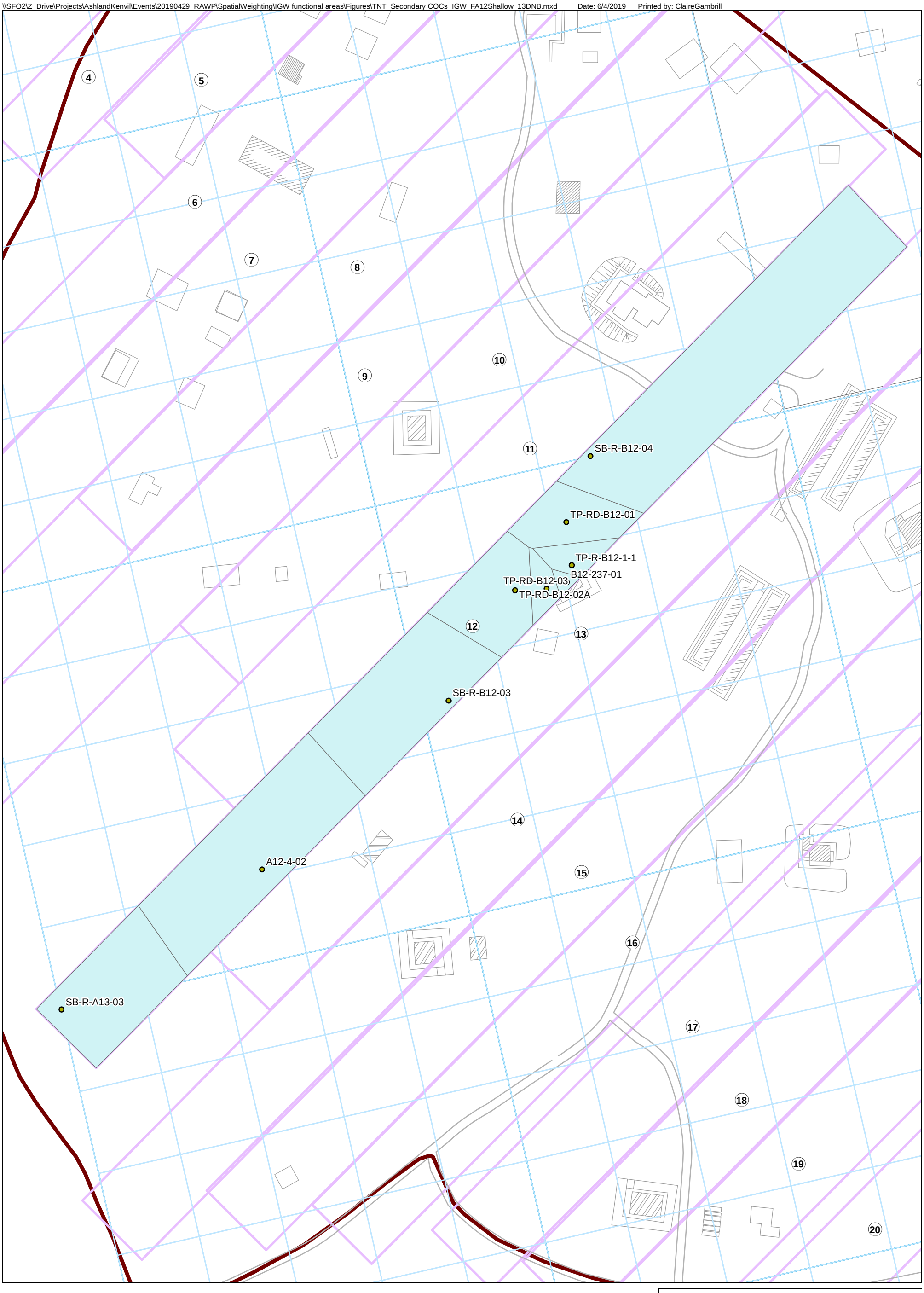
HERCULES

Kennedy Jenks

EXHIBIT

9-23

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA12Shallow_13DNB.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 12 SHALLOW (1,3-DINITROBENZENE)

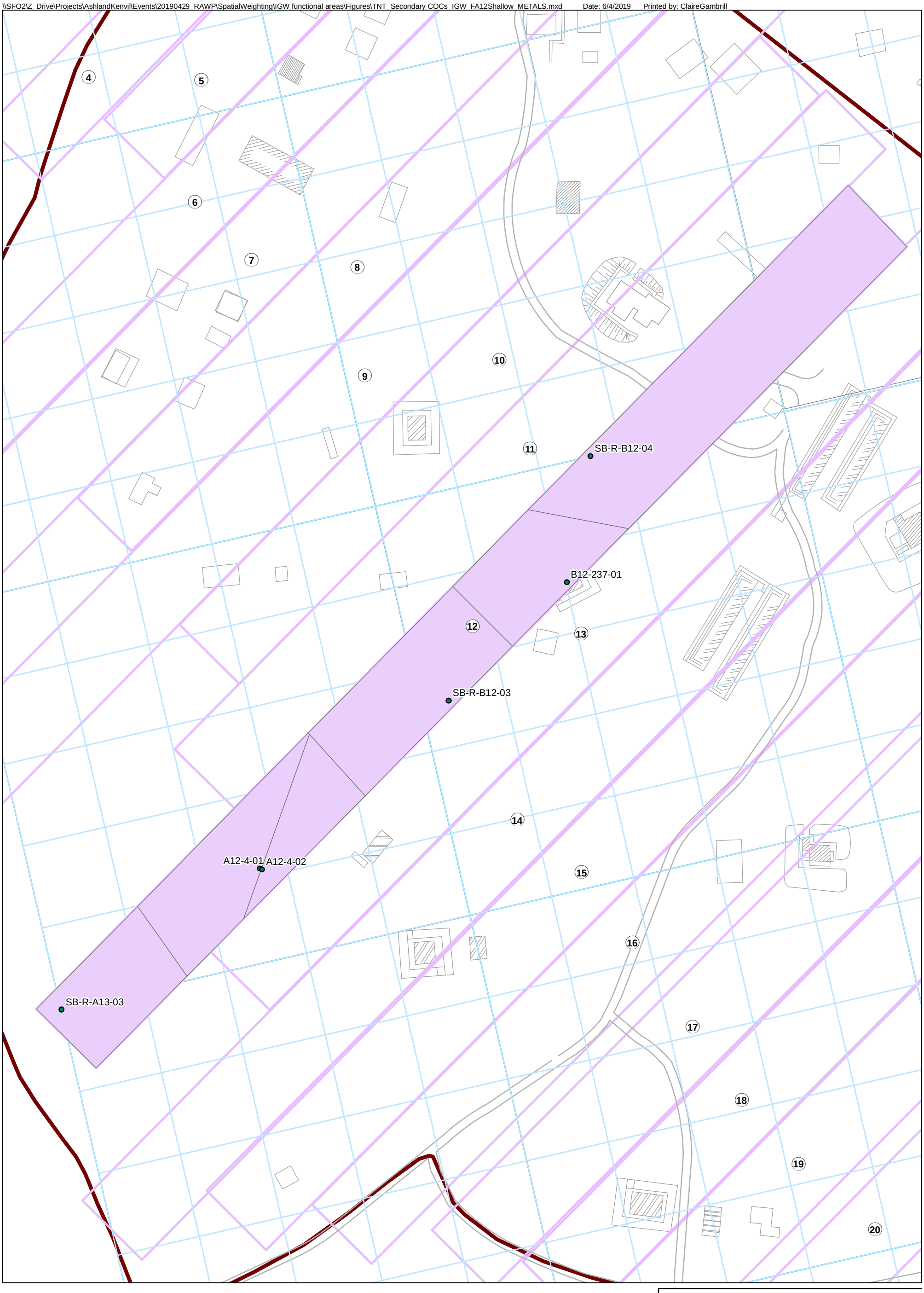
HERCULES

Kennedy Jenks

EXHIBIT

9-24

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA12Shallow_METALS.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 12 SHALLOW (METALS)

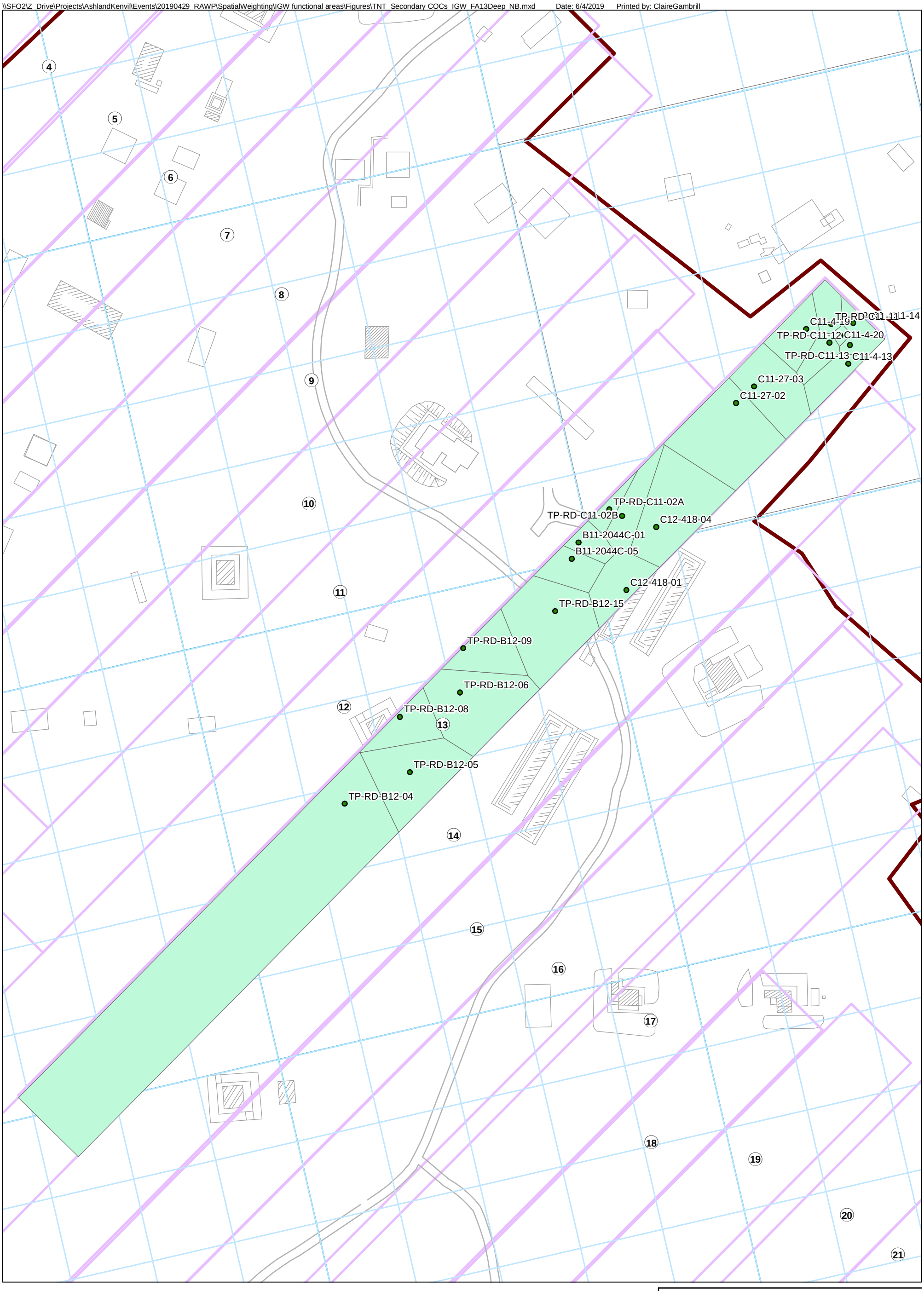
HERCULES

Kennedy Jenks

EXHIBIT

9-25

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA13Deep_NB.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 13 DEEP (NITROBENZENE)

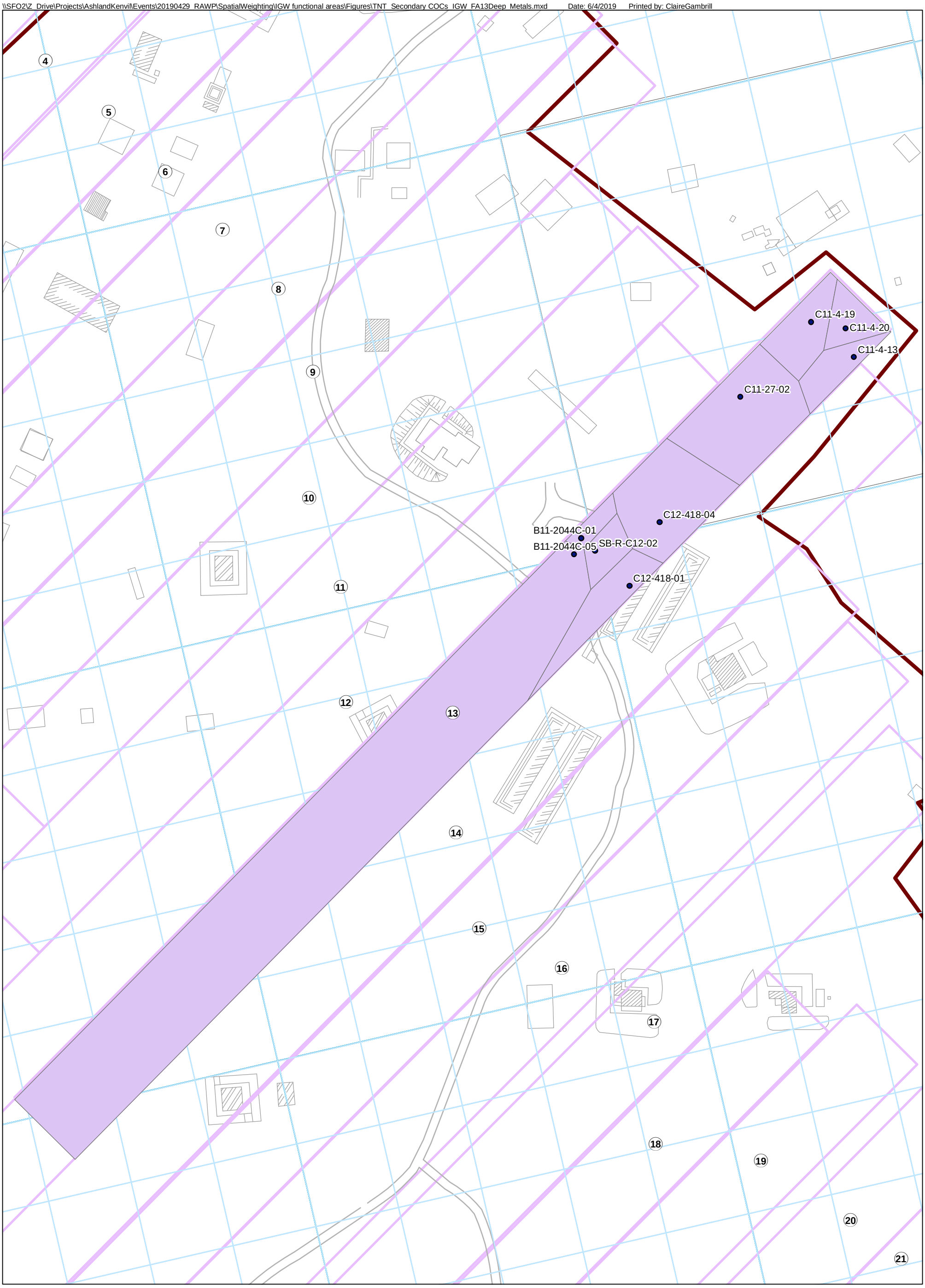
HERCULES

Kennedy Jenks

EXHIBIT

9-26

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA13Deep_Metals.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 13 DEEP (METALS)

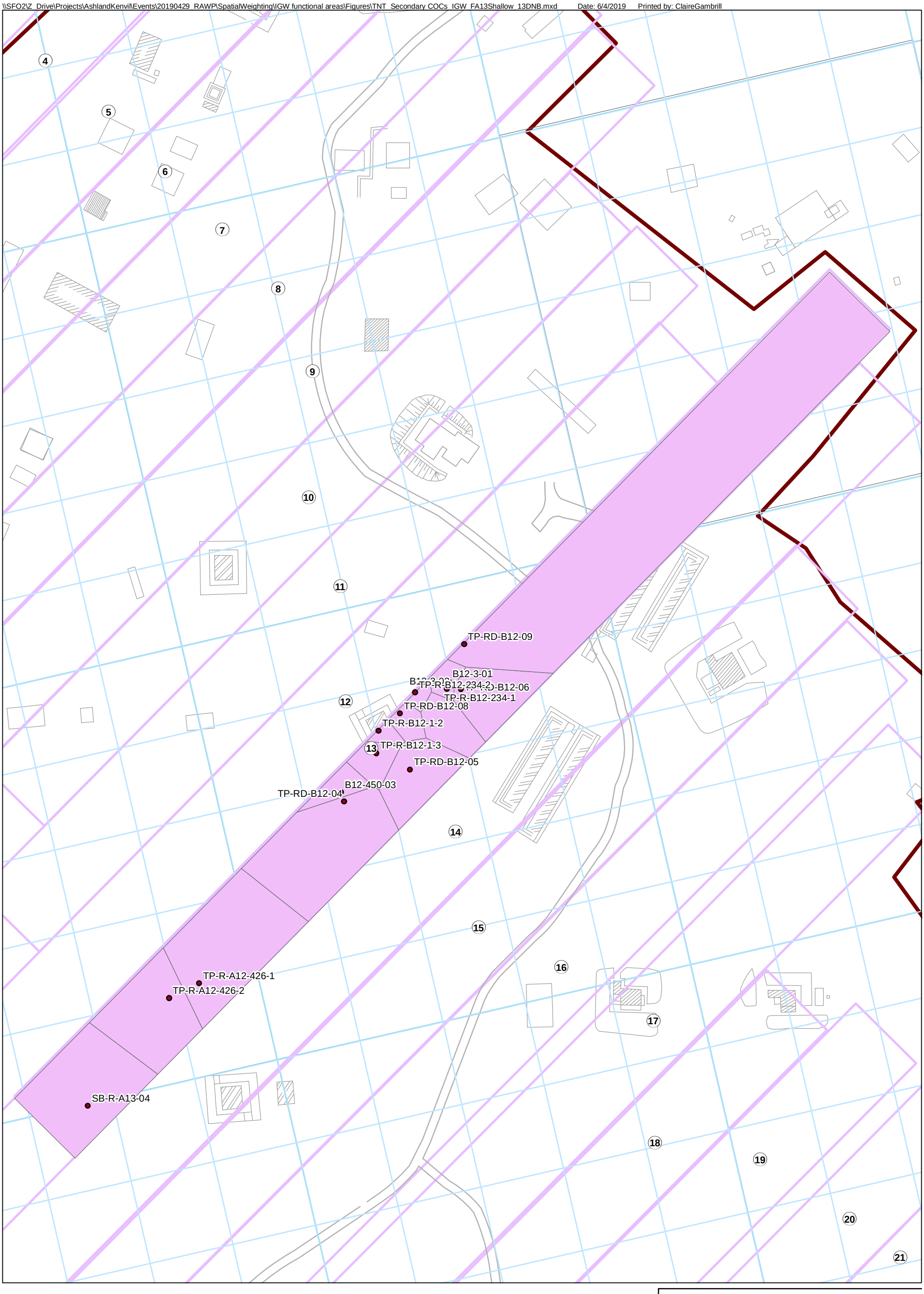
HERCULES

Kennedy Jenks

EXHIBIT

9-27

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA13Shallow_13DNB.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 13 SHALLOW (1,3-DINITROBENZENE)

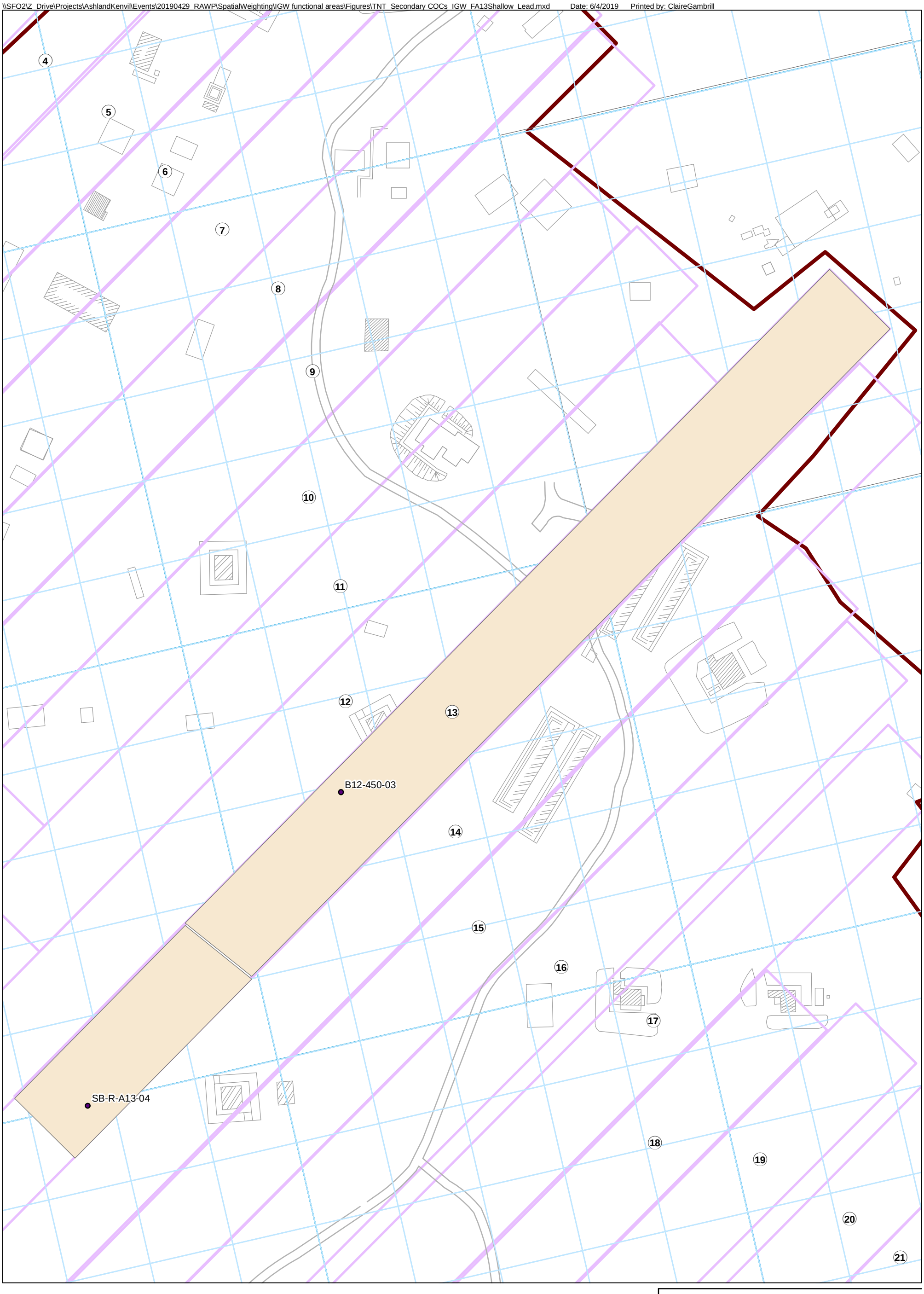
HERCULES

Kennedy Jenks

EXHIBIT

9-28

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA13Shallow_Lead.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 13 SHALLOW (LEAD)

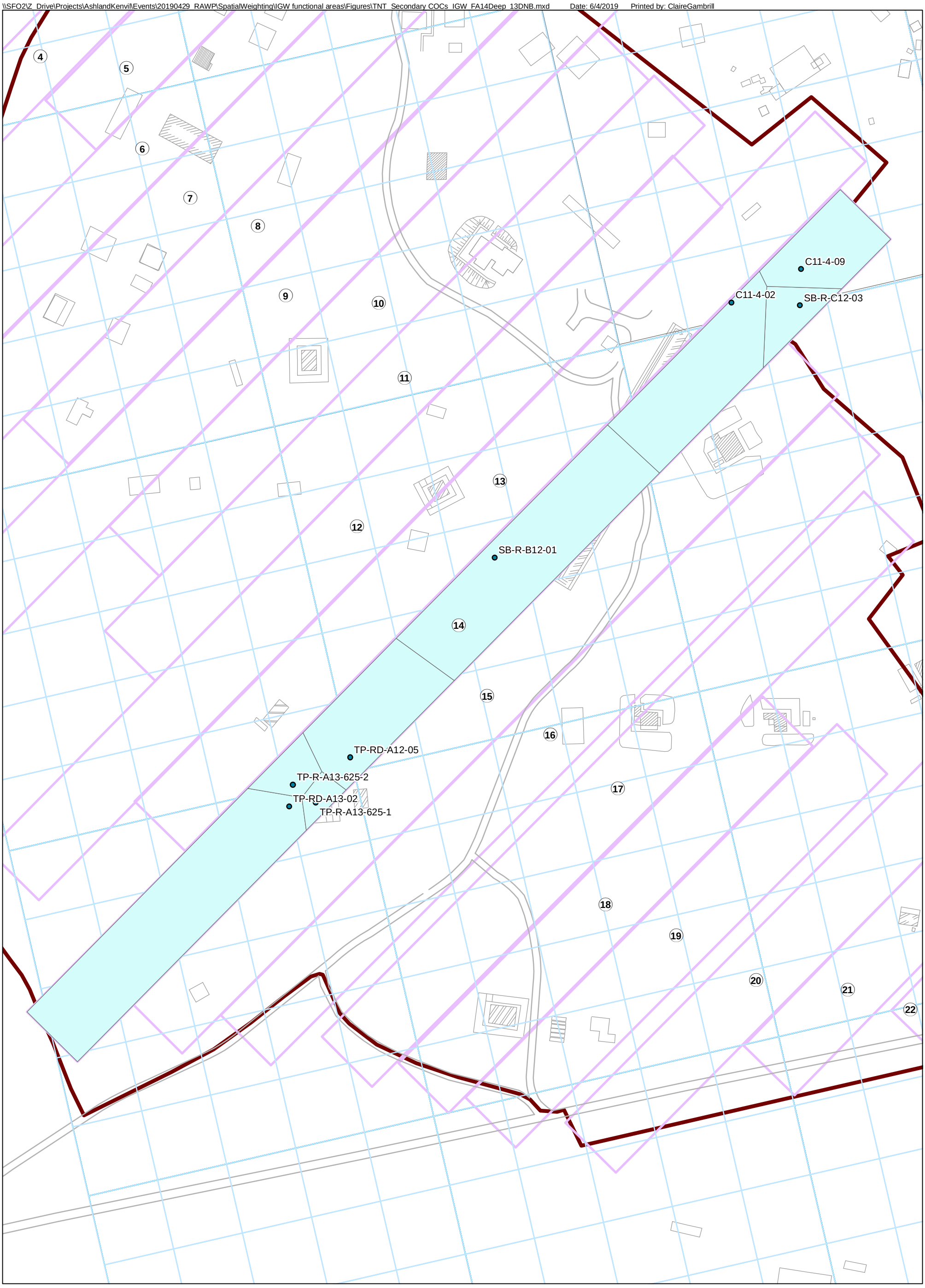
HERCULES

Kennedy Jenks

EXHIBIT

9-29

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA14Deep_13DNB.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 14 DEEP (1,3-DINITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-30

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA14Deep_metals.mxd Date: 6/4/2019 Printed by: ClaireGambrill

C11-4A-01
C11-4A-02
C11-4B-01
C11-4-09
SB-R-C12-03
SB-R-B12-01

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 14 DEEP (METALS)

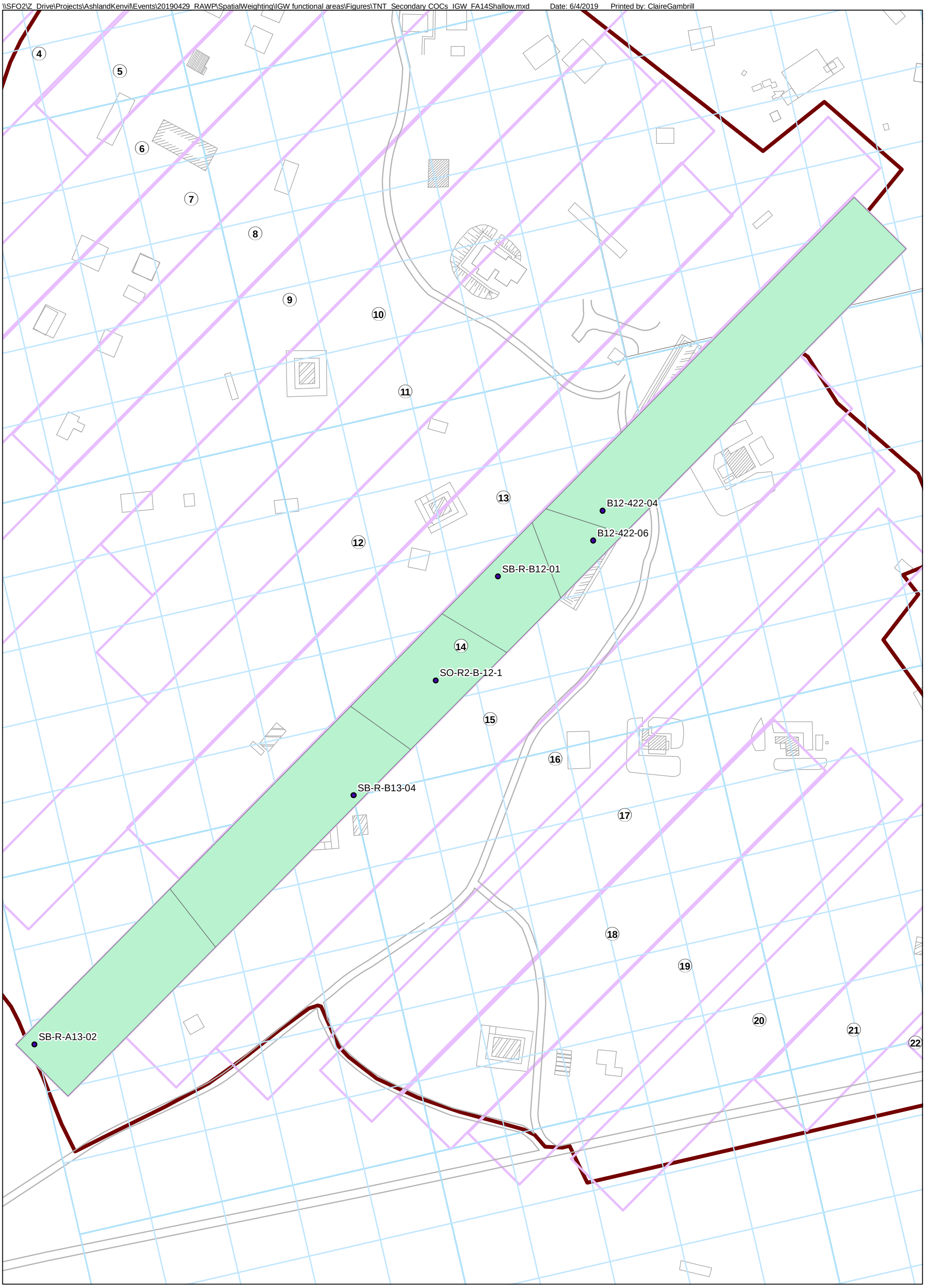
HERCULES

Kennedy Jenks

EXHIBIT

9-31

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA14Shallow.mxd Date: 6/4/2019 Printed by: ClaireGambrill



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 14 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-32

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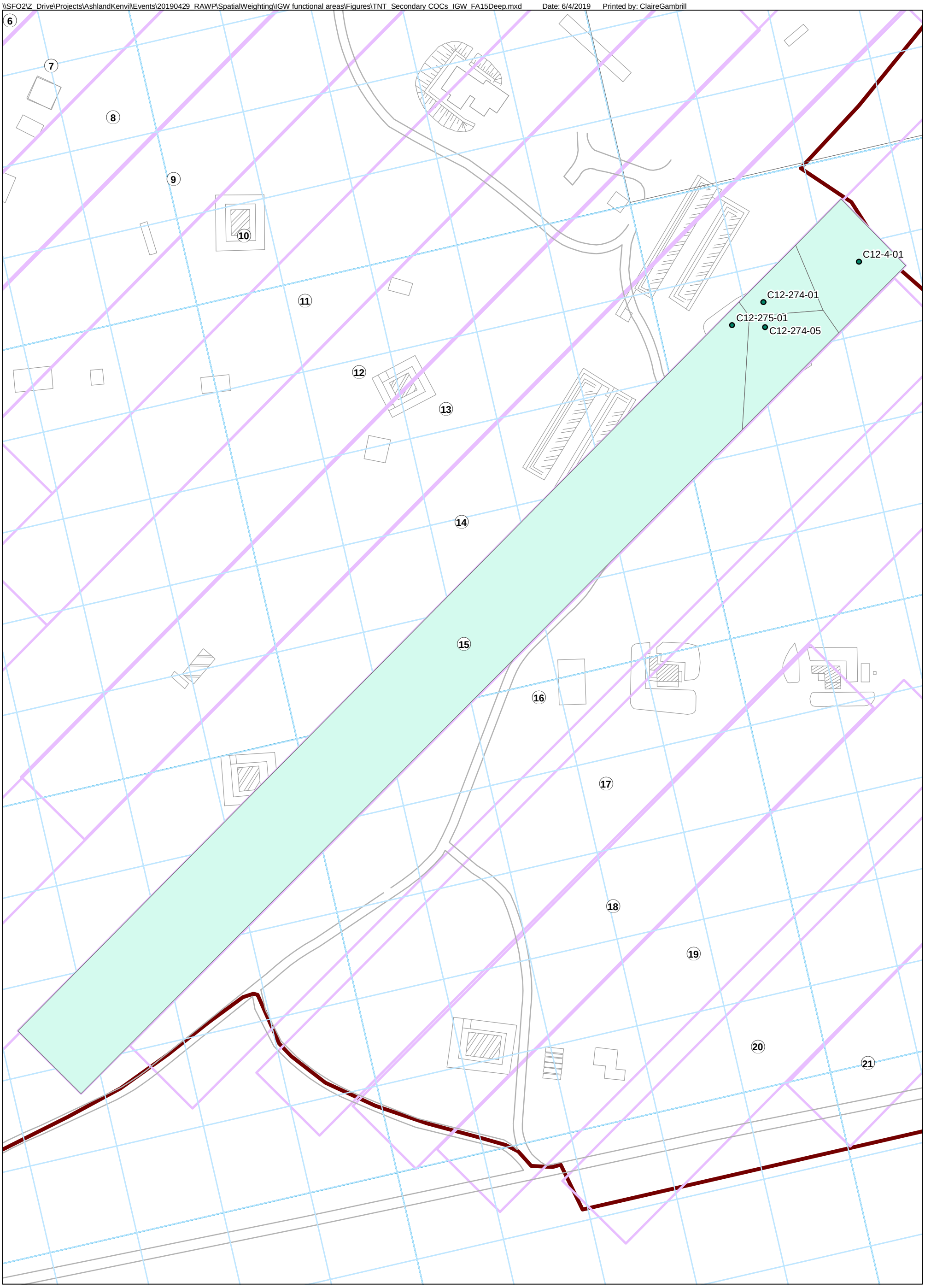

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 15 DEEP

HERCULES

Kennedy Jenks

EXHIBIT

9-33

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA15Shallow_13DNB.mxd Date: 6/4/2019 Printed by: ClaireGambrill

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C12-275-02
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TP-RD-B12-10
TP-R-A13-625-6
TP-RD-B13-10
TP-RD-B13-01
SB-B13-1-01
B13-8-04
B13-8-05
TP-RD-B13-02
TP-R-A13-625-4
TP-RD-A13-01A
TP-RD-A13-04
TP-RD-A13-03
A13-1-01
TP-RD-A13-05
SB-R-A13-01
A13-753-01

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 15 SHALLOW (1,3-DINITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-34

\\SFO2\Z_Drive\Projects\AshlandKenvil\Events\20190429_RAWP\SpatialWeighting\IGW functional areas\Figures\TNT_Secondary COCs_IGW_FA15Shallow_Lead.mxd Date: 6/4/2019 Printed by: ClaireGambrill

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C12-275-02
SB-R-C12-01
SD-B13-1-01
B13-8-04
B13-8-05
A13-1-01
SB-R-A13-01
A13-753-01

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 15 SHALLOW (LEAD)

HERCULES

Kennedy Jenks

EXHIBIT

9-35

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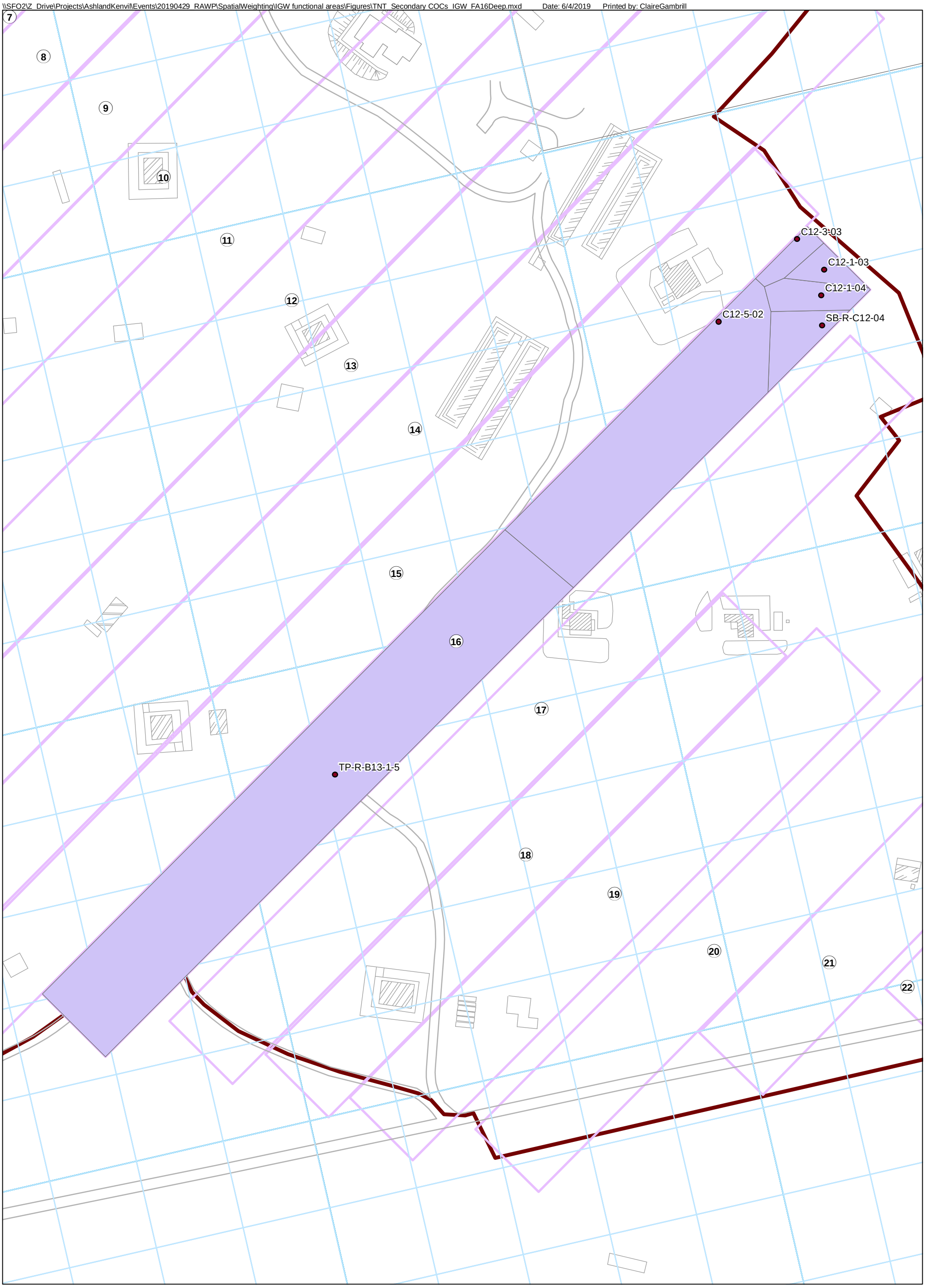

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 16 DEEP

HERCULES

Kennedy Jenks

EXHIBIT

9-36

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7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

SO-R2-C-12-1
B13-7-06
SB-R-B13-03
B13-7-01
SD-B13-3-01
TP-R-B13-1-4
TP-R-B13-1-1
TP-R-B13-1-3
TP-R-B13-1-2
TP-R-B13-2-2
SB-R-B13-02

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 16 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-37

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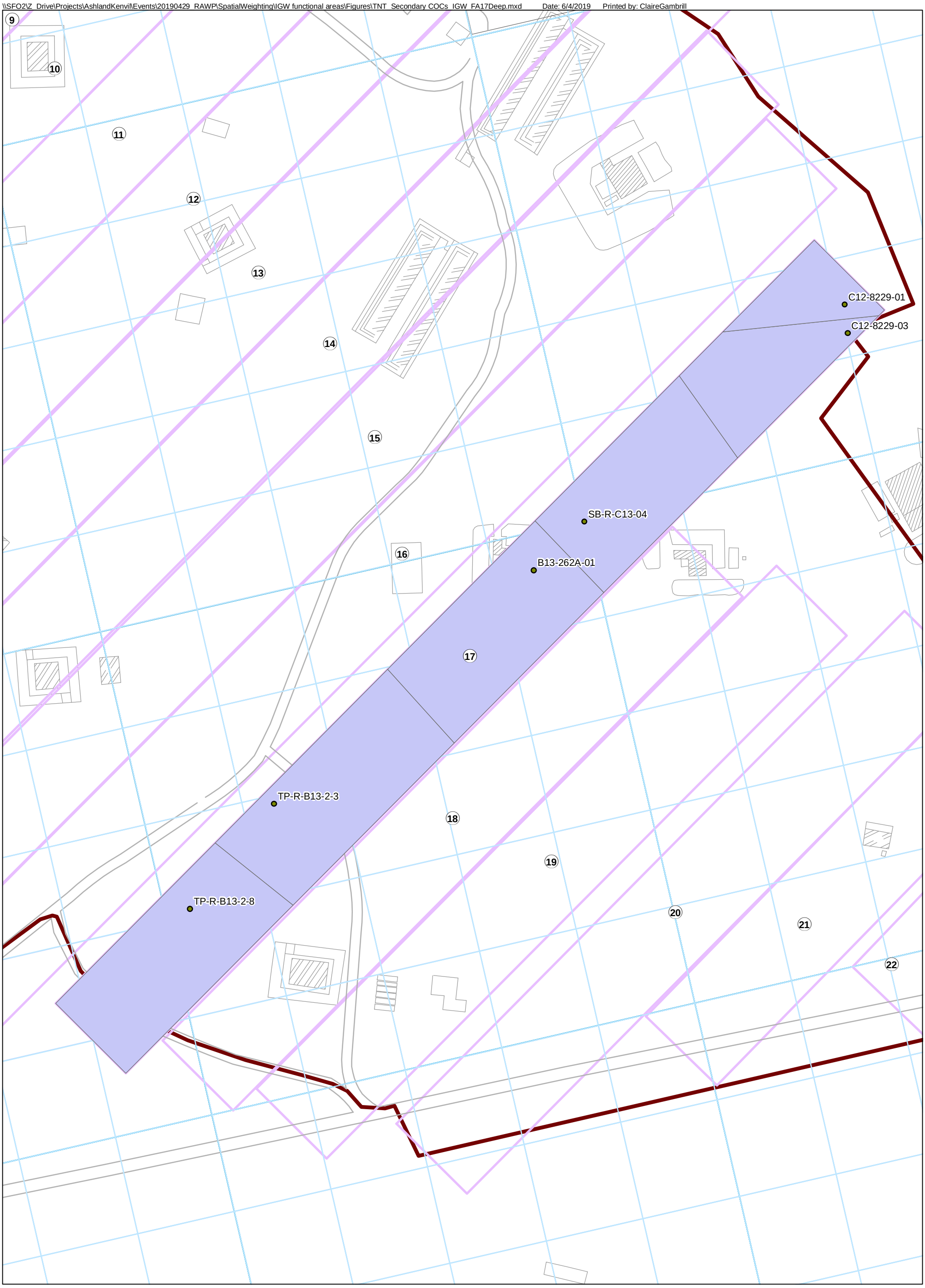

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 17 DEEP

HERCULES

Kennedy Jenks

EXHIBIT

9-38

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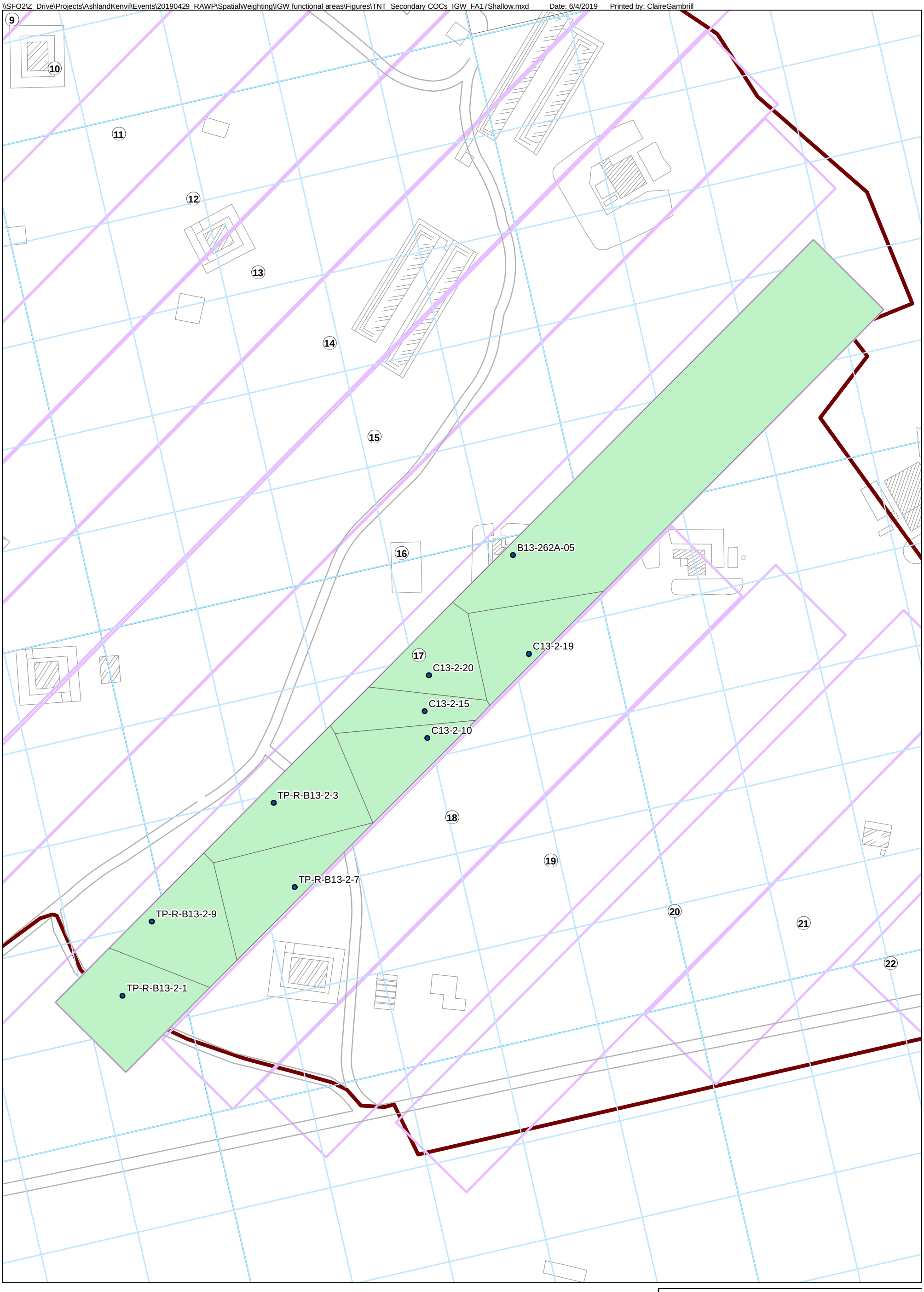

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 17 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-39

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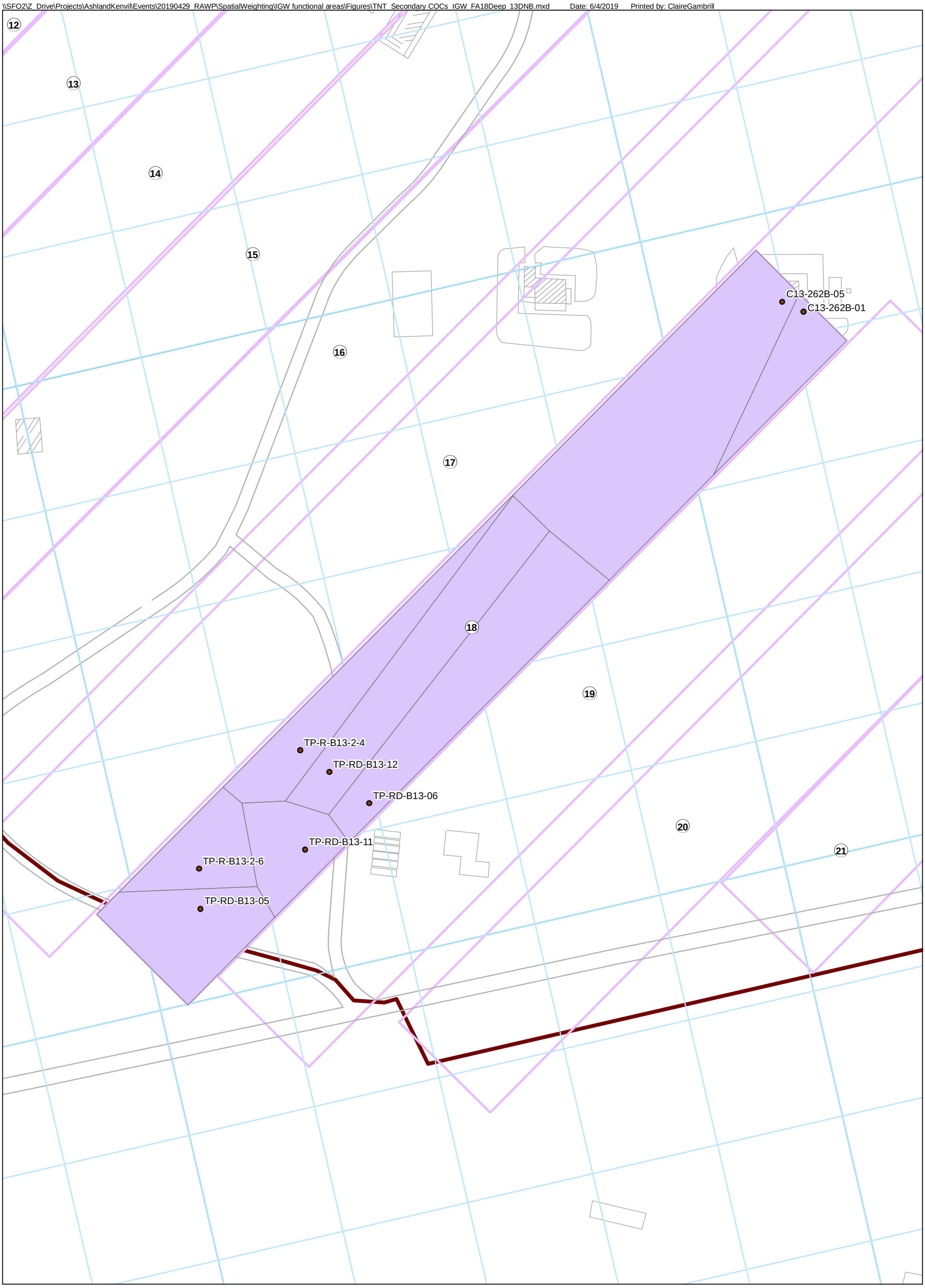

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 18 DEEP (1,3-DINITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-40

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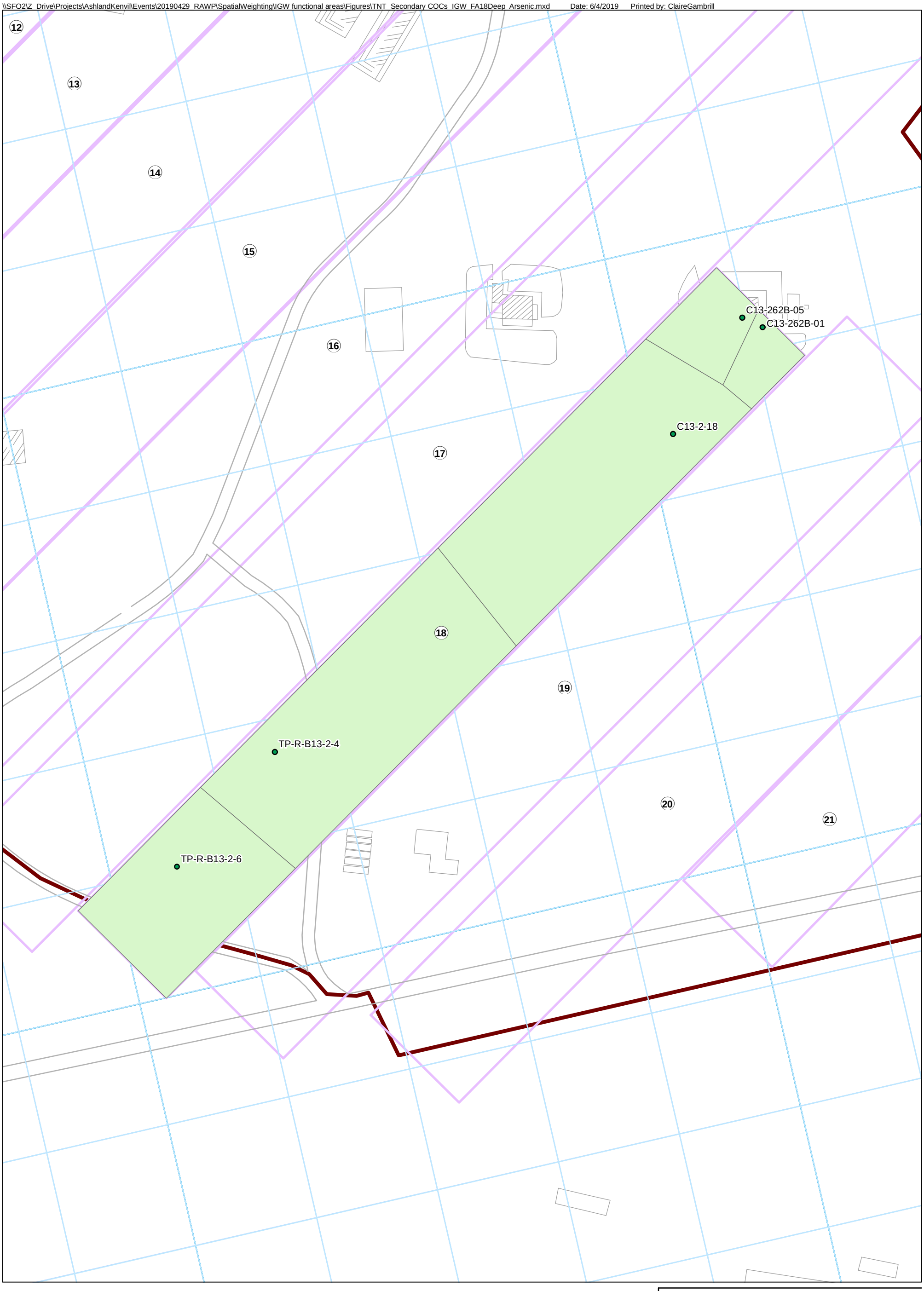

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 18 DEEP (ARSENIC)

HERCULES

Kennedy Jenks

EXHIBIT

9-41

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12
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SB-R-B13-01
TP-R-B13-2-4
TP-RD-B13-12
TP-RD-B13-06
B13-757-04
TP-RD-B13-11
TP-RD-B13-05

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 18 SHALLOW (1,3-DINITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-42

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C13-2-14
C13-2-09
C13-2-05
C13-2-04
SB-R-B13-01
TP-R-B13-2-4
B13-757-04

Legend

IGW Functional Areas

Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

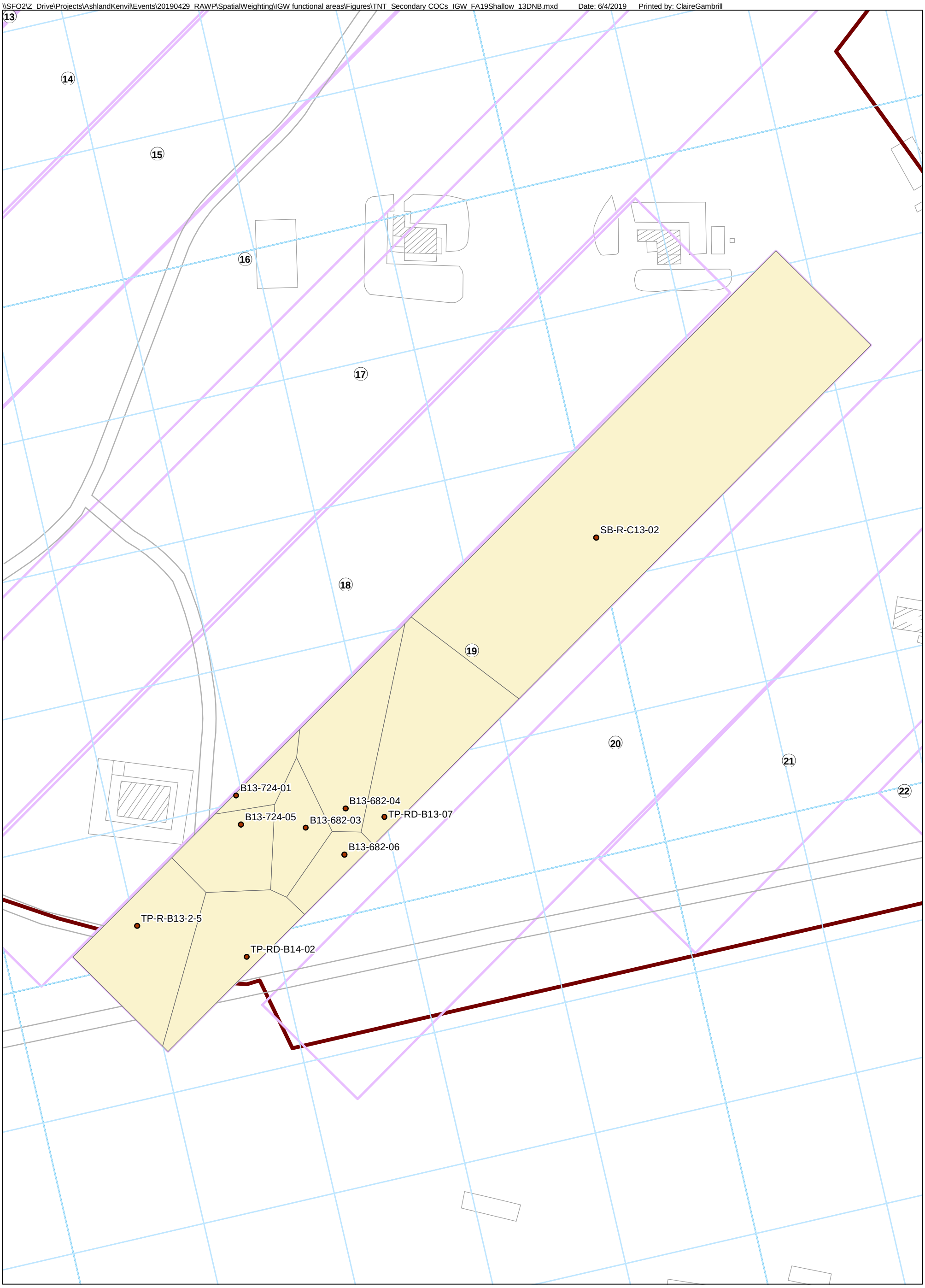
IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 18 SHALLOW (LEAD)

HERCULES

Kennedy Jenks

EXHIBIT

9-43



Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 19 SHALLOW (1,3-DINITROBENZENE)

HERCULES

Kennedy Jenks

EXHIBIT

9-44

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C13-2-17
C13-2-13
C13-2-08
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B13-724-05
B13-682-03
B13-682-06
TP-R-B13-2-5

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 19 SHALLOW (MERCURY)

HERCULES

KJ Kennedy Jenks

EXHIBIT

9-45

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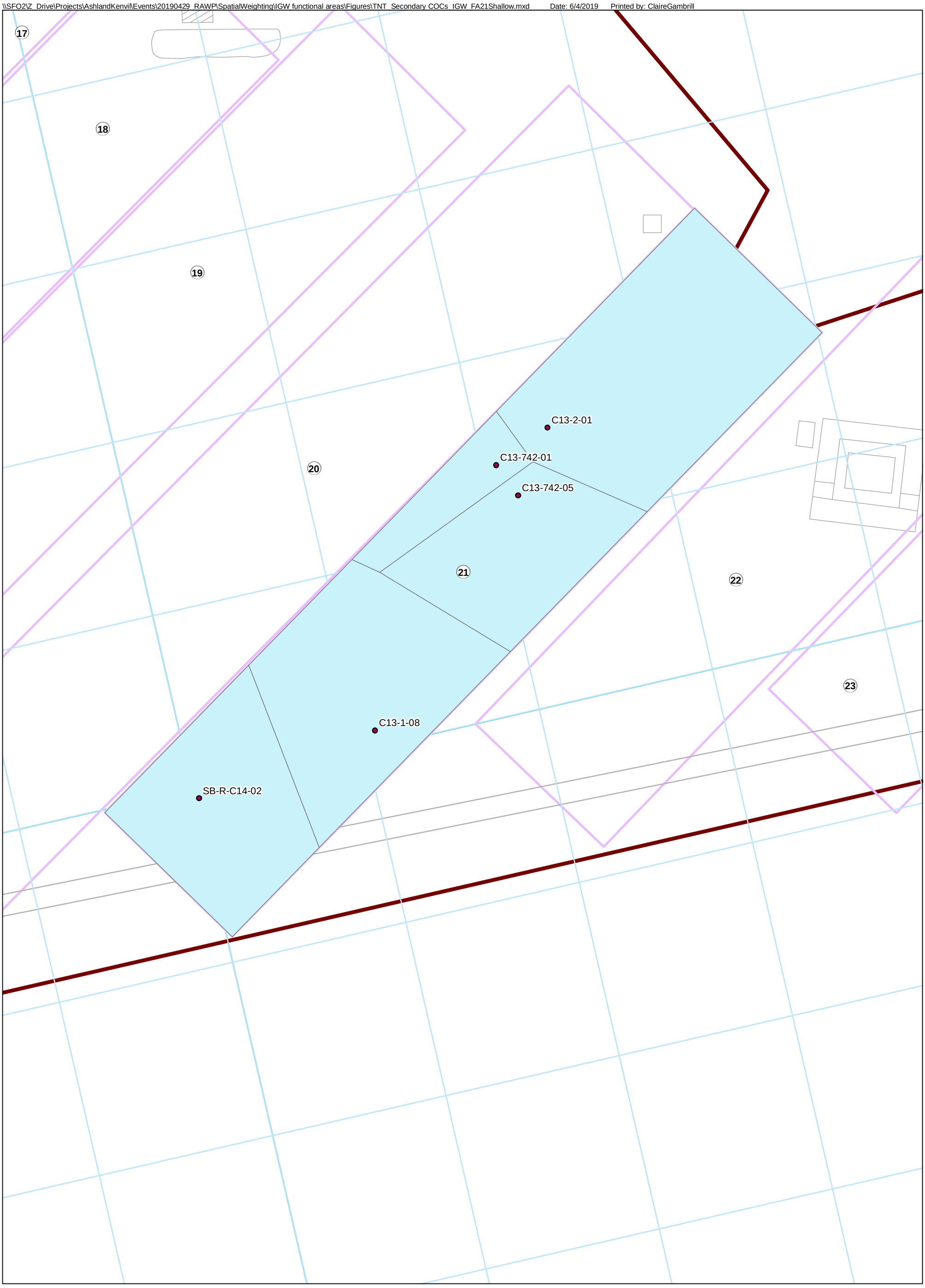

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 21 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-46

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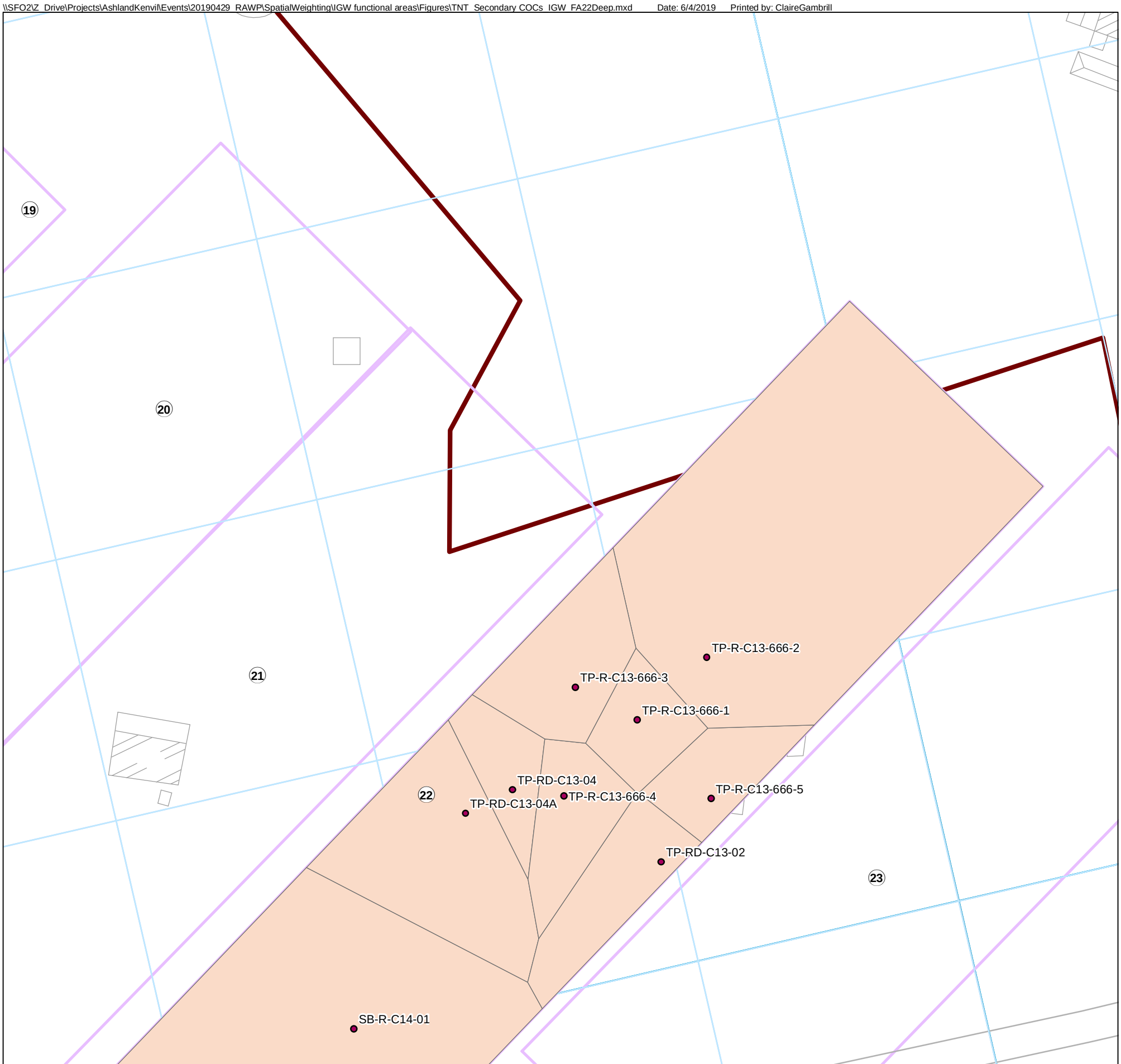

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 22 DEEP

HERCULES

Kennedy Jenks

EXHIBIT

9-47

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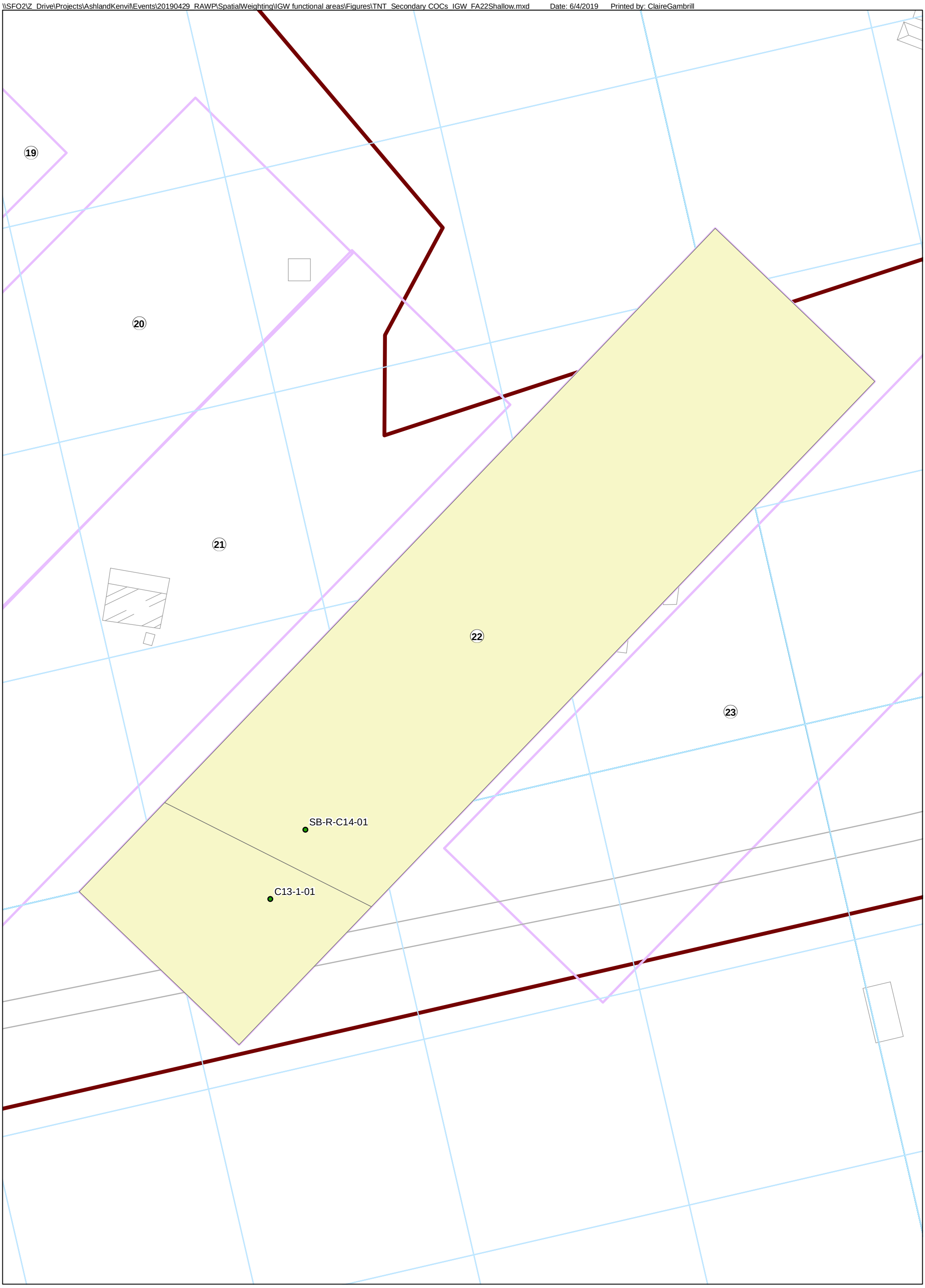

Legend

- IGW Functional Areas
- Project Area Boundary

N

0 50 100

Scale: Feet

HERCULES LLC
FORMER KENVIL WORKS FACILITY
KENVIL, NJ

TNT PROJECT AREA SOIL SECONDARY CONSTITUENTS OF CONCERN

IMPACT TO GROUNDWATER SPATIAL WEIGHTING FUNCTIONAL AREA 22 SHALLOW

HERCULES

Kennedy Jenks

EXHIBIT

9-48

Appendix D

TNT Bioremediation Process Confirmation Sampling Plan

Kennedy Jenks

214 Carnegie Center – Suite 103
Princeton, New Jersey 08540
609-285-2620

TNT Project Area Soil Remediation – Process Confirmation Sampling Plan

August 2020

Prepared for

HERCULES

Ashland Hercules Research Center
500 Hercules Road
Wilmington, Delaware

KJ Project No. 1540001*57

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Section 1: Introduction

On behalf of Hercules LLC (Hercules), Kennedy/Jenks Consultants Inc. (KJ) has prepared this *TNT Soil Remediation Process Confirmation Sampling Plan* (PCSP) outlining the approach, objectives and scope of process confirmation sampling of soil undergoing bioremediation as part of the TNT soil remedy at Hercules' Kenvil Works Facility, located in Kenvil, Morris County, New Jersey (the Facility). This PCSP supports the *TNT Project Area Soil Remedial Action Work Plan* (TNT RAWP).

The TNT RAWP proposes to treat soil in biocells (i.e., engineered treatment cells) for approximately 10 to 12 months before using treated material as backfill in the source excavation areas, where target constituents will undergo additional biological degradation in-situ. Consistent with the TNT RAWP, target constituents include 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene (2,4-DNT), 2,6-dinitrotoluene (2,6-DNT), 2-amino-4,6-dinitrotoluene (2-ADNT), and 4-amino-2,6-dinitrotoluene (4-ADNT).

This PCSP provides a sampling program to document the continued decrease in target constituent concentrations in soil undergoing treatment in the biocells, and characterize processed (oversize) and treated (fines) material to facilitate use as backfill in TNT Project Area excavations. Specifically, the PCSP sampling program outlined herein:

- Establishes sampling goals and success criteria
- Outlines a sampling plan to characterize material being treated in biocells and oversize material washed and segregated by the soil processing plant
- Presents a monitoring, milestone, and reporting schedule

Monitoring related to soil processing plant optimization and long-term monitoring of treated soil backfilled in excavation areas is beyond the scope of this document and will be addressed in separate monitoring plans.

Section 2: Overview & Approach

2.1 Treatment Process Overview

The TNT bioremediation pilot study and preliminary soil process plant design defined the soil preparation process, biofeed moisture content, DARAMEND OE® dosing and dose frequency, and seasonal timing, that created the proper soil temperature, pH, and redox potential conditions to promote efficient biodegradation of target constituents. Under these conditions, pilot study data indicated that target constituents degraded to below the New Jersey Department of Environmental Protection's (NJDEP's) non-residential direct contact soil remediation standards (NRDCSRS) in 9 to 12 weeks. These degradation rates provide a basis for the remedy proposed in the TNT RAWP and the sampling approach outlined in this PCSP. **Attachments 3** and **6** to the TNT RAWP present the *TNT Bioremediation Pilot Study Report* and *TNT Soil Bioremediation Project Preliminary Design Drawings*, respectively.

The TNT Project Area remedy is effectively a scaled-up version of this pilot study with a more robust physical soil preparation process employed to produce material for treatment (biofeed). As such, this process confirmation sampling plan builds on the monitoring approach and procedures used during the pilot study, with adjusted to reflect the scale, scope, and objectives of the full-scale remedy.

2.2 Target Media and Sampling Approach

The soil processing plant will physically prepare material for bioremediation, cleaning and segregating oversize aggregate and creating a homogeneous blend of fine fractions for treatment in biocells. Specifically, the soil processing plant will generate the following three fractions:

- Oversize – Coarse (12.5 millimeters [mm] and greater)
- Oversize – Fine (between 12.5 and 2 mm)
- Biofeed (less than 2 mm, amended with DARAMEND OE®)

The process plant will stockpile washed oversize aggregate in fine and coarse stockpiles. Collectively, these fractions represent about 30 percent of the soil entering the plant. The remaining material passes through the plant, is amended with DARAMEND OE® and pumped to biocells as a homogenous slurry where bioremediation occurs.

This plan outlines a monitoring program that:

- Monitors the progress of bioremediation of the biofeed fraction in the biocells over time
- Characterizes treated biofeed to demonstrate attainment of remedial objectives and facilitate reuse as backfill in excavated areas.
- Characterizes washed, segregated oversize fractions to demonstrate attainment of remedial objectives and facilitate reuse as backfill in excavated areas.

The *TNT Project Area Soil Reuse Plan* (**Appendix F** to the TNT RAWP) supplements the data collection information provided herein and addresses the regulatory requirements associated with onsite reuse of processed materials.

Section 3 and Section 4 outline the oversize and biofeed monitoring programs, respectively.

Section 3: Oversize Characterization Sampling Plan

Characterization of oversize fractions generated by the soil processing plant will facilitate reuse of the cleaned oversize fractions. The coarse (aggregate greater than 12.7mm in diameter) and fine (aggregate greater than 2mm but less than 12.7mm in diameter) oversize materials will be sampled and analyzed to demonstrate the effectiveness of the washing procedure at removing soil containing target constituents that may be adhered to the aggregate. Once confirmed clean (i.e., constituent of concern [COC] concentrations less than NJDEP NRDCSRS), stockpiled material will be moved to a designated area (to be identified during final design) and staged for reuse.

Estimated average plant throughput is 320 tons (T) per processing day (five processing days per week), of which approximately 30 percent (96 T or 64 cubic yards [cy]) is oversize material. The plant will create one stockpile containing approximately 32 cy each day for each oversize fraction. At the end of each processing day, the stockpile will be moved from its location at the end of the radial stacker to a staging area on the processing pad pending characterization. Each staged stockpile will accumulate a week's worth of oversize produced by the plant (~160 cy). Shorter accumulation timeframes may be selected during final design based on available area for stockpiling.

A weekly composite sample (consisting of five daily parts) will be used to characterize the approximately 160 cy of stockpiled material for each oversize fraction. Prior to moving each daily stockpile, one 4-ounce jar of washed, stockpiled oversize material will be collected. After 5 days, aliquots (proportioned by weight) from each of the five 4-ounce aliquots will be combined and mixed together, and a composite sample will be collected in one new 4-ounce jar. Aliquot weights will be calculated based on daily oversize output from the processing plant as measured via a belt scale on the conveyor for each discrete oversize fraction.

The daily oversize samples will be labeled with a sample ID, date and time collected, and sampler's initials, and maintained in a secure onsite freezer under chain of custody procedures.

Samples will be labeled adhering to the following naming convention aligned with the Facility's EQuIS database designations:

- Project identifier: TNT-REM, indicating sample is part of the TNT Project Area remedy
- Sample type: OSC or OSF, indicating the sample consists of oversize – fines fraction (OSF) or oversize coarse fraction (OSC)
- Sample date: MMDDYYY

An example sample ID would be: TNT-REM-OSC-05152020, denoting a TNT Project Area remedy sample consisting of oversize coarse fraction material collected on May 15, 2020.

In the event that multiple samples are collected on the same day, a unique sample number will be added to precede the date. For example, the first sample collected on May 15, 2020 would be logged as TNT-REM-OSC-01-05152020.

Composite samples will be labeled with the sample date followed by a (c).

The weekly composite sample will be shipped in a cooler with ice under chain of custody procedures via FedEx – Priority Overnight to Pace Analytical, a NJ-certified lab located in Madison, Wisconsin (Pace), for analysis, or analyzed by an onsite mobile laboratory operated by Pace. The laboratory will pulverize the aggregate and analyze for constituents of concern as defined in Section 3.3 of the TNT RAWP using the analytical methods that follow.

- Semivolatile Organic Compounds (SVOCs) by United States Environmental Protection Agency (EPA) SW-846 Method 8270C
- Nitroaromatics and Nitramines (E&E) by EPA SW-846 Method 8095
- Target Analyte List (TAL) Metals by EPA SW-846 Method 6010B
- Mercury by EPA SW-846 Method 7471A

Samples will be analyzed on an expedited (e.g., 48-hour) turnaround time such that the stockpile can be confirmed clean (i.e., target constituent concentrations less than NJDEP NRDCSRS) and staged for use as backfill in excavation areas to open up stockpile area on the processing pad for the subsequent week's uncharacterized oversize stockpile(s). Pace will deliver a NJ-reduced (Level II) data deliverable and an electronic data deliverable in a format compatible with the Facility's EQuIS database.

The results will be reviewed and confirmed with the LSRP prior to staging the stockpile(s) as backfill material. In the event that characterization data do not meet NJDEP NRDCSRS, the oversize fraction will be re-run through the processing plant and resampled per the procedures outlined above.

Section 4: Biofeed Bioremediation Sampling Plan

Bioremediation monitoring will generate data to characterize baseline conditions (time 0) and quantify reductions in target constituent concentrations over time and demonstrate compliance with success criteria facilitating reuse as backfill (i.e., NJDEP NRDCSRS). Sampling frequency is based on the degradation rates observed in the pilot study. Excavation, blending, and staging of feed material and process plant design are expected to yield a biofeed product that is physically and chemically homogenous. The data collection approach includes assessment of data similarity both within and between biocells to confirm this expectation. Quantitatively demonstrating homogeneity of target constituent concentrations in biofeed provides a technical basis on which to scope sampling effort during long-term monitoring after material is backfilled in excavation areas.

4.1 Monitoring Frequency

Completing the filling of each biocell will initiate the monitoring program. Based on the results observed during the pilot study, NRDCSRS targets will be attained in approximately 12 weeks (84 days). To confirm the bioremediation is proceeding as planned, a baseline event and three monitoring events will be performed on a 4-week cycle at each bio cell (i.e., Day 0, Day 28, Day 56, and Day 84). Process plant production rate estimates indicate that a biocell will be filled every 11 processing days on average. As such, each biocell will be monitored on its own schedule.

Monitoring will continue irrespective of monitoring results through the Day 84 event. If NRDCSRS targets have been achieved by Day 84, no additional monitoring will occur prior to emptying the biocells the following spring. If NRDCSRS targets have not been attained, sampling will continue on the 4-week cycle until biofeed temperatures drop below 50 degrees Fahrenheit or NRDCSRS are achieved, whichever occurs first. If NRDCSRS have not been attained prior to soil temperatures reaching 50 degrees Fahrenheit, an additional event will be conducted late March or early April of the following year to document attainment of NRDCSRS prior to emptying the biocells.

4.2 Biocell Monitoring Locations

Each of the five bio cells will be assessed as a homogenous unit. Based on the preliminary design drawings (**Attachment 6** to the TNT RAWP), biocell specifications include:

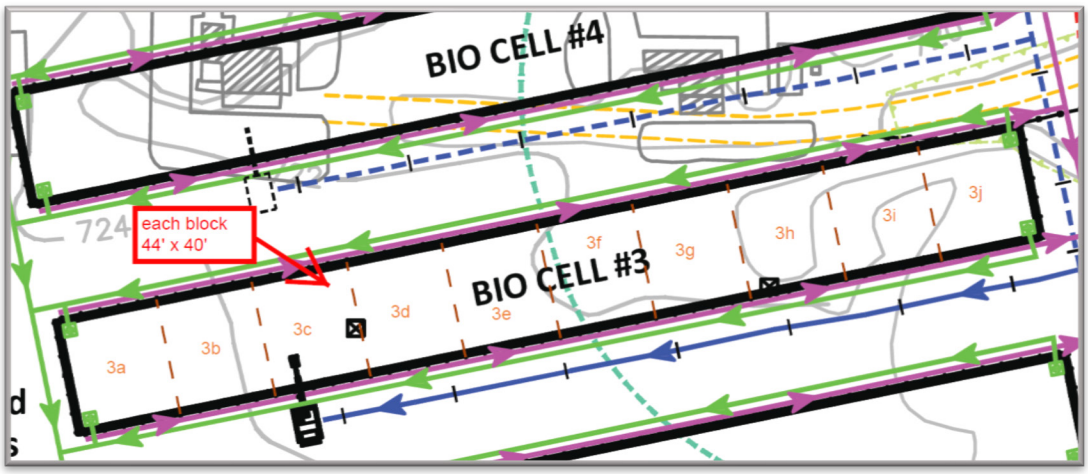
- Internal Dimensions: 402 feet long by 44 feet wide by 6 feet high
- Footprint:17,688 square feet
- Usable Height: 5 feet
- Usable Capacity: 88,440 cubic feet (3,276 cubic yards [cy])

NJDEP Fill Material Guidance for SRP Sites requires that ten samples be collected and analyzed to characterize fill volumes between 3,000 and 4,000 cy (under reduced frequency scenario).

Assuming the biocells are filled to capacity, ten samples of biofeed material will be collected and analyzed during each monitoring event. Bio cell dimensions and volumes are subject to change during final design, and process confirmation sampling will be scaled accordingly for the final design dimensions.

One analytical sample will be collected from each of ten blocks measuring 44 feet wide by 40 feet long by 5 feet high as shown on Figure E-1.

Figure E-1. Bio cell array showing typical subdivision of bio cells.



4.3 Sample Collection & Analysis

Disposable acetate core tubes will be used to collect soil cores from four random locations within each block of the biocell. The full length of the recovered soil core will be composited in the field in a dedicated, decontaminated stainless steel mixing bowl. A single sample of the composited material will be collected to represent that block of the biocell. Using this sampling approach, each biocell (assumed to be at capacity) will be represented by ten composite soil samples.

Samples will be collected in laboratory-provided, certified-clean glassware. Samples will be labeled with sample ID, date and time collected, and sampler's initials, and shipped in a cooler with ice under chain of custody procedures via FedEx – Priority Overnight to Pace Analytical, a NJ-certified lab located in Madison, Wisconsin (Pace), or manually delivered to an onsite mobile Pace laboratory, for analysis.

Requested analyses will be by event as follows:

Sampling Event	*Day 0 (Baseline)*	*Day 28*	*Day 56*	*Day 84*	*Additional 28-day intervals (as necessary)*
SVOCs (EPA SW-846 8270C)	X			X	X*
E&E (EPA SW-846 8095)	X	X	X	X	X
TAL Metals (EPA SW-846 6010B)	X			X	X*
Mercury (EPA SW-846 7471A)	X			X	X*
Total Organic Carbon (Lloyd Kahn)	X			X	X*
Grain Size (Sieve & Hydrometer)	X			X	X*

* samples may be collected and held pending results of E&E analysis

Quality assurance/quality control (QA/QC) samples will be collected at the following frequencies:

- Field equipment blank: 1 per sampling day
- Blind duplicate sample: 1 per 20 field samples
- Matrix spike/matrix spike duplicate samples: 1 per 20 field samples

Samples will be analyzed on a standard (i.e., 10-day) turnaround time. Pace will deliver a NJ-reduced (Level II) data deliverable and an electronic data deliverable in a format compatible with the Facility's EQuIS database.

During biocell sampling, in-situ field probes will be used to collect the following field parameters.

- pH
- temperature (degrees C)
- redox potential / ORP (mV)
- moisture (by visual inspection)

Field measurements will target three depth strata (within 1 foot of biofeed surface, within 1 foot of biocell bottom, and between 2 and 3 feet below biofeed surface). Measurements will be collected at one location per block proximate to the locations where soil samples are collected.

Field data, observations, photographs, and sample collection information will be documented using an automated tablet-based data collection system (i.e., EQuIS Collect, Survey123).

4.4 Sample Nomenclature

Biocells will be numbered sequentially (e.g., 1 through 5) and subdivided into ten blocks a shown on **Figure E-1**. Each block will be assigned a lowercase letter "a" through "j" from west to east.

Thus, each block may be uniquely identified by a biocell number and block letter together (i.e., 2d would denote biocell 2, block d).

Biofeed samples collected for process confirmation will adhere to the naming convention outlined below aligned with the current EQuIS database format. The naming convention deviates from the traditional Facility naming convention as follows:

- Biocells are temporary structures that are not affixed to the sitewide grid system. As such, the grid cell ID will be replaced with biocell number and sampling block references. The syntax of the block ID (number followed by lowercase letter) will differentiate these samples from SI/RI samples affixed to the grid (capital letter followed by number).

- The boring number field will be replaced with the number of treatment days to allow convenient sequential sorting for data tabulations.

An example sample ID may look like the following:

TNT-REM-BIO-4f-56, where:

- TNT-REM = TNT Remediation project
- BIO = biofeed sample
- 4f = Biocell 4, block f
- 56 = Number of days biofeed has been undergoing treatment in biocell

Field sampling procedures will adhere to practices established in the NJDEP Field Sampling Procedures Manual (2005) and Field Quality Assurance Project Plan (Hercules 2005). Laboratory analytical procedures and associated QA/QC will adhere to the Analytical Quality Assurance Project Plan (Hercules 2019, **Appendix E** to the TNT RAWP).

Section 5: Data Evaluation and Reporting

5.1 Data Evaluation

Field measurements will be evaluated immediately following collection. These data will be used to guide biocell water management activities (i.e., pumping of excess water from the biocell to decrease biofeed moisture content or application of process water to increase moisture content). Soil temperature will be used to establish the end of the monitoring season each fall.

Analytical data will be reviewed consistent with NJDEP's *Data Quality Assessment and Data Usability Evaluation Technical Guidance* (2014) and *Data of Known Quality Protocols Technical Guidance* (2014). Data passing these quality reviews will be evaluated to establish time-series trends in target constituent concentrations. Beyond establishing a baseline for monitoring target constituent concentration reductions over time, the Day 0 dataset will provide the plant operators with information regarding excavation/blending/staging effectiveness, process plant homogenization efficiency, and uniformity of DARAMEND OE® distribution in support of plant optimization. Confirmation sampling data will be evaluated in the context of the *TNT Project Area Soil Reuse Plan* (**Appendix F** to the TNT RAWP) facilitating use of treated biofeed as backfill.

In the event that data indicate that bioremediation is not progressing as planned, the need for and scope of corrective actions will be evaluated on a case-by-case basis.

5.2 Reporting

Process monitoring reports will be prepared and submitted annually following confirmation sampling of treated material each spring (following the first season of processing). The reports will:

- Present field observations and measurement data
- Document the decrease in target constituent concentrations over the treatment period
- Address data and/or process observations that present an opportunity to optimize or improve the soil processing plant operation and/or biocell management practices
- Present the confirmation sampling results the demonstrate attainment of the success criteria enabling use of the treated biofeed as backfill (i.e., target constituent concentrations less than NJDEP NRDCSRS)
- Provide an assessment of biofeed homogeneity, both within each biocell and across the biocells, to establish a basis for the sampling approach and frequency for long-term monitoring of biofeed used to backfill the excavations

Upon completion of soil processing and biocell treatment, the information presented in the annual reports will be synthesized in a remedial action report (RAR). The annual reports will be included as attachments to the RAR.

Appendix E

Facility-wide Quality Assurance Project Plan

Document type
Quality Assurance Project Plan (QAPP)

Date
July, 2020

FORMER KENVIL WORKS PLAN
HERCULES LLC

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Project name	**Former Kenvil Works Plan PDI**
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APPENDICES

Appendix A Laboratory Certifications and SOPs
Appendix B Field Procedures

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1. INTRODUCTION

This Analytical Quality Assurance Project Plan (AQAPP) has been developed by O'Brien & Gere, a part of RAMBOLL (RAMBOLL), on behalf of Hercules LLC (Hercules) in support of Pre-design Investigations (PDI) at the Former Kenvil Works in Kenvil, New Jersey (Facility). A site location map is provided as Figure 1. The PDI work will include the collection and analysis of groundwater, surface water, soil, sediment, concrete and biological tissue samples collected from the Facility.

This AQAPP presents the organization, objectives, functional activities and specific quality assurance/quality control (QA/QC) activities associated with the sample collection and laboratory analysis of environmental samples. Laboratory QA/QC is a comprehensive program used to define and document the quality of analytical data. QA involves planning, implementation, assessment, reporting and quality improvement to establish the reliability of laboratory data. QC procedures are the tools used to achieve this reliability. This AQAPP defines how QA and QC are applied to the environmental activities at this Facility to assure that the type and quality of data generated for this PDI meet project needs.

This AQAPP has been prepared using the guidance provided in the following documents:

- NJDEP. Readoption December 2002, Amended February 2003, July 2004, July 2005, December 2007, September 2008, November 2009, May 2012, August 2018. Technical Requirements for Site Remediation (N.J.A.C. 7:26E). Trenton, New Jersey.
- NJDEP. August 2005, Updated April 2011. Field Sampling Procedures Manual (FSMP). Division of Hazardous Site Mitigation. Trenton, New Jersey.
- NJDEP. April 2014a. Site Remediation Program. Quality Assurance Project Plan Technical Guidance.
- NJDEP. April 2014b. Site Remediation Program. Analytical Laboratory Data Generation, Assessment and Usability Technical Guidance.
- NJDEP. April 2014c. Site Remediation Program. Data of Known Quality Protocols Technical Guidance.
- NJDEP. April 2014d. Site Remediation Program. Data Quality Assessment and Data Usability Evaluation Technical Guidance.

This AQAPP reflects the NJDEP April 2014 Quality Assurance Project Plan Technical Guidance and applies the option of submitting data collected for this investigation for data validation. QA/QC procedures described in this AQAPP are in accordance with applicable professional technical standards, NJDEP requirements, government regulations and guidelines, and specific project goals and requirements.

In accordance with Section 2.2 of the August 2018 N.J.A.C. 7:26E, the following topics are addressed in this document:

- Facility background and project scope
- Data quality objectives
- Project organization and responsibilities

- Sampling design and methodologies
- Field instrumentation
- Chain-of-custody, field storage, documentation, sample transportation and sample handling procedures
- Analytical methods, target analytes and regulatory criteria
- Data quality indicator performance criteria and quality control requirements
- Data deliverables
- Data review
- Data validation and usability
- Data assessment procedures

2. FACILITY BACKGROUND, FACILITY LOCATION AND PROJECT SCOPE

This section describes the general Facility background, Facility location and general scope of work for the activities to be performed at the Facility.

2.1 Facility background

The Facility began dynamite manufacturing operations in the 1870's and was operated by various companies until 1912 when Hercules was formed and became the sole owner. The Facility underwent a major expansion at this time in order to manufacture large volumes of various explosives and propellants in response to the demand for these products created by World War I. Since that time, a variety of explosives and specialty products have been produced at the Facility for military and commercial applications. In early 1995, Hercules sold the smokeless gunpowder business to Alliant Techsystems (Alliant), who operated the facility until December 31, 1996. Hercules re-acquired control of the facility on January 1, 1997 and as the property owner is responsible for the remediation and closure of the facility for sale or reuse. After operations ceased at the Facility in 1996, Hercules decontaminated and demolished the E&E manufacturing facilities.

The Facility consists of 13 former operational areas. During the previous RI, the Facility was segregated into the following specified areas for ease of discussion:

- Area I – Encompasses areas north and east of Powder Mill Road including B-Line, Storage, Finishing, and eastern portions of the Development former operation areas.
- Area II – Encompasses areas south and west of Mule Barn Road including Nitroglycerin (NG), Pentaerythritol Tetranitrate (PETN), Trinitrotoluene (TNT), and the Dynamite former operational areas. In addition, the Miscellaneous/Offsite Area is included in Area II.
- Area III – Encompasses central portions of the Facility including A-Line, Maintenance, Ammonia-Nitrate (AN), Diazo, and the western portion of Development former operational areas.

2.2 Facility Location

The approximately 1,200-acre Facility is located on Howard Boulevard, about 0.5 miles northwest of the center of Kenvil, in Morris County, New Jersey. The Facility is approximately 13,000 feet long by 5,000 feet wide. Eight hundred of the 1,200 total acres were developed for former plant use and the remaining 400 acres are undeveloped areas between process units and around the perimeter of the Facility; these undeveloped areas acted as a buffer between the former active portions of the Facility and the surrounding community.

Regionally, the Facility is approximately 40 miles west of New York City and 30 miles east of the Delaware Water Gap. The Facility is bounded by the New Jersey Transit Railway to the north, by Berkshire Road to the southeast, by Route 46 to the south, and by Howard Boulevard to the southeast. The acreage north of Howard Boulevard and the railroad is mostly undeveloped. Residential and commercial properties predominate southeast of Berkshire Road and Route 46. Two small lakes are present immediately south of the Facility. The former production areas are centrally located within the Facility in a relatively flat area with a slight slope extending to Howard Boulevard on the northwest side and a topographic ridge on the southeast side that separates the production area from the Berkshire Valley area. The undeveloped areas are covered with mature

trees, and the former operation areas are covered with grass, weeds or young trees. The property contains several wet areas and has one major pond, known as "Duck Pond", which is approximately 9 acres in size.

Currently, all buildings and structures at the Facility have been demolished to grade except for several one-story structures in Area III, the wastewater treatment plant, a guard shack at the northern gate, and a guard shack and a small office building at the southern gate. These one-story structures have been used to store vehicles and maintenance equipment. The wastewater treatment plant is currently inactive.

2.3 Project objective and scope

The PDI activities will include the collection and analysis of groundwater, surface water, soil, sediment, concrete and biological tissue samples from the Facility.

The objectives of these activities is to collect additional data to:

- Further refine the extent of COCs in groundwater, surface water, soil and sediment
- Develop site specific impact to ground water soil remediation standards (SRS)
- To evaluate the concentrations of COCs in groundwater over time
- Screen for the presence of COCs in biological tissue from small mammals
- Screen for the presence of COCs in concrete
- Evaluate the effectiveness of remedial activities
- Evaluate and design remedial actions; and
- To support human health and ecological risk assessment activities

The PDI will be conducted in accordance with the following guidance:

- NJDEP. Readoption December 2002, Amended February 2003, July 2004, July 2005, December 2007, September 2008, November 2009, May 2012. *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E). Trenton, New Jersey.
- NJDEP. August 2005, Updated April 2011. *Field Sampling Procedures Manual*. Division of Hazardous Site Mitigation. Trenton, New Jersey.
- NJDEP. 2015. *NJDEP Technical Guidance for the Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling of Soil (*Soil SI/RI/RA Guidance) (Ver. 1.2).

2.4 Laboratory Analysis

The samples collected for this PDI will be submitted to the following laboratories for analysis:

- Pace Analytical Services, LLC of Madison, Wisconsin for explosives by USEPA Method 8095.
- Eurofins Frontier Global Sciences of Bothell, Washington for methyl mercury, dimethyl mercury, total mercury, inorganic mercury, free elemental mercury, mercury selective sequential extraction analysis and arsenic speciation (Subcontractor to Eurofins Lancaster Laboratories, Inc. of Lancaster, Pennsylvania).
- CT Laboratories of Barboo, Wisconsin for nitrocellulose analysis (Subcontractor to Eurofins Lancaster Laboratories, Inc. of Lancaster, Pennsylvania).

- EMSL Analytical, Inc. of Cinnaminson, New Jersey for asbestos (Subcontractor to Eurofins Lancaster Laboratories, Inc. of Lancaster, Pennsylvania).
- Eurofins Lancaster Laboratories, Inc. of Lancaster, Pennsylvania for the remaining analyses.

Samples collected for the methods listed in **Table 1** will be shipped from the field location to each laboratory for analysis.

Table 1 presents the analytical methods, sample collection containers and volumes, preservation, holding times and associated quality control sample frequency and NJDEP method certification status. For some methods, NJDEP certification is not offered.

The target analytes are listed in **Table 2-1A, Table 2-1AA, Table 2-1B, Table 2-1BB, Table 2-1C, Table 2-1CC, Table 2-2A, Table 2-2AA, Table 2-2B, Table 2-2BB, Table 2-2C, Table 2-2CC, Table 2-2D, Table 2-3E, Table 2-3A, Table 2-3AA, Table 2-3B, Table 2-3BB, Table 2-3C, Table 2-4A, Table 2-4B, Table 2-4CC, Table 2-5A, Table 2-5B, Table 2-6A, Table 2-6AA, Table 2-6B, Table 2-6BB, Table 2-6C, Table 2-6D and Table 2-6DD**.

The QC requirements and corrective actions listed in **Tables 3-1** through **3-19**, which supplement the method requirements, are to be followed by the laboratory.

The laboratory performing the analysis will be responsible for the quality control of the data reported for this project.

Laboratories reporting environmental results will evaluate non-detected aqueous, solid and biological tissue results to the method detection limits (MDLs) and report the non-detected results referencing the reporting limit (RL). The RL concentration is established by the lowest standard in the instrument calibration. For the remaining data, results that are less than the RLs but greater than or equal to the MDLs will be reported using the "J" flag. For example, for a target analyte with a RL of 10 ug/L and an MDL of 2 ug/L, a non-detected result is reported as 10 ug/L "U", indicating that a concentration greater than or equal to the MDL was not detected by the laboratory. A detected concentration of 6 ug/L is reported as 6 "J" and a detected concentration of 23 ug/L is reported without a laboratory flag. Each laboratory must include both RLs and MDLs on the sample result sheet that is reported to the data user.

Where applicable, the RLs and MDLs listed in **Table 2-1A, Table 2-1AA, Table 2-1B, Table 2-1BB, Table 2-1C, Table 2-1CC, Table 2-2A, Table 2-2AA, Table 2-2B, Table 2-2BB, Table 2-2C, Table 2-2CC, Table 2-2D, Table 2-3E, Table 2-3A, Table 2-3AA, Table 2-3B, Table 2-3BB, Table 2-3C, Table 2-4A, Table 2-4B, Table 2-4CC, Table 2-5A, Table 2-5B, Table 2-6A, Table 2-6AA, Table 2-6B, Table 2-6BB, Table 2-6C, Table 2-6D and Table 2-6DD** or the most recent MDLs and RLs, will be reported by the laboratory.

The laboratory will provide sample containers for the investigation, prepared in accordance with method and SOP requirements and this AQAPP.

Communications with RAMBOLL will be documented by the laboratory in the data packages. The analytical data will be reported in NJDEP full deliverable format in both hardcopy and electronic data format.

2.5 Data Validation

At the discretion of the RAMBOLL or KJ Project Manager and Project LSRP following receipt of final laboratory data packages, a data usability evaluation or full and/or partial data validation will be performed in accordance with this AQAPP.

Data validators from RAMBOLL or KJ and will provide data evaluation services.
Data Usability Evaluation and Data Validation will be performed applying one of the following approaches:

- At a minimum, Data Usability Evaluation will be performed for all samples collected for the investigation
- If deemed appropriate by the LSRP and RAMBOLL or KJ Project Manager, or required by NJDEP regulations, full data validation will be performed for 10 percent of the samples collected for the investigation and partial validation will be performed for the remaining samples.

Upon request by the data validator, the laboratory will provide additional or supplemental information within 3 working days of the request.

Data will be evaluated using the QA/QC criteria established in the methods utilized by the laboratory for analysis, the quality control requirements and corrective actions listed in **Tables 3-1 to 3-19**, and laboratory established criteria, where applicable.

A more detailed description of the Data Usability Evaluation and Data Validation procedures is provided in section 14.5

2.6 Documentation

Laboratory analytical data will be provided in both hardcopy and electronic data deliverable (EDD) format in accordance with the laboratory's internal protocol for NJDEP deliverable requirements for electronic data in New Jersey HAZSITE format.

The findings of this investigation will be documented in a PDI Report.

Records will be incorporated into the final project files for the samples. PDF data packages, EDDs, and final reports uploaded to Ashland's ENFOS system for project archive.

3. DATA QUALITY OBJECTIVES, DATA QUALITY INDICATORS AND CONCEPTUAL SITE MODEL

The Data Quality Objective (DQO) Process, as it has been applied to this PDI, comprises the following steps, consistent with guidance presented in the United States Environmental Protection Agency (USEPA) Guidance for the Data Quality Objectives Process (EPA QA/G-4), February 2006. The DQO process establishes the acceptance criteria, which serve as the basis for collecting data of sufficient quality and quantity to support the goals of the project activities.

3.1 DQO Process

The process consists of the following seven iterative steps for the DQO process:

1. **Step 1** - State the Problem – Additional data is required to evaluate the extent of COCs in groundwater, surface water, soil, sediment, concrete demolition debris and small mammal biological tissue. Planned Facility activities include monitoring well installation, groundwater sampling, soil sampling, surface water sampling, sediment sampling, concrete sampling and biological tissue sampling and analysis.
2. **Step 2** - Identify the Goal of the Study – The purpose of the PDI activities is to provide additional data for the following objectives:

- Further refine the extent of COCs in groundwater, surface water, soil and sediment
- Develop site specific impact to ground water soil remediation standards (SRS)
- To evaluate the concentrations of COCs in groundwater over time
- Screen for the presence of COCs in biological organism tissue
- Screen for the presence of COCs in concrete
- Evaluate the effectiveness of remedial activities
- Evaluate and design remedial actions; and
- To support human health and ecological risk assessment activities

3. **Step 3** - Identify information inputs (the data types that will be required before project decisions can be made) - The primary required data types will be analytical results from groundwater, surface water, soil, sediment, concrete demolition debris and small mammal biological tissue samples collected from the Facility.
4. **Step 4** -Define the Boundaries of the Study (the spatial and temporal features pertinent for decision making) – The Facility is located at the Former Kenvil Works in Kenvil, New Jersey. The approximately 1,200-acre Facility is located on Howard Boulevard, about 0.5 miles northwest of the center of Kenvil, in Morris County, New Jersey. The Facility is approximately 13,000 feet long by 5,000 feet wide. Eight hundred of the 1,200 total acres were developed for former plant use and the remaining 400 acres are undeveloped areas between process units and around the perimeter of the Facility; these undeveloped areas acted as a buffer between the former active portions of the Facility and the surrounding community. Sampling will be completed at on-site and off-site locations.
5. **Step 5** - Develop the analytic approach (how will the study results be analyzed and conclusions made from the data) - The analytical results will be compared to the NJDEP Class IIA Groundwater Quality Standards: Higher of PQL and GWQC, NJDEP Soil Residential and Non-Residential Remediation Standards, Default Impact to Groundwater Soil Screening Levels and NJDEP Ecological Screening Criteria. The analytical results, including contaminants detected in the samples exceeding the aforementioned standards will be

reported to the NJDEP. Based on the results of the investigation, it may be necessary to conduct additional RI activities to fill the data gaps that remain to fully characterize the Facility.

6. **Step 6** - Specify performance or acceptance criteria (performance or acceptance criteria that the collected data will need to achieve) – Data must be of known quality to withstand scientific and legal challenges relative to its intended purpose. Completeness is the measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions. Based on evaluation of the data in terms of precision, accuracy, representativeness, comparability, and sensitivity, a completeness objective of 95 percent of the data set has been established for the proposed sampling activities. If the completeness objective is not met, additional sampling may be warranted.
7. **Step 7** - Develop the plan for obtaining data- The samples will be collected and analyzed as described in this AQAPP.

To meet the DQOs for this investigation, the results will be compared to the following regulatory criteria:

For groundwater and surface water samples:

- NJDEP Class IIA Groundwater Quality Standards: Higher of PQL and GWQC, current as of January 2018.
- NJDEP Ecological Screening Criteria, current as of January 2018.

For soil, sediment, concrete demolition debris and biological tissue samples (where applicable):

- NJDEP Soil Residential and Non-Residential, current as of January 2018.
- Default Impact to Groundwater Soil Screening Levels, current as of January 2018.
- NJDEP Ecological Screening Criteria, current as of January 2018.

3.2 Data Quality Indicators

Data quality indicators (DQIs), measurement performance criteria (MPC), and QC sample and/or activity are used to assess the measurement performance for both the sampling and analytical measurement systems. DQIs include the PARCCS (precision, accuracy, representativeness, comparability, completeness and sensitivity) parameters; a method of assessing the validity of environmental data. Precision, accuracy, and completeness can be measured quantitatively based on techniques described below. Representativeness and comparability are qualitative measurements.

The definitions for the assessment of data quality are discussed in the following section. The equations used for the assessment of data quality are discussed in Section 11.4.

Precision is a measure of the variation among individual measurements of the same sample i.e., the relative percent difference (RPD) of the results obtained for a sample and a split/blind duplicate sample collected at the same time and in the same way as the original sample. The precision of the methods will be determined by the analysis of laboratory duplicate, MS/MSD and field duplicate samples. The precision will be evaluated by calculating the RPD between the duplicates. RPD calculations will be compared to the established limits. The laboratory control limits will be used to evaluate field precision for this investigation.

Accuracy is a measure of the distortion of a measurement from its true value i.e., the percent recovery of a sample spiked with a known concentration of the analytes being tested for. Accuracy/bias may be assessed utilizing control charts in the laboratory. Control charts will consist of line graphs that provide a continuous graphic representation of the state of each analytical procedure. The standard deviation of the mean of the QC measurement is calculated and the upper and lower warning limits are set at plus or minus two standard deviation units. The upper and lower control limits are set at plus or minus three standard deviation units. Acceptable data are realized when results fall between the lower and upper warning limits. If the QC value falls between the control limit and the warning limit, the analysis should be scrutinized as possibly out of control. The laboratory control limits will be used to evaluate accuracy for this investigation. Accuracy will be determined by evaluation of MS recoveries, LCS recoveries, internal standard recoveries, calibration, instrument performance checks and target analyte identification and quantitation.

In general, the accuracy of the methods will be determined by spiking the sample matrix with the analyte and by analyzing reference materials with known concentrations. The spiking levels will be selected to reflect the concentration range of interest. Percent recoveries of the spikes and reference materials will be calculated and compared to the established limits.

Representativeness is a measure of how closely the results received reflect the actual concentrations or distribution of compounds in a sample, as well as field conditions and environmental conditions. Sampling plan design, sample collection techniques, and sample handling protocols have been developed to ensure the collection of representative samples. Field and laboratory blanks will be analyzed to assess sample contamination. The investigation has been designed so that the samples collected are as representative as possible of the medium being sampled and that a sufficient number of samples will be collected.

Comparability expresses the confidence with which one data set can be compared to another. To ensure comparability, standard sample collection and sample analysis procedures, second source reference standards, reporting units, and standardized data reporting format will be utilized. Completeness is a measure of the number of samples collected versus the number of samples analyzed. Data completeness determines whether planned DQOs have been satisfied and is based upon the usability calculation.

For this project, the analytical data completeness objective is 95 percent.

Sensitivity is a measure of sensitivity is made by a comparison of laboratory RLs to the requirements for the DQOs and through evaluation of blank analyses and holding time results. This comparison of RLs will be performed prior to sample analysis, with expected laboratory RLs, and following sample analysis, with actual RLs.

3.3 Historical Data

Historical data will be combined with current data to address the primary objectives for the PDI.

3.4 Conceptual Site Model

A Conceptual Site Model (CSM) for the Facility is presented in the *Phase II Remedial Investigation Report – Summary (Volume A*) that was submitted to the NJDEP in May of 2016.

4. PROJECT ORGANIZATION AND RESPONSIBILITY

RAMBOLL and KJ will be responsible for project management, sample collection, data valitation and data reporting. RAMBOLL will be responsible for AQAPP generation.
The following laboratories will perform sample analyses:

- Eurofins Lancaster Laboratories, Inc. of Lancaster, Pennsylvania for the remaining analyses.
- Pace Analytical Services, LLC of Madison, Wisconsin for explosives by USEPA Method 8095.
- Eurofins Frontier Global Sciences of Bothell, Washington for methyl mercury, dimethyl mercury, total mercury, inorganic mercury, free elemental mercury, mercury selective sequential extraction analysis and arsenic speciation.
- CT Laboratories of Barboo, Wisconsin for nitrocellulose analysis.
- EMSL Analytical, Inc. of Cinnaminson, New Jersey for asbestos.

Responsibilities for key project team members are summarized below.

4.1 Regulatory Agency and Client Key Personnel

Mark Foley of WSP Environment & EnergyUSA is the LSRP for the PDI and has oversight authority on behalf of Hercules for corresponding with NJDEP.

Mark Foley –LSRP
Senior Project Director
WSP USA
200 Cottontail Lane, Suite A112W
Somerset, NJ 08873
mark.foley@wspgroup.com
(732) 564-0888 X16

4.2 Hercules Representative

Edward Meeks is the primary contact at Hercules and is responsible for the execution of each phase of the project, including any correspondence and coordinating activities with NJDEP.

Edward Meeks – Hercules Project Manager
Hercules
500 Hercules Road
Wilmington, DE 19808-1599
edmeeks@ashland.com
(302) 995-3433

4.3 RAMBOLL Key Personnel

4.3.1 RAMBOLL Project Officer

Imants Reks, P.G. is the RAMBOLL Project Officer and has overall responsibility for meeting the stated project objectives. In addition, he is responsible for providing the RAMBOLL Project Manager with access to RAMBOLL corporate resources.
Imants Reks, P.G. – RAMBOLL Project Officer

RAMBOLL
333 W Washington St
Syracuse, NY 13202
Imants.Reks@ramboll.com
(315)956-6452

4.3.2 RAMBOLL Project Manager

John Lucey, P.G. is the RAMBOLL Project Manager and is responsible for implementing the PDI tasks to be completed by RAMBOLL and in managing the technical work, resources and costs to meet project objectives and requirements. His primary function is to meet the technical, financial, and scheduling objectives of the project and provide direction to RAMBOLL Project Team.

John Lucey –RAMBOLL Project Manager
John.Lucey@ramboll.com
(302) 562-2505

4.3.3 Kennedy Jenks Project Manager

Scott Larew is the KJ Project Manager and is responsible for implementing the PDI tasks to be completed by Kennedy Jenks and in managing the technical work, resources and costs to meet project objectives and requirements. His primary function is to meet the technical, financial, and scheduling objectives of the project and provide direction to the Kennedy Jenks Project Team.

Scott M. Larew – KJ Project Manager
214 Carnegie Center, Suite 103
Princeton, New Jersey 08540
ScottLarew@kennedyjenks.com
(609)285-2626

4.3.4 RAMBOLL QA Officer

Karen Storne is the RAMBOLL QA Officer (QAO) for this project. She will manage and be responsible for AQAPP generation and revisions and QA/QC review of data generated by RAMBOLL during the sample collection activities. Data processing and evaluation will be overseen and reviewed by the RAMBOLL QAO. If QA problems or deficiencies requiring special action are identified, the RAMBOLL QAO, Project Manager, and Project Officer will determine the appropriate corrective action. The QAO will then be responsible for follow-up and oversight of corrective action implementation, to the satisfaction of Hercules and the NJDEP representative. The RAMBOLL QAO may perform data validation activities for data generated by RAMBOLL or designate additional data validators to work under her direction. Data validators will be responsible for review of laboratory data for compliance with the project-specific DQOs and for such parameters as precision, accuracy, representativeness, comparability, sensitivity and completeness. Data validators will notify the QAO of any major QA deficiencies.

Karen Storne–RAMBOLL QA Officer
Karen.Storne@ramboll.com
(315) 662-3458

Janice Sloan – KJ QA Officer and Project Database Custodian

Janice Sloan is the QAO for KJ and QAO may perform data validation activities for data generated by KJ or designate additional data validators to work under her direction. Data validators will be responsible for review of laboratory data for compliance with the project-specific DQOs and for such parameters as precision, accuracy, representativeness, comparability, sensitivity and completeness. Data validators will notify the QAO of any major QA deficiencies.…

Janicesloan@kennedyjenks.com
(253) 835-6404

Janice is supported by Valerie Kull on the database management side. Valerie has been involved in the development and management of the project data across multiple database platforms over the past 10 years. The data is currently managed in EQuIS.
valeriekull@kenedyjenks.com
(609) 955-4536

4.3.5 RAMBOLL and KJ Field Investigation Managers

The RAMBOLL and KJ Field Investigation Manager will be responsible for directing and coordinating the day-to-day activities while field activities are underway.

4.3.6 Field Sampling Personnel

RAMBOLL and KJ field sampling personnel will be responsible for collection, packaging, preservation, and shipping of environmental samples in accordance with the AQAPP and applicable NJDEP requirements. Field sampling personnel will also collect field data and monitor site health and safety.

4.3.7 Health and Safety Coordinator

The RAMBOLL and KJ Health & Safety Coordinators and will be responsible for monitoring site health and safety during the sampling events.

- Ramboll

  Karin Goldenbaum
  110 Fieldcrest Avenue
  Raritan Plaza l - 2nd Floor
  Edison, New Jersey 08837 (609) 651-0152
  Karin.Goldenbaum@ramboll.com

- KJ

  Laura Sterner
  214 Carnegie Center
  Princeton, NJ 08540
  (609) 285-2626
  LoraSterner@kennedyjenks.com

4.4 Laboratory Management

The samples collected for this PDI will be submitted to the following laboratories:

- Eurofins Lancaster Laboratories LLC (Lancaster) of Lancaster, Pennsylvania

  Eurofins Lancaster Laboratories Inc.
  2425 New Holland Pike
  Lancaster, Pennsylvania 17601
  (724)720-9386
  NJDEP NELAC Certification Number: PA011

- Pace Analytical Services, LLC (Pace) of Madison, Wisconsin for explosives by Method 8095

  Pace Analytical Services, LLC
  2825 Advance Rd
  Madison, Wisconsin 53718
  (704)796-4830
  LELAP/NELAP Certification Number: 152019/ACC20170003/04165

- Pace Analytical National Center for Testing & Innovation

  Pace Analytical National Center for Testing & Innovation
  12065 Lebanon Road
  Mt. Juliet, TN 37122
  NELAC Certification Number: TN002/180006
  Alana Harvill- Pace National- aharvill@pacenational.com – (615-) 773-9787

- Eurofins Frontier Global Sciences (EFGS) of Bothell, Washington for methyl mercury, dimethyl mercury, total mercury, inorganic mercury, elemental mercury, mercury selective sequential extractions and arsenic speciation.

  Eurofins Frontier Global Sciences
  11720 North Creek Parkway N, Suite 400
  Bothell, Washington 98011
  (425)686-3584
  NJDEP NELAC Certification Number: WA014

- CT Laboratories (CT) of Barboo, Wisconsin for nitrocellulose.

  CT Laboratories
  1230 Lange Court
  Baraboo, Wisconsin 53913
  (608)356-2760
  LELAP Certification Number: 115843/ACC20170002

- EMSL Analytical of Cinnaminson (EMSL), New Jersey for asbestos.

  EMSL Analytical Inc.
  200 Route 130 North
  Cinnaminson, New Jersey 08077
  (800)220-3675

NJDEP NELAC Certification Number: 03036

- Ramboll of East Norriton, Pennsylvania, Groundwater/Surface Water Field Parameters.

  EMSL Analytical Inc.
  301 E Germantown Pike,
  East Norriton, PA
  (484) 804-7200
  NJDEP Certification Number: PA024

- KJ of Princeton, New Jersey, Groundwater/Surface Water Field Parameters.

  214 Carnegie Center
  Princeton, NJ 08540
  (609) 285-2626
  NJDEP Certification Number: 11048

Copies of the laboratory certifications are provided in **Appendix A**. Laboratory SOPs and Laboratory Quality Assurance Manuals (QAM) are available upon request.

4.4.1 Laboratory Project Manager

Lynn Frederiksen is the Laboratory Project Manager for Lancaster, Patrick Garcia-Strickland is the Laboratory Project Manager for EFGS, Ceress Berwanger is the Project Manager for CT, Gary Perimutter is the Project Manager for EMSL and Jessica Esser is the Project Manager for Pace. The Project Managers will be responsible for:

- Coordinating laboratory analysis.
- Supervising in-house chain-of-custody.
- Scheduling sample analysis.
- Overseeing data review.
- Overseeing preparation of analytical reports.

It will be the responsibility of the Laboratory Project Manager to approve final analytical reports prior to submission to RAMBOLL or KJ.

5. SPECIAL TRAINING REQUIREMENTS

Field investigation personnel must comply with the training requirements for hazardous waste operations, codified in 29 CFR 1910.120(e). Each individual must have successfully completed a 40-hour (or 24-hour) course appropriate to the level of work that is performed. In addition, each individual must have completed an 8-hour refresher course within the last 12 months if the initial training was more than 12 months ago. Personnel acting in the capacity of an on-site supervisor, directly responsible for supervising employees engaged in hazardous waste operations, shall also have successfully completed an 8-hour Supervisor training course. Field personnel must have documentation (copies of certificates, or I.D. cards) available at the Facility as proof of compliance with the training requirements.

6. INVESTIGATION PROCESS/SAMPLING DESIGN AND METHODOLOGIES

PDI samples will be collected in accordance with the following guidance:

- NJDEP. Readoption December 2002, Amended February 2003, July 2004, July 2005, December 2007, September 2008, November 2009, May 2012. Technical Requirements for Site Remediation (N.J.A.C. 7:26E). Trenton, New Jersey.
- NJDEP. August 2005, Updated April 2011. Field Sampling Procedures Manual. Division of Hazardous Site Mitigation. Trenton, New Jersey.
- NJDEP. 2015. NJDEP Technical Guidance for the Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling of Soil (Soil SI/RI/RA Guidance) (Ver. 1.2).

6.1 Sampling and analysis activities

Project sampling and analysis activities will be determined on an as needed basis to address the project needs and objectives. Project Work Plans will be developed to reflect the requirements and methods listed in this AQAPP as activities are identified.

6.2 Standard Operating Procedures

Standard operating procedures (SOPs) for field operations are provided the following documents:

- The February 2006 Final Field Quality Assurance Project Plan prepared by MWH
- October 2013 Work Plan Memorandum prepared by RAMBOLL

The documents are provided in **Appendix B**. Additional SOPs may be developed to support PDI activities. These SOPs will be included in task specific work plans

7. FIELD INSTRUMENTATION AND INSPECTION OF SUPPLIES

The following field equipment is expected to be used:

- Photoionization detector (PID) – used for the installation of the monitoring wells and soil sampling activities
- Submersible pump –acceptable pumps include centrifugal or bladder pumps constructed of stainless steel or Teflon®. A peristaltic pump may not be used for low flow sampling activities
- Electronic Water Level Indicator
- The following Water Quality Analyzers will be used for the measurement pH, temperature, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP) and turbidity in surface water and groundwater:
  - Horriba U-52
  - Horriba U-54
  - YSI 6920
  - YSI 6820
- Expray Soil Screening Kit for explosive target analytes

SOPs for the operation of these instruments is provided in Appendix B.

7.1 Field Equipment Calibration

Field instruments will be calibrated in such a manner that accuracy and reproducibility of results are consistent with the manufacturer's specifications. Equipment to be used for the field sampling will be examined to confirm that it is in good operating condition. This includes checking the manufacturer's operating manual and the instructions for each instrument to confirm that the maintenance requirements are being observed.

In general, instruments will be calibrated daily prior to use and will be recalibrated as required. All calibration procedures performed will be documented in the field logbook. Calibration checks will be performed at the intervals specified by the manufacturer. In the event that an internally calibrated field instrument fails to meet calibration procedures, it will be returned to the manufacturer for service.

7.2 Field Equipment Preventative Maintenance

Preventative maintenance procedures will be carried out on field equipment by RAMBOLL or KJ personnel in accordance with the procedures outlined in the manufacturers' specifications and/or equipment manuals.

Maintenance activities involving field equipment will be recorded in the field logbook. Field equipment will be check by qualified field representatives prior to being used in the field. Problems encountered while operating the instrument will be documented in the field logbook. If problem equipment is detected or should require service, the equipment will be returned and a qualified technician will perform the maintenance required. Use of the instrument will not be resumed until the problem is resolved.

7.3 Inspection Requirements for Supplies

The use of standard materials of a known purity and quality is necessary for the generation of reproducible data. The laboratory will monitor the use of laboratory consumable materials including solutions, standards, and reagents as described in this AQAPP.
Solvent materials are also verified prior to use. Each new lot of solvent is analyzed to verify the absence of interfering constituents. Reagent and method blanks are routinely analyzed to evaluate possible laboratory-based contamination of samples.

The sample containers used for this project will be supplied by the laboratory. The containers will be pre-cleaned sample containers that will be purchased from a USEPA-certified manufacturer (I-Chem 200 or equivalent container) or are cleaned using USEPA protocols.

The Laboratory Project Manager and the field representatives will be ultimately responsible for checking supplies for contamination.

Chemical reagents and solvents used by the field personnel will be provided by the laboratory.

8. CHAIN-OF-CUSTODY, FIELD STORAGE, DOCUMENTATION, SAMPLE TRANSPORTATION AND SAMPLING HANDLING PROCEDURES

8.1 Field and Laboratory Custody Procedures

Chain-of-custody procedures will be instituted and followed throughout the investigation. These procedures include field custody, laboratory custody, and evidence files. Samples are physical evidence and will be handled according to strict chain-of-custody protocols. The RAMBOLL of KJ Project Manager must be prepared to produce documentation that traces the samples from the field to the laboratory and through analysis. USEPA has defined custody of evidence as follows:

- In actual possession
- In view after being in physical possession
- In a locked laboratory
- In a secure, restricted area.

8.2 Sample Containers and Field Storage

Table 1 lists the proper sample containers, sample collection information and holding times. If field storage is required, the samples will be stored in a secured storage facility.

The laboratories will supply appropriate sample containers for samples in coolers as well as preservatives (as presented in **Table 1**). QA measures for these samples will begin with the sample containers; pre-cleaned containers will be purchased from a USEPA-certified manufacturer (I-Chem 200 or equivalent).

Immediately after collection, samples will be transferred to properly labeled sample containers, and properly preserved. **Table 1** lists the proper sample container, sample volumes, preservation, and holding times.

Samples requiring refrigeration for preservation will be promptly transferred to coolers packed with wet ice and/or ice packs. If field storage is required, the samples will be stored in a secured storage facility and a cooler temperature of less than or equal to 6 °C will be maintained.

8.3 Field Documentation

The field sampler is personally responsible for the care and custody of the sample until transferred.

The field logbook will be used to note information regarding collection of samples and any observations. All entries will be signed and dated. Field logbooks will be waterproof and bound. The logbook will be dedicated to the project and pages will not be removed. Corrections will be made by drawing a single line through the incorrect data and initialing and dating the correction that was made to the side of the error. An initialed diagonal line will be used to indicate the end of an entry or the end of the day's activities.

The following information will be recorded on the field logbook by the field sampling team:

- Name and title of author, date, and time of site entry, and physical/environmental conditions during the field activity;
- Meteorological data;
- Project number, client name, and Site name;
- Name and title of field crew members;
- Sample media;
- Sample collection method, including equipment utilized;
- Number and volume of samples collected;
- Description of sample locations;
- Date and start and end time of sample collection;
- Diagrams of sampling process;
- Sample and QA/QC identification numbers;
- Sample distribution;
- Field observations;
- Field measurements made and equipment used;
- Initial and final field vacuum readings;
- Calculations, results, and calibration data for field sampling and measurements;
- References for maps and photographs of the sample location; and
- Dates and method of sample shipments.

A completed sample identification label or tag that will be sequentially numbered will be attached to each investigative sample and the sample placed in a sample container. The identification on the label/tag must be sufficient to enable cross-reference with the logbook. The sample label/tag will be recorded using waterproof, non-erasable ink and will be attached to the sample container using adhesive. Permanent marker will not be used on sample tags.

The sample labels/tags will contain the following information:

- Sample location/number identification;
- Site/Project name;
- Date and time of sample collection;
- Designation of the sample as a grab or composite;
- Type of sample matrix;
- Name/initials of the sampler;
- Whether the sample is preserved or unpreserved;
- Space for laboratory sample number (only on the sample tag); and
- General types of analysis to be performed.

8.4 Field Custody Procedures and Documentation

For the environmental samples, chain-of-custody records will be kept starting at the time that sample containers are placed in the coolers for transportation to the laboratory. One completed chain-of-custody record must be kept with each sample cooler at all times.

Example chain-of-custody forms for the various laboratories are provided Figures 2-1 through 2-5.

The following measures will be taken when completing a chain-of-custody record:

- The chain-of-custody forms will be completed in waterproof, non-erasable ink.
- The chain-of-custody forms will be completed neatly using printed text. If a simple mistake is made, the error will be lined out with a single line and initialed and dated.
- Each separate sample entry will be sequentially numbered.
- The use of "ditto" or quotation marks to indicate repetitive information in columnar entries should be avoided. If numerous repetitive entries must be made in the same column, a continuous vertical arrow will be used between the first entry and the next different entry.
- When more than one chain-of-custody form is used for a single shipment, each form will be consecutively numbered using the "page ___ of ___" format.
- If necessary, additional instructions will be placed directly onto the chain-of-custody form.
- Acronyms used on a chain-of-custody form will be defined.

For environmental samples, the chain-of-custody form will contain the following information:

- Laboratory name and address;
- Project identification and number;
- Sample description/location;
- Date and time of sample collection;
- Type and matrix of sample;
- Number of sample containers;
- Analysis requested/comments;
- Sampler signature/date/time;
- Date and signature of the field representative;
- Date and signature of the laboratory representative;
- Carrier used to ship coolers; and
- Air bill number (if shipped by a commercial carrier).

In the case that high concentrations are suspected to be present in the samples, a note to that effect will be included on the chain-of-custody form.

In the field logbook, samplers will note the information previously presented.
Samples will be packed prior to shipment using the following procedures (where applicable):

- Select a sturdy cooler in good repair and clean. Secure and tape the drain plug with fiber or duct tape.

- Be sure the lids on all bottles are tight (will not leak) and baggies are sealed.
- Where applicable, add ice that has been placed in heavy-duty polyethylene bags and properly sealed on top of or between the samples. Pack samples securely to eliminate breakage during shipment with ice packs to maintain the inside temperature of less than or equal to 6 °C.
- Sampling containers will be packed with packing materials. When possible, sample container preparation and packing for shipment will be completed in a well-organized and clean area. Sample containers will be prepared for shipment by wiping containers clean of debris/water using paper towels. Paper towels will be disposed with the personal protective equipment (PPE).
- Place chain-of-custody record into a Ziploc plastic bag, tape the bag to the inner side of the cooler lid, and close the cooler and securely tape (preferably with fiber tape) the top of the cooler shut. Two custody seals will be affixed to the latch and lid of the cooler. The number of the security seal will be recorded on the chain-of-custody form. The custody seals will consist of adhesive-backed tape that easily rips if it is disturbed. The field sampler will initial and date the seal. The seals must be broken to open the cooler and will indicate tampering if the seal is broken before receipt at the laboratory.
- A label containing the name and address of the shipper will be placed on the outside of the container.

8.5 Sample Transportation

The field sampling team will either hand deliver or ship the cooler via an overnight delivery service or contact the laboratory to send a courier for pick up. Prior to shipment of sample coolers, the field sampling team will contact the laboratory to notify the laboratory of the shipment.

Samples will remain in the custody of the sampler until transfer of custody is completed. Transfer consists of:

- Delivery of samples to the Laboratory Sample Custodian; and/or
- Signature of the Laboratory Sample Custodian on the chain-of-custody form as receiving the samples and signature of sampler as relinquishing the samples.

The chain-of-custody document will be completed by the field sampler and provided for each sample cooler. When transferring the possession of samples, individuals relinquishing and receiving will sign, date, and note the time on the chain-of-custody. Custody of samples must be continuous between parties and time gaps must not be present. Each shipment of samples to the laboratory must have its own chain-of-custody record with the contents of the shipment, method of shipment, name of courier, and other pertinent information written on the record. The original record accompanies the shipment and the copies are kept with the field forms and distributed to the RAMBOLL or KJ Project Manager. A copy of the chain-of-custody will be faxed to the laboratory and to the Project Manager on the same day of sample shipment. Freight bills, postal service receipts, and bills of lading will be retained as permanent documentation.

If a carrier is used to take samples between the sampler and the laboratory, the air bill number must be written on the chain-of-custody.

Samples will be shipped or transported within 24 hours of being collected and will arrive at the laboratory no later than 72 hours after sample collection.

8.6 Laboratory Custody Procedures

Laboratory custody procedures continue when the samples are received by the laboratory. When the samples arrive at the laboratory, the Laboratory Sample Custodian will sign the courier's air bill or bill of lading (unless hand-delivered) and will note the cooler temperature on the chain-of-custody form, where applicable. If the cooler temperature is greater than 6 °C, the RAMBOLL or KJ Project Manager will be notified. If the samples were shipped, the courier's air bill number will be attached to the chain-of-custody and the air bill number will be written on the chain-of-custody form. If the cooler arrives at the laboratory after hours, an external chain-of-custody will be properly filled out and will accompany the cooler until the laboratory receives the cooler. The Laboratory Sample Custodian's duties and responsibilities upon sample receipt will be to:

- Document receipt of samples by signing the record with the date and time of sample receipt.
- Note the cooler temperature on the chain-of-custody form where applicable.
- Inspect sample shipping cooler for the presence or absence of custody seals (only if shipped via overnight courier) and for container integrity.
- Sign the appropriate forms or documents, verify, and record the agreement or disagreement of information on sample documents and, if there are discrepancies, record the problem and notify the RAMBOLL or KJ Project Manager.
- Assign a number for each sample upon receipt. That sample number will be placed on the sample label which will remain attached to the sample container.
- Log sample information into the laboratory sample tracking system.
- Label sample with a unique, sequential laboratory sample number.
- Place samples in the walk-in cooler or sample storage area that is a secure, limited-access storage.

If QC samples have not been properly identified during sample collection, the Laboratory Project Manager will contact the RAMBOLL or KJ Project Manager to assign QC samples prior to the start of sample analysis.

The laboratory will immediately contact the RAMBOLL or KJ Project Manager if issues pertaining to sample condition or documentation are detected (e.g., broken security seal; compromised sample containers; chain-of-custody information in disagreement with sample labels).

8.7 Final Evidence Files

The final evidence file will be the central repository for documents that constitute evidence relevant to sampling and analysis activities as described in this AQAPP. RAMBOLL and KJ will be custodians of their respective evidence files and maintains the contents of evidence files for the Site, including relevant records, reported, logs, field notebooks, pictures, subcontractor reports, and data reviews.

Copies of the laboratory data packages will be stored by the laboratory for incorporation into the sample file. The Laboratory Project Manager will be responsible for laboratory data packages. Upon completion of the analyses, the RAMBOLL or KJ Project Manager will begin assimilating the field and laboratory data. In this way, the file for the samples will be generated. The final file for the sample will be stored by either RAMBOLL or KJ their respective facilities and will consist of the following:

- Laboratory data packages, including summary and raw data from the analysis of environmental and QC samples, chromatograms, mass spectra, calibration data, work sheets, and sample preparation log
- Chain-of-custody records
- Data validation reports
- Field notebooks and data
- Field collection report
- Pictures and drawings, if applicable
- Progress and QA reports
- Contractor and subcontractor reports
- Correspondence

The evidence file must be maintained in a secured, limited access area until submittals for the project have been reviewed and approved, and for a minimum of 10 years past the submittal date of the final report.

9. LABORATORY SAMPLE STORAGE AND HANDLING

At the laboratory, the analysts will be required to log samples and extracts in and out of storage as the analysis proceeds.

There must not be a lapse in the custody for the sample containers and exchanges of custody must be documented on the form. Samples will be returned to secure storage at the close of business. Care must be exercised to properly complete, date, and sign records needed to generate the data package.

Procedures to be followed by the laboratory include:

- Samples will be handled by the minimum number of people possible.
- The laboratory will set aside a secured sample storage area consisting of a clean, dry, refrigerated, isolated room.
- A specific person will be designated sample custodian. Incoming samples will be received by the custodian who will indicate receipt by signing the chain-of-custody form.
- The custodian will ensure that samples which are heat-sensitive, light-sensitive, radioactive, or which require special handling in other ways, are properly stored and maintained prior to analysis.
- The analytical area will be restricted to authorized personnel only.
- After sample analyses are complete, the analytical data will be kept secured and released to authorized personnel only.

10. ANALYTICAL METHODS, TARGET ANALYTES AND REGULATORY CRITERIA

The analytical methods, target analytes, detection limits and regulatory limits for the sampling activities are presented in **Table 2-1A, Table 2-1AA, Table 2-1B, Table 2-1BB, Table 2-1C, Table 2-1CC, Table 2-2A, Table 2-2AA, Table 2-2B, Table 2-2BB, Table 2-2C, Table 2-2CC, Table 2-2D, Table 2-3E, Table 2-3A, Table 2-3AA, Table 2-3B, Table 2-3BB, Table 2-3C, Table 2-4A, Table 2-4B, Table 2-4CC, Table 2-5A, Table 2-5B, Table 2-6A, Table 2-6AA, Table 2-6B, Table 2-6BB, Table 2-6C, Table 2-6D and Table 2-6DD**.

10.1 Analytical Methods and Laboratory Analysis

To obtain data of a quality sufficient to meet the project DQOs, the methods listed in Table 1 will be used for analysis of the environmental samples.

The laboratory will adhere to the specific analyses and QA/QC requirements in the analytical methods listed in **Table 1** and additional requirements listed in this AQAPP. The most recent laboratory control limits for accuracy and precision, will be used to evaluate the sample data. In addition, the QC requirements and corrective actions listed in **Tables 3-1 to 3-19**, which augment the method requirements, will be followed by the laboratory.

In the event of an analytical system failure, the Laboratory Project Manager will identify the situation and provide corrective action guidance. The RAMBOLL QAO and KJ Project Manager (if appropriate) will be notified and the situation will be documented in the data package case narrative.

Matrix interferences will be identified and documented during the analytical process. Samples may be diluted only if analytes of concern generate responses in excess of the linear range of the instrument. MDLs and RLs may only be achieved in an undiluted sample free of matrix interferences or of high concentrations of target analytes. If matrix interferences are encountered or if high concentrations of target compounds are present, established MDLs and RLs may not be achievable without impacting the instrument quality. If the laboratory has taken appropriate actions and matrix interferences prevent the laboratory from achieving the specified detection limits, the RAMBOLL QAO or KJ Project Manager (if appropriate) will be contacted as soon as the situation is identified. The Laboratory Project Manager will document, in the data package case narrative, how the laboratory demonstrated good analytical practices in order to attempt to achieve the specified reporting detection limits.

Blanks will not be subtracted from target analyte results.

The generated data will be input into the laboratory database management system. Laboratories analyzing samples for submittal to the NJDEP must meet the required NJDEP Environmental Laboratory Certification by holding NJDEP Environmental Laboratory Certification, NJDEP Primary NELAP Accreditation, NJDEP Secondary NELAP Accreditation or a combination of certifications and accreditation. Laboratories must meet and maintain the analytical protocol requirements stipulated in the New Jersey Regulations Governing the Certification of Laboratories and Environmental Measurements and the certified method.

Complete descriptions of analytical procedures to be used in the laboratory are described in the methods, the QC requirements and corrective actions listed in this AQAPP and the laboratory SOPs. The laboratory SOPs and QAM are available upon request.

10.2 Target Analytes and Detection Limits

The MDL is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte. The RL is the lowest concentration that can be reliably quantified within specified limits of precision and accuracy during routine laboratory operations.

The laboratories will evaluate non-detected results for solid, aqueous and biological results to the MDLs and report the non-detected results referencing the RL. The RL concentration is established by the lowest standard in the instrument calibration. Results that are less than the RLs but greater than or equal to the MDLs will be reported using the "J" flag. For example, for a target analyte with a RL of 10 ug/L and an MDL of 2 ug/L, a non-detected result is reported as 10 ug/L "U", indicating that a concentration greater than or equal to the MDL was not detected by the laboratory. A detected concentration of 6 ug/L is reported as 6 "J" and a detected concentration of 23 ug/L is reported without a laboratory flag. The laboratory must include both RLs and MDLs on the sample result sheet that is reported to the data user.

Where applicable, the RLs and MDLs listed in **Table 2-1A, Table 2-1AA, Table 2-1B, Table 2-1BB, Table 2-1C, Table 2-1CC, Table 2-2A, Table 2-2AA, Table 2-2B, Table 2-2BB, Table 2-2C, Table 2-2CC, Table 2-2D, Table 2-3E, Table 2-3A, Table 2-3AA, Table 2-3B, Table 2-3BB, Table 2-3C, Table 2-4A, Table 2-4B, Table 2-4CC, Table 2-5A, Table 2-5B, Table 2-6A, Table 2-6AA, Table 2-6B, Table 2-6BB, Table 2-6C, Table 2-6D and Table 2-6DD** or the most recent MDLs and RLs, will be reported by the laboratory.

Laboratories periodically update the MDL and RL values as part of internal laboratory policy.

10.3 Regulatory Criteria

Table 2-1A, Table 2-1AA, Table 2-1B, Table 2-1BB, Table 2-1C, Table 2-1CC, Table 2-2A, Table 2-2AA, Table 2-2B, Table 2-2BB, Table 2-2C, Table 2-2CC, Table 2-2D, Table 2-3E, Table 2-3A, Table 2-3AA, Table 2-3B, Table 2-3BB, Table 2-3C, Table 2-4A, Table 2-4B, Table 2-4CC, Table 2-5A, Table 2-5B, Table 2-6A, Table 2-6AA, Table 2-6B, Table 2-6BB, Table 2-6C, Table 2-6D and Table 2-6DD present the applicable NJDEP regulatory levels which will be used to evaluate analytical data for the sampling activities.

To meet the DQOs for this investigation, the results will be compared to the following regulatory criteria/guidance:

For groundwater and surface water samples:

- NJDEP Class IIA Groundwater Quality Standards: Higher of PQL and GWQC, current as of January 2018.
- NJDEP Ecological Screening Criteria, current as of January 2018.

For soil, sediment, concrete demolition debris and small mammal biological tissue samples (where applicable):

- NJDEP Soil Residential and Non-Residential, current as of January 2018.
- Default Impact to Groundwater Soil Screening Levels, current as of January 2018.
- NJDEP Ecological Screening Criteria, current as of January 2018.
- NJDEP Evaluation of Extractable of Extractable Petroleum Hydrocarbons in Soil Technical Guidance current as of June 2019
- Default Leachate Criteria for Class II Groundwater provided in the NJDEP's November 2013 Development of Site-Specific Impact to Ground Water Soil Remediation Standards using the Synthetic Precipitation Leachate Procedure.

11. QUALITY CONTROL REQUIREMENTS AND DATA QUALITY INDICATOR PERFORMANCE CRITERIA

The overall effectiveness of a QA/QC program depends on operating in the field and laboratory according to a program that systematically ensures the precision and accuracy of analyses by detecting errors and preventing their recurrence or measuring the degree of error inherent in the methods applied.

Quality Assurance is an integrated system of activities involving planning, quality assessment, reporting and quality improvement to ensure that a program meets defined standards of quality with a stated level of confidence. Quality Control involves the technical activities that measure the quality of a program so that it meets the needs of users.

A brief description of laboratory quality control (QC) analyses is presented in the following sections.

11.1 Laboratory QA/QC Checks

Tables 3-1 to 3-19 summarize the laboratory QC checks, frequency of analysis, control limits, and laboratory corrective actions for the analytical method to be used in this project. A brief description of laboratory QA/QC analyses is presented in the following subsections.

11.1.1 GC/MS Tuning

Tuning and performance criteria are established to verify mass resolution, identification, and to some degree, instrument sensitivity. These criteria are not sample specific; conformance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

11.1.2 Calibration

Compliance requirements for satisfactory instrument calibration are established to verify that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of analysis, and continuing calibration and performance checks document satisfactory maintenance and adjustment of the instrument on a day-to-day basis.

11.1.3 Blanks

Several types of blanks will be analyzed by the laboratory. Corrective action procedures will be implemented for blank analyses if target compounds are detected at concentrations greater than the applicable criteria. The criteria for evaluation of blanks apply to any blank associated with a group of samples collected, prepared and/or analyzed at the same time, where applicable. If problems with a blank exist, data associated with the project must be carefully evaluated to determine whether or not there is an inherent variability in the data for the project, or if the problem is an isolated occurrence not affecting other data.

A method blank is an analyte-free blank that undergoes the preparation procedures applied to a sample. These samples are analyzed to examine whether sample preparation and analysis techniques result in sample contamination. The laboratory will prepare and analyze a method blank with each group of samples that are extracted, digested, or analyzed at the same time.

Field rinsate blanks are analyzed to assess contamination introduced during field sampling procedures and sample shipment, respectively. Field rinsate blank collection begins with two sets of identical bottles; one set filled with target analyte-free water provided by the laboratory, and one empty set of bottles identical to those provided for aqueous sample collection. At the field location, in an area suspected to be contaminated, the water is passed from the full set of bottles through the dedicated or field decontaminated sampling device(s) and into the empty set of bottles. This will constitute identical bottle to bottle transfer. The field rinsate blank samples will be subject to the same analyses as the environmental samples. One field rinsate blank will be collected during each day of the sampling event or one per 10 samples collected.

Trip blanks will be prepared as other samples submitted for VOC analysis and will contain analyte-free water or preservative, as appropriate. A trip blank will be prepared by the laboratory, using the same preservation technique as that used to prepare the sample containers, from the same source as the method blank water, and sent to the Site in the cooler with the other sample containers. The trip blank will undergo shipment from the sampling site to the laboratory in coolers with the environmental samples to be analyzed for VOCs. Trip blanks will be analyzed for VOCs to determine if contamination has taken place during sample handling and/or shipment. Trip blanks will be included in sample coolers at a frequency of one trip blank per cooler containing samples to be submitted for VOC analysis, consistent with Ramboll's internal policy.

11.1.4 Internal Standards Performance

Internal standards, which are compounds not found in environmental samples, will be spiked into samples, blanks, and laboratory control samples at the time of sample preparation for applicable methods. Internal standards should meet the criteria specified in the corrective action tables.

11.1.5 Surrogate Recovery

Accuracy and matrix biases for individual samples are monitored for organic analyses using surrogate additions. Surrogates are compounds similar in nature to the target analytes; the surrogates are spiked into aqueous and solid samples, blanks, and QC samples prior to sample preparation for organic analyses. The evaluation of the results of these surrogate spikes is not necessarily straightforward. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the review and validation of data based on specific sample results is frequently subjective.

11.1.6 Laboratory Control/Laboratory Control Duplicate Samples

Laboratory control samples (LCSs) and laboratory control duplicate samples (LCSDs) are standard solutions that consist of known concentrations of the complete list of target analytes spiked into laboratory analyte-free matrix. They are prepared or purchased from a certified manufacturer from a source independent from the calibration standards to provide an independent verification of the calibration procedure. These QC samples are then prepared and analyzed following the same procedures employed for environmental sample analysis to assess method accuracy independently of sample matrix effects. Percentage recoveries are evaluated to assess the efficiency of the preparation and analysis method independent of environmental sample matrix effects. If performed by the laboratory, the LCSD is evaluated for laboratory precision.

11.1.7 MS/MSD Samples

MS/MSD data are generated to determine long-term precision and accuracy of the analytical method with respect to sample matrices. Generally, the MS/MSD data alone are not used to evaluate the precision and accuracy for associated organic samples since data may reflect specific matrix effects only present within one sample.

One set of MS/MSD samples will be collected for every 20 samples (minimum frequency of 5%) or one per matrix for less than 20 samples. If less than 20 samples are collected, one MS/MSD set will be collected. Whenever possible, MS/MSD samples will be prepared and analyzed within the same batch as the environmental samples. MS/MSD samples will be spiked at the laboratory with the complete list of target analytes.

11.1.8 Analyte Identification and Quantitation

The objective of the qualitative criteria is to minimize the number of erroneous identifications of compounds. An erroneous identification can either be a false positive (reporting a compound present when it is not) or a false negative (not reporting a compound that is present). The identification criteria can be applied much more easily in detecting false positives than false negatives. Negatives, or non-detect compounds on the other hand, represent an absence of data and are therefore much more difficult to assess. The objective for quantitative requirements is to maximize the accuracy of data and sensitivity of the instrument. Unless sample screening indicates the presence of high concentration target analytes, samples will be analyzed undiluted to maximize sensitivity. Samples must be reanalyzed at the appropriate dilution when concentrations exceed the linear calibration range to maximize accuracy. Matrix interferences will be identified and documented. Samples may be diluted only if analytes of concern generate responses in excess of the linear range of the instrument.

11.2 Field QA/QC Checks

In order to evaluate data quality, QA/QC samples will be collected during the sampling activities. Table 1 lists the environmental samples and corresponding QC samples to be collected by analysis.

11.2.1 Field Duplicate Samples

Collection of field duplicate samples provides for the evaluation of the laboratory's precision performance by comparing analytical results of two samples from the same location. They are also collected to evaluate field sample collection precision procedures. Samples are collected from one location and sent to the laboratory blind (with two different sample identifications). Duplicates of solid samples submitted for VOC analysis are obtained from discrete locations without mixing. Duplicates for the remaining analyses require homogenization by filling a decontaminated stainless steel tray or bowl with the sample and mixing it with a decontaminated stainless steel instrument. The mixed sample is divided in half and scooped alternatively from each half to fill the sample container. One field duplicate sample will be collected for every 20 samples (minimum frequency of 5%) or one per matrix for less than 20 samples. If less than 20 samples are collected, one field duplicate sample will be collected.

11.2.2 MS/MSDs

MS/MSD samples are duplicate samples that are collected in the field and have spiking solutions added at the laboratory during sample preparation. MS/MSD samples are considered identical to

the original sample. The percent recovery of the spiked amount indicates the accuracy of the extraction as well as interferences caused by the matrix. Relative percent differences (%RPD) between spike sample recoveries or between duplicate samples will indicate the precision of the data. One MS/MSD sample set will be collected for every 20 samples submitted to the laboratory (minimum frequency of 5%) or one MS/MSD for less than 20 samples.

11.2.3 Field Rinsate Blanks

One field rinsate blank, presented in Section 11.1.3, will be collected per 10 samples or once per day, whichever is more conservative.

11.2.4 Trip Blanks

Trip blanks, presented in Section 11.1.3, will be included in sample coolers at a frequency of either one trip blank per cooler, consistent with Ramboll's internal policy, or one trip blank per shipment of samples sent to the laboratory for VOCs.

11.2.5 Temperature Blanks

Temperature blanks will consist of vials of water that have undergone shipment from the sampling site to the laboratory in coolers with the environmental samples to be analyzed for the sampling program. The temperature of these blanks will be measured at the laboratory upon receipt of the sample cooler to verify compliance with the cooler temperature requirement.

11.3 Corrective Action

Generally, the following corrective actions may be taken by the laboratory. When analytical parameters that are within the control of the laboratory, including calibration, instrument performance, and blank criteria, are not met, the cause of the problem will be located and corrected. The analytical system will then be recalibrated. Sample analysis will not begin until calibration, instrument performance, and blank criteria are met. When matrix spike, standard, or duplicate analyses are out of control, samples analysis will cease. The problem will be investigated. Depending on the results of the overall QC program for the sample set, the data may be accepted, accepted with qualification, or determined to be unusable.

If, through the application of the corrective actions listed in this AQAPP, the data is determined to be unusable, the QC analysis will be re-prepared and reanalyzed. If QC criteria are met upon reanalysis, only the new results are reported. If QC criteria are still not met upon reanalysis, both sets of sample results will be reported and the RAMBOLL QAO or KJ Project Manager will be notified of the situation at the time of sample analysis.

If matrix interferences are suspected, the RAMBOLL QAO or KJ Project Manager will be contacted. Unless sample screening indicates the presence of high concentration target analytes, samples may be diluted in the analysis only if analytes of concern generate responses in excess of the linear range of the instrument.

If the laboratory has taken appropriate actions and matrix interferences prevent the laboratory from achieving the specified detection limits, the RAMBOLL QAO or KJ Project Manager will be contacted as soon as the situation is identified. The Laboratory Project Manager will document, in the data package case narrative, how the laboratory demonstrated good analytical practices in order to attempt to achieve the specified reporting detection limits.

11.4 Data Quality Indicator Performance Criteria

As presented in Section 3.2, data for accuracy/bias, precision, representativeness, sensitivity, comparability and completeness will be evaluated.

The definitions and equations used for the assessment of data quality are discussed below.

Accuracy /Bias - Is a measure of the nearness of an analytical result, or a set of results, to the true value. It is usually expressed in terms of error, bias, or percent recovery (%R).

Normally, the term accuracy is used synonymously with percent recovery. It describes either the recovery of a synthetic standard of known value, or the recovery of known amount of analyte (spike) added to a sample of known value. The %R or accuracy can be calculated by using:

Standards: %R = (observed value/true value) x 100

Spikes: %R = [((conc. spike + sample conc.) - sample conc.)x100)]/conc. Spike

Precision - Refers to the agreement or reproducibility of a set of replicate results among themselves without assumption of any prior information as to the true result. It is usually expressed in terms of the percent difference (%D) or RPD.

The %D is calculated by using:

%D = (larger SR - smaller SR x 100)/smaller SR

Where: SR is the sample result.

The RPD is calculated by using:

RPD = (OSR - DSRx 100)/((OSR + DSR)/2)

Where: OSR is the original sample result and DSR is the duplicate sample result.

Average - The average or arithmetic mean (X) of a set of n values (Xi) is calculated by summing the individual values and dividing by n:

$$X = (\sum Xi_{I=1\ to\ n}) \div n$$

Range - The range (Ri) is the difference between the highest and lowest value in a group. For n sets of duplicate values (X2, X1), the range (Ri) of the duplicates and the average range (R) of the n sets are calculated by the following:

Ri = X2 - X1

$$R = \sum Ri_{i=1\ to\ n} \div n$$

Standard deviation and variation - The standard deviation (S) of a sample of n results is the most widely used measure to describe the variability of a data set. It is calculated by using the following equation:

$$S = \sqrt{\frac{\Sigma (Xi - \overline{X})^2}{n-1}} \; n_{\text{ to } i-1}$$

Where: X is the average of the n results and Xi is the value of result. Normally, X ± S will include 68% and X ± 2S includes about 95% of normally distributed data.

The variance is equal to S2. The percent relative standard deviation (%RSD), or coefficient of variation (CV), is the standard deviation divided by the mean and multiplied by 100 as follows:

CV = 100S/X

The Laboratory Project Manager, with individual laboratory group leaders, will identify any data that should be rated as "unacceptable" based on the assessment of the QA/QC criteria.

Bias - Results of sample spiking are used to calculate the quality control parameter for accuracy evaluation, the percent recovery (%R).

%R = 100(S1 - S2)/T1
where: T1 = True concentration of the spike
S1 = Observed spiked sample concentration
S2 = Sample concentration without spike addition

Sensitivity - The measure of sensitivity is made by a comparison of laboratory RLs to the requirements for the DQOs. This comparison will be performed prior to sample analysis, with expected laboratory RLs, and following sample analysis, with actual RLs.

Completeness -Completeness is the fraction of usable data obtained from a measurement system (e.g., sampling and analysis) compared to that which was planned and is calculated as follows:
Completeness = (Usable Laboratory Measurements Made/ Laboratory Measurements Planned) / x 100%

12. DATA REVIEW

For data to be scientifically valid, legally defensible, and comparable procedures must be used to prepare and manage the data.

12.1 Data Reporting Procedures

Specific laboratory procedures and instrumentation can be found in the laboratory QAMs and SOPs. The data production and reporting procedures described below will be employed at the laboratory.

12.1.1 Data Reduction

Data reduction consists of manual and computer data reduction procedures and calculations. Computer data reduction procedures and calculations will be checked manually by the laboratory to verify that compound identification and quantitation adhere to method requirements. The laboratory will be responsible for maintaining a listing of computer-based data reduction programs and SOPs for data reduction. Sample preparation or extraction logs will be used to document sample preparation information (for example, preparation weights, volumes, reagents). Instrument injection logs or bench sheets will also be maintained for each instrument.

12.1.2 Laboratory Data Review

Analytical results are generally entered into the laboratory computer system by the analyst, independently reviewed by another analyst or supervisor experienced in the method, and approved by the Laboratory Manager. The following are requirements that are generally examined as part of this review:

- Initial calibration criteria were met. Standards in the calibration curve covered the expected concentration ranges of the samples including the RL.
- Initial and continuing calibrations met the acceptance criteria defined in the method standard procedure.
- Sample results fell within the range of the standard curve.
- Method blanks were processed with each analytical batch and no detectable levels of contamination were identified.
- MS/MSD and duplicate analyses were performed at the required frequency and results were within the control limits.
- LCS analyses were performed with each analytical batch and the results obtained were within control limits.
- Calculations have been accurately performed.
- Reporting units are correct.
- Data for the analysis provide a complete audit trail.
- Reported RLs comply with data quality indicator requirements.

The analyst's supervisor will check a minimum of 10% of the data back to raw data in the secondary review. When required analyses on the samples in a project are complete, entered, and reviewed, a report will be generated. The report will be forwarded to the assigned Laboratory Project Manager or designee for review. The report will then be reviewed for the following items (at a minimum):

- QC data will be reviewed to identify whether or not internal specification and contract requirements have been me.
- Non-conformance reports, if any, will be reviewed for completion of corrective actions and their impact of results. Non-compliance and corrective action procedures will be documented in the case narrative in the final report.

The report requires the signature of the Laboratory Project Manager or designee. Electronic data are copied onto computer tape, inventoried, and stored off-site in a secure facility, or within locked cabinets on-site. This data archive system is maintained for a minimum of ten years. Following final review, one hardcopy of the laboratory data package and a portable document format (PDF) copy will be transmitted to the RAMBOLL or KJ Project Manager.

13. DATA DELIVERABLES AND DATA MANAGEMENT

Definitive data will be generated in the laboratory. The laboratory-generated data will be entered into the laboratory DBMS and presented in data packages. The laboratory will perform the data review process, including a minimum of 10 percent check of the data back to raw data in the secondary review by a laboratory supervisor. Validation of the sample data will be performed as described in Section 14 of this AQAPP.

Laboratory analytical data will be provided in EDD format, in accordance with the laboratory's internal protocol for NJDEP deliverable requirements for electronic data in New Jersey HAZSITE format.

Data will be managed in a relational DBMS. Laboratory analytical data will be provided in electronic disk deliverable format for direct upload into the DBMS.

The laboratory is responsible for providing an EDD that matches the hardcopy and electronic data package for sample and analysis information. The EDD records must be the same format (i.e., flat file format). Field samples that are not collected from the project site should not be included in the laboratory report or EDD.

The DBMS will be used to provide custom queries and reports to support data validation, data analysis, and report preparation. Data validation qualifiers will be entered into the DBMS by hand. The DBMS will be checked independently to minimize data transmittal error and loss. Generally, the information flow will include the following steps:

- Samples will be collected in the field and transported to the laboratory.
- Samples will be analyzed at the laboratory and data generated.
- The laboratory data will be sent to the data validator for evaluation and to the Project Manager for preliminary evaluation.
- Qualified data will be sent to data management personnel and entered into the DBMS.
- The final data set from the DBMS will be provided to the Project Manager for data evaluation in terms of project goals.
- Project decisions based on results of the data analysis will be reported to Sunoco.

Records will be incorporated into the final project files for the samples. The field logs, data packages, and records will be included in the project files. The project files will be archived by RAMBOLL or KJ for a period of ten years.

14. DATA VALIDATION AND DATA USABILITY EVALUATION

At the discretion of the RAMBOLL or KJ Project Manager and Project LSRP following receipt of final laboratory data packages, a data usability evaluation or full and/or partial data validation will be performed in accordance with this AQAPP.

Data validators from RAMBOLL or KJ and will provide data evaluation services.

Data Usability Evaluation and Data Validation will be performed applying one of the following approaches:

- At a minimum, a Data Usability Evaluation will be performed for all samples collected for the investigation in accordance with the NJDEP's April 2014d. Site Remediation Program. Data Quality Assessment and Data Usability Evaluation Technical Guidance
- If deemed appropriate by the LSPR and RAMBOLL or KJ Project Manager, full data validation will be performed for 10 percent of the samples collected for the investigation and partial validation will be performed for the remaining samples.

Upon request by the data validator, the laboratory will provide additional or supplemental information within 3 working days of the request.

14.1 Data Usability Evaluation

The specific data quality requirements including precision, accuracy, representativeness, comparability, sensitivity, and completeness will, at a minimum, be assessed through a Data Usability Evaluation. Data usability with respect to the DQOs and data uses will be compared to the project requirements. In the event that the completeness objective of 95 percent is not achieved, samples may be recollected at the discretion of the Hercules LSRP, RAMBOLL or KJ Project Manager.

Based on the QA/QC information review and the qualifiers assigned to the analytical data, an overall evaluation of the data's usability will be performed. Data usability is defined as the percentage of data that remains unqualified or is qualified as approximate or non-detected due to blank contamination, divided by the data reported by the laboratory times 100. The percent usability excludes the data qualified as rejected due to major QA/QC excursions. The non-usable data is defined as the percentage of the data qualified as rejected divided by the data reported by the laboratory times 100. The data usability will be provided for each type of analysis performed.

The data usability evaluation considers the data parameters of precision, sensitivity, accuracy, representativeness, comparability, and completeness which are described as follows:

- Precision is evaluated through the review of field duplicate samples, laboratory duplicates, and MS/MSD samples.
- Sensitivity is evaluated through the review of RLs, blank analyses and holding time results.
- Accuracy is evaluated through the review of MS recoveries, LCS recoveries, internal standard recoveries, calibration, instrument performance checks, target analyte identification and quantitation and sample preservation.

- Representativeness is evaluated through the review of sample preservation and sampling containers.
- Comparability is evaluated through the review of the analytical methods and reporting procedures for consistency.
- Completeness is defined as the overall percentage of sample results that are determined to be usable.

14.2 Validation Procedures

Data Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Data validation is essentially a three-step process in which the analytical data's quality assurance/quality control information is first compared to a series of QA/QC criteria. Based on the results of this comparison, the analytical data are then assigned qualifiers, which provide an indication of the data's usability. Finally, an overall evaluation of the data's usability is performed.

The analytical data generated for this investigation will be evaluated by RAMBOLL or KJ using the analytical methods utilized by the laboratories (as presented in this AQAPP), the QA/QC requirements listed in **Tables 3-1 to 3-19**, where applicable for each method, the laboratory SOP (where applicable) and professional judgment.

Full data validation consists of a review of data summary forms and raw analytical data that are provided in the data packages. During the full validation, data validators will recalculate selected laboratory sample calculations using raw data when verifying sample results. In addition, data validators will review raw data to verify that compound identification was performed correctly and transcription errors are not present.

Partial validation consists of a review of only analytical QC summary forms that are included in the data package. The forms and the information contained on the forms are not evaluated for accuracy or completeness during the partial validation process.

In the event that major analytical excursions are detected during the partial validation, full validation may be performed to further investigate the major excursion, upon approval of the RAMBOLL QAO or KJ Project Manager.

The following QA/QC information will be included in the full and partial validation, where applicable:

- AQAPP compliance
- Chain-of-custody record
- Sample collection
- Sample preservation
- Percent solids
- Percent lipids
- Holding times
- Calibrations (Full validation only) (Calibration response factor evaluation only for partial validation)

- Blank analysis
- MS/MSD analysis
- LCS analysis
- Field duplicate analysis
- Surrogate recovery
- Internal standards performance
- Recovery standard performance
- GC/MS instrument performance check (Full validation only)
- ICP interference check analysis
- ICP serial dilution analysis
- Laboratory duplicate analysis
- Sample dilutions (Full validation only)
- Target analyte quantitation, identification, and quantitation limits (RLs) (Full validation only)
- Documentation completeness

14.3 Assignment of Qualifiers

Data affected by excursions will be qualified using the approach to applying data validation qualifiers listed in the following documents and professional judgment:

- USEPA. 2006. USEPA Region II Validating PCB Compounds, PCBs by Gas Chromatography SW-846 Method 8082A, HW-45 Revision 1.
- USEPA. 2010. USEPA Region II Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D, SOP HW-22 Revision 5.
- USEPA. 2010. USEPA Region II, Validating Pesticide Compounds Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B. HW-44 Revision 1.1.
- USEPA. 2010. USEPA Region II, Validation of Data Nitroaromatics and NItroamines by HPLC, SW-846, Method 8330A. HW-16 Revision 2.1.
- USEPA. 2010. USEPA Region II Data Validation SOP For SW-846 Method 8290 Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)By High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS), HW-19, Revision 1.1.
- USEPA. 2010. USEPA Region II, Validating Chlorinated Herbicides, GC SW-846 Method 8151A, SOP HW-17, Revision 3.1.
- USEPA. 2014. USEPA Region II Standard Operating Procedure For the Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP HW-24, Revision 4.
- USEPA. 2016a. USEPA Region II ICP-AES Data Validation, SOP No. 3a, Revision 1.
- USEPA. 2016b. USEPA Region II ICP-MS Data Validation, ISM02.0, SOP No. 3b, Revision 1.
- USEPA. 2016c. USEPA Region II, Mercury and Cyanide Data Validation, ISM02.2, SOP HW-3c Revision 1.

The application of these validation guidelines will be modified to reflect method, laboratory SOP and AQAPP requirements.

In accordance with the USEPA guidance, and utilizing professional judgment, the following qualifiers will be used in the data validation:

"R" Indicates that the RL or sample result is determined to be unusable due to a major deficiency in the data generation process. The data should not be used for any qualitative or quantitative purposes.

"U" Indicates that the analyte was analyzed for, but a concentration was not detected. The sample RL is reported. This qualifier is also used in the validation process to signify that the detection limit of an analyte was revised due to blank contamination.

"J" Indicates that the concentration should be considered approximate. This qualifier is used when the data validation process identifies a deficiency in the data generation process. This qualifier is also applied by the laboratory when the analyte concentration is greater than the MDL but less than the RL. In the latter case, the identification of the analyte is not in question but the quantitation of the analyte concentration may be uncertain.

"J+" The result is an approximate quantity, but the result may be biased high.

"J-" The result is an approximate quantity, but the result may be biased low.

"UJ" Indicates that the analyte was analyzed for, but a concentration was not detected. The sample RL is reported and should be considered approximate. This qualifier is used when the data validation process identifies a deficiency in the data generation process.

"JN " Indicates that there is presumptive evidence that the analyte is present, but it has not been confirmed due to confirmation excursions.

The following guidelines will be used regarding the assignment of qualifiers and the evaluation of data:

- The data quality evaluation results in only one type of qualifier ("U", "J", "UJ," or "R") for each analyte; in a case when several qualifiers are applicable to the same analyte, the cumulative effect of the various QA/QC excursions is employed in assigning the final data qualifiers. For example, if a sample result is affected by low surrogate recoveries, for which the "UJ" qualifier is applied, but low MS/MSD recoveries result in the rejection of the sample result (application of the "R" qualifier), the final data qualifier is the "R" qualifier.

14.4 Data Validation Report

The data validation report will contain separate QA sections in which data quality information collected during the investigation is summarized. The validation report will include the following:

- Guidelines used to evaluate the data;
- Data qualifiers applied to sample results;
- Summary of samples collected and analyses performed;

- Narrative that identifies major and minor analysis excursions detected for each parameter evaluated for each analysis;
- Additional issues and information that may be beneficial to the data user;
- Data summary forms.

The data validation report will be prepared under the direction of the RAMBOLL QAO or KJ Project Manager and will include the report on the usability of the data.

15. DATA ASSESSMENT PROCEDURES

15.1 Data QC Review

Data assessment is a systematic process of reviewing data against a set of criteria to identify outliers or errors and to delete suspect values or to flag them for the user. Laboratory data review starts with the laboratory quality control procedures discussed in Section 11 of this AQAPP.

Sample results obtained from the laboratory will be qualitatively and quantitatively assessed by the project team. Factors to be considered in the data assessment will include, but are not necessarily limited to, the following:

- Were all samples collected and handled using the custody procedures, methodologies and SOPs proposed in the AQAPP?
- Were samples obtained from all proposed sampling locations?
- Do any analytical results exhibit elevated laboratory RLs?
- Were any reported analytes not expected to be present?
- Which data points were found to be unusable based on the data validation results?
- Have sufficient data of appropriate quality been generated to meet the key objectives of the project as identified in this AQAPP?

15.2 Data Review

The internal laboratory data review process will be used to evaluate data. Data validation will be used to determine the quality and quantity of usable analytical data generated based upon the project specific AQAPP requirements.

15.3 Reconciliation with DQOs

PDI reports will include an evaluation of how representative the analytical results are of the medium being evaluated based on measures such as sampling design and quality control results. It will also include a discussion on the sufficiency of the data set for meeting project DQOs. The reports will also contain a discussion of any unusable data and follow up actions for subsequent data collection to meet the project DQOs.

15.4 Project Completeness Assessment

The RAMBOLL or KJ Project Manager will examine the project data for consistency with historical data, data quality, and usability.

16. PROJECT REPORTING

16.1 Data USABILITY/Validation Report

The data usability/validation report will contain separate QA sections in which data quality information collected during the investigation is summarized.

The data validation report will be prepared under the direction of the QAO and will include the report on the usability of the data.

16.2 Project Report

PDI reports will be prepared at the conclusion of each investigation and will include sample data results and the findings of that investigation.

17. REFERENCES

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ASTM. D854-14, *Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer.*

ASTM. D2216-10, *Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.*

ASTM. D422-63, *Standard Test Method for Particle Size Analysis of Soils.*

ASTM. D7521, *Standard Test Method for Determination of Asbestos in Soil.*

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NJDEP. April 2014a. *Site Remediation Program. Quality Assurance Project Plan Technical Guidance.*

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USEPA. 2010d. *USEPA Region II Data Validation SOP For SW-846 Method 8290 Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)By High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS), HW-19, Revision 1.1.*

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USEPA. 2016c. *USEPA Region II, Mercury and Cyanide Data Validation, ISM02.2, SOP HW-3c Revision 1.*

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Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
VOCs (USEPA Methods 5030C/5035A/8000C/8260C)[1]	Aqueous	3 - 40-milliliter glass vials with Teflon® lined septum caps	≤6°C HCL to pH≤2 FC Sealed and Headspace Free	Analysis within 14 days from collection for preserved samples. Analysis within 7 days from collection for samples not acid preserved.	TBD	One for every 20 samples collected	1 each in cooler with VOC samples	One for every 20 samples collected	One for every 10 samples collected
VOCs Low Level (USEPA Methods 5035A/8000C/8260C)[1]	Solid	Encore sampler used to collect and transport sample in accordance with USEPA Method 5035A.	≤6°C Sealed	At the laboratory: For Encore sampler: extrude sample to a sealed vial and freeze to -7°C within 48 hours from collection. Analysis must be performed within 14 days from collection. Otherwise, 48 hours from collection to analysis.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	1 each in cooler with VOC samples	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
VOCs Medium Level (USEPA Methods 5035A/8000C/8260C)[1]	Solid	Encore sampler in accordance with USEPA Method 5035A. Alternatively, 1-40 milliliter glass vials with Teflon® lined septum caps in accordance with USEPA Method 5035A. 5 grams sample volume required.	<6°C Sealed	At the laboratory within 48 hours of collection: Add methanol solution to 5 grams of sample in accordance with USEPA Method 5035A. 14 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	One ea. per cooler with VOC samples. Methanol preservation trip blank.	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
VOCs Low Level-SPLP/TCLP Preparation	Solid	Encore sampler used to collect and transport sample in accordance with	≤6°C Sealed	At the laboratory: Extrude Encore sample to a sealed	TBD	One per 20 samples or one per matrix (for	1 each in cooler with	One per 20 samples or one per matrix (for	One per 10 samples or one per

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
(USEPA Methods 5035A/8000C/1312/1311/ 8260C)[1]		USEPA Method 5035A. 25 Grams of sample required		vial and freeze to -7°C within 48 hours from collection. For SPLP/TCLP - VOCs, 14 days from collection to extract generation. 14 days from extract generation to analysis.		less than 20 samples)	VOC samples	less than 20 samples)	sampling event as required for each matrix
SVOCs (USEPA Methods 3510C/8000C/8270D/ SIM)[2]	Aqueous	2-~~one liter~~ 250 mL amber glass container with Teflon® lined screw caps	≤6°C	7 days from collection to extraction; 40 days from extraction to analysis.	TBD	One for every 20 samples collected	NA	One for every 20 samples collected	One for every 10 samples collected
SVOCs (USEPA Methods 3541/3546/3550B/ 8000C/8270D)[2]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	14 days from collection to extraction; 40 days from extraction to analysis	TBD	One for every 20 samples collected	NA	One for every 20 samples collected	One for every 10 samples collected
SVOCs* (USEPA Methods 3541/3550B/ 8000C/8270D)[2]	Biological Tissue	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	14 days from collection to extraction; 40 days from extraction to analysis	TBD	One for every 20 samples collected	NA	One for every 20 samples collected	One for every 10 samples collected
SVOCs/SPLP/TCLP Preparation (USEPA Methods 3541/ 3546/3550B/8000C/ 1312/1311/ 8270D)[2]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	For SPLP/TCLP - 14 days from collection to extract generation. 7 days from extract generation to extraction. 40 days from extraction to analysis	TBD	One for every 20 samples collected	NA	One for every 20 samples collected	One for every 10 samples collected

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
PCBs (USEPA Methods 3510C/8000C/8082/8082A)[2]	Aqueous	2- 250 ml amber glass container with Teflon® lined screw caps	≤6°C	Project Holding Time: 7 days from collection to extraction; 40 days from extraction to analysis	TBD	One for every 20 samples collected	NA	One for every 20 samples collected	One for every 10 samples collected
PCBs (USEPA Methods 3545A/3546/8000C/8082/8082A)[2]	Solid	4 oz. wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	Project Holding Time: 14 days from collection to extraction; 40 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Organochlorine Pesticides/TCLP Preparation (USEPA Methods 3510C/8000C/1311/8081B)[2]	Solid	4 oz. wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	For TCLP - 14 days from collection to extract generation. 7 days from extract generation to extraction. 40 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Herbicides/TCLP Preparation (USEPA Methods 3510C/8000C/ 1311/8151A)[6]	Solid	4 oz. wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	For TCLP - 14 days from collection to extract generation. 7 days from extract generation to extraction. 40 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Extractable Petroleum Hydrocarbons Cat 1 and Cat 2 (EPH- Aliphatic and Aromatic) (NJDEP EPH10/08 Oct 2010 Rev 3)[20]	Aqueous	1 Liter narrow mouth glass container with Teflon® lined lid	4°C 5 mls HCL to pH<2	14 days from collection to extraction; 40 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Extractable Petroleum Hydrocarbons Cat 1 and Cat 2 (EPH- Aliphatic and Aromatic) (NJDEP EPH10/08 Oct 2010 Rev 3)[20]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	4°C	14 days from collection to extraction; 40 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Dioxins/ Dibenzofurans (USEPA Method 8290A)[2]	Aqueous	2-one liter amber glass container with Teflon® lined screw caps	≤6°C	Project Holding Time: 30 days from collection to extraction; 45 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Dioxins/ Dibenzofurans (USEPA Method 8290A)[2]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	Project Holding Time: 30 days from collection to extraction; 45 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Explosives (USEPA Method 8000C/8330A)[2]	Aqueous	2-one liter amber glass containers with Teflon® lined screw caps	≤6°C	Project Holding Time: 7 days from collection to extraction; 40 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Explosives (USEPA Method 8000C/8330A)[2]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	Project Holding Time: 14 days from collection to extraction; 40 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Explosives (USEPA Method 8000C/8095)[1]	Aqueous	2-one liter amber glass containers with Teflon® lined screw caps	≤6°C	Project Holding Time - 7 days from collection to extraction; 40 days from extraction to analysis Store extracts in the dark at ≤6°C	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Explosives (USEPA Method 8000C/8095)[1]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	Project Holding Time - 14 days from collection to extraction; 40 days from extraction to analysis Store extracts in the dark at ≤6°C	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Perchlorate (USEPA Methods 8000C/6850)[2]	Aqueous	125 milliliter polyethylene container with Teflon® lined lid. 100 milliliters sample volume required.	≤6°C	28 days from collection to analysis Store samples and extracts with headspace	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Perchlorate (USEPA Methods 8000C/6850)[2]	Solid	500 milliliter wide mouth amber glass container with Teflon® lined lid.50 grams sample volume required.	≤6°C	28 days from collection to extraction; 28 days from extraction to analysis Store samples and extracts with headspace	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Nitrocellulose* (CT Laboratories SOP)[5]	Aqueous (	1 Liter amber glass container with Teflon® lined screw caps 1000 milliliters sample volume required.	≤6°C	28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Nitrocellulose* (CT Laboratories SOP)[5]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required.	≤6°C	28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
TOC (USEPA Method 9060A)[4]	Aqueous	1-120 milliliter glass amber bottle. 50 milliliters sample volume required.	≤6°C HCl to pH<2	28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
TOC (USEPA Method 9060A)[4]	Solid	4 ounce wide mouth glass container with Teflon® lined lid. 50 grams sample volume required.	≤6°C	28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Metals (USEPA Methods 3005A/6010C/6010D/6020A/6020B)[2]	Aqueous	1-1000 milliliter polyethylene or fluorocarbon (TFE or PFA) container. 500 milliliters sample volume required.	HNO_3 to pH<2 ≤6°C	180 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Metals (USEPA Methods 3050B/6010C/6010D/6020A/6020B)[2]	Solid	2 ounce wide mouth polyethylene or fluorocarbon (TFE or PFA) container. 50 grams sample volume required.	≤6°C	180 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Metals* **(USEPA Methods 3050B/6010C/6020A)[2]**	Biological Tissue	2 ounce wide mouth polyethylene or fluorocarbon (TFE or PFA) container. 50 grams sample volume required.	≤6°C	180 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Metals – SPLP/TCLP Preparation **(USEPA Methods 3005A/1312/6010C/6010D /6020A/6020B)[2]**	Solid	2 ounce wide mouth poly-ethylene or fluorocarbon (TFE or PFA) container.200 grams sample volume required	≤6°C	SPLP/TCLP - 180 days from collection to extract generation, 180 days from extraction to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Mercury **(USEPA Method 7470A)[3]**	Aqueous	1-1000 milliliter polyethylene or fluorocarbon (TFE or PFA) container. 500 milliliters sample volume required.	≤6°C HNO_3 to pH<2	28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Mercury (USEPA Method 7471B)[3]	Solid	2 ounce wide mouth polyethylene or fluorocarbon (TFE or PFA) container. 50 grams sample volume required.	≤6°C	28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Mercury – TCLP Preparation (USEPA Methods 1311/7470A)[3]	Solid	2 ounce wide mouth polyethylene or fluorocarbon (TFE or PFA) container. 50 grams sample volume required.	≤6°C	TCLP- 28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Total Cyanide (USEPA Method 9012B)[6]	Aqueous	1-500 milliliter polyethylene or fluorocarbon (TFE or PFA) container. 250 milliliters sample volume required.	≤6°C NaOH to pH≥12 OA	14 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Total Cyanide (USEPA Method 9012B)[6]	Solid	2 ounce wide mouth glass container with Teflon® lined lid. 50 grams sample volume required.	≤6°C	14 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Methyl Mercury (USEPA Modified Method 1630)[7]	Aqueous	Rigorously cleaned pretested, PETG 250 milliliter bottle using sample handling techniques designed for collection of mercury at trace levels. 200 milliliters sample volume required	4°C	Aqueous samples are acid preserved with HCL within 48 hours of collection. Six months from collection to analysis for preserved samples kept in the dark at a cool temperature.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Methyl Mercury (USEPA Modified Method 1630)[7]	Solid	Solid samples are collected into 2 ounce HDPE wide mouth glass or high density polyethylene or fluoropolymer jars. 20 to 30 grams sample volume required	4°C	Solid samples are frozen to -11°C upon receipt. Six months from collection to analysis for preserved samples kept in the dark at a cool temperature.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Dimethyl Mercury*NO-NJDEP (USEPA Modified Method 1630)[7A]	Aqueous	Rigorously cleaned PETG bottle with Teflon™ lined caps. 250 milliliter sample volume required	4°C	Unpreserved aqueous samples: 48 hours from collection to analysis.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Dimethyl Mercury*NO-NJDEP (USEPA Modified Method 1630)[7A]	Solid	Solid samples are collected into 2 ounce HDPE jars with Teflon™ lined caps, 80-90% full, placed on ice and overnight shipped to the laboratory. 20 to 30 grams sample volume required Sample collection container must be separate from any other analysis.	4°C	Solid samples are frozen to -11°C upon receipt. Six months from collection to digestion.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Total Mercury / Inorganic Mercury / Free Elemental Mercury / Mercury Selective Sequential Extraction (F0, FS) *NO-NJDEP (USEPA Modified Method 1631)[8]	Aqueous	Rigorously cleaned pretested, PETG 250 milliliter bottle using sample handling techniques designed for collection of mercury at trace levels.	4°C	Aqueous samples are preserved upon receipt at the laboratory with 0.2N BrCL (pre-tested for mercury). Samples must be either preserved within the container or analyzed within 48 hours of collection. 28 days to analysis for preserved samples.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Total Mercury / Inorganic Mercury / Free Elemental Mercury / Mercury Selective Sequential Extraction (F0-F6) *NO-NJDEP (USEPA Modified Method 1631)[8]	Solid	Solid samples are collected into 2 ounce HDPE high density polyethylene or fluoropolymer jars. 20 to 30 grams sample volume required	4°C	Solid samples are frozen to -11°C upon receipt. Analyze within 180 days from collection.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 10 samples or one per matrix (for less than 10 samples)	One per 10 samples or one per sampling event as required for each matrix
Arsenic Speciation*NO-NJDEP (USEPA Method 1632)[9]	Aqueous	Collect into wide-mouth jars with Teflon lined lids. Maintain at <5 °C until frozen within 24 hours of collection.	4°C	Aqueous samples are acidified to pH <2 with HCL and stored in polyethylene bags at 0-6°C from the time of collection until analysis. Analyze 28 days from collection	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 10 samples or one per matrix (for less than 10 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Arsenic Speciation*NO-NJDEP (USEPA Method 1632)[9]	Solid	Collect into plastic zip type bags (double bagged) or wide-mouth jars with Teflon lined lids. Maintain at <5 °C until freezing at < -11 °C.	4°C	Analyze 180 days from collection at < -11 °C.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
AVS/SEM *NO-NJDEP (USEPA 821-R-91-100)[10]	Aqueous	250 milliliter glass container. Protect sediment samples from exposure to oxygen during sample collection and handling. Fill entire bottle - no headspace.	<6°C	14 days from collection to analysis NaOH to pH >12	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
AVS/SEM *NO-NJDEP (USEPA 821-R-91-100)[10]	Solid	125 milliliter glass container. Protect sediment samples from exposure to oxygen during sample collection and handling. Fill entire bottle - no headspace.	<6°C	14 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Total Phenols (USEPA Method 9066)[11]	Aqueous	1-one liter amber glass container with Teflon® lined screw caps. 500 milliliters sample volume required.	≤6°C H_2SO_4 to pH<2	28 days from collection for analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Total Phenols (USEPA Method 9066)[11]	Solid	4 ounce wide mouth polyethylene or fluorocarbon (TFE or PFA) container. 50 grams sample volume required.	≤6°C	28 days from collection for analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Nitrate (USEPA Method 353.2)[21]	Aqueous	2 –50 milliliter polyethylene or fluorocarbon (TFE or PFA) container. 50 milliliters sample volume required.	≤6°C H_2SO_4 to pH<2	48 hours from collection to analysis 28 days from collection to analysis if preserved	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Nitrate (USEPA Method 9056A)[2]	Aqueous	1-500 milliliter plastic bottle. 100 milliliters sample volume required.	4°C	48 hours from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Nitrate* (USEPA Method 300.0)[21]	Solid	4 ounce wide mouth glass container with Teflon® lined lid. 50 grams sample volume required.	≤6°C	48 hours from collection for analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Nitrate (USEPA Method 9056A)[2]	Solid	4 ounce wide mouth glass container with Teflon® lined lid. 50 grams sample volume required.	≤6°C	48 hours from collection for analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Nitrite (USEPA Method 300.0)[21]	Aqueous	1-500 milliliter plastic bottle. 100 milliliters sample volume required.	4°C	48 hours from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Nitrite (USEPA Method 9056A)[2]	Solid	1-500 milliliter plastic bottle. 100 milliliters sample volume required.	4°C	48 hours from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Ammonia-Nitrogen (USEPA Method 350.1)[21]	Aqueous	One -1000 milliliter polyethylene bottle 500 milliliters sample volume required	4°C, H2SO4 to pH<2	28 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Ammonia-Nitrogen* (USEPA Method 350.1)[21]	**Solid**	**4 ounce wide mouth glass container with**	**4°C**		**TBD**	One per 20 samples or one per matrix (for	NA	One per 20 samples or one per matrix (for	One per 10 samples or one per

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
		Teflon® lined lid. **50 grams sample volume required.**		**28 days from collection for analysis**		less than 20 samples)		less than 20 samples)	sampling event as required for each matrix
Ignitability* NO-NJDEP – Aqueous Sample (USEPA SW846 Chapter 7/1010A)[4]	Waste	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	4°C	48 hours from collection to analysis	**TBD**	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Corrosivity (USEPA Method 9040C/9045D)[4]	Waste	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	4°C	48 hours from collection to analysis	**TBD**	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Reactivity (Total Sulfide) (USEPA Method 9030B/9034)[6]	Aqueous	300 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	48 hours from collection to analysis	**TBD**	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Reactivity (Total Sulfide) (USEPA Method 9030B/9034)[6]	Solids	300 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	≤6°C	48 hours from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Reactivity (Total Cyanide) (USEPA Method 9012B)[6]	Aqueous	1-500 milliliter polyethylene or fluorocarbon (TFE or PFA) container. 250 milliliters sample volume required.	≤6°C NaOH to pH≥12 OA	14 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Reactivity (Total Cyanide) (USEPA Method 9012B)[6]	Solid	2 ounce wide mouth glass container with Teflon® lined lid. 50 grams sample volume required.	≤6°C	14 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
Paint Filter (USEPA Method 9095A)[6]	Solid	1- 8-ounce wide mouth glass container with Teflon® lined lid. 200 gram required.	4°C	26 days from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
pH (USEPA Method 9045D)[4]	Solid	8 ounce wide mouth glass container with Teflon® lined lid. 50 grams sample volume required.	<6°C	15 minutes from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
pH (USEPA Method 9045D)[4]	Solid	8 ounce wide mouth glass container with Teflon® lined lid. 50 grams sample volume required.	<6°C	15 minutes from collection to analysis	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	One per 20 samples or one per matrix (for less than 20 samples)	One per 10 samples or one per sampling event as required for each matrix
SPLP Preparation (USEPA Method 1312)[3]	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	NA	NA	NA	NA	NA	NA	NA
TCLP Preparation (USEPA Method 1311)	Solid	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	NA	NA	NA	NA	NA	NA	NA
Percent Lipids (USEPA Method 3545)[6]	Biological Tissue	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	NA	NA	NA	NA	NA	NA	NA
Lead Particle Size (OLEM Directive 9200.1-128)[18]	Solid	2 ounce wide mouth polyethylene or fluorocarbon (TFE or PFA) container. 50 grams sample volume required.	NA	NA	NA	NA	NA	NA	NA

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Percent Solids (SM20 2540G)[12]	Solid	100 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	<6°C	NA	NA	NA	NA	NA	NA
Bulk Density*NO-NJDEP (ASTM D7263[13]	Soil	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	<6°C	NA	NA	NA	NA	NA	NA
Specific Gravity *NO-NJDEP (ASTM D854)[14]	Soil	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	<6°C	NA	NA	NA	NA	NA	NA
Moisture Content*NO-NJDEP (ASTM D2216)[15]	Soil	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	<6°C	NA	NA	NA	NA	NA	NA
Particle Size Distribution*NO-NJDEP (ASTM D422)[16]	Soil	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	<6°C	NA	NA	NA	NA	NA	NA

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank
Asbestos*NO-NJDEP (ASTM D7521)[17]	Soil	250 milliliter wide mouth glass container with Teflon® lined lid. 100 grams sample volume required	<6°C	NA	NA	NA	NA	NA	NA
Temperature, pH, conductivity, turbidity, oxidation-reduction potential (ORP), Dissolved oxygen (DO)	Aqueous	Field collection and analysis	NA	NA	NA	NA	NA	NA	NA

NOTES:

* Indicates the laboratory performing this method is not certified by NJDEP; either the method certification is not available or the laboratory does not hold that certification.

*NO-NJDEP indicates the laboratory performing this method is not certified by NJDEP since method certification is not offered by NJDEP.

MS/MSD indicates matrix spike/matrix spike duplicate sample.

VOC indicates volatile organic compound.

SVOC indicates semivolatile organic compound.

PCB indicates polychlorinated biphenyls.

SIM indicates selected ion monitoring.

TOC indicates total organic carbon.

SPLP indicates synthetic precipitation leaching procedure.

HDPE indicates high density polyethylene.

AVS/SEM indicates acid-volatile sulfide/simultaneously-extracted metals.

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Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Samples	QC Sample Frequency			
						Field Duplicate	Trip Blank	MS/MSD and Spike Duplicate	Field Rinsate Blank

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17- ASTM. D7521, Standard Test Method for Determination of Asbestos in Soil.

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Source: O'Brien & Gere

Table 2-1A. *Laboratory limits and regulatory criteria for VOCs in aqueous samples by ELLE*

TCL Volatile Organic Compounds (VOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
1,1,1-Trichloroethane (TCA)	71-55-6	8260C	1	0.5	0.1	NA	79-120	79-120	30	30	30	NA	76	120
1,1,2,2-Tetrachloroethane	79-34-5	8260C	1	0.5	0.1	NA	75-123	75-123	30	30	1	NA	380	4.7
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	8260C	1	0.5	0.2	NA	75-127	75-127	30	30	20000	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	3	NA	500	13
1,1-Dichloroethane (1,1-DCA)	75-34-3	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	50	NA	NA	NA
1,1-Dichloroethene (1,1-DCE)	75-35-4	8260C	1	0.5	0.1	NA	76-120	76-120	30	30	1	NA	65	4.7
1,2,3-Trichlorobenzene	87-61-6	8260C	1	0.5	0.1	NA	66-120	66-120	30	30	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	8260C	1	0.5	0.1	NA	74-120	74-120	30	30	9	NA	30	21
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260C	1	0.5	0.2	NA	53-142	53-142	30	30	0.02	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	0.03	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	600	NA	14	2000
1,2-Dichloroethane	107-06-2	8260C	1	0.5	0.1	NA	80-137	80-137	30	30	2	NA	910	0.29
1,2-Dichloroethene (cis)	156-59-2	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	70	NA	NA	NA
1,2-Dichloroethene (trans)	156-60-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	100	NA	970	590
1,2-Dichloropropane	78-87-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1	NA	360	0.5
1,3-Dichlorobenzene	541-73-1	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	600	NA	38	2200
1,3-Dichloropropene (cis)	10061-01-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1*	NA	NA	0.34*
1,3-Dichloropropene (trans)	10061-02-6	8260C	1	0.5	0.1	NA	77-129	77-129	30	30	1*	NA	NA	0.34*
1,4-Dichlorobenzene	106-46-7	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	75	NA	9.4	550
2-Butanone (Methyl ethyl ketone)	78-93-3	8260C	1	5	1	NA	69-132	69-132	30	30	300	NA	NA	NA
2-Hexanone	591-78-6	8260C	1	5	1	NA	61-143	61-143	30	30	40	NA	NA	NA
4-Methyl-2-pentanone	108-10-1	8260C	1	5	1	NA	67-140	67-140	30	30	100^	NA	NA	NA
Acetone	67-64-1	8260C	1	5	3	NA	68-141	68-141	30	30	6000	NA	NA	NA
Benzene	71-43-2	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1	NA	114	0.15
Bromochloromethane	74-97-5	8260C	1	0.5	0.1	NA	80-125	80-125	30	30	NA	NA	NA	NA
Bromodichloromethane	75-27-4	8260C	1	0.5	0.1	NA	80-125	80-125	30	30	1	NA	NA	0.55
Bromoform	75-25-2	8260C	1	0.5	0.1	NA	68-133	68-133	30	30	4	NA	230	4.3
Bromomethane	74-83-9	8260C	1	0.5	0.1	NA	67-130	67-130	30	30	10	NA	16	47
Carbon Disulfide	75-15-0	8260C	1	1	0.4	NA	59-133	59-133	30	30	700	NA	NA	NA
Carbon Tetrachloride	56-23-5	8260C	1	0.5	0.1	NA	76-134	76-134	30	30	1	NA	240	0.33
Chlorobenzene	108-90-7	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	50	NA	47	210
Chloroethane	75-00-3	8260C	1	0.5	0.1	NA	63-125	63-125	30	30	5	NA	NA	NA
Chloroform	67-66-3	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	70	NA	140	68
Chloromethane	74-87-3	8260C	1	0.5	0.2	NA	55-126	55-126	30	30	100^	NA	NA	NA
Cyclohexane	110-82-7	8260C	1	0.5	0.1	NA	69-120	69-120	30	30	100^	NA	NA	NA
Dibromochloromethane	124-48-1	8260C	1	0.5	0.1	NA	78-127	78-127	30	30	1	NA	NA	0.4
Dichlorodifluoromethane (Freon 12)	75-71-8	8260C	1	0.5	0.1	NA	31-150	31-150	30	30	1000	NA	NA	NA
Ethylbenzene	100-41-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	700	NA	14	530
Isopropylbenzene (Cumene)	98-82-8	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	700	NA	NA	NA
Methyl Acetate	79-20-9	8260C	1	1	0.3	NA	59-143	59-143	30	30	7000	NA	NA	NA
Methyl tert butyl ether (MTBE)	1634-04-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	70	151,000	51,000	70
Methylcyclohexane	108-87-2	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	100^	NA	NA	NA
Methylene Chloride	75-09-2	8260C	1	0.5	0.2	NA	80-120	80-120	30	30	3	NA	940	2.5
Styrene	100-42-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	100	NA	32	NA
Tetrachloroethylene (PCE)	127-18-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1	NA	45	0.34
Toluene	108-88-3	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	600	NA	253	1300
Trichloroethene	79-01-6	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1	NA	47	1
Trichlorofluoromethane (Freon 11)	75-69-4	8260C	1	0.5	0.1	NA	66-141	66-141	30	30	2000	NA	NA	NA
Vinyl Chloride	75-01-4	8260C	1	0.5	0.1	NA	63-133	63-133	30	30	1	NA	930	0.082
Xylene-m,p	179601-23-1	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1000	NA	NA	NA
Xylene-o	95-47-6	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1000	NA	NA	NA
Xylenes-Total	1330-20-7	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1000	NA	27	NA
Dibromofluoromethane	1868-53-7	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane-d4	17060-07-0	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA	NA	NA	NA
Toluene-d8	2037-26-5	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromofluorobenzene	460-00-4	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

* - Standard is for combined cis and trans 1,3-Dichloropropene

Target analyte detection limit exceeds regulatory criteria.

VOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference

1. USEPA. 2006. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.

2- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-1AA. *Laboratory limits and regulatory criteria for VOCs in aqueous samples by Pace Analytical Services*

TCL Volatile Organic Compounds (VOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
1,1,1-Trichloroethane (TCA)	71-55-6	8260C	1	0.001	0.000319	NA	73-124	23-160	28.00	20.00	30	NA	76	120
1,1,2,2-Tetrachloroethane	79-34-5	8260C	1	0.001	0.00013	NA	65-130	33-150	28.00	20.00	1	NA	380	4.7
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	8260C	1	0.001	0.000303	NA	69-132	23-160	30.00	20.00	20000	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	8260C	1	0.001	0.000383	NA	80-120	35-147	27.00	20.00	3	NA	500	13
1,1-Dichloroethane (1,1-DCA)	75-34-3	8260C	1	0.001	0.000259	NA	70-126	25-158	27.00	20.00	50	NA	NA	NA
1,1-Dichloroethene (1,1-DCE)	75-35-4	8260C	1	0.001	0.000398	NA	71-124	11-160	29.00	20.00	1	NA	65	4.7
1,2,3-Trichlorobenzene	87-61-6	8260C	1	0.001	0.00023	NA	50-138	17-150	36.00	20.00	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	8260C	1	0.001	0.000355	NA	57-137	24-150	33.00	20.00	9	NA	30	21
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260C	1	0.005	0.00133	NA	58-134	22-151	34.00	20.00	0.02	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	8260C	1	0.001	0.000381	NA	80-122	34-147	27.00	20.00	0.03	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	8260C	1	0.001	0.000349	NA	79-121	34-149	28.00	20.00	600	NA	14	2000
1,2-Dichloroethane	107-06-2	8260C	1	0.001	0.000361	NA	70-128	29-151	27.00	20.00	2	NA	910	0.29
1,2-Dichloroethene (cis)	156-59-2	8260C	1	0.001	0.00026	NA	73-120	10-160	27.00	20.00	70	NA	NA	NA
1,2-Dichloroethene (trans)	156-60-5	8260C	1	0.001	0.000396	NA	73-120	17-153	27.00	20.00	100	NA	970	590
1,2-Dichloropropane	78-87-5	8260C	1	0.001	0.000306	NA	77-125	30-156	27.00	20.00	1	NA	360	0.5
1,3-Dichlorobenzene	541-73-1	8260C	1	0.001	0.00022	NA	79-120	36-146	27.00	20.00	600	NA	38	2200
1,3-Dichloropropene (cis)	10061-01-5	8260C	1	0.001	0.000418	NA	80-123	34-149	28.00	20.00	1*	NA	NA	0.34*
1,3-Dichloropropene (trans)	10061-02-6	8260C	1	0.001	0.000419	NA	78-124	32-149	28.00	20.00	1*	NA	NA	0.34*
1,4-Dichlorobenzene	106-46-7	8260C	1	0.001	0.000274	NA	79-120	35-142	27.00	20.00	75	NA	9.4	550
2-Butanone (Methyl ethyl ketone)	78-93-3	8260C	1	0.01	0.00393	NA	44-160	10-160	32.00	20.00	300	NA	NA	NA
2-Hexanone	591-78-6	8260C	1	0.01	0.00382	NA	67-149	21-160	29.00	20.00	40	NA	NA	NA
4-Methyl-2-pentanone	108-10-1	8260C	1	0.01	0.00214	NA	68-142	29-160	29.00	20.00	100^	NA	NA	NA
Acetone	67-64-1	8260C	1	0.05	0.01	NA	19-160	10-160	35.00	27.00	6000	NA	NA	NA
Benzene	71-43-2	8260C	1	0.001	0.000331	NA	70-123	17-158	27.00	20.00	1	NA	114	0.15
Bromochloromethane	74-97-5	8260C	1	0.001	0.00052	NA	76-122	38-142	26.00	20.00	NA	NA	NA	NA
Bromodichloromethane	75-27-4	8260C	1	0.001	0.00038	NA	75-120	31-150	27.00	20.00	1	NA	NA	0.55
Bromoform	75-25-2	8260C	1	0.001	0.000469	NA	68-132	29-150	29.00	20.00	4	NA	230	4.3
Bromomethane	74-83-9	8260C	1	0.005	0.000866	NA	10-160	10-160	38.00	25.00	10	NA	16	47
Carbon Disulfide	75-15-0	8260C	1	0.001	0.000275	NA	61-128	10-156	28.00	20.00	700	NA	NA	NA
Carbon Tetrachloride	56-23-5	8260C	1	0.001	0.000379	NA	68-126	23-159	28.00	20.00	1	NA	240	0.33
Chlorobenzene	108-90-7	8260C	1	0.001	0.000348	NA	80-121	33-152	27.00	20.00	50	NA	47	210
Chloroethane	75-00-3	8260C	1	0.005	0.000453	NA	47-150	10-160	30.00	20.00	5	NA	NA	NA
Chloroform	67-66-3	8260C	1	0.005	0.000324	NA	73-120	29-154	28.00	20.00	70	NA	140	68
Chloromethane	74-87-3	8260C	1	0.0025	0.000276	NA	41-142	10-160	29.00	20.00	100^	NA	NA	NA
Cyclohexane	110-82-7	8260C	1	0.001	0.00039	NA	71-124	19-160	23.00	20.00	100^	NA	NA	NA
Dibromochloromethane	124-48-1	8260C	1	0.001	0.000327	NA	77-125	37-149	27.00	20.00	1	NA	NA	0.4
Dichlorodifluoromethane (Freon 12)	75-71-8	8260C	1	0.005	0.000551	NA	51-149	10-160	29.00	20.00	1000	NA	NA	NA
Ethylbenzene	100-41-4	8260C	1	0.001	0.000384	NA	79-123	30-155	27.00	20.00	700	NA	14	530
Isopropylbenzene (Cumene)	98-82-8	8260C	1	0.001	0.000326	NA	76-127	28-157	27.00	20.00	700	NA	NA	NA
Methyl Acetate	79-20-9	8260C	1	0.02	0.0043	NA	57-148	18-151	30.00	20.00	7000	NA	NA	NA
Methyl tert butyl ether (MTBE)	1634-04-4	8260C	1	0.001	0.000367	NA	68-125	28-150	29.00	20.00	70	151,000	51,000	70
Methylcyclohexane	108-87-2	8260C	1	0.001	0.00038	NA	68-126	11-160	24.00	20.00	100^	NA	NA	NA
Methylene Chloride	75-09-2	8260C	1	0.005	0.001	NA	67-120	23-144	28.00	20.00	3	NA	940	2.5
Styrene	100-42-5	8260C	1	0.001	0.000307	NA	73-130	33-155	28.00	20.00	100	NA	32	NA
Tetrachloroethylene (PCE)	127-18-4	8260C	1	0.001	0.000372	NA	72-132	10-160	27.00	20.00	1	NA	45	0.34
Toluene	108-88-3	8260C	1	0.001	0.000412	NA	79-120	26-154	28.00	20.00	600	NA	253	1300
Trichloroethene	79-01-6	8260C	1	0.001	0.000398	NA	78-124	10-160	25.00	20.00	1	NA	47	1
Trichlorofluoromethane (Freon 11)	75-69-4	8260C	1	0.005	0.0012	NA	59-147	17-160	31.00	20.00	2000	NA	NA	NA
Vinyl Chloride	75-01-4	8260C	1	0.001	0.000259	NA	67-131	10-160	27.00	20.00	1	NA	930	0.082
Xylene-m,p	179601-23-1	8260C	1	0.002	0.000719	NA	80-122	43-146	26.00	20.00	1000	NA	NA	NA
Xylene-o	95-47-6	8260C	1	0.001	0.000341	NA	80-122	45-144	26.00	20.00	1000	NA	NA	NA
Xylenes-Total	1330-20-7	8260C	1	0.003	0.00106	NA	79-123	29-154	28.00	20.00	1000	NA	27	NA
Dibromofluoromethane	1868-53-7	8260C	1	NA	NA	75-120	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane-d4	17060-07-0	8260C	1	NA	NA	70-130	NA	NA	NA	NA	NA	NA	NA	NA
Toluene-d8	2037-26-5	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromofluorobenzene	460-00-4	8260C	1	NA	NA	77-126	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs, RLs and control limits provided by Pace Anayltical Services current as of May 2019.

* - Standard is for combined cis and trans 1,3-Dichloropropene

VOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference

1. USEPA. 2006. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.

2- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-1B. *Laboratory limits and regulatory criteria for VOCs in solid samples by ELLE*

TCL Volatile Organic Compounds (VOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Solid Medium Level RL	Laboratory Solid Medium Level MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
1,1,1-Trichloroethane (TCA)	71-55-6	8260C	1	5	1	NA	61-125	61-125	30	30	160,000,000	NA	300	213	NA
1,1,2,2-Tetrachloroethane	79-34-5	8260C	1	5	1	NA	61-131	61-131	30	30	1,000	3,000	7	850	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	8260C	1	10	2	NA	59-139	59-139	30	30	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	8260C	1	5	1	NA	80-120	80-120	30	30	2,000	6,000	20	518	NA
1,1-Dichloroethane (1,1-DCA)	75-34-3	8260C	1	5	1	NA	77-120	77-120	30	30	8,000	24,000	200	NA	NA
1,1-Dichloroethene (1,1-DCE)	75-35-4	8260C	1	5	1	NA	73-129	73-129	30	30	11,000	150,000	8	19	NA
1,2,3-Trichlorobenzene	87-61-6	8260C	1	5	1	NA	63-128	63-128	30	30	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	8260C	1	5	1	NA	62-127	62-127	30	30	73,000	820,000	700	506	NA
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260C	2	5	2	NA	47-126	47-126	30	30	80	200	5	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	8260C	2	5	1	NA	74-120	74-120	30	30	8	40	5	NA	NA
1,2-Dichlorobenzene	95-50-1	8260C	1	5	1	NA	80-120	80-120	30	30	5,300,000	59,000,000	17,000	294	NA
1,2-Dichloroethane	107-06-2	8260C	1	5	1	NA	71-128	71-128	30	30	900	3,000	5	260	NA
1,2-Dichloroethene (cis)	156-59-2	8260C	1	5	1	NA	80-120	80-120	30	30	230,000	560,000	300	NA	NA
1,2-Dichloroethene (trans)	156-60-5	8260C	1	5	1	NA	80-125	80-125	30	30	300,000	720,000	600	654	NA
1,2-Dichloropropane	78-87-5	8260C	1	5	1	NA	76-120	76-120	30	30	2,000	5,000	5	333	NA
1,3-Dichlorobenzene	541-73-1	8260C	1	5	1	NA	80-120	80-120	30	30	5,300,000	59,000,000	19,000	1,315	NA
1,3-Dichloropropene (cis)	10061-01-5	8260C	1	5	1	NA	66-120	66-120	30	30	2,000*	7,000*	5*	NA	NA
1,3-Dichloropropene (trans)	10061-02-6	8260C	1	5	1	NA	63-124	63-124	30	30	2,000*	7,000*	5*	NA	NA
1,4-Dichlorobenzene	106-46-7	8260C	1	5	1	NA	80-120	80-120	30	30	5,000	13,000	2,000	318	NA
2-Butanone (Methyl ethyl ketone)	78-93-3	8260C	1	10	4	NA	49-128	49-128	30	30	3,100,000	44,000,000	900	NA	NA
2-Hexanone	591-78-6	8260C	1	10	3	NA	51-131	51-131	30	30	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	108-10-1	8260C	1	10	3	NA	53-134	53-134	30	30	NA	NA	NA	NA	NA
Acetone	67-64-1	8260C	1	20	7	NA	32-144	32-144	30	30	70,000,000	NA	19,000	NA	NA
Benzene	71-43-2	8260C	1	5	0.5	NA	80-120	80-120	30	30	2,000	5,000	5	142	NA
Bromochloromethane	74-97-5	8260C	1	5	1	NA	80-120	80-120	30	30	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	8260C	1	5	1	NA	70-120	70-120	30	30	1,000	3,000	5	NA	NA
Bromoform	75-25-2	8260C	1	5	1	NA	54-120	54-120	30	30	81,000	280,000	30	492	NA
Bromomethane	74-83-9	8260C	1	5	2	NA	31-160	31-160	30	30	25,000	59,000	40	1	NA
Carbon Disulfide	75-15-0	8260C	1	5	1	NA	60-128	60-128	30	30	7,800,000	110,000,000	6,000	NA	NA
Carbon Tetrachloride	56-23-5	8260C	1	5	1	NA	62-129	62-129	30	30	2,000	4,000	5	1,450	NA
Chlorobenzene	108-90-7	8260C	1	5	1	NA	80-120	80-120	30	30	510,000	7,400	600	291	NA
Chloroethane	75-00-3	8260C	1	5	2	NA	43-137	43-137	30	30	220,000	1,100,000	NA	NA	NA
Chloroform	67-66-3	8260C	1	5	1	NA	80-120	80-120	30	30	600	2,000	400	121	NA
Chloromethane	74-87-3	8260C	1	5	2	NA	56-120	56-120	30	30	4,000	12,000	NA	NA	NA
Cyclohexane	110-82-7	8260C	1	5	1	NA	58-126	58-126	30	30	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	8260C	1	5	1	NA	65-120	65-120	30	30	3,000	8,000	5	NA	NA
Dichlorodifluoromethane (Freon 12)	75-71-8	8260C	1	5	2	NA	10-133	10-133	30	30	490,000	230,000,000	39,000	NA	NA
Ethylbenzene	100-41-4	8260C	1	5	1	NA	80-120	80-120	30	30	7,800,000	110,000,000	13,000	175	NA
Isopropylbenzene (Cumene)	98-82-8	8260C	1	5	1	NA	76-120	76-120	30	30	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	8260C	1	5	2	NA	54-146	54-146	30	30	78,000,000	NA	22,000	NA	NA
Methyl tert butyl ether (MTBE)	1634-04-4	8260C	1	5	0.5	NA	66-123	66-123	30	30	110,000	320,000	200	NA	NA
Methylcyclohexane	108-87-2	8260C	1	5	1	NA	61-124	61-124	30	30	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	8260C	1	5	2	NA	76-122	76-122	30	30	46,000	230,000	10	159	NA
Styrene	100-42-5	8260C	1	5	1	NA	76-120	76-120	30	30	90,000	260,000	3,000	254	NA
Tetrachloroethylene (PCE)	127-18-4	8260C	1	5	1	NA	73-120	73-120	30	30	43,000	1,500,000	5	450	NA
Toluene	108-88-3	8260C	1	5	1	NA	80-120	80-120	30	30	6,300,000	91,000,000	7,000	1,220	NA
Trichloroethene	79-01-6	8260C	1	5	1	NA	80-120	80-120	30	30	3,000	10,000	10	112	NA
Trichlorofluoromethane (Freon 11)	75-69-4	8260C	1	5	2	NA	47-132	47-132	30	30	23,000,000	340,000,000	34,000	NA	NA
Vinyl Chloride	75-01-4	8260C	1	5	1	NA	59-120	59-120	30	30	700	2,000	5	202	NA
Xylene-m,p	179601-23-1	8260C	1	5	1	NA	80-120	80-120	30	30	12,000,000	170,000,000	19,000	120	NA
Xylene-o	95-47-6	8260C	1	5	1	NA	75-120	75-120	30	30	12,000,000	170,000,000	19,000	120	NA
Xylenes-Total	1330-20-7	8260C	1	5	1	NA	80-120	80-120	30	30	12,000,000	170,000,000	19,000	120	NA
Dibromofluoromethane	1868-53-7	8260C	1	NA	NA	50-141	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane-d4	17060-07-0	8260C	1	NA	NA	54-135	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene-d8	2037-26-5	8260C	1	NA	NA	52-141	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromofluorobenzene	460-00-4	8260C	1	NA	NA	50-131	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

NA indicates value not applicable, a standard has not been established.'

%R indicates percent recovery.

RPD indicates relative percent difference.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

*- Standards are for combined cis and trans 1,3-Dichloropropene

Target analyte detection limit exceeds regulatory criteria.

VOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference:

1. USEPA. 2006. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-1BB. *Laboratory limits and regulatory criteria for VOCs in solid samples by Pace Analytical Services*

TCL Volatile Organic Compounds (VOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Solid Medium Level RL	Laboratory Solid Medium Level MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
1,1,1-Trichloroethane (TCA)	71-55-6	8260C	1	0.0025	0.000275	NA	69-126	10-144	35.00	20.00	160,000,000	NA	300	213	NA
1,1,2,2-Tetrachloroethane	79-34-5	8260C	1	0.0025	0.00039	NA	68-128	10-160	35.00	20.00	1,000	3,000	7	850	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	8260C	1	0.0025	0.000675	NA	61-139	10-160	36.00	20.00	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	8260C	1	0.0025	0.000883	NA	78-123	10-160	35.00	20.00	2,000	6,000	20	518	NA
1,1-Dichloroethane (1,1-DCA)	75-34-3	8260C	1	0.0025	0.000575	NA	70-127	10-147	37.00	20.00	8,000	24,000	200	NA	NA
1,1-Dichloroethene (1,1-DCE)	75-35-4	8260C	1	0.0025	0.0005	NA	65-131	10-155	37.00	20.00	11,000	150,000	8	19	NA
1,2,3-Trichlorobenzene	87-61-6	8260C	1	0.0025	0.000625	NA	59-139	10-160	40.00	20.00	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	8260C	1	0.0125	0.00482	NA	62-137	10-160	40.00	20.00	73,000	820,000	700	506	NA
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260C	2	0.025	0.0051	NA	59-130	10-151	39.00	20.00	80	200	5	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	8260C	2	0.0025	0.000525	NA	74-128	10-148	34.00	20.00	8	40	5	NA	NA
1,2-Dichlorobenzene	95-50-1	8260C	1	0.005	0.00145	NA	76-124	10-155	37.00	20.00	5,300,000	59,000,000	17,000	294	NA
1,2-Dichloroethane	107-06-2	8260C	1	0.0025	0.000475	NA	65-131	10-148	35.00	20.00	900	3,000	5	260	NA
1,2-Dichloroethene (cis)	156-59-2	8260C	1	0.0025	0.00069	NA	73-125	10-149	37.00	20.00	230,000	560,000	300	NA	NA
1,2-Dichloroethene (trans)	156-60-5	8260C	1	0.005	0.00143	NA	71-125	10-150	37.00	20.00	300,000	720,000	600	654	NA
1,2-Dichloropropane	78-87-5	8260C	1	0.005	0.00127	NA	74-125	10-148	37.00	20.00	2,000	5,000	5	333	NA
1,3-Dichlorobenzene	541-73-1	8260C	1	0.005	0.0017	NA	76-125	10-153	38.00	20.00	5,300,000	59,000,000	19,000	1,315	NA
1,3-Dichloropropene (cis)	10061-01-5	8260C	1	0.0025	0.000678	NA	76-127	10-151	37.00	20.00	2,000*	7,000*	5*	NA	NA
1,3-Dichloropropene (trans)	10061-02-6	8260C	1	0.005	0.00153	NA	73-127	10-148	37.00	20.00	2,000*	7,000*	5*	NA	NA
1,4-Dichlorobenzene	106-46-7	8260C	1	0.005	0.00197	NA	77-121	10-151	38.00	20.00	5,000	13,000	2,000	318	NA
2-Butanone (Methyl ethyl ketone)	78-93-3	8260C	1	0.025	0.0125	NA	30-160	10-160	40.00	24.00	3,100,000	44,000,000	900	NA	NA
2-Hexanone	591-78-6	8260C	1	0.025	0.01	NA	54-147	10-160	36.00	20.00	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	108-10-1	8260C	1	0.025	0.01	NA	56-143	10-160	35.00	20.00	NA	NA	NA	NA	NA
Acetone	67-64-1	8260C	1	0.025	0.0137	NA	10-160	10-160	40.00	31.00	70,000,000	NA	19,000	NA	NA
Benzene	71-43-2	8260C	1	0.001	0.0004	NA	70-123	10-149	37.00	20.00	2,000	5,000	5	142	NA
Bromochloromethane	74-97-5	8260C	1	0.005	0.00113	NA	77-128	10-155	33.00	20.00	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	8260C	1	0.0025	0.000788	NA	73-121	10-143	37.00	20.00	1,000	3,000	5	NA	NA
Bromoform	75-25-2	8260C	1	0.025	0.00598	NA	64-132	10-146	36.00	20.00	81,000	280,000	30	492	NA
Bromomethane	74-83-9	8260C	1	0.0125	0.0037	NA	56-147	10-149	38.00	20.00	25,000	59,000	40	1	NA
Carbon Disulfide	75-15-0	8260C	1	0.0125	0.00406	NA	56-133	10-145	39.00	20.00	7,800,000	110,000,000	6,000	NA	NA
Carbon Tetrachloride	56-23-5	8260C	1	0.005	0.00108	NA	66-128	10-145	37.00	20.00	2,000	4,000	5	1,450	NA
Chlorobenzene	108-90-7	8260C	1	0.0025	0.000573	NA	76-128	10-152	39.00	20.00	510,000	7,400	600	291	NA
Chloroethane	75-00-3	8260C	1	0.005	0.00108	NA	61-134	10-146	40.00	20.00	220,000	1,100,000	NA	NA	NA
Chloroform	67-66-3	8260C	1	0.0025	0.000415	NA	72-123	10-146	37.00	20.00	600	2,000	400	121	NA
Chloromethane	74-87-3	8260C	1	0.0125	0.00139	NA	51-138	10-159	37.00	20.00	4,000	12,000	NA	NA	NA
Cyclohexane	110-82-7	8260C	1	0.0025	0.000508	NA	70-130	10-157	32.00	20.00	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	8260C	1	0.0025	0.00045	NA	74-127	10-146	37.00	20.00	3,000	8,000	5	NA	NA
Dichlorodifluoromethane (Freon 12)	75-71-8	8260C	1	0.0025	0.000818	NA	43-156	10-160	35.00	20.00	490,000	230,000,000	39,000	NA	NA
Ethylbenzene	100-41-4	8260C	1	0.0025	0.00053	NA	74-126	10-160	38.00	20.00	7,800,000	110,000,000	13,000	175	NA
Isopropylbenzene (Cumene)	98-82-8	8260C	1	0.0025	0.000863	NA	72-127	10-155	38.00	20.00	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	8260C	1	0.005	0.0021	NA	43-158	10-160	40.00	20.00	78,000,000	NA	22,000	NA	NA
Methyl tert butyl ether (MTBE)	1634-04-4	8260C	1	0.001	0.000295	NA	66-132	11-147	35.00	20.00	110,000	320,000	200	NA	NA
Methylcyclohexane	108-87-2	8260C	1	0.005	0.00103	NA	67-129	10-160	33.00	20.00	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	8260C	1	0.025	0.00664	NA	68-123	10-141	37.00	20.00	46,000	230,000	10	159	NA
Styrene	100-42-5	8260C	1	0.0125	0.00273	NA	72-127	10-160	40.00	20.00	90,000	260,000	3,000	254	NA
Tetrachloroethylene (PCE)	127-18-4	8260C	1	0.0025	0.0007	NA	70-136	10-156	39.00	20.00	43,000	1,500,000	5	450	NA
Toluene	108-88-3	8260C	1	0.005	0.00125	NA	75-121	10-156	38.00	20.00	6,300,000	91,000,000	7,000	1,220	NA
Trichloroethene	79-01-6	8260C	1	0.001	0.0004	NA	76-126	10-156	38.00	20.00	3,000	10,000	10	112	NA
Trichlorofluoromethane (Freon 11)	75-69-4	8260C	1	0.0025	0.0005	NA	61-142	10-160	40.00	20.00	23,000,000	340,000,000	34,000	NA	NA
Vinyl Chloride	75-01-4	8260C	1	0.0025	0.000683	NA	63-134	10-160	37.00	20.00	700	2,000	5	202	NA
Xylene-m,p	179601-23-1	8260C	1	0.004	0.0015	NA	76-126	10-156	40.00	20.00	12,000,000	170,000,000	19,000	120	NA
Xylene-o	95-47-6	8260C	1	0.0025	0.001	NA	79-124	10-156	40.00	20.00	12,000,000	170,000,000	19,000	120	NA
Xylenes-Total	1330-20-7	8260C	1	0.0065	0.00478	NA	72-127	10-160	37.00	20.00	12,000,000	170,000,000	19,000	120	NA
Dibromofluoromethane	1868-53-7	8260C	1	NA	NA	65-129	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane-d4	17060-07-0	8260C	1	NA	NA	70-130	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene-d8	2037-26-5	8260C	1	NA	NA	75-131	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromofluorobenzene	460-00-4	8260C	1	NA	NA	67-138	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

NA indicates value not applicable, a standard has not been established.'

%R indicates percent recovery.

RPD indicates relative percent difference.

MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.

*- Standards are for combined cis and trans 1,3-Dichloropropene

VOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference:

1. USEPA. 2006. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-1C. *Laboratory limits and regulatory criteria for VOCs in samples prepared using SPLP by ELLE*

TCL Volatile Organic Compounds (VOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous SPLP RL	Laboratory Aqueous SPLP MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	SPLP Leachate Criteria
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)
1,1,1-Trichloroethane (TCA)	71-55-6	8260C	1	0.5	0.1	NA	79-120	79-120	30	30	600
1,1,2,2-Tetrachloroethane	79-34-5	8260C	1	0.5	0.1	NA	75-123	75-123	30	30	20
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	8260C	1	0.5	0.2	NA	75-127	75-127	30	30	NA
1,1,2-Trichloroethane	79-00-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	60
1,1-Dichloroethane (1,1-DCA)	75-34-3	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1,000
1,1-Dichloroethene (1,1-DCE)	75-35-4	8260C	1	0.5	0.1	NA	76-120	76-120	30	30	20
1,2,3-Trichlorobenzene	87-61-6	8260C	1	0.5	0.1	NA	66-120	66-120	30	30	NA
1,2,4-Trichlorobenzene	120-82-1	8260C	1	0.5	0.1	NA	74-120	74-120	30	30	180
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260C	1	0.5	0.2	NA	53-142	53-142	30	30	0.4
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	0.03
1,2-Dichlorobenzene	95-50-1	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	12,000
1,2-Dichloroethane	107-06-2	8260C	1	0.5	0.1	NA	80-137	80-137	30	30	6
1,2-Dichloroethene (cis)	156-59-2	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1,400
1,2-Dichloroethene (trans)	156-60-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	2,000
1,2-Dichloropropane	78-87-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	10
1,3-Dichlorobenzene	541-73-1	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	12,000
1,3-Dichloropropene (cis)	10061-01-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	8
1,3-Dichloropropene (trans)	10061-02-6	8260C	1	0.5	0.1	NA	77-129	77-129	30	30	8
1,4-Dichlorobenzene	106-46-7	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1,500
2-Butanone (Methyl ethyl ketone)	78-93-3	8260C	1	5	1	NA	69-132	69-132	30	30	6,000
2-Hexanone	591-78-6	8260C	1	5	1	NA	61-143	61-143	30	30	NA
4-Methyl-2-pentanone	108-10-1	8260C	1	5	1	NA	67-140	67-140	30	30	NA
Acetone	67-64-1	8260C	1	5	3	NA	68-141	68-141	30	30	120,000
Benzene	71-43-2	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	4
Bromochloromethane	74-97-5	8260C	1	0.5	0.1	NA	80-125	80-125	30	30	NA
Bromodichloromethane	75-27-4	8260C	1	0.5	0.1	NA	80-125	80-125	30	30	0.005
Bromoform	75-25-2	8260C	1	0.5	0.1	NA	68-133	68-133	30	30	80
Bromomethane	74-83-9	8260C	1	0.5	0.1	NA	67-130	67-130	30	30	200
Carbon Disulfide	75-15-0	8260C	1	1	0.4	NA	59-133	59-133	30	30	14,000
Carbon Tetrachloride	56-23-5	8260C	1	0.5	0.1	NA	76-134	76-134	30	30	8
Chlorobenzene	108-90-7	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1,000
Chloroethane	75-00-3	8260C	1	0.5	0.1	NA	63-125	63-125	30	30	NA
Chloroform	67-66-3	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1,400
Chloromethane	74-87-3	8260C	1	0.5	0.2	NA	55-126	55-126	30	30	NA
Cyclohexane	110-82-7	8260C	1	0.5	0.1	NA	69-120	69-120	30	30	NA
Dibromochloromethane	124-48-1	8260C	1	0.5	0.1	NA	78-127	78-127	30	30	8
Dichlorodifluoromethane (Freon 12)	75-71-8	8260C	1	0.5	0.1	NA	31-150	31-150	30	30	20,000
Ethylbenzene	100-41-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	14,000
Isopropylbenzene (Cumene)	98-82-8	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	NA
Methyl Acetate	79-20-9	8260C	1	1	0.3	NA	59-143	59-143	30	30	140,000
Methyl tert butyl ether (MTBE)	1634-04-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	1,400
Methylcyclohexane	108-87-2	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	NA
Methylene Chloride	75-09-2	8260C	1	0.5	0.2	NA	80-120	80-120	30	30	60
Styrene	100-42-5	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	2,000
Tetrachloroethylene (PCE)	127-18-4	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	8
Toluene	108-88-3	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	12,000
Trichloroethene	79-01-6	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	20
Trichlorofluoromethane (Freon 11)	75-69-4	8260C	1	0.5	0.1	NA	66-141	66-141	30	30	40,000
Vinyl Chloride	75-01-4	8260C	1	0.5	0.1	NA	63-133	63-133	30	30	2
Xylene-m,p	179601-23-1	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	20,000
Xylene-o	95-47-6	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	20,000
Xylenes-Total	1330-20-7	8260C	1	0.5	0.1	NA	80-120	80-120	30	30	20,000
Dibromofluoromethane	1868-53-7	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA
1,2-Dichloroethane-d4	17060-07-0	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA
Toluene-d8	2037-26-5	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA
4-Bromofluorobenzene	460-00-4	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

VOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference

1. USEPA. 2006. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.

Regulatory Criteria:

1- SPLP regulatory criteria as of January 2018.

Table 2-1CC. *Laboratory limits and regulatory criteria for TCLP VOCs by Pace Analytical Services.*

TCL Volatile Organic Compounds (VOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	TCLP Criteria
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)
1,1-Dichloroethene	75-35-4	8260C	1	0.001	NA	NA	71-124	11-160	29.00	20.00	700
1,2-Dichloroethane	107-06-2	8260C	1	0.001	NA	NA	70-128	29-151	27.00	20.00	500
1,4-Dichlorobenzene	106-46-7	8260C	1	0.001	NA	NA	79-120	35-142	27.00	20.00	7,500
2-Butanone (Methyl ethyl ketone)	78-93-3	8260C	1	0.01	NA	NA	44-160	10-160	32.00	20.00	200,000
Benzene	71-43-2	8260C	1	0.001	NA	NA	70-123	17-158	27.00	20.00	500
Carbon tetrachloride	56-23-5	8260C	1	0.001	NA	NA	68-126	23-159	28.00	20.00	500
Chlorobenzene	108-90-7	8260C	1	0.001	NA	NA	80-121	33-152	27.00	20.00	100,000
Chloroform	67-66-3	8260C	1	0.005	NA	NA	73-120	29-154	28.00	20.00	6,000
Tetrachloroethene	127-18-4	8260C	1	0.001	NA	NA	72-132	10-160	27.00	20.00	700
Trichloroethene	79-01-6	8260C	1	0.001	NA	NA	78-124	10-160	25.00	20.00	500
Vinyl chloride	75-01-4	8260C	1	0.001	NA	NA	67-131	10-160	27.00	20.00	200
Dibromofluoromethane	1868-53-7	8260C	1	NA	NA	75-120	NA	NA	NA	NA	NA
1,2-Dichloroethane-d4	17060-07-0	8260C	1	NA	NA	70-130	NA	NA	NA	NA	NA
Toluene-d8	2037-26-5	8260C	1	NA	NA	80-120	NA	NA	NA	NA	NA
4-Bromofluorobenzene	460-00-4	8260C	1	NA	NA	77-126	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs and RLs provided by Pace Anayltical Services, current as of May 2019.

TCLP indicates toxicity characteristic leaching procedure.

VOC Source List:

TCLP Target list

Method reference

1. USEPA. 2006. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.

Regulatory Criteria:

1- USEPA 40 CFR 261.24 - Toxicity Characteristic.

Table 2-2A. *Laboratory limits and regulatory criteria for SVOCs in aqueous samplesby ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
1,4-Dioxane	123-91-1	8270D SIM	1	0.2	0.05	NA	25-72	25-72	30	30	0.4	NA	NA	NA
1,1-Biphenyl	92-52-4	8270D	1	1	0.5	NA	65-107	65-107	30	30	400	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D	1	1	0.5	NA	50-108	50-108	30	30	NA	NA	3	0.97
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	1	1	0.5	NA	69-125	69-125	30	30	200	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	8270D	1	1	0.5	NA	75-118	75-118	30	30	700	NA	NA	1,800
2,4,6-Trichlorophenol	88-06-2	8270D	1	1	0.5	NA	75-118	75-118	30	30	20	NA	4.9	0.58
2,4-Dichlorophenol	120-83-2	8270D	1	1	0.5	NA	71-113	71-113	30	30	20	NA	11	77
2,4-Dimethylphenol	105-67-9	8270D	1	1	0.5	NA	53-93	53-93	30	30	100	NA	100	380
2,4-Dinitrophenol	51-28-5	8270D	1	30	10	NA	33-133	33-133	30	30	40	NA	19	69
2,4-Dinitrotoluene	121-14-2	8270D	1	5	1	NA	70-122	70-122	30	30	10*	NA	44	0.11
2,6-Dinitrotoluene	606-20-2	8270D	1	1	0.5	NA	75-121	75-121	30	30	10*	NA	NA	NA
2-Chloronaphthalene	91-58-7	8270D	1	1	0.4	NA	59-109	59-109	30	30	600	NA	0.396	1,000
2-Chlorophenol	95-57-8	8270D	1	1	0.5	NA	62-105	62-105	30	30	40	NA	24	81
2-Methylnaphthalene	91-57-6	8270D	1	0.5	0.1	NA	54-111	54-111	30	30	30	NA	330	NA
2-Methylphenol (o-Cresol)	95-48-7	8270D	1	1	0.5	NA	57-105	57-105	30	30	50	NA	NA	NA
2-Nitrophenol	88-75-5	8270D	1	1	0.5	NA	68-120	68-120	30	30	NA	NA	NA	NA
2-Nitroaniline (o-Nitroaniline)	88-74-4	8270D	1	1	0.5	NA	74-121	74-121	30	30	NA	NA	NA	NA
3-Nitroaniline	99-09-2	8270D	1	1	0.5	NA	61-114	61-114	30	30	NA	NA	NA	NA
3,3'-Dichlorobenzidine	91-94-1	8270D	1	5	2	NA	37-104	37-104	30	30	30	NA	4.5	0.021
4-Chloroaniline (p-Chloroaniline)	106-47-8	8270D	1	4	2	NA	42-99	42-99	30	30	30	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	8270D	1	1	0.5	NA	72-116	72-116	30	30	100	NA	NA	NA
4-Chlorophenyl- phenyl ether	7005-72-3	8270D	1	1	0.5	NA	65-112	65-112	30	30	NA	NA	NA	NA
4-Bromophenyl phenyl ether	101-55-3	8270D	1	1	0.5	NA	71-114	71-114	30	30	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	8270D	1	15	5	NA	59-125	59-125	30	30	0.7	NA	NA	13
3 & 4-Methylphenol (m&p- Cresol)	106-44-5	8270D	1	1	0.5	NA	51-100	51-100	30	30	50**	NA	NA	NA
4-Nitroaniline (p-Nitroaniline)	100-01-6	8270D	1	1	0.5	NA	60-106	60-106	30	30	NA	NA	NA	NA
4-Nitrophenol	100-02-7	8270D	1	30	10	NA	18-91	18-91	30	30	NA	NA	60	NA
Acenaphthene	83-32-9	8270D SIM	1	0.05	0.01	NA	65-125	65-125	30	30	400	NA	38	670
Acenaphthylene	208-96-8	8270D SIM	1	0.05	0.01	NA	58-96	58-96	30	30	100	NA	4,840	NA
Acetophenone	98-86-2	8270D	1	1	0.5	NA	71-108	72-108	30	30	700	NA	NA	NA
Anthracene	120-12-7	8270D SIM	1	0.05	0.01	NA	70-110	70-110	30	30	2,000	NA	0.035	8,300
Atrazine	1912-24-9	8270D	1	5	2	NA	80-120	80-120	30	30	3	NA	NA	NA
Benzaldehyde	100-52-7	8270D	1	5	1	NA	58-107	58-107	30	30	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	8270D SIM	1	0.05	0.01	NA	75-119	75-119	30	30	0.1	NA	0.025	0.038
Benzo(a)pyrene	50-32-8	8270D SIM	1	0.05	0.01	NA	75-115	75-115	30	30	0.1	NA	0.014	0.0038
Benzo(b)fluoranthene	205-99-2	8270D SIM	1	0.05	0.01	NA	75-120	75-120	30	30	0.2	NA	9.07	0.038
Benzo(ghi)perylene	191-24-2	8270D SIM	1	0.05	0.01	NA	61-117	61-117	30	30	100	NA	7.64	70^
Benzo(k)fluoranthene	207-08-9	8270D SIM	1	0.05	0.01	NA	71-118	71-118	30	30	0.5	NA	NA	0.38
Bis(2-Chloroethoxy)Methane	111-91-1	8270D	1	1	0.5	NA	72-116	72-116	30	30	NA	NA	NA	NA
Bis(2-Chloroethyl)Ether	111-44-4	8270D	1	1	0.5	NA	63-108	63-108	30	30	7	NA	1,900	0.03
Bis(2-Chloro-Isopropyl)Ether [2,2'-Oxybis(1-	108-60-1	8270D	1	1	0.5	NA	54-113	54-113	30	30	300	NA	NA	1,400
Bis[2-ethylhexyl] phthalate	117-81-7	8270D	1	5	2	NA	64-126	64-126	30	30	3	NA	0.3	1.2
Butylbenzylphthalate	85-68-7	8270D	1	5	2	NA	52-121	52-121	30	30	100	NA	23	150
Caprolactam	105-60-2	8270D	1	15	5	NA	13-37	13-37	30	30	4,000	NA	NA	NA
Carbazole	86-74-8	8270D	1	1	0.5	NA	79-116	79-116	30	30	100	NA	NA	NA
Chrysene	218-01-9	8270D SIM	1	0.05	0.01	NA	73-111	73-111	30	30	5	NA	NA	3.8
Dibenzo(a,h)anthracene	53-70-3	8270D SIM	1	0.05	0.01	NA	62-122	62-122	30	30	0.3	NA	NA	0.0038
Dibenzofuran	132-64-9	8270D	1	1	0.5	NA	69-110	69-110	30	30	100	NA	NA	NA
Diethylphthalate	84-66-2	8270D	1	5	2	NA	55-113	55-113	30	30	6,000	NA	110	17,000
Dimethylphthalate	131-11-3	8270D	1	5	2	NA	19-119	19-119	30	30	100	NA	NA	NA
Di-n-octylphthalate	117-84-0	8270D	1	5	2	NA	68-127	68-127	30	30	100	NA	NA	NA
Fluoranthene	206-44-0	8270D SIM	1	0.05	0.01	NA	67-112	67-112	30	30	300	NA	1.9	130
Fluorene	86-73-7	8270D SIM	1	0.05	0.01	NA	69-113	69-113	30	30	300	NA	19	1,100
Hexachlorobenzene	118-74-1	8270D SIM	1	0.05	0.01	NA	41-120	41-120	30	30	0.02	NA	0.0003	0.00028
Hexachlorobutadiene	87-68-3	8270D	1	1	0.5	NA	27-111	27-111	30	30	1	NA	0.053	0.44

Table 2-2A. *Laboratory limits and regulatory criteria for SVOCs in aqueous samplesby ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Hexachlorocyclopentadiene	77-47-4	8270D	1	15	5	NA	10-81	10-81	30	30	40	NA	77	40
Hexachloroethane	67-72-1	8270D	1	5	1	NA	28-103	28-103	30	30	7	NA	8	1.4
Indeno(1,2,3-cd) pyrene	193-39-5	8270D SIM	1	0.05	0.01	NA	64-117	64-117	30	30	0.2	NA	4.31	0.038
Isophorone	78-59-1	8270D	1	1	0.5	NA	70-117	70-117	30	30	40	NA	920	35
Naphthalene	91-20-3	8270D SIM	1	0.06	0.03	NA	52-110	52-110	30	30	300	NA	13	NA
Di-n-butyl phthalate	84-74-2	8270D	1	5	2	NA	69-117	69-117	30	30	700	NA	9.7	2,000
Nitrobenzene	98-95-3	8270D	1	1	0.5	NA	66-114	66-114	30	30	6	NA	220	17
N-Nitroso-di-n-propylamine	621-64-7	8270D	1	1	0.5	NA	67-115	67-115	30	30	10	NA	NA	0.005
N-Nitrosodiphenylamine	86-30-6	8270D	1	1	0.5	NA	75-116	75-116	30	30	10	NA	NA	3.3
Pentachlorophenol	87-86-5	8270D	1	5	1	NA	59-134	59-134	30	30	0.3	***	***	0.27
Phenanthrene	85-01-8	8270D SIM	1	0.06	0.03	NA	73-107	73-107	30	30	100	NA	3.6	NA
Phenol	108-95-2	8270D	1	1	0.5	NA	16-80	16-80	30	30	2,000	NA	180	10,000
Pyrene	129-00-0	8270D SIM	1	0.05	0.01	NA	65-113	65-113	30	30	200	NA	0.3	830
Phenol-d6	13127-88-3	8270D	1	NA	NA	10-69	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	10-83	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	13-149	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	40-113	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	46-104	NA	NA	NA	NA	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	35-119	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene-d10	93951-69-0	8270D SIM	1	NA	NA	44-115	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene-d12	63466-71-7	8270D SIM	1	NA	NA	25-125	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene-d10	38072-94-5	8270D SIM	1	NA	NA	33-112	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

* - Standard is for 2,4-Dinitrotoluene/2,6-Dinitrotoluene Mix

** - Standard is 50 µg/l for m-cresol and p-cresol separately

*** Freshwater criteria for pentachlorophenol are expressed as a function of pH. Criteria are derived in accordance with the formula set forth below:Acute criterion = e(1.005[pH]-4.869) ; Chronic criterion = e(1.005[pH]-5.134)

^ Site specific criteria

Target analyte detection limit exceeds regulatory criteria.

SVOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.]

Method reference

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.

1- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-2AA. *Laboratory limits and regulatory criteria for SVOCs in aqueous samples by Pace Analytical Services*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
1,4-Dioxane	123-91-1	8270D SIM	1	0.0004	0.0000447	NA	73-146	38-160	21	20	0.4	NA	NA	NA
1,1-Biphenyl	92-52-4	8270D	1	0.01	0.000206	NA	38-120	29-120	27	33	400	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D	1	0.01	0.00241	NA	31-121	19-122	32	27	NA	NA	3	0.97
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	1	0.01	0.002	NA	42-132	17-142	34	22	200	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	8270D	1	0.01	0.000236	NA	44-120	33-120	31	22	700	NA	NA	1,800
2,4,6-Trichlorophenol	88-06-2	8270D	1	0.01	0.000297	NA	42-120	26-120	31	23	20	NA	4.9	0.58
2,4-Dichlorophenol	120-83-2	8270D	1	0.01	0.000284	NA	36-120	19-120	27	26	20	NA	11	77
2,4-Dimethylphenol	105-67-9	8270D	1	0.01	0.000624	NA	33-120	15-120	28	26	100	NA	100	380
2,4-Dinitrophenol	51-28-5	8270D	1	0.01	0.00325	NA	10-120	10-120	40	39	40	NA	19	69
2,4-Dinitrotoluene	121-14-2	8270D	1	0.01	0.00165	NA	49-124	39-125	25	20	10*	NA	44	0.11
2,6-Dinitrotoluene	606-20-2	8270D	1	0.01	0.000279	NA	46-120	36-120	27	21	10*	NA	NA	NA
2-Chloronaphthalene	91-58-7	8270D	1	0.001	0.00033	NA	37-120	29-120	28	25	600	NA	0.396	1,000
2-Chlorophenol	95-57-8	8270D	1	0.01	0.000283	NA	25-120	18-120	34	35	40	NA	24	81
2-Methylnaphthalene	91-57-6	8270D	1	0.001	0.000311	NA	33-120	17-120	28	25	30	NA	330	NA
2-Methylphenol (o-Cresol)	95-48-7	8270D	1	0.01	0.000312	NA	28-120	10-120	30	29	50	NA	NA	NA
2-Nitrophenol	88-75-5	8270D	1	0.01	0.00032	NA	31-120	20-120	30	29	NA	NA	NA	NA
2-Nitroaniline (o-Nitroaniline)	88-74-4	8270D	1	0.01	0.0019	NA	43-120	33-120	27	22	NA	NA	NA	NA
3-Nitroaniline	99-09-2	8270D	1	0.01	0.000308	NA	38-120	20-120	27	21	NA	NA	NA	NA
3,3'-Dichlorobenzidine	91-94-1	8270D	1	0.01	0.00202	NA	44-120	10-134	30	20	30	NA	4.5	0.021
4-Chloroaniline (p-Chloroaniline)	106-47-8	8270D	1	0.01	0.000382	NA	25-120	10-120	31	25	30	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	8270D	1	0.01	0.000263	NA	40-120	26-120	27	21	100	NA	NA	NA
4-Chlorophenyl- phenyl ether	7005-72-3	8270D	1	0.01	0.000303	NA	44-120	36-120	23	20	NA	NA	NA	NA
4-Bromophenyl phenyl ether	101-55-3	8270D	1	0.01	0.000335	NA	45-120	37-120	24	20	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	8270D	1	0.01	0.00262	NA	38-138	10-144	39	25	0.7	NA	NA	13
3 & 4-Methylphenol (m&p- Cresol)	106-44-5	8270D	1	0.01	0.000266	NA	31-120	10-120	36	30	50**	NA	NA	NA
4-Nitroaniline (p-Nitroaniline)	100-01-6	8270D	1	0.01	0.000349	NA	18-160	10-160	26	21	NA	NA	NA	NA
4-Nitrophenol	100-02-7	8270D	1	0.01	0.00201	NA	10-120	10-120	40	33	NA	NA	60	NA
Acenaphthene	83-32-9	8270D SIM	1	0.00005	0.00000818	NA	65-138	44-153	20	20	400	NA	38	670
Acenaphthylene	208-96-8	8270D SIM	1	0.00005	0.000012	NA	66-140	53-150	20	20	100	NA	4,840	NA
Acetophenone	98-86-2	8270D	1	0.01	0.00271	NA	29-120	20-120	35	28	700	NA	NA	NA
Anthracene	120-12-7	8270D SIM	1	0.00005	0.000014	NA	67-150	56-156	20	20	2,000	NA	0.035	8,300
Atrazine	1912-24-9	8270D	1	0.01	0.00153	NA	39-141	39-130	23	20	3	NA	NA	NA
Benzaldehyde	100-52-7	8270D	1	0.01	0.0014	NA	10-160	10-160	40	40	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	8270D SIM	1	0.00005	0.0000041	NA	61-140	47-151	20	20	0.1	NA	0.025	0.038
Benzo(a)pyrene	50-32-8	8270D SIM	1	0.00005	0.0000116	NA	60-143	45-146	20	20	0.1	NA	0.014	0.0038
Benzo(b)fluoranthene	205-99-2	8270D SIM	1	0.00005	0.00000212	NA	58-141	43-142	20	20	0.2	NA	9.07	0.038
Benzo(ghi)perylene	191-24-2	8270D SIM	1	0.00005	0.00000227	NA	52-153	40-147	20	20	100	NA	7.64	70^
Benzo(k)fluoranthene	207-08-9	8270D SIM	1	0.00005	0.0000136	NA	58-148	43-148	21	20	0.5	NA	NA	0.38
Bis(2-Chloroethoxy)Methane	111-91-1	8270D	1	0.01	0.000329	NA	33-120	17-120	31	24	NA	NA	NA	NA
Bis(2-Chloroethyl)Ether	111-44-4	8270D	1	0.01	0.00162	NA	23-120	14-120	33	33	7	NA	1,900	0.03
Bis(2-Chloro-Isopropyl)Ether [2,2'-Oxybis(1-	108-60-1	8270D	1	0.01	0.000445	NA	28-120	18-120	34	31	300	NA	NA	1,400
Bis[2-ethylhexyl] phthalate	117-81-7	8270D	1	0.003	0.000709	NA	43-122	33-126	25	20	3	NA	0.3	1.2
Butylbenzylphthalate	85-68-7	8270D	1	0.003	0.000275	NA	43-121	34-126	24	20	100	NA	23	150
Caprolactam	105-60-2	8270D	1	0.01	0.000583	NA	10-120	10-120	40	26	4,000	NA	NA	NA
Carbazole	86-74-8	8270D	1	0.01	0.000162	NA	51-122	38-127	21	20	100	NA	NA	NA
Chrysene	218-01-9	8270D SIM	1	0.00005	0.0000108	NA	64-144	50-148	20	20	5	NA	NA	3.8
Dibenzo(a,h)anthracene	53-70-3	8270D SIM	1	0.00005	0.00000396	NA	52-155	37-151	20	20	0.3	NA	NA	0.0038
Dibenzofuran	132-64-9	8270D	1	0.01	0.000338	NA	44-120	32-120	26	30	100	NA	NA	NA
Diethylphthalate	84-66-2	8270D	1	0.003	0.000282	NA	48-122	39-125	24	20	6,000	NA	110	17,000
Dimethylphthalate	131-11-3	8270D	1	0.003	0.000283	NA	48-120	37-120	24	20	100	NA	NA	NA
Di-n-octylphthalate	117-84-0	8270D	1	0.003	0.000278	NA	42-125	25-135	26	20	100	NA	NA	NA
Fluoranthene	206-44-0	8270D SIM	1	0.00005	0.0000157	NA	69-153	56-157	20	20	300	NA	1.9	130
Fluorene	86-73-7	8270D SIM	1	0.00005	0.0000085	NA	64-136	48-148	20	20	300	NA	19	1,100
Hexachlorobenzene	118-74-1	8270D SIM	1	0.00002	0.0000067	NA	70-130	70-130	20	20	0.02	NA	0.0003	0.00028
Hexachlorobutadiene	87-68-3	8270D	1	0.01	0.000329	NA	19-120	12-120	34	32	1	NA	0.053	0.44

Table 2-2AA. *Laboratory limits and regulatory criteria for SVOCs in aqueous samples by Pace Analytical Services*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Hexachlorocyclopentadiene	77-47-4	8270D	1	0.01	0.00233	NA	15-120	10-120	33	31	40	NA	77	40
Hexachloroethane	67-72-1	8270D	1	0.01	0.000365	NA	15-120	10-120	40	37	7	NA	8	1.4
Indeno(1,2,3-cd) pyrene	193-39-5	8270D SIM	1	0.00005	0.0000148	NA	54-153	41-148	20	20	0.2	NA	4.31	0.038
Isophorone	78-59-1	8270D	1	0.01	0.000272	NA	36-120	21-120	27	23	40	NA	920	35
Naphthalene	91-20-3	8270D SIM	1	0.00025	0.0000198	NA	61-137	10-160	20	20	300	NA	13	NA
Di-n-butyl phthalate	84-74-2	8270D	1	0.003	0.000266	NA	49-121	35-128	23	20	700	NA	9.7	2,000
Nitrobenzene	98-95-3	8270D	1	0.01	0.000367	NA	27-120	12-120	30	29	6	NA	220	17
N-Nitroso-di-n-propylamine	621-64-7	8270D	1	0.01	0.000403	NA	31-120	16-120	30	28	10	NA	NA	0.005
N-Nitrosodiphenylamine	86-30-6	8270D	1	0.01	0.00119	NA	47-120	37-120	24	20	10	NA	NA	3.3
Pentachlorophenol	87-86-5	8270D	1	0.01	0.000313	NA	23-120	10-128	37	30	0.3	***	***	0.27
Phenanthrene	85-01-8	8270D SIM	1	0.00005	0.0000082	NA	62-137	47-147	20	20	100	NA	3.6	NA
Phenol	108-95-2	8270D	1	0.01	0.000334	NA	10-120	10-120	40	36	2,000	NA	180	10,000
Pyrene	129-00-0	8270D SIM	1	0.00005	0.0000117	NA	60-142	51-148	20	20	200	NA	0.3	830
Phenol-d5	13127-88-3	8270D	1	NA	NA	10-120	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	10-120	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	10-155	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	10-127	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	10-130	NA	NA	NA	NA	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	10-128	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene-d10	93951-69-0	8270D SIM	1	NA	NA	50-150	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene-d12	63466-71-7	8270D SIM	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene-d10	38072-94-5	8270D SIM	1	NA	NA	50-150	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.
MDLs indicate method detection limits.
ug/L indicates microgram per liter.
%R indicates percent recovery.
RPD indicates relative percent difference.
NA indicates not applicable.
SIM indicates selected ion monitoring.
MDLs, RLs and control limits provided by Pace Analytcial Services, current as of May 2019.
Target analyte detection limit exceeds regulatory criteria.
* - Standard is for 2,4-Dinitrotoluene/2,6-Dinitrotoluene Mix
** - Standard is 50 µg/l for m-cresol and p-cresol separately
*** Freshwater criteria for pentachlorophenol are expressed as a function of pH. Criteria are derived in accordance with the formula set forth below:Acute criterion = e(1.005[pH]-4.869) ; Chronic criterion = e(1.005[pH]-5.134)
^ Site specific criteria

SVOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.]

Method reference

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.
1- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-2B. *Laboratory limits and regulatory criteria for SVOCs in solid samples by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Solid RL	Laboratory Solid MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
1,4-Dioxane	123-91-1	8270D	1	330	100	NA	20-59	20-59	30	30	NA	NA	NA	NA	NA
1,1-Biphenyl	92-52-4	8270D	1	33	17	NA	82-106	82-106	30	30	61,000	240,000	140,000	NA	NA
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D	1	33	17	NA	84-109	84-109	30	30	NA	NA	NA	1,252	NA
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	1	170	67	NA	80-137	80-137	30	30	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	8270D	1	33	17	NA	84-116	84-116	30	30	6,100,000	68,000,000	68,000	NA	NA
2,4,6-Trichlorophenol	88-06-2	8270D	1	33	17	NA	80-120	80-120	30	30	19,000	74,000	200	208	NA
2,4-Dichlorophenol	120-83-2	8270D	1	33	17	NA	80-122	80-122	30	30	180,000	2,100,000	200	81.7	NA
2,4-Dimethylphenol	105-67-9	8270D	1	33	17	NA	60-101	60-101	30	30	1,200,000	14,000,000	1,000	304	NA
2,4-Dinitrophenol	51-28-5	8270D	1	1,000	330	NA	24-140	24-140	30	30	120,000	1,400,000	300	6.21	NA
2,4-Dinitrotoluene	121-14-2	8270D	1	170	67	NA	81-123	81-123	30	30	700	3,000	700^	14.4	NA
2,6-Dinitrotoluene	606-20-2	8270D	1	33	17	NA	76-123	76-123	30	30	700	3,000	500^	39.8^	NA
2-Chloronaphthalene	91-58-7	8270D	1	33	7	NA	54-137	54-137	30	30	NA	NA	NA	417	NA
2-Chlorophenol	95-57-8	8270D	1	33	17	NA	81-126	81-126	30	30	310,000	2,200,000	800	31.9	NA
2-Methylnaphthalene	91-57-6	8270D	1	17	3	NA	83-106	83-106	30	30	230,000	2,400,000	8,000	20.2	NA
2-Methylphenol (o-Cresol)	95-48-7	8270D	1	33	17	NA	87-119	87-119	30	30	310,000	3,400,000	NA	NA	NA
2-Nitrophenol	88-75-5	8270D	1	33	17	NA	74-117	74-117	30	30	NA	NA	NA	NA	NA
2-Nitroaniline (o-Nitroaniline)	88-74-4	8270D	1	33	17	NA	83-122	83-122	30	30	39,000	23,000,000	NA	NA	NA
3-Nitroaniline	99-09-2	8270D	1	170	67	NA	72-115	72-115	30	30	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	91-94-1	8270D	1	330	100	NA	17-117	17-117	30	30	1,000	4,000	200	127	NA
4-Chloroaniline (p-Chloroaniline)	106-47-8	8270D	1	67	33	NA	10-93	10-93	30	30	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	8270D	1	33	17	NA	79-128	79-128	30	30	NA	NA	NA	NA	NA
4-Chlorophenyl- phenyl ether	7005-72-3	8270D	1	33	17	NA	81-112	81-112	30	30	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	101-55-3	8270D	1	33	17	NA	82-118	82-118	30	30	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	8270D	1	500	170	NA	76-112	76-112	30	30	6,000	68,000	300	NA	NA
3 & 4-Methylphenol (m&p- Cresol)	106-44-5	8270D	1	33	17	NA	83-115	83-115	30	30	31,000	340,000	NA	NA	NA
4-Nitroaniline (p-Nitroaniline)	100-01-6	8270D	1	170	67	NA	50-113	50-113	30	30	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	8270D	1	500	170	NA	41-151	41-151	30	30	NA	NA	NA	13.3	NA
Acenaphthene	83-32-9	8270D	1	17	3	NA	81-113	81-113	30	30	3,400,000	37,000,000	110,000	6.71	NA
Acenaphthylene	208-96-8	8270D	1	17	3	NA	74-124	74-124	30	30	NA	300,000,000	NA	5.87	NA
Acetophenone	98-86-2	8270D	1	33	17	NA	70-106	70-106	30	30	2,000	5,000	3,000	NA	NA
Anthracene	120-12-7	8270D	1	17	3	NA	87-113	87-113	30	30	17,000,000	30,000,000	2,400,000	57.2	370,000
Atrazine	1912-24-9	8270D	1	170	33	NA	69-122	69-122	30	30	210,000	2,400,000	200	NA	NA
Benzaldehyde	100-52-7	8270D	1	170	67	NA	10-74	10-74	30	30	6,100,000	68,000,000	NA	NA	NA
Benzo(a)anthracene	56-55-3	8270D	1	17	3	NA	81-119	81-119	30	30	5,000	17,000	13,000^	108	1,480,000
Benzo(a)pyrene	50-32-8	8270D	1	17	3	NA	83-109	83-109	30	30	500	2,000	3,000^	150	1,440,000
Benzo(b)fluoranthene	205-99-2	8270D	1	17	3	NA	85-117	85-117	30	30	5,000	17,000	41,000^	10,400	NA
Benzo(ghi)perylene	191-24-2	8270D	1	17	3	NA	81-117	81-117	30	30	380,000,000	30,000,000	NA	170	320,000
Benzo(k)fluoranthene	207-08-9	8270D	1	17	3	NA	77-119	77-119	30	30	45,000	170,000	25,000	240	1,340,00
Bis(2-Chloroethoxy)Methane	111-91-1	8270D	1	33	17	NA	75-115	75-115	30	30	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)Ether	111-44-4	8270D	1	33	17	NA	75-108	75-108	30	30	400	2,000	200	3,520	NA
Bis(2-Chloro-Isopropyl)Ether [2,2'-Oxybis(1-	108-60-1	8270D	1	33	17	NA	56-123	56-123	30	30	23,000	67,000	5,000	NA	NA
Bis[2-ethylhexyl] phthalate	117-81-7	8270D	1	170	67	NA	81-128	81-128	30	30	35,000	140,000	1,200,000	182	750
Butylbenzylphthalate	85-68-7	8270D	1	170	67	NA	84-124	84-124	30	30	1,200,000	14,000,000	230,000	1,970	NA
Caprolactam	105-60-2	8270D	1	170	33	NA	65-113	65-113	30	30	31,000,000	340,000,000	12,000	NA	NA
Carbazole	86-74-8	8270D	1	33	17	NA	77-113	77-113	30	30	24,000	96,000	NA	NA	NA
Chrysene	218-01-9	8270D	1	17	3	NA	77-118	77-118	30	30	450,000	1,700,000	80,000	166	460,000
Dibenzo(a,h)anthracene	53-70-3	8270D	1	17	3	NA	81-121	81-121	30	30	500	2,000	13,000^	33	130,000
Dibenzofuran	132-64-9	8270D	1	33	17	NA	80-112	80-112	30	30	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	8270D	1	170	67	NA	87-113	87-113	30	30	49,000,000	550,000,000	88,000	295	NA
Dimethylphthalate	131-11-3	8270D	1	170	67	NA	90-108	90-108	30	30	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	8270D	1	170	67	NA	83-136	83-136	30	30	2,400,000	27,000,000	3,300,000	NA	NA
Fluoranthene	206-44-0	8270D	1	17	3	NA	80-113	80-113	30	30	2,300,000	24,000,000	1,300,000	423	1,020,000
Fluorene	86-73-7	8270D	1	17	3	NA	84-115	84-115	30	30	2,300,000	24,000,000	170,000	77.4	160,000
Hexachlorobenzene	118-74-1	8270D	1	17	3	NA	75-110	75-110	30	30	300	1,000	200	20	24,000
Hexachlorobutadiene	87-68-3	8270D	1	33	17	NA	71-105	71-105	30	30	6,000	25,000	900	26.5	NA
Hexachlorocyclopentadiene	77-47-4	8270D	1	500	170	NA	66-161	66-161	30	30	45,000	110,000	320,000	901	NA
Hexachloroethane	67-72-1	8270D	1	170	33	NA	76-100	76-100	30	30	12,000	48,000	200	584	NA
Indeno(1,2,3-cd) pyrene	193-39-5	8270D	1	17	3	NA	77-116	77-116	30	30	5,000	17,000	7,000	200	320,000
Isophorone	78-59-1	8270D	1	33	17	NA	85-119	85-119	30	30	510,000	2,000,000	200	432	NA
Naphthalene	91-20-3	8270D	1	17	3	NA	83-104	83-104	30	30	6,000	17,000	25,000	160	NA
Di-n-butyl phthalate	84-74-2	8270D	1	170	67	NA	88-118	88-118	30	30	6,100,000	68,000,000	760,000	1,114	110

Table 2-2B. *Laboratory limits and regulatory criteria for SVOCs in solid samples by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Solid RL	Laboratory Solid MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Nitrobenzene	98-95-3	8270D	1	33	17	NA	79-108	79-108	30	30	5,000	14,000	200	145	NA
N-Nitroso-di-n-propylamine	621-64-7	8270D	1	33	17	NA	71-118	71-118	30	30	200	300	200	NA	NA
N-Nitrosodiphenylamine	86-30-6	8270D	1	33	17	NA	82-120	82-120	30	30	99,000	390,000	6,000^	NA	NA
Pentachlorophenol	87-86-5	8270D	1	170	33	NA	47-134	47-134	30	30	900	3,000	300	23,000	NA
Phenanthrene	85-01-8	8270D	1	17	3	NA	86-107	86-107	30	30	NA	300,000,000	NA	204	950,000
Phenol	108-95-2	8270D	1	33	17	NA	77-120	77-120	30	30	18,000,000	210,000,000	8,000	49.1	48
Pyrene	129-00-0	8270D	1	17	3	NA	84-106	84-106	30	30	1,700,000	18,000,000	840,000	195	850,000
Phenol-d6	13127-88-3	8270D	1	NA	NA	46-125	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	51-123	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	34-129	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	49-118	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	57-116	NA	NA	NA	NA	NA	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	55-118	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates value not applicable, a standard has not been established.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

* Standard for 4-Methylphenol

^ Site specific criteria

SVOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.]

Method references

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-2BB. *Laboratory limits and regulatory criteria for SVOCs in solid samples by Pace Analytical Services*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Solid RL	Laboratory Solid MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
1,4-Dioxane	123-91-1	8270D	1	0.1	0.039	NA	70-130	50-150	20	20	NA	NA	NA	NA	NA
1,1-Biphenyl	92-52-4	8270D	1	0.333	0.00588	NA	39-120	15-120	33	24	61,000	240,000	140,000	NA	NA
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D	1	0.333	0.0762	NA	30-120	12-120	37	23	NA	NA	NA	1,252	NA
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	1	0.333	0.121	NA	39-120	20-120	31	24	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	8270D	1	0.333	0.0104	NA	38-120	20-120	30	24	6,100,000	68,000,000	68,000	NA	NA
2,4,6-Trichlorophenol	88-06-2	8270D	1	0.333	0.00779	NA	37-120	19-120	32	24	19,000	74,000	200	208	NA
2,4-Dichlorophenol	120-83-2	8270D	1	0.333	0.00746	NA	25-120	20-120	31	21	180,000	2,100,000	200	81.7	NA
2,4-Dimethylphenol	105-67-9	8270D	1	0.333	0.0471	NA	15-120	10-120	33	26	1,200,000	14,000,000	1,000	304	NA
2,4-Dinitrophenol	51-28-5	8270D	1	0.333	0.098	NA	10-120	10-121	40	40	120,000	1,400,000	300	6.21	NA
2,4-Dinitrotoluene	121-14-2	8270D	1	0.333	0.00607	NA	45-120	30-120	31	21	700	3,000	700^	14.4	NA
2,6-Dinitrotoluene	606-20-2	8270D	1	0.333	0.00737	NA	42-120	25-120	31	21	700	3,000	500^	39.8^	NA
2-Chloronaphthalene	91-58-7	8270D	1	0.0333	0.00639	NA	35-120	20-120	32	24	NA	NA	NA	417	NA
2-Chlorophenol	95-57-8	8270D	1	0.333	0.00831	NA	28-120	15-120	37	28	310,000	2,200,000	800	31.9	NA
2-Methylnaphthalene	91-57-6	8270D	1	0.0333	0.00861	NA	34-120	10-120	37	22	230,000	2,400,000	8,000	20.2	NA
2-Methylphenol (o-Cresol)	95-48-7	8270D	1	0.333	0.00986	NA	35-120	11-120	40	24	310,000	3,400,000	NA	NA	NA
2-Nitrophenol	88-75-5	8270D	1	0.333	0.013	NA	20-120	12-120	39	25	NA	NA	NA	NA	NA
2-Nitroaniline (o-Nitroaniline)	88-74-4	8270D	1	0.333	0.00755	NA	46-120	24-120	30	22	39,000	23,000,000	NA	NA	NA
3-Nitroaniline	99-09-2	8270D	1	0.333	0.0085	NA	36-120	11-120	32	22	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	91-94-1	8270D	1	0.333	0.0794	NA	28-120	10-120	34	23	1,000	4,000	200	127	NA
4-Chloroaniline (p-Chloroaniline)	106-47-8	8270D	1	0.333	0.0352	NA	18-120	10-120	36	25	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	8270D	1	0.333	0.00477	NA	28-120	15-120	30	20	NA	NA	NA	NA	NA
4-Chlorophenyl- phenyl ether	7005-72-3	8270D	1	0.333	0.00627	NA	40-120	24-120	29	22	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	101-55-3	8270D	1	0.333	0.0114	NA	40-120	27-120	30	21	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	8270D	1	0.333	0.124	NA	16-120	10-120	39	33	6,000	68,000	300	NA	NA
3 & 4-Methylphenol (m&p- Cresol)	106-44-5	8270D	1	0.333	0.00783	NA	42-120	12-123	38	25	31,000	340,000	NA	NA	NA
4-Nitroaniline (p-Nitroaniline)	100-01-6	8270D	1	0.333	0.00639	NA	36-120	15-120	31	23	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	8270D	1	0.333	0.0525	NA	27-120	10-137	32	24	NA	NA	NA	13.3	NA
Acenaphthene	83-32-9	8270D	1	0.0333	0.00642	NA	38-120	18-120	32	22	3,400,000	37,000,000	110,000	6.71	NA
Acenaphthylene	208-96-8	8270D	1	0.0333	0.00671	NA	40-120	25-120	32	22	NA	300,000,000	NA	5.87	NA
Acetophenone	98-86-2	8270D	1	0.333	0.0752	NA	29-120	10-120	37	27	2,000	5,000	3,000	NA	NA
Anthracene	120-12-7	8270D	1	0.0333	0.00632	NA	42-120	22-120	29	20	17,000,000	30,000,000	2,400,000	57.2	370,000
Atrazine	1912-24-9	8270D	1	0.333	0.0938	NA	43-120	20-131	28	21	210,000	2,400,000	200	NA	NA
Benzaldehyde	100-52-7	8270D	1	0.333	0.0532	NA	10-160	10-160	40	40	6,100,000	68,000,000	NA	NA	NA
Benzo(a)anthracene	56-55-3	8270D	1	0.0333	0.00428	NA	44-120	25-120	29	20	5,000	17,000	13,000^	108	1,480,000
Benzo(a)pyrene	50-32-8	8270D	1	0.0333	0.00548	NA	45-120	24-120	30	20	500	2,000	3,000^	150	1,440,000
Benzo(b)fluoranthene	205-99-2	8270D	1	0.0333	0.00695	NA	43-120	19-122	31	22	5,000	17,000	41,000^	10,400	NA
Benzo(ghi)perylene	191-24-2	8270D	1	0.0333	0.00721	NA	43-120	10-120	33	22	380,000,000	30,000,000	NA	170	320,000
Benzo(k)fluoranthene	207-08-9	8270D	1	0.0333	0.00582	NA	44-120	23-120	30	21	45,000	170,000	25,000	240	1,340,00
Bis(2-Chloroethoxy)Methane	111-91-1	8270D	1	0.333	0.0077	NA	20-120	10-120	34	23	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)Ether	111-44-4	8270D	1	0.333	0.00896	NA	16-120	10-120	40	31	400	2,000	200	3,520	NA
Bis(2-Chloro-Isopropyl)Ether [2,2'-Oxybis(1-	108-60-1	8270D	1	0.333	0.0076	NA	23-120	10-120	40	30	23,000	67,000	5,000	NA	NA
Bis[2-ethylhexyl] phthalate	117-81-7	8270D	1	0.333	0.012	NA	41-120	17-126	30	21	35,000	140,000	1,200,000	182	750
Butylbenzylphthalate	85-68-7	8270D	1	0.333	0.0103	NA	40-120	23-120	30	21	1,200,000	14,000,000	230,000	1,970	NA
Caprolactam	105-60-2	8270D	1	0.333	0.104	NA	38-120	11-141	31	20	31,000,000	340,000,000	12,000	NA	NA
Carbazole	86-74-8	8270D	1	0.333	0.00524	NA	48-120	31-120	24	20	24,000	96,000	NA	NA	NA
Chrysene	218-01-9	8270D	1	0.0333	0.00555	NA	43-120	21-120	29	20	450,000	1,700,000	80,000	166	460,000
Dibenzo(a,h)anthracene	53-70-3	8270D	1	0.0333	0.00821	NA	44-120	10-120	32	22	500	2,000	13,000^	33	130,000
Dibenzofuran	132-64-9	8270D	1	0.333	0.00518	NA	44-120	24-120	30	21	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	8270D	1	0.333	0.00691	NA	43-120	26-120	28	21	49,000,000	550,000,000	88,000	295	NA
Dimethylphthalate	131-11-3	8270D	1	0.333	0.0054	NA	43-120	25-120	29	22	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	8270D	1	0.333	0.00907	NA	40-120	21-123	29	21	2,400,000	27,000,000	3,300,000	NA	NA
Fluoranthene	206-44-0	8270D	1	0.0333	0.00496	NA	44-120	18-126	32	21	2,300,000	24,000,000	1,300,000	423	1,020,000
Fluorene	86-73-7	8270D	1	0.0333	0.00682	NA	41-120	25-120	30	22	2,300,000	24,000,000	170,000	77.4	160,000
Hexachlorobenzene	118-74-1	8270D	1	0.333	0.00856	NA	39-120	27-120	28	21	300	1,000	200	20	24,000
Hexachlorobutadiene	87-68-3	8270D	1	0.333	0.01	NA	15-120	10-120	38	28	6,000	25,000	900	26.5	NA
Hexachlorocyclopentadiene	77-47-4	8270D	1	0.333	0.0587	NA	15-120	10-120	40	31	45,000	110,000	320,000	901	NA
Hexachloroethane	67-72-1	8270D	1	0.333	0.0134	NA	17-120	10-120	40	31	12,000	48,000	200	584	NA
Indeno(1,2,3-cd) pyrene	193-39-5	8270D	1	0.0333	0.00772	NA	45-120	10-120	32	21	5,000	17,000	7,000	200	320,000
Isophorone	78-59-1	8270D	1	0.333	0.00522	NA	23-120	13-120	34	23	510,000	2,000,000	200	432	NA
Naphthalene	91-20-3	8270D	1	0.0333	0.00889	NA	18-120	10-120	35	24	6,000	17,000	25,000	160	NA
Di-n-butyl phthalate	84-74-2	8270D	1	0.333	0.0109	NA	43-120	30-120	29	20	6,100,000	68,000,000	760,000	1,114	110

Table 2-2BB. *Laboratory limits and regulatory criteria for SVOCs in solid samples by Pace Analytical Services*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Solid RL	Laboratory Solid MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Nitrobenzene	98-95-3	8270D	1	0.333	0.00695	NA	17-120	10-120	36	26	5,000	14,000	200	145	NA
N-Nitroso-di-n-propylamine	621-64-7	8270D	1	0.333	0.00906	NA	26-120	10-120	37	27	200	300	200	NA	NA
N-Nitrosodiphenylamine	86-30-6	8270D	1	0.333	0.09	NA	40-120	17-120	29	21	99,000	390,000	6,000^	NA	NA
Pentachlorophenol	87-86-5	8270D	1	0.333	0.048	NA	29-120	10-160	31	25	900	3,000	300	23,000	NA
Phenanthrene	85-01-8	8270D	1	0.0333	0.00528	NA	42-120	17-120	31	20	NA	300,000,000	NA	204	950,000
Phenol	108-95-2	8270D	1	0.333	0.00695	NA	28-120	12-120	38	27	18,000,000	210,000,000	8,000	49.1	48
Pyrene	129-00-0	8270D	1	0.0333	0.0123	NA	41-120	16-121	32	21	1,700,000	18,000,000	840,000	195	850,000
Phenol-d5	13127-88-3	8270D	1	NA	NA	10-120	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	12-120	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	10-127	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	10-122	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	15-120	NA	NA	NA	NA	NA	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	10-120	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates value not applicable, a standard has not been established.

MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.

* Standard for 4-Methylphenol

^ Site specific criteria

SVOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.]

Method references

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-2C. *Laboratory limits and regulatory criteria for SVOCs in concrete samples by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Concrete RL	Laboratory Concrete MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
1,4-Dioxane	123-91-1	8270D	1	3300	1000	NA	20-59	20-59	30	30	NA	NA	NA	NA	NA
1,1-Biphenyl	92-52-4	8270D	1	330	170	NA	82-106	82-106	30	30	61,000	240,000	140,000	NA	NA
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D	1	330	170	NA	84-109	84-109	30	30	NA	NA	NA	1,252	NA
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	1	1700	670	NA	80-137	80-137	30	30	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	8270D	1	330	170	NA	84-116	84-116	30	30	6,100,000	68,000,000	68,000	NA	NA
2,4,6-Trichlorophenol	88-06-2	8270D	1	330	170	NA	80-120	80-120	30	30	19,000	74,000	200	208	NA
2,4-Dichlorophenol	120-83-2	8270D	1	330	170	NA	80-122	80-122	30	30	180,000	2,100,000	200	81.7	NA
2,4-Dimethylphenol	105-67-9	8270D	1	330	170	NA	60-101	60-101	30	30	1,200,000	14,000,000	1,000	304	NA
2,4-Dinitrophenol	51-28-5	8270D	1	10000	3300	NA	24-140	24-140	30	30	120,000	1,400,000	300	6.21	NA
2,4-Dinitrotoluene	121-14-2	8270D	1	1700	670	NA	81-123	81-123	30	30	700	3,000	700^	14.4	NA
2,6-Dinitrotoluene	606-20-2	8270D	1	330	170	NA	76-123	76-123	30	30	700	3,000	500^	39.8^	NA
2-Chloronaphthalene	91-58-7	8270D	1	330	70	NA	54-137	54-137	30	30	NA	NA	NA	417	NA
2-Chlorophenol	95-57-8	8270D	1	330	170	NA	81-126	81-126	30	30	310,000	2,200,000	800	31.9	NA
2-Methylnaphthalene	91-57-6	8270D	1	170	30	NA	83-106	83-106	30	30	230,000	2,400,000	8,000	20.2	NA
2-Methylphenol (o-Cresol)	95-48-7	8270D	1	330	170	NA	87-119	87-119	30	30	310,000	3,400,000	NA	NA	NA
2-Nitrophenol	88-75-5	8270D	1	330	170	NA	74-117	74-117	30	30	NA	NA	NA	NA	NA
2-Nitroaniline (o-Nitroaniline)	88-74-4	8270D	1	330	170	NA	83-122	83-122	30	30	39,000	23,000,000	NA	NA	NA
3-Nitroaniline	99-09-2	8270D	1	1700	670	NA	72-115	72-115	30	30	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	91-94-1	8270D	1	3300	1000	NA	17-117	17-117	30	30	1,000	4,000	200	127	NA
4-Chloroaniline (p-Chloroaniline)	106-47-8	8270D	1	670	330	NA	10-93	10-93	30	30	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	8270D	1	330	170	NA	79-128	79-128	30	30	NA	NA	NA	NA	NA
4-Chlorophenyl- phenyl ether	7005-72-3	8270D	1	330	170	NA	81-112	81-112	30	30	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	101-55-3	8270D	1	330	170	NA	82-118	82-118	30	30	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	8270D	1	5000	1700	NA	76-112	76-112	30	30	6,000	68,000	300	NA	NA
3 & 4-Methylphenol (m&p- Cresol)	106-44-5	8270D	1	330	170	NA	83-115	83-115	30	30	31,000	340,000	NA	NA	NA
4-Nitroaniline (p-Nitroaniline)	100-01-6	8270D	1	1700	670	NA	50-113	50-113	30	30	NA	NA	NA	NA	NA
4-Nitrophenol	100-02-7	8270D	1	5000	1700	NA	41-151	41-151	30	30	NA	NA	NA	13.3	NA
Acenaphthene	83-32-9	8270D	1	170	30	NA	81-113	81-113	30	30	3,400,000	37,000,000	110,000	6.71	NA
Acenaphthylene	208-96-8	8270D	1	170	30	NA	74-124	74-124	30	30	NA	300,000,000	NA	5.87	NA
Acetophenone	98-86-2	8270D	1	330	170	NA	70-106	70-106	30	30	2,000	5,000	3,000	NA	NA
Anthracene	120-12-7	8270D	1	170	30	NA	87-113	87-113	30	30	17,000,000	30,000,000	2,400,000	57.2	370,000
Atrazine	1912-24-9	8270D	1	1700	330	NA	69-122	69-122	30	30	210,000	2,400,000	200	NA	NA
Benzaldehyde	100-52-7	8270D	1	1700	670	NA	10-74	10-74	30	30	6,100,000	68,000,000	NA	NA	NA
Benzo(a)anthracene	56-55-3	8270D	1	170	30	NA	81-119	81-119	30	30	5,000	17,000	13,000^	108	1,480,000
Benzo(a)pyrene	50-32-8	8270D	1	170	30	NA	83-109	83-109	30	30	500	2,000	3,000^	150	1,440,000
Benzo(b)fluoranthene	205-99-2	8270D	1	170	30	NA	85-117	85-117	30	30	5,000	17,000	41,000^	10,400	NA
Benzo(ghi)perylene	191-24-2	8270D	1	170	30	NA	81-117	81-117	30	30	380,000,000	30,000,000	NA	170	320,000
Benzo(k)fluoranthene	207-08-9	8270D	1	170	30	NA	77-119	77-119	30	30	45,000	170,000	25,000	240	1,340,00
Bis(2-Chloroethoxy)Methane	111-91-1	8270D	1	330	170	NA	75-115	75-115	30	30	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)Ether	111-44-4	8270D	1	330	170	NA	75-108	75-108	30	30	400	2,000	200	3,520	NA
Bis(2-Chloro-Isopropyl)Ether [2,2'-Oxybis(1-	108-60-1	8270D	1	330	170	NA	56-123	56-123	30	30	23,000	67,000	5,000	NA	NA
Bis[2-ethylhexyl] phthalate	117-81-7	8270D	1	1700	670	NA	81-128	81-128	30	30	35,000	140,000	1,200,000	182	750
Butylbenzylphthalate	85-68-7	8270D	1	1700	670	NA	84-124	84-124	30	30	1,200,000	14,000,000	230,000	1,970	NA
Caprolactam	105-60-2	8270D	1	1700	330	NA	65-113	65-113	30	30	31,000,000	340,000,000	12,000	NA	NA
Carbazole	86-74-8	8270D	1	330	170	NA	77-113	77-113	30	30	24,000	96,000	NA	NA	NA
Chrysene	218-01-9	8270D	1	170	30	NA	77-118	77-118	30	30	450,000	1,700,000	80,000	166	460,000
Dibenzo(a,h)anthracene	53-70-3	8270D	1	170	30	NA	81-121	81-121	30	30	500	2,000	13,000^	33	130,000
Dibenzofuran	132-64-9	8270D	1	330	170	NA	80-112	80-112	30	30	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	8270D	1	1700	670	NA	87-113	87-113	30	30	49,000,000	550,000,000	88,000	295	NA
Dimethylphthalate	131-11-3	8270D	1	1700	670	NA	90-108	90-108	30	30	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	8270D	1	1700	670	NA	83-136	83-136	30	30	2,400,000	27,000,000	3,300,000	NA	NA
Fluoranthene	206-44-0	8270D	1	170	30	NA	80-113	80-113	30	30	2,300,000	24,000,000	1,300,000	423	1,020,000
Fluorene	86-73-7	8270D	1	170	30	NA	84-115	84-115	30	30	2,300,000	24,000,000	170,000	77.4	160,000
Hexachlorobenzene	118-74-1	8270D	1	170	30	NA	75-110	75-110	30	30	300	1,000	200	20	24,000
Hexachlorobutadiene	87-68-3	8270D	1	330	170	NA	71-105	71-105	30	30	6,000	25,000	900	26.5	NA
Hexachlorocyclopentadiene	77-47-4	8270D	1	5000	1700	NA	66-161	66-161	30	30	45,000	110,000	320,000	901	NA
Hexachloroethane	67-72-1	8270D	1	1700	330	NA	76-100	76-100	30	30	12,000	48,000	200	584	NA
Indeno(1,2,3-cd) pyrene	193-39-5	8270D	1	170	30	NA	77-116	77-116	30	30	5,000	17,000	7,000	200	320,000
Isophorone	78-59-1	8270D	1	330	170	NA	85-119	85-119	30	30	510,000	2,000,000	200	432	NA
Naphthalene	91-20-3	8270D	1	170	30	NA	83-104	83-104	30	30	6,000	17,000	25,000	160	NA

Table 2-2C. *Laboratory limits and regulatory criteria for SVOCs in concrete samples by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Concrete RL	Laboratory Concrete MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Di-n-butyl phthalate	84-74-2	8270D	1	1700	670	NA	88-118	88-118	30	30	6,100,000	68,000,000	760,000	1,114	110
Nitrobenzene	98-95-3	8270D	1	330	170	NA	79-108	79-108	30	30	5,000	14,000	200	145	NA
N-Nitroso-di-n-propylamine	621-64-7	8270D	1	330	170	NA	71-118	71-118	30	30	200	300	200	NA	NA
N-Nitrosodiphenylamine	86-30-6	8270D	1	330	170	NA	82-120	82-120	30	30	99,000	390,000	6,000^	NA	NA
Pentachlorophenol	87-86-5	8270D	1	1700	330	NA	47-134	47-134	30	30	900	3,000	300	23,000	NA
Phenanthrene	85-01-8	8270D	1	170	30	NA	86-107	86-107	30	30	NA	300,000,000	NA	204	950,000
Phenol	108-95-2	8270D	1	330	170	NA	77-120	77-120	30	30	18,000,000	210,000,000	8,000	49.1	48
Pyrene	129-00-0	8270D	1	170	30	NA	84-106	84-106	30	30	1,700,000	18,000,000	840,000	195	850,000
Phenol-d6	13127-88-3	8270D	1	NA	NA	46-125	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	51-123	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	34-129	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	49-118	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	57-116	NA	NA	NA	NA	NA	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	55-118	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates value not applicable, a standard has not been established.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

^ Site specific criteria

Target analyte detection limit exceeds regulatory criteria.

SVOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.]

Method references

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-2CC. *Laboratory limits and regulatory criteria for TCLP SVOCs by Pace Analytical Services*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	TCLP
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)
2,4,5-Trichlorophenol	95-95-4	8270D SIM	1	0.1	0.000236	NA	44-120	33-120	31	22	400,000
2,4,6-Trichlorophenol	88-06-2	8270D	1	0.1	0.000297	NA	42-120	26-120	31	23	2,000
2,4-Dinitrotoluene	121-14-2	8270D	1	0.1	0.00165	NA	49-124	39-125	25	20	130
2-Methylphenol	95-48-7	8270D	1	0.1	0.000312	NA	28-120	10-120	30	29	200,000
3 & 4 -Methylphenol	NA	8270D	1	0.1	0.000266	NA	31-120	10-120	36	30	200,000
Hexachlorobenzene	118-74-1	8270D	1	0.1	0.000341	NA	44-120	35-122	24	20	130
Hexachlorobutadiene	87-68-3	8270D	1	0.1	0.000329	NA	19-120	12-120	34	32	500
Hexachloroethane	67-72-1	8270D	1	0.1	0.000365	NA	15-120	10-120	40	37	3,000
Nitrobenzene	98-95-3	8270D	1	0.1	0.000367	NA	27-120	12-120	30	29	2,000
Pentachlorophenol	87-86-5	8270D	1	0.1	0.000313	NA	23-120	10-128	37	25	100,000
Pyridine	110-86-1	8270D	1	0.1	0.00137	NA	10-120	10-120	37	38	5,000
Phenol-d6	13127-88-3	8270D	1	NA	NA	10-69	NA	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	10-83	NA	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	13-149	NA	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	40-113	NA	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	46-104	NA	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	35-119	NA	NA	NA	NA	NA
Fluoranthene-d10	93951-69-0	8270D SIM	1	NA	NA	44-115	NA	NA	NA	NA	NA
Benzo(a)pyrene-d12	63466-71-7	8270D SIM	1	NA	NA	25-125	NA	NA	NA	NA	NA
1-Methylnaphthalene-d10	38072-94-5	8270D SIM	1	NA	NA	33-112	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

TCLP indicates toxicity characteristic leaching procedure.

MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.

SVOC Source List:

TCLP target list.

Method reference

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- USEPA 40 CFR 261.24 - Toxicity Characteristic.

Table 2-2D. *Laboratory limits and regulatory criteria for SVOCs in biological tissue samples by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Biologial Tissue RL	Laboratory Biologial Tissue MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)
1,4-Dioxane	123-91-1	8270D	1	1320	400	NA	20-59	20-59	30	30
1,1-Biphenyl	92-52-4	8270D	1	132	68	NA	82-106	82-106	30	30
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D	1	132	68	NA	84-109	84-109	30	30
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	1	680	268	NA	80-137	80-137	30	30
2,4,5-Trichlorophenol	95-95-4	8270D	1	132	68	NA	84-116	84-116	30	30
2,4,6-Trichlorophenol	88-06-2	8270D	1	132	68	NA	80-120	80-120	30	30
2,4-Dichlorophenol	120-83-2	8270D	1	132	68	NA	80-122	80-122	30	30
2,4-Dimethylphenol	105-67-9	8270D	1	132	68	NA	60-101	60-101	30	30
2,4-Dinitrophenol	51-28-5	8270D	1	4000	1320	NA	24-140	24-140	30	30
2,4-Dinitrotoluene	121-14-2	8270D	1	680	268	NA	81-123	81-123	30	30
2,6-Dinitrotoluene	606-20-2	8270D	1	132	68	NA	76-123	76-123	30	30
2-Chloronaphthalene	91-58-7	8270D	1	132	28	NA	54-137	54-137	30	30
2-Chlorophenol	95-57-8	8270D	1	132	68	NA	81-126	81-126	30	30
2-Methylnaphthalene	91-57-6	8270D	1	68	12	NA	83-106	83-106	30	30
2-Methylphenol (o-Cresol)	95-48-7	8270D	1	132	68	NA	87-119	87-119	30	30
2-Nitrophenol	88-75-5	8270D	1	132	68	NA	74-117	74-117	30	30
2-Nitroaniline (o-Nitroaniline)	88-74-4	8270D	1	132	68	NA	83-122	83-122	30	30
3-Nitroaniline	99-09-2	8270D	1	680	268	NA	72-115	72-115	30	30
3,3'-Dichlorobenzidine	91-94-1	8270D	1	1320	400	NA	17-117	17-117	30	30
4-Chloroaniline (p-Chloroaniline)	106-47-8	8270D	1	268	132	NA	10-93	10-93	30	30
4-Chloro-3-methylphenol	59-50-7	8270D	1	132	68	NA	79-128	79-128	30	30
4-Chlorophenyl- phenyl ether	7005-72-3	8270D	1	132	68	NA	81-112	81-112	30	30
4-Bromophenyl phenyl ether	101-55-3	8270D	1	132	68	NA	82-118	82-118	30	30
4,6-Dinitro-2-methylphenol	534-52-1	8270D	1	2000	680	NA	76-112	76-112	30	30
3 & 4-Methylphenol (m&p- Cresol)	106-44-5	8270D	1	132	68	NA	83-115	83-115	30	30
4-Nitroaniline (p-Nitroaniline)	100-01-6	8270D	1	680	268	NA	50-113	50-113	30	30
4-Nitrophenol	100-02-7	8270D	1	2000	680	NA	41-151	41-151	30	30
Acenaphthene	83-32-9	8270D	1	68	12	NA	81-113	81-113	30	30
Acenaphthylene	208-96-8	8270D	1	68	12	NA	74-124	74-124	30	30
Acetophenone	98-86-2	8270D	1	132	68	NA	70-106	70-106	30	30
Anthracene	120-12-7	8270D	1	68	12	NA	87-113	87-113	30	30
Atrazine	1912-24-9	8270D	1	680	132	NA	69-122	69-122	30	30
Benzaldehyde	100-52-7	8270D	1	680	268	NA	10-74	10-74	30	30
Benzo(a)anthracene	56-55-3	8270D	1	68	12	NA	81-119	81-119	30	30
Benzo(a)pyrene	50-32-8	8270D	1	68	12	NA	83-109	83-109	30	30
Benzo(b)fluoranthene	205-99-2	8270D	1	68	12	NA	85-117	85-117	30	30
Benzo(ghi)perylene	191-24-2	8270D	1	68	12	NA	81-117	81-117	30	30
Benzo(k)fluoranthene	207-08-9	8270D	1	68	12	NA	77-119	77-119	30	30
Bis(2-Chloroethoxy)Methane	111-91-1	8270D	1	132	68	NA	75-115	75-115	30	30
Bis(2-Chloroethyl)Ether	111-44-4	8270D	1	132	68	NA	75-108	75-108	30	30

Table 2-2D. *Laboratory limits and regulatory criteria for SVOCs in biological tissue samples by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Biologial Tissue RL	Laboratory Biologial Tissue MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)
Bis(2-Chloro-Isopropyl)Ether [2,2'-Oxybis(1-	108-60-1	8270D	1	132	68	NA	56-123	56-123	30	30
Bis[2-ethylhexyl] phthalate	117-81-7	8270D	1	680	268	NA	81-128	81-128	30	30
Butylbenzylphthalate	85-68-7	8270D	1	680	268	NA	84-124	84-124	30	30
Caprolactam	105-60-2	8270D	1	680	132	NA	65-113	65-113	30	30
Carbazole	86-74-8	8270D	1	132	68	NA	77-113	77-113	30	30
Chrysene	218-01-9	8270D	1	68	12	NA	77-118	77-118	30	30
Dibenzo(a,h)anthracene	53-70-3	8270D	1	68	12	NA	81-121	81-121	30	30
Dibenzofuran	132-64-9	8270D	1	132	68	NA	80-112	80-112	30	30
Diethylphthalate	84-66-2	8270D	1	680	268	NA	87-113	87-113	30	30
Dimethylphthalate	131-11-3	8270D	1	680	268	NA	90-108	90-108	30	30
Di-n-octylphthalate	117-84-0	8270D	1	680	268	NA	83-136	83-136	30	30
Fluoranthene	206-44-0	8270D	1	68	12	NA	80-113	80-113	30	30
Fluorene	86-73-7	8270D	1	68	12	NA	84-115	84-115	30	30
Hexachlorobenzene	118-74-1	8270D	1	68	12	NA	75-110	75-110	30	30
Hexachlorobutadiene	87-68-3	8270D	1	132	68	NA	71-105	71-105	30	30

Table 2-2D. *Laboratory limits and regulatory criteria for SVOCs in biological tissue samples by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Biologial Tissue RL	Laboratory Biologial Tissue MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)
Hexachlorocyclopentadiene	77-47-4	8270D	1	2000	680	NA	66-161	66-161	30	30
Hexachloroethane	67-72-1	8270D	1	680	132	NA	76-100	76-100	30	30
Indeno(1,2,3-cd) pyrene	193-39-5	8270D	1	68	12	NA	77-116	77-116	30	30
Isophorone	78-59-1	8270D	1	132	68	NA	85-119	85-119	30	30
Naphthalene	91-20-3	8270D	1	68	12	NA	83-104	83-104	30	30
Di-n-butyl phthalate	84-74-2	8270D	1	680	268	NA	88-118	88-118	30	30
Nitrobenzene	98-95-3	8270D	1	132	68	NA	79-108	79-108	30	30
N-Nitroso-di-n-propylamine	621-64-7	8270D	1	132	68	NA	71-118	71-118	30	30
N-Nitrosodiphenylamine	86-30-6	8270D	1	132	68	NA	82-120	82-120	30	30
Pentachlorophenol	87-86-5	8270D	1	680	132	NA	47-134	47-134	30	30
Phenanthrene	85-01-8	8270D	1	68	12	NA	86-107	86-107	30	30
Phenol	108-95-2	8270D	1	132	68	NA	77-120	77-120	30	30
Pyrene	129-00-0	8270D	1	68	12	NA	84-106	84-106	30	30
Phenol-d5	13127-88-3	8270D	1	NA	NA	46-125	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	51-123	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	34-129	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	49-118	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	57-116	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	55-118	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates value not applicable, a standard has not been established.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

SVOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.]

Method references

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-2E. *Laboratory limits and regulatory criteria for SVOCs in samples prepared using SPLP by ELLE*

Semivolatile Organic Compounds (SVOCs)	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous SPLP RL	Laboratory Aqueous SPLP MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	SPLP Criteria
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)
1,4-Dioxane	123-91-1	8270D SIM	1	1	0.25	NA	25-72	25-72	30	30	NA
1,1-Biphenyl	92-52-4	8270D	1	5	2.5	NA	65-107	65-107	30	30	6,000
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D	1	5	2.5	NA	50-108	50-108	30	30	NA
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	1	5	2.5	NA	69-125	69-125	30	30	NA
2,4,5-Trichlorophenol	95-95-4	8270D	1	5	2.5	NA	75-118	75-118	30	30	14,000
2,4,6-Trichlorophenol	88-06-2	8270D	1	5	2.5	NA	75-118	75-118	30	30	20
2,4-Dichlorophenol	120-83-2	8270D	1	5	2.5	NA	71-113	71-113	30	30	400
2,4-Dimethylphenol	105-67-9	8270D	1	5	2.5	NA	53-93	53-93	30	30	2,000
2,4-Dinitrophenol	51-28-5	8270D	1	150	50	NA	33-133	33-133	30	30	200
2,4-Dinitrotoluene	121-14-2	8270D	1	25	5	NA	70-122	70-122	30	30	NA
2,6-Dinitrotoluene	606-20-2	8270D	1	5	2.5	NA	75-121	75-121	30	30	NA
2-Chloronaphthalene	91-58-7	8270D	1	5	2	NA	59-109	59-109	30	30	NA
2-Chlorophenol	95-57-8	8270D	1	5	2.5	NA	62-105	62-105	30	30	800
2-Methylnaphthalene	91-57-6	8270D	1	2.5	0.5	NA	54-111	54-111	30	30	600
2-Methylphenol (o-Cresol)	95-48-7	8270D	1	5	2.5	NA	57-105	57-105	30	30	NA
2-Nitrophenol	88-75-5	8270D	1	5	2.5	NA	68-120	68-120	30	30	NA
2-Nitroaniline (o-Nitroaniline)	88-74-4	8270D	1	5	2.5	NA	74-121	74-121	30	30	NA
3-Nitroaniline	99-09-2	8270D	1	5	2.5	NA	61-114	61-114	30	30	NA
3,3'-Dichlorobenzidine	91-94-1	8270D	1	25	10	NA	37-104	37-104	30	30	30
4-Chloroaniline (p-Chloroaniline)	106-47-8	8270D	1	20	10	NA	42-99	42-99	30	30	NA
4-Chloro-3-methylphenol	59-50-7	8270D	1	5	2.5	NA	72-116	72-116	30	30	NA
4-Chlorophenyl- phenyl ether	7005-72-3	8270D	1	5	2.5	NA	65-112	65-112	30	30	NA
4-Bromophenyl phenyl ether	101-55-3	8270D	1	5	2.5	NA	71-114	71-114	30	30	NA
4,6-Dinitro-2-methylphenol	534-52-1	8270D	1	75	25	NA	59-125	59-125	30	30	14
3 & 4-Methylphenol (m&p- Cresol)	106-44-5	8270D	1	5	2.5	NA	51-100	51-100	30	30	NA
4-Nitroaniline (p-Nitroaniline)	100-01-6	8270D	1	5	2.5	NA	60-106	60-106	30	30	NA
4-Nitrophenol	100-02-7	8270D	1	150	50	NA	18-91	18-91	30	30	NA
Acenaphthene	83-32-9	8270D SIM	1	0.25	0.05	NA	65-125	65-125	30	30	4,200
Acenaphthylene	208-96-8	8270D SIM	1	0.25	0.05	NA	58-96	58-96	30	30	NA
Acetophenone	98-86-2	8270D	1	5	2.5	NA	71-108	72-108	30	30	14,000
Anthracene	120-12-7	8270D SIM	1	0.25	0.05	NA	70-110	70-110	30	30	43
Atrazine	1912-24-9	8270D	1	25	10	NA	80-120	80-120	30	30	60
Benzaldehyde	100-52-7	8270D	1	25	5	NA	58-107	58-107	30	30	NA
Benzo(a)anthracene	56-55-3	8270D SIM	1	0.25	0.05	NA	75-119	75-119	30	30	1
Benzo(a)pyrene	50-32-8	8270D SIM	1	0.25	0.05	NA	75-115	75-115	30	30	0.1
Benzo(b)fluoranthene	205-99-2	8270D SIM	1	0.25	0.05	NA	75-120	75-120	30	30	1
Benzo(ghi)perylene	191-24-2	8270D SIM	1	0.25	0.05	NA	61-117	61-117	30	30	NA
Benzo(k)fluoranthene	207-08-9	8270D SIM	1	0.25	0.05	NA	71-118	71-118	30	30	0.8
Bis(2-Chloroethoxy)Methane	111-91-1	8270D	1	5	2.5	NA	72-116	72-116	30	30	NA
Bis(2-Chloroethyl)Ether	111-44-4	8270D	1	5	2.5	NA	63-108	63-108	30	30	7
Bis(2-Chloro-Isopropyl)Ether [2,2'-Oxybis(1-	108-60-1	8270D	1	5	2.5	NA	54-113	54-113	30	30	6,000
Bis[2-ethylhexyl] phthalate	117-81-7	8270D	1	25	10	NA	64-126	64-126	30	30	40
Butylbenzylphthalate	85-68-7	8270D	1	25	10	NA	52-121	52-121	30	30	2,000
Caprolactam	105-60-2	8270D	1	75	25	NA	13-37	13-37	30	30	70,000
Carbazole	86-74-8	8270D	1	5	2.5	NA	79-116	79-116	30	30	NA
Chrysene	218-01-9	8270D SIM	1	0.25	0.05	NA	73-111	73-111	30	30	2
Dibenzo(a,h)anthracene	53-70-3	8270D SIM	1	0.25	0.05	NA	62-122	62-122	30	30	0.3
Dibenzofuran	132-64-9	8270D	1	5	2.5	NA	69-110	69-110	30	30	NA
Diethylphthalate	84-66-2	8270D	1	25	10	NA	55-113	55-113	30	30	120,000
Dimethylphthalate	131-11-3	8270D	1	25	10	NA	19-119	19-119	30	30	NA
Di-n-octylphthalate	117-84-0	8270D	1	25	10	NA	68-127	68-127	30	30	20
Fluoranthene	206-44-0	8270D SIM	1	0.25	0.05	NA	67-112	67-112	30	30	210
Fluorene	86-73-7	8270D SIM	1	0.25	0.05	NA	69-113	69-113	30	30	2,000
Hexachlorobenzene	118-74-1	8270D SIM	1	0.25	0.05	NA	41-120	41-120	30	30	0.4
Hexachlorobutadiene	87-68-3	8270D	1	5	2.5	NA	27-111	27-111	30	30	8
Hexachlorocyclopentadiene	77-47-4	8270D	1	75	25	NA	10-81	10-81	30	30	800
Hexachloroethane	67-72-1	8270D	1	25	5	NA	28-103	28-103	30	30	40
Indeno(1,2,3-cd) pyrene	193-39-5	8270D SIM	1	0.25	0.05	NA	64-117	64-117	30	30	0.2
Isophorone	78-59-1	8270D	1	5	2.5	NA	70-117	70-117	30	30	800
Naphthalene	91-20-3	8270D SIM	1	0.3	0.15	NA	52-110	52-110	30	30	6,000
Di-n-butyl phthalate	84-74-2	8270D	1	25	10	NA	69-117	69-117	30	30	11,000
Nitrobenzene	98-95-3	8270D	1	5	2.5	NA	66-114	66-114	30	30	80
N-Nitroso-di-n-propylamine	621-64-7	8270D	1	5	2.5	NA	67-115	67-115	30	30	10
N-Nitrosodiphenylamine	86-30-6	8270D	1	5	2.5	NA	75-116	75-116	30	30	140
Pentachlorophenol	87-86-5	8270D	1	25	5	NA	59-134	59-134	30	30	6
Phenanthrene	85-01-8	8270D SIM	1	0.3	0.15	NA	73-107	73-107	30	30	NA
Phenol	108-95-2	8270D	1	5	2.5	NA	16-80	16-80	30	30	40,000
Pyrene	129-00-0	8270D SIM	1	0.25	0.05	NA	65-113	65-113	30	30	140
Phenol-d5	13127-88-3	8270D	1	NA	NA	10-73	NA	NA	NA	NA	NA
2-Fluorophenol	367-12-4	8270D	1	NA	NA	11-91	NA	NA	NA	NA	NA
2,4,6-Tribromophenol	118-79-6	8270D	1	NA	NA	44-130	NA	NA	NA	NA	NA
Nitrobenzene-d5	4165-60-0	8270D	1	NA	NA	54-115	NA	NA	NA	NA	NA
2-Fluorobiphenyl	321-60-8	8270D	1	NA	NA	52-112	NA	NA	NA	NA	NA
Terphenyl-d14	1718-51-0	8270D	1	NA	NA	57-116	NA	NA	NA	NA	NA
Fluoranthene-d10	93951-69-0	8270D SIM	1	NA	NA	44-115	NA	NA	NA	NA	NA
Benzo(a)pyrene-d12	63466-71-7	8270D SIM	1	NA	NA	25-125	NA	NA	NA	NA	NA
1-Methylnaphthalene-d10	38072-94-5	8270D SIM	1	NA	NA	33-112	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

SVOC Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.]

Method reference

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- SPLP regulatory criteria as of January 2018.

Table 2-3A. *Laboratory limits and regulatory criteria for PCBs in aqueous samples by ELLE*

PCBs	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Aroclor 1016	12674-11-2	8082A	1	0.01	0.006	NA	60-117	60-117	30	30	0.5	NA	NA	NA
Aroclor 1221	11104-28-2	8082A	1	0.01	0.006	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1232	11141-16-5	8082A	1	0.01	0.007	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1242	53469-21-9	8082A	1	0.01	0.006	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1248	12672-29-6	8082A	1	0.01	0.005	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1254	11097-69-1	8082A	1	0.01	0.005	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1260	11096-82-5	8082A	1	0.01	0.005	NA	57-134	57-134	30	30.00	0.5	NA	NA	NA
Aroclor 1262	37324-23-5	8082A	1	0.01	0.005	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1268	11100-14-4	8082A	1	0.01	0.005	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Total PCBs	---	8082A	1	0.01	0.005	NA	NA	NA	NA	NA	0.5	NA	0.014	0.000064
Tetrachloro-m-xylene	---	8082A	1	NA	NA	33-137	NA	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl	---	8082A	1	NA	NA	10-149	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

NA indicates not applicable.

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

PCB Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.

2- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-3AA. *Laboratory limits and regulatory criteria for PCBs in aqueous samples by Pace Analytical Services*

PCBs	CAS Number	USEPA Method	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
				(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Aroclor 1016	12674-11-2	8082A	1	0.0005	0.00001981	NA	36-135	11-160	38	29	0.5	NA	NA	NA
Aroclor 1221	11104-28-2	8082A	1	0.0005	0.000073	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1232	11141-16-5	8082A	1	0.0005	0.000042	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1242	53469-21-9	8082A	1	0.0005	0.000047	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1248	12672-29-6	8082A	1	0.0005	0.000086	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1254	11097-69-1	8082A	1	0.0005	0.000047	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1260	11096-82-5	8082A	1	0.0005	0.0000146	NA	42-131	20-142	27	25.00	0.5	NA	NA	NA
Aroclor 1262	37324-23-5	8082A	1	0.0005	0.00012	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Aroclor 1268	11100-14-4	8082A	1	0.0005	0.00012	NA	NA	NA	NA	NA	0.5	NA	NA	NA
Total PCBs	---	8082A	1	0.0005	0.000042	NA	NA	NA	NA	NA	0.5	NA	0.014	0.000064
Tetrachloro-m-xylene	---	8082A	1	NA	NA	10-127	NA	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl	---	8082A	1	NA	NA	10-128	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

NA indicates not applicable.

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.

PCB Source List:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.

2- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-3B. *Laboratory limits and regulatory criteria for PCBs in solid samples by ELLE*

PCBs	CAS Number	USEPA Method	Method Reference	Laboratory Soil RL	Laboratory Soil MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Aroclor 1016	12674-11-2	8082A	1	17	3.6	NA	76-121	76-121	50	50	200	1,000	200	7	53,000
Aroclor 1221	11104-28-2	8082A	1	17	4.6	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1232	11141-16-5	8082A	1	17	8	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1242	53469-21-9	8082A	1	17	3.3	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1248	12672-29-6	8082A	1	17	3.3	NA	NA	NA	NA	NA	200	1,000	200	30	150,000
Aroclor 1254	11097-69-1	8082A	1	17	3.3	NA	NA	NA	NA	NA	200	1,000	200	60	34,000
Aroclor 1260	11096-82-5	8082A	1	17	4.9	NA	79-120	79-130	50	50	200	1,000	200	5	24,000
Aroclor 1262	37324-23-5	8082A	1	17	3.3	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1268	11100-14-4	8082A	1	17	3.3	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Total PCBs	---	8082A	1	17	3.3	NA	NA	NA	NA	NA	200	1,000	200	59.8	530,000
Tetrachloro-m-xylene	---	8082A	1	NA	NA	53-140	NA	NA	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl	---	8082A	1	NA	NA	45-143	NA	NA	NA	NA	NA	NA	NA	NA	NA

--indicates not applicable.

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria by ELLE.

PCB Source List:

USEPA. 2014. Multi-Media, Multi-Concentration Organic Analytical Service for Superfund (SOM02.2). Washington, D.C.

Method Reference:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-3BB. *Laboratory limits and regulatory criteria for PCBs in solid samples by Pace Analytical Services*

PCBs	CAS Number	USEPA Method	Method Reference	Laboratory Soil RL	Laboratory Soil MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Aroclor 1016	12674-11-2	8082A	1	0.017	0.003504	NA	36-141	10-160	37	35	200	1,000	200	7	53,000
Aroclor 1221	11104-28-2	8082A	1	0.017	0.005367	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1232	11141-16-5	8082A	1	0.017	0.004168	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1242	53469-21-9	8082A	1	0.017	0.003176	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1248	12672-29-6	8082A	1	0.017	0.003148	NA	NA	NA	NA	NA	200	1,000	200	30	150,000
Aroclor 1254	11097-69-1	8082A	1	0.017	0.004722	NA	NA	NA	NA	NA	200	1,000	200	60	34,000
Aroclor 1260	11096-82-5	8082A	1	0.017	0.004942	NA	37-145	10-160	38	37	200	1,000	200	5	24,000
Aroclor 1262	37324-23-5	8082A	1	0.017	0.004942	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1268	11100-14-4	8082A	1	0.017	0.00182	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Total PCBs	---	8082A	1	0.017	0.003148	NA	NA	NA	NA	NA	200	1,000	200	59.8	530,000
Tetrachloro-m-xylene	---	8082A	1	NA	NA	10-139	NA	NA	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl	---	8082A	1	NA	NA	10-135	NA	NA	NA	NA	NA	NA	NA	NA	NA

--indicates not applicable.

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.

PCB Source List:

USEPA. 2014. Multi-Media, Multi-Concentration Organic Analytical Service for Superfund (SOM02.2). Washington, D.C.

Method Reference:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-3C. *Laboratory limits and regulatory criteria for PCBs in concrete samples by ELLE*

PCBs	CAS Number	USEPA Method	Method Reference	Laboratory Concrete RL	Laboratory Concrete MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Aroclor 1016	12674-11-2	8082A	1	170	36	NA	76-121	76-121	50	50	200	1,000	200	7	53,000
Aroclor 1221	11104-28-2	8082A	1	170	46	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1232	11141-16-5	8082A	1	170	80	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1242	53469-21-9	8082A	1	170	33	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1248	12672-29-6	8082A	1	170	33	NA	NA	NA	NA	NA	200	1,000	200	30	150,000
Aroclor 1254	11097-69-1	8082A	1	170	33	NA	NA	NA	NA	NA	200	1,000	200	60	34,000
Aroclor 1260	11096-82-5	8082A	1	170	49	NA	79-120	79-130	50	50	200	1,000	200	5	24,000
Aroclor 1262	37324-23-5	8082A	1	170	33	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Aroclor 1268	11100-14-4	8082A	1	170	33	NA	NA	NA	NA	NA	200	1,000	200	NA	NA
Total PCBs	---	8082A	1	170	33	NA	NA	NA	NA	NA	200	1,000	200	59.8	530,000
Tetrachloro-m-xylene	---	8082A	1	NA	NA	53-140	NA	NA	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl	---	8082A	1	NA	NA	45-143	NA	NA	NA	NA	NA	NA	NA	NA	NA

--indicates not applicable.

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

PCB Source List:

USEPA. 2014. Multi-Media, Multi-Concentration Organic Analytical Service for Superfund (SOM02.2). Washington, D.C.

Method Reference:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-4A. *Laboratory limits and regulatory criteria for pesticides in aqueous samples by ELLE*

Pesticides	CAS Number	**USEPA Method**	**Method Reference**	**Laboratory Aqueous RL**	**Laboratory Aqueous MDL**	**Surrogate Recovery Control Limits**	**LCS Recovery Control Limits**	**MS/MSD Recovery Control Limits**	**MS/MSD Precision Control Limits**	**LCS/LCSD Precision Control Limits**	**NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]**	**NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]**	**NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]**	**NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]**
				(ug/L)	**(ug/L)**	**(%R)**	**(%R)**	**(%R)**	**(RPD)**	**(RPD)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**
4,4'-DDE	72-55-9	8081B	**1**	0.02	0.005	NA	51-129	51-129	30	30	0.1	NA	4.51E-09	0.00022
4,4'-DDD	72-54-8	8081B	**1**	0.02	0.005	NA	42-148	42-148	30	30	0.1	NA	NA	0.00031
4,4'-DDT	50-29-3	8081B	**1**	0.02	0.0052	NA	40-145	40-145	30	30	0.1	1.1	0.001	0.00022
Aldrin	309-00-2	8081B	**1**	0.01	0.002	NA	28-119	28-119	30	30	0.04	3	0.017	0.000049
Alpha BHC	319-84-6	8081B	**1**	0.01	0.003	NA	47-132	47-132	30	30	0.02	NA	12.4	0.0026
alpha-Chlordane	5103-71-9	8081B	**1**	0.01	0.003	NA	53-126	53-126	30	30	NA	2.4	0.0043	0.0001
Beta BHC	319-85-7	8081B	**1**	0.01	0.0034	NA	56-125	56-125	30	30	0.04	NA	0.495	0.0091
Delta BHC	319-86-8	8081B	**1**	0.01	0.0034	NA	49-140	49-140	30	30	NA	NA	NA	NA
Dieldrin	60-57-1	8081B	**1**	0.02	0.0053	NA	54-126	54-126	30	30	0.03	0.24	0.056	0.000052
Endosulfan I	959-98-8	8081B	**1**	0.01	0.0043	NA	40-138	40-138	30	30	40	NA	NA	NA
Endosulfan II	33213-65-9	8081B	**1**	0.03	0.015	NA	54-124	54-124	30	30	40	NA	NA	NA
Endosulfan Sulfate	1031-07-8	8081B	**1**	0.02	0.0058	NA	41-133	41-133	30	30	40	NA	2.22	62
Endrin	72-20-8	8081B	**1**	0.02	0.0081	NA	35-143	35-143	30	30	2	0.086	0.036	0.059
Endrin Aldehyde	7421-93-4	8081B	**1**	0.1	0.02	NA	40-135	40-135	30	30	NA	NA	0.15	0.059
Endrin Ketone	53494-70-5	8081B	**1**	0.02	0.005	NA	44-136	44-136	30	30	NA	NA	NA	NA
Gamma BHC (Lindane)	58-89-9	8081B	**1**	0.01	0.002	NA	51-132	51-132	30	30	0.03	0.95	0.026	0.98
gamma-Chlordane	5103-74-2	8081B	**1**	0.02	0.007	NA	53-130	53-130	30	30	NA	2.4	0.0043	0.0001
Heptachlor	76-44-8	8081B	**1**	0.01	0.002	NA	38-135	38-135	30	30	0.05	0.52	0.0038	0.000079
Heptachlor Epoxide	1024-57-3	8081B	**1**	0.01	0.0023	NA	56-132	56-132	30	30	0.2	0.52	0.0038	0.000039
Methoxychlor	72-43-5	8081B	**1**	0.1	0.03	NA	39-143	39-143	30	30	40	NA	0.03	40
Toxaphene	8001-35-2	8081B	**1**	1	0.3	NA	NA	NA	NA	NA	2	0.73	0.0002	0.00028
Tetrachloro-m-xylene	877-09-8	8081B	**1**	NA	NA	29-129	NA	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl	2051-24-3	8081B	**1**	NA	NA	32-149	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

Pesticide target analyte list source:

Target compound list (TCL) resource- USEPA. October 2016. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.4). Washington, D.C.

Method reference:

D.C.

Regulatory Criteria References:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.

2- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-4B. *Laboratory limits and regulatory critieria for pesticides in solid samplesby ELLE*

Pesticides	CAS Number	USEPA Method	Method Reference	Laboratory Soil RL	Laboratory Soil MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
				(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
4,4'-DDE	72-55-9	8081B	1	1.7	0.33	NA	68-146	68-146	50	50	2,000	9,000	18,000	3.16	19,000
4,4'-DDT	50-29-3	8081B	1	1.7	0.36	NA	67-135	67-135	50	50	2,000	8,000	11,000	4.16	71,000
4.4'-DDD	72-54-8	8081B	1	1.7	0.33	NA	69-138	69-138	50	50	3,000	13,000	4,000	4.88	6,000
Aldrin	309-00-2	8081B	1	0.83	0.17	NA	60-117	60-117	50	50	40	200	200	2.00	8,000
Alpha BHC	319-84-6	8081B	1	0.83	0.17	NA	65-124	65-124	50	50	100	500	2	6.00	10,000
Beta BHC	319-85-7	8081B	1	1	0.3	NA	68-129	68-129	50	50	400	2,000	2	5.00	21,000
Endosulfan II	33213-65-9	8081B	1	1.7	0.33	NA	65-126	65-126	50	50	470,000*	6,800,000*	4,000*	NA	NA
Dieldrin	60-57-1	8081B	1	1.7	0.33	NA	63-126	63-126	50	50	40	200	3	1.90	91,000
Endosulfan I	959-98-8	8081B	1	0.83	0.22	NA	62-119	62-119	50	50	470,000*	6,800,000*	4,000*	NA	NA
Endosulfan Sulfate	1031-07-8	8081B	1	1.7	0.33	NA	71-132	71-132	50	50	470,000	6,800,000	2,000	34.60	NA
Endrin	72-20-8	8081B	1	1.7	0.34	NA	65-125	65-125	50	50	23,000	340,000	1,000	2.22	130,000
Endrin Aldehyde	7421-93-4	8081B	1	1.7	0.33	NA	59-122	59-122	50	50	NA	NA	NA	480.00	NA
Gamma BHC (Lindane)	58-89-9	8081B	1	0.83	0.17	NA	47-140	47-140	50	50	400	2,000	2	3.00	1,000
Heptachlor	76-44-8	8081B	1	0.83	0.17	NA	66-118	66-118	50	50	100	700	500	0.60	10
Heptachlor Epoxide	1024-57-3	8081B	1	0.83	0.17	NA	74-128	74-128	50	50	70	300	10	2.47	5,000
alpha-Chlordane	5103-71-9	8081B	1	0.83	0.17	NA	73-131	73-131	50	50	200	1,000	50	NA	NA
gamma-Chlordane	5103-74-2	8081B	1	0.83	0.25	NA	76-134	76-134	50	50	200	1,000	50	NA	NA
Delta BHC	319-86-8	8081B	1	0.9	0.45	NA	45-151	45-151	50	50	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	8081B	1	6.7	1.7	NA	65-131	65-131	50	50	390,000	5,700,000	160,000	13.60	NA
Endrin Ketone	53494-70-5	8081B	1	1.8	0.6	NA	64-121	64-121	50	50	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	8081B	1	33	14	NA	NA	NA	NA	NA	600	3,000	300	0.077	NA
Tetrachloro-m-xylene	877-09-8	8081B	1	NA	NA	26-145	NA	NA	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl	2051-24-3	8081B	1	NA	NA	39-152	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/Kg indicates microgram per killogram.

NA indicates value not applicable, a standard has not been established.'

%R indicates percent recovery.

RPD indicates relative percent difference.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

* - Standards for combined Endosulfan I and Endosulfan II

Target analyte detection limit exceeds regulatory criteria.

Pesticide target analyte list source:

Target compound list (TCL) resource- USEPA. August 2014. Multi-Media, Multi-Concentration Organic Superfund Methods (SOM02.2). Washington, D.C.]

Method reference:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.

2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.

3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-4CC. *Laboratory limits and regulatory criteria for TCLP pesticides and TCLP herbicides by Pace Analytical Services*

Pesticides	CAS Number	**USEPA Method**	**Method Reference**	**Laboratory Aqueous RL**	**Laboratory Aqueous MDL**	**Surrogate Recovery Control Limits**	**LCS Recovery Control Limits**	**MS/MSD Recovery Control Limits**	**MS/MSD Precision Control Limits**	**LCS/LCSD Precision Control Limits**	**TCLP Criteria**
				(ug/L)	**(ug/L)**	**(%R)**	**(%R)**	**(%R)**	**(RPD)**	**(RPD)**	**(ug/L)**
Pesticides											
Chlordane		8081B	**1**	0.005	NA	NA	NA	NA	NA	NA	30
Endrin	72-20-8	8081B	**1**	0.005	0.0000189	NA	57-134	10-160	39.00	21.00	20
Gamma BHC (Lindane)	58-89-9	8081B	**1**	0.005	0.0000176	NA	55-129	14-141	40.00	20.00	400
Heptachlor	76-44-8	8081B	**1**	0.005	0.0000108	NA	27-132	16-136	40.00	31.00	8
Heptachlor Epoxide	1024-57-3	8081B	**1**	0.005	0.0000175	NA	57-130	10-160	36.00	20.00	8
Methoxychlor	72-43-5	8081B	**1**	0.005	0.0000193	NA	54-155	10-160	34.00	24.00	10000
Toxaphene	8001-35-2	8081B	**1**	0.01	NA	NA	NA	NA	NA	NA	500
Tetrachloro-m-xylene	877-09-8	8081B	**1**	NA	NA	10-127	NA	NA	NA	NA	NA
Decachlorobiphenyl	2051-24-3	8081B	**1**	NA	NA	10-128	NA	NA	NA	NA	NA
Herbicides											
2,4-D	94-75-7	8151A	**2**	0.002	NA	NA	50-120	50-120	20	20	10000
2,4,5-TP/ Silvex	93-72-1	8151A	**2**	0.002	NA	NA	50-125	50-125	20	20	1000
2,4-Dichlorophenylacetic acid (DCAA)	19719-29	8151A	**2**	NA	NA	14-158	NA	NA	NA	NA	

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.

Target analyte list source:

TCLP target list.

Method reference:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

2. USEPA. 1996. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update III. Washington D.C.

Regulatory Criteria References:

1- USEPA 40 CFR 261.24 - Toxicity Characteristic.

Table 2-5A. Laboratory limits for dioxins, dibenzofurans, explosives, perchlorate and TOC in aqueous samples by ELLE.

Dioxins and Dibenzofurans	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
					(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
1,2,3,4,6,7,8-HpCDD	35822-46-9	8290A	ELLE	1	0.00001	0.000006	NA	70-140	70-140	25	25	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	67562-39-4	8290A	ELLE	1	0.00001	0.000004	NA	82-122	82-122	25	25	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	55673-89-7	8290A	ELLE	1	0.00001	0.000003	NA	78-138	78-138	25	25	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	39227-28-6	8290A	ELLE	1	0.00001	0.000004	NA	70-164	70-164	25	25	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	57653-85-7	8290A	ELLE	1	0.00001	0.000003	NA	76-134	76-134	25	25	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	57117-44-9	8290A	ELLE	1	0.00001	0.000003	NA	84-130	84-130	25	25	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	19408-74-3	8290A	ELLE	1	0.00001	0.000004	NA	64-162	64-162	25	25	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	72918-21-9	8290A	ELLE	1	0.00001	0.000004	NA	78-130	78-130	25	25	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	70648-26-9	8290A	ELLE	1	0.00001	0.000003	NA	72-134	72-134	25	25	NA	NA	NA	NA
1,2,3,7,8-PeCDD	40321-76-4	8290A	ELLE	1	0.00001	0.000003	NA	70-142	70-142	25	25	NA	NA	NA	NA
1,2,3,7,8-PeCDF	57117-41-6	8290A	ELLE	1	0.00001	0.000003	NA	80-134	80-134	25	25	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	60851-34-5	8290A	ELLE	1	0.00001	0.000003	NA	70-156	70-156	25	25	NA	NA	NA	NA
2,3,4,7,8-PeCDF	57117-31-4	8290A	ELLE	1	0.00001	0.000003	NA	68-160	68-160	25	25	NA	NA	NA	NA
2,3,7,8-TCDD	1746-01-6	8290A	ELLE	1	0.000002	0.000001	NA	67-158	67-158	25	25	0.00001	NA	0.000000003	0.000000005
2,3,7,8-TCDF	51207-31-9	8290A	ELLE	1	0.000002	0.000001	NA	75-158	75-158	25	25	NA	NA	NA	NA
OCDD	3268-87-9	8290A	ELLE	1	0.00002	0.00001	NA	78-144	78-144	25	25	NA	NA	NA	NA
OCDF	39001-02-0	8290A	ELLE	1	0.00002	0.000006	NA	63-170	63-170	25	25	NA	NA	NA	NA
Total TCDF	55722-27-5	8290A	ELLE	1	0.000002	0.000001	NA	--	--	--	--	NA	NA	NA	NA
Total TCDD	41930-57-5	8290A	ELLE	1	0.000002	0.000001	NA	--	--	--	--	NA	NA	NA	NA
Total PeCDD	36088-22-9	8290A	ELLE	1	0.00001	0.000003	NA	--	--	--	--	NA	NA	NA	NA
Total PeCDF	30402-15-4	8290A	ELLE	1	0.00001	0.000003	NA	--	--	--	--	NA	NA	NA	NA
Total HxCDD	34465-46-8	8290A	ELLE	1	0.00001	0.000004	NA	--	--	--	--	NA	NA	NA	NA
Total HpCDD	37871-00-4	8290A	ELLE	1	0.00001	0.000004	NA	--	--	--	--	NA	NA	NA	NA
Total HxCDF	55684-94-1	8290A	ELLE	1	0.00001	0.000004	NA	--	--	--	--	NA	NA	NA	NA
Total HpCDF	38998-75-3	8290A	ELLE	1	0.00001	0.000004	NA	--	--	--	--	NA	NA	NA	NA
Explosives															
1,2-Dinitrobenzene	528-29-0	8330	ELLE	**2**	0.6	0.2	NA	81-128	81-128	30	30	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	8330	ELLE	**2**	0.6	0.2	NA	82-115	82-115	30	30	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	8330	ELLE	**2**	0.60	0.20	NA	82-124	82-124	30	30	NA	NA	NA	NA
1,4-Dinitrobenzene	100-25-4	8330	ELLE	**2**	0.6	0.2	NA	85-115	85-115	30	30	NA	NA	NA	NA
1-Nitronaphthalene	86-57-7	8330	ELLE	**2**	0.6	0.2	NA	79-115	79-115	30	30	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	8330	ELLE	**2**	0.60	0.20	NA	77-115	77-115	30	30	1	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	8330	ELLE	**2**	2	0.72	NA	85-115	85-115	30	30	10*	NA	44	0.11
2,6-Dinitrotoluene	606-20-2	8330	ELLE	**2**	1.3	0.45	NA	81-115	81-115	30	30	10*	NA	NA	NA
2-Amino-4,6-Dinitrotoluene	35572-78-2	8330	ELLE	**2**	0.60	0.20	NA	83-115	83-115	30	30	NA	NA	NA	10^
2-Nitrotoluene	88-72-2	8330	ELLE	**2**	0.75	0.25	NA	80-115	80-115	30	30	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	8330	ELLE	**2**	1.2	0.4	NA	85-115	85-115	30	30	NA	NA	NA	NA
4-Amino-2,6-Dinitrotoluene	19406-51-0	8330	ELLE	**2**	0.6	0.3	NA	79-124	79-124	30	30	NA	NA	NA	10^
4-Nitrotoluene	99-99-0	8330	ELLE	**2**	1.2	0.6	NA	84-115	84-115	30	30	NA	NA	NA	NA
Octahydro-1,35,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	8330	ELLE	**2**	2	0.65	NA	69-115	69-115	30	30	NA	NA	NA	120,600^
Nitrobenzene	98-95-3	8330	ELLE	**2**	0.60	0.20	NA	85-115	85-115	30	30	6	NA	220	17
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	8330	ELLE	**2**	0.6	0.6	NA	76-122	76-122	30	30	0.5	NA	NA	NA
2,4,6-Trinitrophenylmethylnitramine (Tetryl)	479-45-8	8330	ELLE	**2**	0.8	0.4	NA	17-128	17-128	30	30	NA	NA	NA	NA
Nitroglycerin (NG)	55-63-0	8330	ELLE	**2**	15	5.2	NA	73-139	73-139	30	30	NA	NA	NA	NA
Pentaerythriol Tetrannitrate (PETN)	78-11-5	8330	ELLE	**2**	18	6	NA	81-120	81-120	30	30	NA	NA	NA	NA
2-Nitro-m-xylene - Surrogate	81-20-9	8330	ELLE	**2**	NA	NA	68-122	NA	NA	NA	NA	NA	NA	NA	NA
Explosives															
1,2-Dinitrobenzene	528-29-0	8095	Pace	1	**NC**	NC	NC	**NC**	**NC**	**NC**	**NC**	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	8095	Pace	1	**0.025**	0.0012	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	8095	Pace	1	**0.025**	0.0064	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
1,4-Dinitrobenzene	100-25-4	8095	Pace	1	**NC**	NC	NC	**NC**	**NC**	**NC**	**NC**	NA	NA	NA	NA
1-Nitronaphthalene	86-57-7	8095	Pace	1	**NA**	NA	NA	**NA**	**NA**	**NA**	**NA**	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	8095	Pace	1	**0.025**	0.0015	NA	**70-130**	**70-130**	**20**	**20**	1	NA	NA	1^
2,4-Dinitrotoluene	121-14-2	8095	Pace	1	**0.025**	0.002	NA	**70-130**	**70-130**	**20**	**20**	10*	NA	44	0.11
2,6-Dinitrotoluene	606-20-2	8095	Pace	1	**0.025**	0.0008	NA	**70-130**	**70-130**	**20**	**20**	10*	NA	NA	NA
2-Amino-4,6-Dinitrotoluene	35572-78-2	8095	Pace	1	**0.025**	0.0029	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
2-Nitrotoluene	88-72-2	8095	Pace	1	**0.025**	0.0029	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
3-Nitrotoluene	99-08-1	8095	Pace	1	**0.025**	0.0025	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
4-Amino-2,6-Dinitrotoluene	19406-51-0	8095	Pace	1	**0.025**	0.0027	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
4-Nitrotoluene	99-99-0	8095	Pace	1	**0.025**	0.0059	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
Octahydro-1,35,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	8095	Pace	1	**0.025**	0.0029	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
Nitrobenzene	98-95-3	8095	Pace	1	**0.025**	0.0011	NA	**70-130**	**70-130**	**20**	**20**	6	NA	220	17
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	8095	Pace	1	**0.025**	0.0025	NA	**70-130**	**70-130**	**20**	**20**	0.5	NA	NA	4300^
2,4,6-Trinitrophenylmethylnitramine (Tetryl)	479-45-8	8095	Pace	1	**0.025**	0.0083	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA

Table 2-5A. Laboratory limits for dioxins, dibenzofurans, explosives, perchlorate and TOC in aqueous samples by ELLE.

Dioxins and Dibenzofurans	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
					(ug/L)	(ug/L)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Nitroglycerin (NG)	55-63-0	8095	Pace	1	**0.025**	0.0018	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
Pentaerythriol Tetrannitrate (PETN)	78-11-5	8095	Pace	1	**0.025**	0.0011	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA
2,2'-Dinitrobiphenyl - Surrogate	2436-96-6	8095	Pace	1	**NA**	NA	85.3-125	**NA**	**NA**	**NA**	**NA**	NA	NA	NA	NA
Other Analytes															
Perchlorate	14797-73-0	6850	ELLE	1	1	0.062	NA	80-120	80-120	15	15	5	NA	NA	NA
Total Organic Carbon (TOC)	---	9060A	ELLE	3	1000	500	NA	91-113	91-113	20	20	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

NC indicates laboratory is not certified for this target analyte at this project site.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA (ELLE) and Pace Analytical Laboratories of Madison, WI, current as of January 2018.

*Standard is for 2,4-Dinitrotoluene and 2,6-Dinitrotoluene Mix

Target analyte detection limit exceeds regulatory criteria.

^ Site specific standard

Dioxin and Dibenzofuran target analyte list source:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.'

Explosives

Project list.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.
2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.
3. USEPA. 2004. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IIIB. Washington D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.

2- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-5B. Laboratory limits for dioxins, dibenzofurans, explosives, perchlorate and TOC in solid samples by ELLE.

Dioxins and Dibenzofurans	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Solid Medium Level RL	Laboratory Solid Medium Level MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
					(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
1,2,3,4,6,7,8-HpCDD	35822-46-9	8290A	ELLE	1	0.005	0.0005	NA	70-140	70-140	20	25	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	67562-39-4	8290A	ELLE	1	0.005	0.0003	NA	82-122	82-122	20	25	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	55673-89-7	8290A	ELLE	1	0.005	0.0004	NA	78-138	78-138	20	25	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	39227-28-6	8290A	ELLE	1	0.005	0.0003	NA	70-164	70-164	20	25	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	57653-85-7	8290A	ELLE	1	0.005	0.0004	NA	76-134	76-134	20	25	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	57117-44-9	8290A	ELLE	1	0.005	0.0003	NA	84-130	84-130	20	25	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	19408-74-3	8290A	ELLE	1	0.005	0.0003	NA	64-162	64-162	20	25	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	72918-21-9	8290A	ELLE	1	0.005	0.0005	NA	78-130	78-130	20	25	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	70648-26-9	8290A	ELLE	1	0.005	0.0003	NA	72-134	72-134	20	25	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDD	40321-76-4	8290A	ELLE	1	0.005	0.0004	NA	70-142	70-142	20	25	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	57117-41-6	8290A	ELLE	1	0.005	0.0004	NA	80-134	80-134	20	25	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	60851-34-5	8290A	ELLE	1	0.005	0.0003	NA	70-156	70-156	20	25	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	57117-31-4	8290A	ELLE	1	0.005	0.0003	NA	68-160	68-160	20	25	NA	NA	NA	NA	NA
2,3,7,8-TCDD	1746-01-6	8290A	ELLE	1	0.001	0.0001	NA	67-158	67-158	20	25	NA	NA	NA	0.00012	0.0088
2,3,7,8-TCDF	51207-31-9	8290A	ELLE	1	0.001	0.0001	NA	75-158	75-158	20	25	NA	NA	NA	NA	NA
OCDD	3268-87-9	8290A	ELLE	1	0.01	0.001	NA	78-144	78-144	20	25	NA	NA	NA	NA	NA
OCDF	39001-02-0	8290A	ELLE	1	0.01	0.0005	NA	63-170	63-170	20	25	NA	NA	NA	NA	NA
Total TCDF	55722-27-5	8290A	ELLE	1	0.001	0.0001	NA	--	--	--	--	NA	NA	NA	NA	NA
Total TCDD	41930-57-5	8290A	ELLE	1	0.001	0.0001	NA	--	--	--	--	NA	NA	NA	NA	NA
Total PeCDD	36088-22-9	8290A	ELLE	1	0.005	0.0004	NA	--	--	--	--	NA	NA	NA	NA	NA
Total PeCDF	30402-15-4	8290A	ELLE	1	0.005	0.0004	NA	--	--	--	--	NA	NA	NA	NA	NA
Total HxCDD	34465-46-8	8290A	ELLE	1	0.005	0.0004	NA	--	--	--	--	NA	NA	NA	NA	NA
Total HpCDD	37871-00-4	8290A	ELLE	1	0.005	0.0005	NA	--	--	--	--	NA	NA	NA	NA	NA
Total HxCDF	55684-94-1	8290A	ELLE	1	0.005	0.0005	NA	--	--	--	--	NA	NA	NA	NA	NA
Total HpCDF	38998-75-3	8290A	ELLE	1	0.005	0.0004	NA	--	--	--	--	NA	NA	NA	NA	NA
Explosives																
1,2-Dinitrobenzene	528-29-0	8330	ELLE	**2**	300	100	NA	85-129	85-129	50	50	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	8330	ELLE	**2**	300	100	NA	83-119	83-119	50	50	2,300,000^	10,000,000^	NA	2^	NA
1,3-Dinitrobenzene	99-65-0	8330	ELLE	**2**	300	100	NA	85-124	85-124	50	50	7,800^	100,000^	500^	NA	NA
1,4-Dinitrobenzene	100-25-4	8330	ELLE	**2**	300	100	NA	83-122	83-122	50	50	NA	NA	NA	NA	NA
1-Nitronaphthalene	86-57-7	8330	ELLE	**2**	300	100	NA	83-122	83-122	50	50	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	8330	ELLE	**2**	300	100	NA	82-133	82-133	50	50	21,000^	95,000^	200^	92^	NA
2,4-Dinitrotoluene	121-14-2	8330	ELLE	**2**	300	100	NA	83-125	83-125	50	50	700	3,000	700^	14.4	NA
2,6-Dinitrotoluene	606-20-2	8330	ELLE	**2**	300	100	NA	72-137	72-137	50	50	700	3,000	500^	39.8^	NA
2-Amino-4,6-Dinitrotoluene	35572-78-2	8330	ELLE	**2**	300	100	NA	79-120	79-120	50	50	4,700^	61,000^	400^	NA	NA
2-Nitrotoluene	88-72-2	8330	ELLE	**2**	400	200	NA	85-155	85-115	50	50	780,000^	10,000,000^	NA	NA	NA
3-Nitrotoluene	99-08-1	8330	ELLE	**2**	500	250	NA	85-135	85-135	50	50	1,600,000^	10,000,000^	NA	NA	NA
4-Amino-2,6-Dinitrotoluene	19406-51-0	8330	ELLE	**2**	400	150	NA	81-133	81-133	50	50	4,700^	61,000^	NA	NA	NA
4-Nitrotoluene	99-99-0	8330	ELLE	**2**	400	200	NA	80-122	80-122	50	50	780,000^	10,000,000^	NA	NA	NA
Octahydro-1,35,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	8330	ELLE	**2**	750	250	NA	65-121	65-121	50	50	3,900,000^	10,000,000^	NA	6^	NA
Nitrobenzene	98-95-3	8330	ELLE	**2**	300	100	NA	81-116	81-116	50	50	5,000	14,000	200	145	NA
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	8330	ELLE	**2**	300	130	NA	84-122	84-122	50	50	5,800^	26,000^	NA	13^	NA
2,4,6-Trinitrophenylmethylnitramine (Tetryl)	479-45-8	8330	ELLE	**2**	400	160	NA	67-152	67-152	50	50	780,000^	10,000,000^	NA	NA	NA
Nitroglycerin (NG)	55-63-0	8330	ELLE	**2**	3000	2000	NA	70-118	70-118	50	50	46,000^	200,000^	1,000^	NA	NA
Pentaerythriol Tetrannitrate (PETN)	78-11-5	8330	ELLE	**2**	6,000	2,000	NA	64-121	64-121	50	50	NA	NA	NA	NA	NA
2-Nitro-m-xylene - Surrogate	81-20-9	8330	ELLE	**2**	NA	NA	79-149	NA	NA	NA	NA	NA	NA	NA	NA	NA
Explosives																
1,2-Dinitrobenzene	528-29-0	8095	Pace	1	**NC**	NC	NC	**NC**	**NC**	**NC**	**NC**	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	99-35-4	8095	Pace	1	**100**	0.35						2,300,000^	10,000,000^	NA	2^	NA
1,3-Dinitrobenzene	99-65-0	8095	Pace	1	**100**	1.2	NA	**70-130**	**70-130**	**20**	**20**	7,800^	100,000^	500^	NA	NA
1,4-Dinitrobenzene	100-25-4	8095	Pace	1	**NC**	NC	NC	**NC**	**NC**	**NC**	**NC**	NA	NA	NA	NA	NA
1-Nitronaphthalene	86-57-7	8095	Pace	1	**NA**	NA	NA	**NA**	**NA**	**NA**	**NA**	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	118-96-7	8095	Pace	1	**100**	0.36	NA	**70-130**	**70-130**	**20**	**20**	21,000^	95,000^	200^	92^	NA
2,4-Dinitrotoluene	121-14-2	8095	Pace	1	**100**	0.23	NA	**70-130**	**70-130**	**20**	**20**	700	3,000	700^	14.4	NA
2,6-Dinitrotoluene	606-20-2	8095	Pace	1	**100**	0.39	NA	**70-130**	**70-130**	**20**	**20**	700	3,000	500^	39.8^	NA

Table 2-5B. Laboratory limits for dioxins, dibenzofurans, explosives, perchlorate and TOC in solid samples by ELLE.

Dioxins and Dibenzofurans	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Solid Medium Level RL	Laboratory Solid Medium Level MDL	Surrogate Recovery Control Limits	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
					(ug/Kg)	(ug/Kg)	(%R)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
2-Amino-4,6-Dinitrotoluene	35572-78-2	8095	Pace	1	**100**	0.23	NA	**70-130**	**70-130**	**20**	**20**	4,700^	61,000^	400^	NA	NA
2-Nitrotoluene	88-72-2	8095	Pace	1	**100**	0.57	NA	**70-130**	**70-130**	**20**	**20**	780,000^	10,000,000^	NA	NA	NA
3-Nitrotoluene	99-08-1	8095	Pace	1	**100**	0.34	NA	**70-130**	**70-130**	**20**	**20**	1,600,000^	10,000,000^	NA	NA	NA
4-Amino-2,6-Dinitrotoluene	19406-51-0	8095	Pace	1	**100**	0.24	NA	**70-130**	**70-130**	**20**	**20**	4,700^	61,000^	NA	NA	NA
4-Nitrotoluene	99-99-0	8095	Pace	1	**100**	0.28	NA	**70-130**	**70-130**	**20**	**20**	780,000^	10,000,000^	NA	NA	NA
Octahydro-1,35,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	8095	Pace	1	**100**	1	NA	**70-130**	**70-130**	**20**	**20**	3,900,000^	10,000,000^	NA	6^	NA
Nitrobenzene	98-95-3	8095	Pace	1	**100**	0.28	NA	**70-130**	**70-130**	**20**	**20**	5,000	14,000	200	145	NA
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	8095	Pace	1	**100**	0.28	NA	**70-130**	**70-130**	**20**	**20**	5,800^	26,000^	NA	13^	NA
2,4,6-Trinitrophenylmethylnitramine (Tetryl)	479-45-8	8095	Pace	1	**100**	0.88	NA	**70-130**	**70-130**	**20**	**20**	780,000^	10,000,000^	NA	NA	NA
Nitroglycerin (NG)	55-63-0	8095	Pace	1	**100**	0.21	NA	**70-130**	**70-130**	**20**	**20**	46,000^	200,000^	1,000^	NA	NA
Pentaerythriol Tetrannitrate (PETN)	78-11-5	8095	Pace	1	**100**	0.34	NA	**70-130**	**70-130**	**20**	**20**	NA	NA	NA	NA	NA
2,2'-Dinitrobiphenyl - Surrogate	2436-96-6	8095	Pace	1	NA	NA	68-127	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Analytes																
Perchlorate	14797-73-0	6850	ELLE	1	5	1.9	NA	80-120	70-130	15	15	NA	NA	NA	NA	NA
Total Organic Carbon (TOC)	---	9060A	ELLE	3	300000	100000	NA	47-142	47-143	20	20	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.
MDLs indicate method detection limits.
ug/L indicates microgram per liter.
%R indicates percent recovery.
RPD indicates relative percent difference.
NA indicates not applicable.
NC indicates laboratory is not certified for this target analyte at this project site.
MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA (ELLE) and Pace Analytical Laboratories of Madison, WI, current as of January 2018.
^ Site specific criteria
Target analyte detection limit exceeds regulatory criteria.

Dioxin and Dibenzofuran target analyte list source:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.'

Explosives

Project list.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.
2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.
3. USEPA. 2004. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IIIB. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.
2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.
3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-6A. Laboratory limits and regulatory criteria for metals, mercury, total cyanide, nitrocellulose, total phenols, nitrate, AVS/ SEM, methyl mercury, dimethyl mercury, elemental mercury, inorganic mercury and arsenic speciation in aqueous samples by various laboratories

TAL Metals	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
					(ug/L)	(ug/L)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Aluminum (Al)	7429-90-5	6020A	ELLE	1	200	21.5	80-120	75-125	20	20	200	NA	NA	NA
Antimony (Sb)	7440-36-0	6020A	ELLE	1	2	0.451	80-120	75-125	20	20	6	NA	80	5.6
Arsenic (As)	7440-38-2	6020A	ELLE	1	4	0.723	80-120	75-125	20	20	3	340	150	0.017
Barium (Ba)	7440-39-3	6010C	ELLE	1	10	0.85	80-120	75-125	20	20	6,000	NA	220	2,000
Beryllium (Be)	7440-41-7	6020A	ELLE	1	1	0.0713	80-120	75-125	20	20	1	NA	3.6	6
Cadmium (Cd)	7440-43-9	6020A	ELLE	1	1	0.152	80-120	75-125	20	20	4	1.2^	0.2^	3.4
Calcium (Ca)	7440-70-2	6010C	ELLE	1	400	60	80-120	75-125	20	20	NA	NA	NA	NA
Chromium (Total)	7440-47-3	6010C	ELLE	1	30	3.3	80-120	75-125	20	20	70	NA	42	92
Cobalt (Co)	7440-48-4	6010C	ELLE	1	10	1.7	80-120	75-125	20	20	100	NA	24	NA
Copper (Cu)	7440-50-8	6010C	ELLE	1	20	4	80-120	75-125	20	20	1,300	11^	7.4^	1,300
Iron (Fe)	7439-89-6	6020A	ELLE	1	200	37.4	80-120	75-125	20	20	300	NA	NA	NA
Lead (Pb)	7439-92-1	6020A	ELLE	1	2	0.111	80-120	75-125	20	20	5	38	5.4	5
Magnesium (Mg)	7439-95-4	6010C	ELLE	1	200	37.4	80-120	75-125	20	20	NA	NA	NA	NA
Manganese (Mn)	7439-96-5	6010C	ELLE	1	10	1.6	80-120	75-125	20	20	50	NA	NA	NA
Total Mercury (Hg)	7439-97-6	7470A	ELLE	2	0.2	0.05	80-120	82-120	20	20	2	1.4	0.77	0.05
Nickel (Ni)	7440-02-0	6010C	ELLE	1	20	4	80-120	75-125	20	20	100	348^	39^	500
Potassium (K)	7440-09-7	6010C	ELLE	1	1000	179	80-120	75-125	20	20	NA	NA	NA	NA
Selenium (Se)	7782-49-2	6020A	ELLE	1	4	0.5	80-120	75-125	20	20	40	20	5	170
Silver (Ag)	7440-22-4	6020A	ELLE	1	1	0.118	80-120	75-125	20	20	40	2.5^	0.12	170
Sodium (Na)	7440-23-5	6010C	ELLE	1	2000	321	80-120	75-125	20	20	50,000	NA	NA	NA
Thallium (Tl)	7440-28-0	6020A	ELLE	1	1	0.117	80-120	75-125	20	20	2	NA	10	0.24
Vanadium (V)	7440-62-2	6010C	ELLE	1	10	1.6	80-120	75-125	20	20	60	NA	12	NA
Zinc (Zn)	7440-66-6	6010C	ELLE	1	40	6.5	80-120	75-125	20	20	2,000	100^	100^	7,400
Other Analyses														
Total Cyanide	57-12-5	9012B	ELLE	3	10	5	90-110	72-114	20	20	100	22	5.2	140
Nitrocellulose	----	9056M	CT	4	500	400	70-130	70-130	20	20	NA	NA	NA	NA
Total Phenols	----	9066	ELLE	5	20	10	82-109	82-109	20	20	NA	NA	180	10,000
Nitrate	----	353.2	ELLE	6	100	40	90-110	90-110	20	20	10,000	NA	NA	10,000
AVS/SEM - Sulfide	----	EPA-821-R-91-100	ELLE	7	2	0.63	40-95	40-95	20	20	NA	NA	NA	NA
AVS/SEM - Cadmium (umoles/mL)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0045	0.00012	80-120	75-125	20	20	NA	NA	NA	NA
AVS/SEM - Copper (umoles/mL)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0157	0.0009	80-120	75-125	20	20	NA	NA	NA	NA
AVS/SEM - Lead (umoles/mL)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0072	0.00072	80-120	75-125	20	20	NA	NA	NA	NA
AVS/SEM - Nickel (umoles/mL)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0085	0.00128	80-120	75-125	20	20	NA	NA	NA	NA
AVS/SEM - Zinc (umoles/mL)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0306	0.0009	80-120	75-125	20	20	NA	NA	NA	NA
AVS/SEM - Mercury (umoles/mL)	----	EPA-821-R-91-100/7470B	ELLE	7	0.0001	0.000007	80-120	80-120	20	20	NA	NA	NA	NA
Methyl Mercury	----	1630 Modified	EFGS	8	0.00005	0.0000258	**70-130**	**65-130**	**35**	**25**	NA	NA	NA	NA
DiMethyl Mercury	----	1630 Modified	EFGS	8A	0.00001	0.000006	**70-130**	**65-130**	**35**	**25**	NA	NA	NA	NA
Inorganic Mercury	----	1631 Modified	EFGS	9	0.0005	0.00008	**75-125**	**71-125**	**24**	**24**	NA	NA	NA	NA
Arsenic Speciation - Arsenic (III) (Arsenite (AS^{+3}))	----	1632	EFGS	10	0.01	0.003	**30-170**	**30-170**	**35**	**35**	NA	NA	NA	NA
Arsenic Speciation - Total Inorganic Arsenic (Used to calculate Arsenite (AS^{+5}))	----	1632	EFGS	10	**0.01**	**0.003**	**50-150**	**50-150**	**35**	**35**	NA	NA	NA	NA
Arsenic Speciation - Arsenic (V)	----	1632	EFGS	10	**0.01**	**0.003**	**50-150**	**50-150**	**35**	**35**	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.
MDLs indicate method detection limits.
ug/L indicates microgram per liter.
%R indicates percent recovery.
RPD indicates relative percent difference.
AVS indicates Acid-Volatile Sulfide.
SEM indicates Simuntaneously-Extracted Metals.
SSE indicates Selective Sequential Extraction.
NA indicates not applicable.
MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA (ELLE), Eurofins Frontier Global Sciences of Bothell, Washington (EFGS) and CT Laboratories of Baraboo, Wisconsin (CT), current as of January 2018.
^ Site specific criteria
Target analyte detection limit exceeds regulatory criteria.

Target analyte source List:

Metals - Target analyte list (TAL) resource - USEPA. October 2016. EPA Contract Laboratory Program, Statement of Work for Inorganic Superfund Methods, Multi-Media, Multi-Concentration ISM02.4). Washington, D.C.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.
2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.
3. USEPA. 1996. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update III. Washington D.C.
4. CT Laboratories. 2017. VO 008 Preparation of Nitrocellulose Soils and Waters for Analysis of Ntrate/Nitrite by Ion Chromatogarphy.
5. USEPA. 1986. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.
6. AWWA, APHA and WEF. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. Washington, D.C.
7. USEPA. 1991. Analytical Method for the Determination of Acid Volatile Si;fode in Sediment, EPA-821-R-91-100.
8. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2808, Determination of Methyl Mercury in Various Matrices by CV-GC-AFS, Based on USEPA Method 1630, Methyl Mercury in Water by Distillaion, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.
8A. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2816, Sampling and Analysis of Dimethyl mercury in Enviromental Media Based on USEPA Method 1630, Methyl Mercury in Water by Distillaion, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.
9. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2822, Determination of Total Mercury in Various Matrices by FI-AFS, Based on USEPA Method 1631,Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.
10. Eurofins. 2017. EFAFS-T-AFS-SOP2987, Arsenic Speciation by Hydride-Generation Cryo-Trapping GC-AAS, Based on USEPA Method 1632, Chemical Speciation of Arsenic in Water and Tissue By Hydride Generation Quartz Furnace Atomic Absorption

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.
2- NJDEP Surface Water Criteria, current as of January 2018.

Table 2-6AA. Laboratory limits and regulatory criteria for metals, mercury, total cyanide, nitrate, nitrite, ammonia-nitrogen and reactivity (sulfide) in aqueous samples by Pace Analytical Services

TAL Metals	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Aqueous RL	Laboratory Aqueous MDL	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Class IIA Groundwater Quality: Higher of PQL and GWQC[1]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Acute Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Aquatic, Chronic Criteria[2]	NJDEP Ecological Screening Criteria - Surface Water, FW2, Human Health Criteria[2]
					(ug/L)	(ug/L)	(%R)	(%R)	(RPD)	(RPD)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Aluminum (Al)	7429-90-5	6020	Pace Analytical Services	1	0.1	0.00515	80-120	75-125	20	20	200	NA	NA	NA
Antimony (Sb)	7440-36-0	6020	Pace Analytical Services	1	0.002	0.000754	80-120	75-125	20	20	6	NA	80	5.6
Arsenic (As)	7440-38-2	6020	Pace Analytical Services	1	0.002	0.00025	80-120	75-125	20	20	3	340	150	0.017
Barium (Ba)	7440-39-3	6020	Pace Analytical Services	1	0.005	0.00036	80-120	75-125	20	20	6000	NA	220	2000
Beryllium (Be)	7440-41-7	6020	Pace Analytical Services	1	0.002	0.00012	80-120	75-125	20	20	1	NA	3.6	6
Cadmium (Cd)	7440-43-9	6020	Pace Analytical Services	1	0.001	0.00016	80-120	75-125	20	20	4	1.2^	0.2^	3.4
Calcium (Ca)	7440-70-2	6020	Pace Analytical Services	1	1	0.046	80-120	75-125	20	20	NA	NA	NA	NA
Chromium (Total)	7440-47-3	6020	Pace Analytical Services	1	0.002	0.00054	80-120	75-125	20	20	70	NA	42	92
Cobalt (Co)	7440-48-4	6020	Pace Analytical Services	1	0.002	0.00026	80-120	75-125	20	20	100	NA	24	NA
Copper (Cu)	7440-50-8	6020	Pace Analytical Services	1	0.005	0.00052	80-120	75-125	20	20	1300	11^	7.4^	1300
Iron (Fe)	7439-89-6	6020	Pace Analytical Services	1	0.1	0.015	80-120	75-125	20	20	300	NA	NA	NA
Lead (Pb)	7439-92-1	6020	Pace Analytical Services	1	0.002	0.00024	80-120	75-125	20	20	5	38	5.4	5
Magnesium (Mg)	7439-95-4	6020	Pace Analytical Services	1	1	0.1	80-120	75-125	20	20	NA	NA	NA	NA
Manganese (Mn)	7439-96-5	6020	Pace Analytical Services	1	0.005	0.00025	80-120	75-125	20	20	50	NA	NA	NA
Total Mercury (Hg)	7439-97-6	7470A	Pace Analytical Services	2	.0002	0.000049	85-115	70-130	20	20	2	1.4	0.77	0.05
Nickel (Ni)	7440-02-0	6020	Pace Analytical Services	1	0.002	0.00035	80-120	75-125	20	20	100	348^	39^	500
Potassium (K)	7440-09-7	6020	Pace Analytical Services	1	1	0.037	80-120	75-125	20	20	NA	NA	NA	NA
Selenium (Se)	7782-49-2	6020	Pace Analytical Services	1	0.002	0.00038	80-120	75-125	20	20	40	20	5	170
Silver (Ag)	7440-22-4	6020	Pace Analytical Services	1	0.002	0.00031	80-120	75-125	20	20	40	2.5^	0.12	170
Sodium (Na)	7440-23-5	6020	Pace Analytical Services	1	1	0.11	80-120	75-125	20	20	50000	NA	NA	NA
Thallium (Tl)	7440-28-0	6020	Pace Analytical Services	1	0.002	0.00019	80-120	75-125	20	20	2	NA	10	0.24
Vanadium (V)	7440-62-2	6020	Pace Analytical Services	1	0.005	0.00018	80-120	75-125	20	20	60	NA	12	NA
Zinc (Zn)	7440-66-6	6020	Pace Analytical Services	1	0.025	0.00256	80-120	75-125	20	20	2000	100^	100^	7400
Other Analyses														
Total Cyanide	57-12-5	9012B	Pace Analytical Services	3	0.005	0.0018	85-115	75-125	20	20	100	22	5.2	140
Nitrate	----	353.2	Pace Analytical Services	4	0.1	0.0227	90-110	80-120	20	20	10000	NA	NA	10000
Nitrate	----	9056A	Pace Analytical Services	1	0.1	0.0227	80-120	80-120	15	15	10000	NA	NA	10000
Nitrite	----	300.0	Pace Analytical Services	4	0.1	0.0277	90-110	80-120	20	20				
Ammonia-Nitrogen	----	350.1	Pace Analytical Services	4	0.1	0.317	90-110	90-110	10	10				
Reactivity (Sulfide)	----	9030B/9034	Pace Analytical Services	3	0.05	0.0065	85-115	80-120	20	20				

Notes:

RLs indicates reporting limits.
MDLs indicate method detection limits.
ug/L indicates microgram per liter.
%R indicates percent recovery.
RPD indicates relative percent difference.
NA indicates not applicable.
MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.
^ Site specific criteria

Target analyte source List:

Metals - Target analyte list (TAL) resource - USEPA. October 2016. EPA Contract Laboratory Program, Statement of Work for Inorganic Superfund Methods, Multi-Media, Multi-Concentration ISM02.4). Washington, D.C.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.
2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.
3. USEPA. 1996. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update III. Washington D.C.
4. USEPA. 1993. Methods for the Determination of Inorganic Substances in Environmental Samples, EPA-600/R-93/100. Washington, D.C.

Regulatory Criteria:

1- NJDEP Class IIA Aqufer: Higher of PQL and GWQC, current as of January 2018.
2- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-6B. Laboratory limits and regulatory limits for criteria for Laboratory limits and regulatory criteria for metals, mercury, total cyanide, nitrocellulose, total phenols, nitrate, AVS/ SEM, methyl mercury, dimethyl mercury, elemental mercury, inorganic mercury and arsenic speciation in solid samples by various laboratories.

TAL Metals	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Soil RL	Laboratory Soil MDL	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
					(ug/Kg)	(ug/Kg)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Aluminum (Al)	7429-90-5	6010C	ELLE	1	40000	8940	80-120	75-125	20	20	78,000,000	NA	6,000,000	25,500,000	NA
Antimony (Sb)	7440-36-0	6010C	ELLE	1	4000	870	80-120	75-125	20	20	31,000	450,000	6,000	NA	3,000
Arsenic (As)	7440-38-2	6010C	ELLE	1	4000	960	80-120	75-125	20	20	19,000	19,000	19,000	6,000	33,000
Barium (Ba)	7440-39-3	6010C	ELLE	1	1000	44	80-120	75-125	20	20	16,000,000	59,000,000	2,100,000	NA	NA
Beryllium (Be)	7440-41-7	6010C	ELLE	1	1000	79	80-120	75-125	20	20	16,000	140,000	1,080^	NA	NA
Cadmium (Cd)	7440-43-9	6010C	ELLE	1	1000	54	80-120	75-125	20	20	78,000	78,000	2,000	600	10,000
Calcium (Ca)	7440-70-2	6010C	ELLE	1	40000	3330	80-120	75-125	20	20	NA	NA	NA	NA	NA
Chromium (Total)	7440-47-3	6010C	ELLE	1	3000	170	80-120	75-125	20	20	120,000,000	NA	NA	26,000	110,000
Cobalt (Co)	7440-48-4	6010C	ELLE	1	1000	110	80-120	75-125	20	20	1,600,000	590,000	90,000	50,000	NA
Copper (Cu)	7440-50-8	6010C	ELLE	1	2000	240	80-120	75-125	20	20	3,100,000	45,000,000	11,000,000	16,000	110,000
Iron (Fe)	7439-89-6	6010C	ELLE	1	40000	8050	80-120	75-125	20	20	NA	NA	NA	NA	NA
Lead (Pb)	7439-92-1	6010C	ELLE	1	3000	600	80-120	75-125	20	20	400,000	800,000	90,000	31,000	250,000
Magnesium (Mg)	7439-95-4	6010C	ELLE	1	20000	2430	80-120	75-125	20	20	NA	NA	NA	NA	NA
Manganese (Mn)	7439-96-5	6010C	ELLE	1	1000	83	80-120	75-125	20	20	11,000,000	5,900,000	65,000	630,000	1,100,000
Total Mercury (Hg)	7439-97-6	7471B	ELLE	2	100	10	80-120	80-120	20	20	23,000	65,000	320^	174	2,000
Nickel (Ni)	7440-02-0	6010C	ELLE	1	2000	150	80-120	75-125	20	20	1,600,000	23,000,000	48,000	16,000	75,000
Potassium (K)	7440-09-7	6010C	ELLE	1	100000	16700	80-120	75-125	20	20	NA	NA	NA	NA	NA
Selenium (Se)	7782-49-2	6010C	ELLE	1	4000	930	80-120	75-125	20	20	390,000	5,700,000	11,000	NA	NA
Silver (Ag)	7440-22-4	6010C	ELLE	1	1000	240	80-120	75-125	20	20	390,000	5,700,000	1,000	500	NA
Sodium (Na)	7440-23-5	6010C	ELLE	1	200000	16700	80-120	75-125	20	20	NA	NA	NA	NA	NA
Thallium (Tl)	7440-28-0	6010C	ELLE	1	6000	1370	80-120	75-125	20	20	NA	NA	3,000	NA	NA
Vanadium (V)	7440-62-2	6010C	ELLE	1	1000	150	80-120	75-125	20	20	78,000	1,100,000	NA	NA	NA
Zinc (Zn)	7440-66-6	6010C	ELLE	1	4000	240	80-120	75-125	20	20	23,000,000	110,000,000	930,000	120,000	820,000
Other Analyses															
Total Cyanide	57-12-5	9012B	ELLE	3	200	180	90-110	45-145	20	20	47,000	680,000	20,000	0.1	NA
Nitrocellulose	----	9056M	CT	4	200,000	100,000	63-130	63-130	20	20	NA	NA	NA	NA	NA
Total Phenols	----	9066	ELLE	5	3500	1200	80-120	80-120	20	20	18,000,000	210,000,000	8,000	49	48
Nitrate	----	300.0	ELLE	6	1.5	0.5	90-110	90-110	15	20	NA	NA	NA	NA	NA
AVS/SEM - Sulfide (umoles/g)	----	EPA-821-R-91-100	ELLE	7	2	0.63	40-95	40-95	20	20	NA	NA	NA	NA	NA
AVS/SEM - Cadmium (umoles/g)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0045	0.00012	80-120	75-125	20	20	NA	NA	NA	NA	NA
AVS/SEM - Copper (umoles/g)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0157	0.0009	80-120	75-125	20	20	NA	NA	NA	NA	NA
AVS/SEM - Lead (umoles/g)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0072	0.00072	80-120	75-125	20	20	NA	NA	NA	NA	NA
AVS/SEM - Nickel (umoles/g)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0085	0.00128	80-120	75-125	20	20	NA	NA	NA	NA	NA
AVS/SEM - Zinc (umoles/g)	----	EPA-821-R-91-100/6010C	ELLE	7	0.0306	0.0009	80-120	75-125	20	20	NA	NA	NA	NA	NA
AVS/SEM - Mercury (umoles/g)	----	EPA-821-R-91-100/7471B	ELLE	7	0.0001	0.000007	80-120	80-120	20	20	NA	NA	NA	NA	NA
Methyl Mercury	----	1630 Modified	EFGS	8	0.0503	0.0148	70-130%	65-130%	35	25	NA	NA	NA	NA	NA
DiMethyl Mercury	----	1630 Modified	EFGS	8A	TBD	TBD	TBD	TBD	TBD	TBD	NA	NA	NA	NA	NA
Inorganic Mercury	----	1631 Modified	EFGS	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SSE - Free Volatile Elemental Mercury (Hg^0)	----	1631 (Modified)	EFGS	9	1	0.17	75-125	71-125	24	24	NA	NA	NA	NA	NA
SSE - F-1 Water Soluble Mercury	----	1631 (Modified)	EFGS	9	3.12	1	75-125	71-125	24	24	NA	NA	NA	NA	NA
SSE - F2- pH 2 Soluble Mercury	----	1631 (Modified)	EFGS	9	3.12	1	75-125	71-125	24	24	NA	NA	NA	NA	NA
SSE - F-3 1N KOH Extractable Mercury	----	1631 (Modified)	EFGS	9	6.25	2	75-125	71-125	24	24	NA	NA	NA	NA	NA
SSE - F4- 12N HNO_3 Soluble Mercury	----	1631 (Modified)	EFGS	9	15.6	5	75-125	71-125	24	24	NA	NA	NA	NA	NA
SSE - F5- Aqua Regia Soluble Mercury	----	1631 (Modified)	EFGS	9	1	0.11	75-125	71-125	24	24	NA	NA	NA	NA	NA
SSE - F-6 Mineral-Bound Mercury	----	1631 (Modified)	EFGS	9	10	0.92	75-125	71-125	24	24	NA	NA	NA	NA	NA
SSE - F-S Total Inorganic Mercury by Sum of Species (Summation Calculation)	----	1631 (Modified)	EFGS	9							NA	NA	NA	NA	NA
Arsenic Speciation - Arsenic (III) (Arsenite (AS^{+3})	----	1632 (Modified)	EFGS	10	10	5	30-170	30-170	35	35	NA	NA	NA	NA	NA
Arsenic Speciation - Total Inorganic Arsenic (Used to calculate Arsenite											NA	NA	NA	NA	NA
Arsenic Speciation - Arsenic (V)	----	1632 (Modified)	EFGS	10	10	5	50-150	50-150	35	35	NA	NA	NA	NA	NA

Notes:

RLs indicates reporting limits.
MDLs indicate method detection limits.
ug/Kg indicates microgram per killogram.
NA indicates value not applicable, a standard has not been established.'
%R indicates percent recovery.
RPD indicates relative percent difference.
AVS indicates Acid-Volatile Sulfide.
SEM indicates Simuntaneously-Extracted Metals.
SSE indicates Selective Sequential Extraction.
MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA (ELLE), Eurofins Frontier Global Sciences of Bothell, Washington (EFGS) and CT Laboratories of Baraboo, Wisconsin (CT), current as of January 2018.
^ Site specific criteria
Target analyte detection limit exceeds regulatory criteria.

Target analyte source List:

Metals - Target analyte list (TAL) resource - USEPA. October 2016. EPA Contract Laboratory Program, Statement of Work for Inorganic Superfund Methods, Multi-Media, Multi-Concentration ISM02.4). Washington, D.C.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.
2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.
3. USEPA. 1996. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update III. Washington D.C.
4. CT Laboratories. 2017. VO 008 Preparation of Nitrocellulose Soils and Waters for Analysis of Ntrate/Nitrite by Ion Chromatogarphy.
5. USEPA. 1986. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.
6. AWWA, APHA and WEF. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. Washington, D.C.
7. USEPA. 1991. Analytical Method for the Determination of Acid Volatile Si;fode in Sediment, EPA-821-R-91-100.
8. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2808, Determination of Methyl Mercury in Various Matrices by CV-GC-AFS, Based on USEPA Method 1630, Methyl Mercury in Water by Distillaion, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.
8A. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2816, Sampling and Analysis of Dimethyl mercury in Enviromental Media Based on USEPA Method 1630, Methyl Mercury in Water by Distillaion, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.
9. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2822, Determination of Total Mercury in Various Matrices by FI-AFS, Based on USEPA Method 1631,Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.
10. Eurofins. 2017. EFAFS-T-AFS-SOP2987, Arsenic Speciation by Hydride-Generation Cryo-Trapping GC-AAS, Based on USEPA Method 1632, Chemical Speciation of Arsenic in Water and Tissue By Hydride Generation Quartz Furnace Atomic Absorption Spectrometry.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.
2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.
3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-6BB. Laboratory limits and regulatory limits for criteria for laboratory limits and regulatory criteria for metals, mercury, total cyanide, nitrate, nitrite, ammonia-nitrogen, ignitability, corrosivity (pH), reactivity (sulfide), reactivity (cyanide) and paint filter liquids in solid samples by Pace Analytical Services.

TAL Metals	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Soil RL	Laboratory Soil MDL	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits	NJDEP Residential Direct Contact[1]	NJDEP Non-Residential Direct Contact[1]	Default Impact to Groundwater Soil Screening Levels[2]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Lowest Effects Level (LEL)[3]	NJDEP Ecological Screening Criteria, Sediment, Fresh Water, Severe Effects Level (SEL)[3]
					(ug/Kg)	(ug/Kg)	(%R)	(%R)	(RPD)	(RPD)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Aluminum (Al)	7429-90-5	6010C	Pace Analytical Services	1	10	3.5	80-120	75-125	20	20	78,000,000	NA	6,000,000	25,500,000	NA
Antimony (Sb)	7440-36-0	6010C	Pace Analytical Services	1	2	0.75	80-120	75-125	20	20	31,000	450,000	6,000	NA	3,000
Arsenic (As)	7440-38-2	6010C	Pace Analytical Services	1	2	0.46	80-120	75-125	20	20	19,000	19,000	19,000	6,000	33,000
Barium (Ba)	7440-39-3	6010C	Pace Analytical Services	1	0.5	0.17	80-120	75-125	20	20	16,000,000	59,000,000	2,100,000	NA	NA
Beryllium (Be)	7440-41-7	6010C	Pace Analytical Services	1	0.2	0.07	80-120	75-125	20	20	16,000	140,000	1,080^	NA	NA
Cadmium (Cd)	7440-43-9	6010C	Pace Analytical Services	1	10	0.07	80-120	75-125	20	20	78,000	78,000	2,000	600	10,000
Calcium (Ca)	7440-70-2	6010C	Pace Analytical Services	1	0.5	4.63	80-120	75-125	20	20	NA	NA	NA	NA	NA
Chromium (Total)	7440-47-3	6010C	Pace Analytical Services	1	1	0.14	80-120	75-125	20	20	120,000,000	NA	NA	26,000	110,000
Cobalt (Co)	7440-48-4	6010C	Pace Analytical Services	1	1	0.23	80-120	75-125	20	20	1,600,000	590,000	90,000	50,000	NA
Copper (Cu)	7440-50-8	6010C	Pace Analytical Services	1	2	0.53	80-120	75-125	20	20	3,100,000	45,000,000	11,000,000	16,000	110,000
Iron (Fe)	7439-89-6	6010C	Pace Analytical Services	1	10	1.41	80-120	75-125	20	20	NA	NA	NA	NA	NA
Lead (Pb)	7439-92-1	6010C	Pace Analytical Services	1	0.5	0.19	80-120	75-125	20	20	400,000	800,000	90,000	31,000	250,000
Magnesium (Mg)	7439-95-4	6010C	Pace Analytical Services	1	100	1.11	80-120	75-125	20	20	NA	NA	NA	NA	NA
Manganese (Mn)	7439-96-5	6010C	Pace Analytical Services	1	1	0.12	80-120	75-125	20	20	11,000,000	5,900,000	65,000	630,000	1,100,000
Total Mercury (Hg)	7439-97-6	7471B	Pace Analytical Services	2	0.02	0.0028	80-120	75-125	20	20	23,000	65,000	320^	174	2,000
Nickel (Ni)	7440-02-0	6010C	Pace Analytical Services	1	2	0.49	80-120	75-125	20	20	1,600,000	23,000,000	48,000	16,000	75,000
Potassium (K)	7440-09-7	6010C	Pace Analytical Services	1	100	10.24	80-120	75-125	20	20	NA	NA	NA	NA	NA
Selenium (Se)	7782-49-2	6010C	Pace Analytical Services	1	2	0.62	80-120	75-125	20	20	390,000	5,700,000	11,000	NA	NA
Silver (Ag)	7440-22-4	6010C	Pace Analytical Services	1	1	0.12	80-120	75-125	20	20	390,000	5,700,000	1,000	500	NA
Sodium (Na)	7440-23-5	6010C	Pace Analytical Services	1	100	9.85	80-120	75-125	20	20	NA	NA	NA	NA	NA
Thallium (Tl)	7440-28-0	6010C	Pace Analytical Services	1	2	0.65	80-120	75-125	20	20	NA	NA	3,000	NA	NA
Vanadium (V)	7440-62-2	6010C	Pace Analytical Services	1	2	0.24	80-120	75-125	20	20	78,000	1,100,000	NA	NA	NA
Zinc (Zn)	7440-66-6	6010C	Pace Analytical Services	1	5	0.59	80-120	75-125	20	20	23,000,000	110,000,000	930,000	120,000	820,000
Other Analyses															
Total Cyanide	57-12-5	9012B	Pace Analytical Services	3	0.250000	0.039000	50-150	75-125	20	20	47,000	680,000	20,000	0.1	NA
Nitrate	----	9056A	Pace Analytical Services	1	1	0.0116	90-110	80-120	20	20					
Nitrite	----	9056A	Pace Analytical Services	1	1	0.0958	90-110	80-120	20	20					
Ammonia-Nitrogen	----	350.1	Pace Analytical Services	4	5	1.57	90-110	80-120	20	20					
Ignitability	----	1010A	Pace Analytical Services	5	NA	NA	96-104	NA	NA	10					
Corrosivity (pH)		9045D/9040C	Pace Analytical Services	5	0.1	0.1	99-101	NA	NA	1					
Reactivity (Sulfide)		9030B/9034	Pace Analytical Services	3	25	7.63	70-130	NA	NA	20					
Reactivity (Cyanide)		9012B	Pace Analytical Services	3	0.250000	0.0390000	50-150	75-125	20	20					
Paint Filter Liquids (Lab Duplicate Only)	----	9095A	Pace Analytical Services	3	NA	NA	NA	NA	NA	NA					

Notes:
RLs indicates reporting limits.
MDLs indicate method detection limits.
ug/Kg indicates microgram per killogram.
NA indicates value not applicable, a standard has not been established.'
%R indicates percent recovery.
RPD indicates relative percent difference.
MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.
^ Site specific criteria

Target analyte source List:

Metals - Target analyte list (TAL) resource - USEPA. October 2016. EPA Contract Laboratory Program, Statement of Work for Inorganic Superfund Methods, Multi-Media, Multi-Concentration ISM02.4). Washington, D.C.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.
2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.
3. USEPA. 1996. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update III. Washington D.C.
4 USEPA. 1993. Methods for the Determination of Inorganic Substances in Environmental Samples, EPA-600/R-93/100. Washington, D.C.
5- USEPA. 2004. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IIIB. Washington D.C.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.
2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.
3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-6C. Laboratory limits and regulatory limits for criteria for Laboratory limits and regulatory criteria for metals in biological tissue by ELLE.

TAL Metals	CAS Number	USEPA Method	Laboratory Performing Analysis	Method Reference	Laboratory Biological Tissue RL	Laboratory Biological Tissue MDL	LCS Recovery Control Limits	MS/MSD Recovery Control Limits	MS/MSD Precision Control Limits	LCS/LCSD Precision Control Limits
					(ug/Kg)	(ug/Kg)	(%R)	(%R)	(RPD)	(RPD)
Aluminum (Al)	7429-90-5	6010C	ELLE	1	40000	8940	80-120	75-125	20	20
Antimony (Sb)	7440-36-0	6010C	ELLE	1	4000	870	80-120	75-125	20	20
Arsenic (As)	7440-38-2	6010C	ELLE	1	4000	960	80-120	75-125	20	20
Barium (Ba)	7440-39-3	6010C	ELLE	1	1000	44	80-120	75-125	20	20
Beryllium (Be)	7440-41-7	6010C	ELLE	1	1000	79	80-120	75-125	20	20
Cadmium (Cd)	7440-43-9	6010C	ELLE	1	1000	54	80-120	75-125	20	20
Calcium (Ca)	7440-70-2	6010C	ELLE	1	40000	3330	80-120	75-125	20	20
Chromium (Total)	7440-47-3	6010C	ELLE	1	3000	170	80-120	75-125	20	20
Cobalt (Co)	7440-48-4	6010C	ELLE	1	1000	110	80-120	75-125	20	20
Copper (Cu)	7440-50-8	6010C	ELLE	1	2000	240	80-120	75-125	20	20
Iron (Fe)	7439-89-6	6010C	ELLE	1	40000	8050	80-120	75-125	20	20
Lead (Pb)	7439-92-1	6010C	ELLE	1	3000	600	80-120	75-125	20	20
Magnesium (Mg)	7439-95-4	6010C	ELLE	1	20000	2430	80-120	75-125	20	20
Manganese (Mn)	7439-96-5	6010C	ELLE	1	1000	83	80-120	75-125	20	20
Total Mercury (Hg)	7439-97-6	7471B	ELLE	2	100	10	80-120	80-120	20	20
Nickel (Ni)	7440-02-0	6010C	ELLE	1	2000	150	80-120	75-125	20	20
Potassium (K)	7440-09-7	6010C	ELLE	1	100000	16700	80-120	75-125	20	20
Selenium (Se)	7782-49-2	6010C	ELLE	1	4000	930	80-120	75-125	20	20
Silver (Ag)	7440-22-4	6010C	ELLE	1	1000	240	80-120	75-125	20	20
Sodium (Na)	7440-23-5	6010C	ELLE	1	200000	16700	80-120	75-125	20	20
Thallium (Tl)	7440-28-0	6010C	ELLE	1	6000	1370	80-120	75-125	20	20
Vanadium (V)	7440-62-2	6010C	ELLE	1	1000	150	80-120	75-125	20	20
Zinc (Zn)	7440-66-6	6010C	ELLE	1	4000	240	80-120	75-125	20	20

Notes:

RLs indicates reporting limits.
MDLs indicate method detection limits.
ug/Kg indicates microgram per killogram.
NA indicates value not applicable, a standard has not been established.'
%R indicates percent recovery.
RPD indicates relative percent difference.
AVS indicates Acid-Volatile Sulfide.
SEM indicates Simuntaneously-Extracted Metals.
SSE indicates Selective Sequential Extraction.
MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA (ELLE), Eurofins Frontier Global Sciences of Bothell, Washington (EFGS) and CT Laboratories of Baraboo, Wisconsin (CT), current as of January 2018.
Target analyte detection limit exceeds regulatory criteria.

Target analyte source List:

Metals - Target analyte list (TAL) resource - USEPA. October 2016. EPA Contract Laboratory Program, Statement of Work for Inorganic Superfund Methods, Multi-Media, Multi-Concentration ISM02.4). Washington, D.C.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.
2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.
3. USEPA. 1996. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update III. Washington D.C.
4. CT Laboratories. 2017. VO 008 Preparation of Nitrocellulose Soils and Waters for Analysis of Ntrate/Nitrite by Ion Chromatogarphy.
5. USEPA. 1986. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition. Washington D.C.
6. AWWA, APHA and WEF. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. Washington, D.C.
7. USEPA. 1991. Analytical Method for the Determination of Acid Volatile Si;fode in Sediment, EPA-821-R-91-100.
8. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2808, Determination of Methyl Mercury in Various Matrices by CV-GC-AFS, Based on USEPA Method 1630, Methyl Mercury in Water by Distillaion, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.

8A. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2816, Sampling and Analysis of Dimethyl mercury in Enviromental Media Based on USEPA Method 1630, Methyl Mercury in Water by Distillaion, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.

9. Eurofins. 2017. Eurofins SOP EFAFS-T-AFS-SOP2822, Determination of Total Mercury in Various Matrices by FI-AFS, Based on USEPA Method 1631,Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.

10. Eurofins. 2017. EFAFS-T-AFS-SOP2987, Arsenic Speciation by Hydride-Generation Cryo-Trapping GC-AAS, Based on USEPA Method 1632, Chemical Speciation of Arsenic in Water and Tissue By Hydride Generation Quartz Furnace Atomic Absorption Spectrometry.

Regulatory Criteria:

1- NJDEP Soil Remediation Standards, Residential and Non-Residential, current as of January 2018.
2. Default Impact to Groundwater Soil Screening Levels current as of January 2018.
3- NJDEP Ecological Screening Criteria, current as of January 2018.

Table 2-6D. *Laboratory limits and regulatory criteria for metals in samples prepared using SPLP by ELLE*

TAL Metals	CAS Number	USEPA Method	Method Reference	Laboratory SPLP RL (ug/L)	Laboratory SPLP MDL (ug/L)	SPLP LCS Recovery Control Limits (%R)	SPLP MS/MSD Recovery Control Limits (%R)	SPLP MS/MSD Precision Control Limits (RPD)	SPLP LCS/LCSD Precision Control Limits (RPD)	SPLP Regulatory Criteria (ug/L)
Aluminum (Al)	7429-90-5	6010C	1	400	89.4	80-120	75-125	20	20	4,000
Antimony (Sb)	7440-36-0	6010C	1	40	8.7	80-120	75-125	20	20	120
Arsenic (As)	7440-38-2	6020A	1	4	0.723	80-120	75-125	20	20	3
Barium (Ba)	7440-39-3	6010C	1	10	0.85	80-120	75-125	20	20	120,000
Beryllium (Be)	7440-41-7	6010C	1	10	2	80-120	75-125	20	20	20
Cadmium (Cd)	7440-43-9	6010C	1	10	1.8	80-120	75-125	20	20	80
Calcium (Ca)	7440-70-2	6010C	1	400	60	80-120	75-125	20	20	NA
Chromium (Total)	7440-47-3	6010C	1	30	3.3	80-120	75-125	20	20	NA
Cobalt (Co)	7440-48-4	6010C	1	10	1.7	80-120	75-125	20	20	2,000
Copper (Cu)	7440-50-8	6010C	1	20	4	80-120	75-125	20	20	26,000
Iron (Fe)	7439-89-6	6010C	1	400	80.5	80-120	75-125	20	20	NA
Lead (Pb)	7439-92-1	6010C	1	30	6	80-120	75-125	20	20	100
Magnesium (Mg)	7439-95-4	6010C	1	200	37.4	80-120	75-125	20	20	NA
Manganese (Mn)	7439-96-5	6010C	1	10	1.6	80-120	75-125	20	20	1,000
Total Mercury (Hg)	7439-97-6	7471B	2	0.2	0.05	80-120	80-120	20	20	40
Nickel (Ni)	7440-02-0	6010C	1	20	4	80-120	75-125	20	20	2,000
Potassium (K)	7440-09-7	6010C	1	1000	179	80-120	75-125	20	20	NA
Selenium (Se)	7782-49-2	6010C	1	40	9.3	80-120	75-125	20	20	800
Silver (Ag)	7440-22-4	6010C	1	10	2.4	80-120	75-125	20	20	800
Sodium (Na)	7440-23-5	6010C	1	2000	321	80-120	75-125	20	20	NA
Thallium (Tl)	7440-28-0	6020A	1	1	0.117	80-120	75-125	20	20	10
Vanadium (V)	7440-62-2	6010C	1	10	1.6	80-120	75-125	20	20	NA
Zinc (Zn)	7440-66-6	6010C	1	40	6.5	80-120	75-125	20	20	40,000

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs and RLs provided by Eurofins Lancaster of Lancaster, PA, current as of January 2018.

Target analyte detection limit exceeds regulatory criteria.

Target analyte source List:

Metals - Target analyte list (TAL) resource - USEPA. October 2016. EPA Contract Laboratory Program, Statement of Work for Inorganic Superfund Methods, Multi-Media, Multi-Concentration ISM02.4). Washington, D.C.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.

Regulatory Criteria:

SPLP regulatory criteria as of January 2018.

Table 2-6DD. *Laboratory limits and regulatory criteria for metals in samples prepared using TCLP by Pace Analytical Services.*

TAL Metals	CAS Number	USEPA Method	Method Reference	Laboratory TCLP RL (ug/L)	Laboratory TCLP MDL (ug/L)	TCLP LCS Recovery Control Limits (%R)	TCLP MS/MSD Recovery Control Limits (%R)	TCLP MS/MSD Precision Control Limits (RPD)	TCLP LCS/LCSD Precision Control Limits (RPD)	TCLP Regulatory Criteria (ug/L)
Arsenic (As)	7440-38-2	6020A	1	0.02	0.0025	79.50-120	74.5-125	20	20	5000
Barium (Ba)	7440-39-3	6010C	1	0.10	NA	80-120	75-125	20	20	100000
Cadmium (Cd)	7440-43-9	6010C	1	0.10	NA	80-120	75-125	20	20	1000
Chromium (Total)	7440-47-3	6010C	1	0.10	NA	80-120	75-125	20	20	5000
Lead (Pb)	7439-92-1	6010C	1	0.10	NA	80-120	75-125	20	20	5000
Total Mercury (Hg)	7439-97-6	7470A	2	0.01	NA	80-120	75-125	20	20	200
Selenium (Se)	7782-49-2	6010C	1	0.10	NA	80-120	75-125	20	20	1000
Silver (Ag)	7440-22-4	6010C	1	0.10	NA	80-120	75-125	20	20	5000

Notes:

RLs indicates reporting limits.

MDLs indicate method detection limits.

ug/L indicates microgram per liter.

%R indicates percent recovery.

RPD indicates relative percent difference.

NA indicates not applicable.

MDLs, RLs and control limits provided by Pace Analytical Services, current as of May 2019.

Target analyte source List:

TCLP target list.

Method references:

1. USEPA. 2007. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update IV. Washington D.C.

2. USEPA. 1994. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, Update II. Washington D.C.

Regulatory Criteria:

TCLP regulatory criteria as of May 2019.

Table 3-1. VOCs using USEPA Methods 8000C/8260C quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous samples: cooler temperature ≤6°C, preserve with HCL to pH≤2, Sealed and Headspace Free. For solid samples: cooler temperature ≤6°C, See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be analyzed within holding time.	See Table 1 For aqueous and solid samples: Analyze within 14 days from collection for preserved samples. Analysis within 7 days from collection to analysis for aqueous samples not acid preserved. For SPLP -14 days from collection to extract generation. 14 days from extract generation to analysis. See Table 1 for sample collection information.	If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify QAO since re-sampling may be required. Document corrective action in the case narrative.
MS Tuning (Accuracy)	Once every 12 hours prior to initial calibration and calibration verifications. Analytical sequence must be completed within 12 hours of the GC/MS Instrument Performance Check	Bromofluorobenzene (BFB) key ions and abundance criteria listed in the method Table 3 or Lab SOP must be met for all 9 ions and analyses must be performed within 12 hours of injection of the BFB. Part of the BFB peak will not be background subtracted to meet tune criteria. Documentation of all bromofluorobenzene analyses and evaluation must be included in the data packages.	Tune the mass spectrometer. Document corrective action in the case narrative. Samples cannot be analyzed until control limit criteria have been met.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Initial Calibration Initial Calibration Verification (ICV) **(Accuracy)**	Prior to sample analysis and when calibration verifications criteria are not met. Initial calibration will contain all target analytes in each standard. Quantitation of analyses will utilize the initial calibration results.	A minimum of five concentrations bracketing expected concentration range for all compounds of interest. One standard must be analyzed at or below the RL concentration. One second-source standard (ICV) must be analyzed immediately following the initial calibration at the mid-calibration concentration. This standard must be within 30% recovery or within laboratory control limits. It is also recommended that a separate standard at the MDL level be analyzed after calibration is complete to check sensitivity. Response factor (RF) as listed in Table 4, Method 8260C. The following exceptions are allowed: RFs ≥ 0.010 for poor purging target analytes such as ketones, acetonitrile, acrolein, propionitrile, vinyl acetate, 1,4-dioxane, alcohols, tetrahydrofuran, and cyclohexanone. For other target analytes not listed on Table 4, RFs ≥ 0.050. For Ketones listed in Table 4 with RFs ≥ 0.010 and less than 0.100 results, data will be qualified as approximate (UJ, J). For compound with %RSD >20, quantitation must be performed using a separate calibration curve and the Coefficient of Determination (COD) must be ≥ 0.99. If linear regression is used for the calibration curve, the low initial calibration standard should be evaluated for accuracy using criteria of %D <30% from true value. Relative retention time (RRT) for each target analyte in each calibration standard must agree within ± 0.06 RRT units	Identify and correct problem. If criteria are still not met, recalibrate. Document corrective action in the case narrative. Samples should not be analyzed until calibration control limit criteria are met. Response factor excursions may result in rejected data during data validation. Contact QAO to discuss problem target analytes before proceeding with analysis.
Calibration **Verification (Accuracy)**	Every 12 hours, following BFB. The calibration verification will contain all target analytes in each standard at a concentration that is representative of the midpoint of the initial calibration.	Within percent drift or percent difference (%D) ≤ 20 for compound. RFs must meet the criteria listed for initial calibration. The internal standards areas and retention times must meet the method criteria.	Reanalyze. If criteria are still not met, identify and correct problem, recalibrate. Document corrective action in the case narrative; samples should not be analyzed until calibration control limit criteria are met.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Preparation Blank Analysis **(Sensitivity)**	Every 12 hours, following calibration verification	Methylene chloride less than 3 times RL and 2-butanone and acetone less than 5 times RL remaining analytes less than RL will be provided along with the preparation blank results.	Reanalyze blank. If limits are still exceeded, clean instrument, recalibrate analytical system, and reanalyze all samples if detected for same compounds as in blank. Document corrective action in the case narrative - samples cannot be analyzed until blank criteria have been met.
Field Blank Analysis **(Sensitivity)**	Collected per QAPP requirements.	Methylene chloride less than 3 times RL and 2-butanone and acetone less than 5 times RL. Remaining analytes less than RL.	Investigate problem. Document in the case narrative.
Trip Blank **(Sensitivity)**	1 per cooler containing VOC samples.	Methylene chloride less than 3 times RL and 2-butanone and acetone less than 5 times RL. Remaining analytes less than RL.	Investigate problem. Document in the case narrative.
Laboratory Control Sample Analysis **(Accuracy)**	Each analytical batch (every 12 hours). Prepared independently from calibration standards. Spike must contain all target analytes and should be at a concentration, which is in the lower 1/2 of the calibration curve.	Recovery within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	If recovery failures are above control limits and these compounds are not detected in the associated samples, corrective action is not required. If recovery failures are below control limits, reanalyze LCS and examine results of other QC analyses. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. Document corrective action in the case narrative.
Internal Standards **(Accuracy)**	All samples and blanks(including MS/MSD)	Response -50% - +200% of internal standards from continuing calibration of the day. RT must be ± 30 sec. from associated calibration verification standard of that sequence.	Reanalyze. If still outside of the limits, report both analyses. Document corrective action in the case narrative.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Surrogate Spike **(Accuracy)**	All samples and blanks (including MS/MSD)	Recovery within laboratory control limits. The lowest acceptable control limits for recovery will be 10%.	Reanalyze any environmental or QC sample with surrogates that exceed control limits. If still outside of the limits, report both analyses. Document corrective action in the case narrative.
Matrix Spike/ **Matrix Spike Dup. (MS/MSD) Analysis** **(Accuracy/Precision)**	Collected per QAPP requirements. Samples from the investigation must be used for MS/MSD analysis. Spike must contain complete list of target analytes.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	Reanalyze if <10%. It is recommended that if reanalysis is still <10%, report both analyses and document in the case narrative. If >10% and LCS criteria are met, document in case narrative; no additional corrective action required. If LCS criteria are exceeded also, examine other QC data for source of problem; i.e., surrogate recoveries for extraction efficiency and calibration data for instrument performance issues. Reanalyze samples and associated MS/MSD and LCSs as required. Document corrective action in the case narrative
Field Duplicate Analysis (Precision)	Collected per QAPP requirements. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Target Analyte Identification **(Accuracy)**	As required for identification of target analytes	The intensities of the characteristic ions of a compound maximize in the same scan or within one scan of each other. Selection of a peak by a data system target compound search routine where the search is based on the presence of a target chromatographic peak containing ions specific for the target compound at a compound-specific retention time will be accepted as meeting this criterion. The relative retention time (RRT) of the sample component is within ± 0.06 RRT units of the RRT of the standard component. The relative intensities of the characteristic ions agree within 30% of the relative intensities of these ions in the reference spectrum. (Example: For an ion with an abundance of 50% in the reference spectrum, the corresponding abundance in a sample spectrum can range between 20% and 80%.) Structural isomers that produce very similar mass spectra should be identified as individual isomers if they have sufficiently different GC retention times Identification is hampered when sample components are not resolved chromatographically and produce mass spectra containing ions contributed by more than one analyte. When gas chromatographic peaks obviously represent more than one sample component (i.e., a broadened peak with shoulder(s) or a valley between two or more maxima), appropriate selection of analyte spectra and background spectra is important.	Not applicable
Target Analyte Identification **(Accuracy)**	As required for identification of target analytes	Examination of extracted ion current profiles of appropriate ions can aid in the selection of spectra, and in qualitative identification of compounds. When analytes co-elute (i.e., only one chromatographic peak is apparent), the identification criteria may be met, but each analyte spectrum will contain extraneous ions contributed by the co-eluting compound.	Not applicable
Target Analyte Quantitation **(Accuracy)**	Apply USEPA Method 8000C for medium level extraction technique	Moisture correction in accordance with USEPA Method 8000C will be applied to the complete set of solid samples, regardless of the percent moisture content.	Not applicable
Tentatively Identified Compound **(Accuracy)**	If required, perform for each sample and blank analysis. Non-target compounds will be reported using a Mass Spectral Library search.	Not applicable	Not applicable

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Dilutions	When target analyte concentration exceeds upper limit of calibration curve. When matrix interference is demonstrated by the lab and documented in the case narrative (highly viscous samples or a large number of nontarget peaks on the chromatogram). It is recommended that a reagent blank be analyzed if an analyte saturates the detector or if highly concentrated analytes are detected. Otherwise data impacted from carryover cannot be used. Laboratory will note in the data deliverables which analytical runs were reported.	The reagent blank will meet the method blank criteria.	Reanalyze reagent blank until method blank criteria are met. Document corrective action in the case narrative.
pH Determination	Once sample aliquot is taken from the VOC vial, the pH of water samples must be determined.	Record pH and report in the case narrative. pH logs may be requested during data validation.	Not applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Percent solids	For solid samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Deliverables as required	. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. . It is recommended that an example calculation be provided for each analysis, for each type of matrix in the data package using samples from the project. . Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. . Final spiking concentrations will be presented in summary form. . Standard tracing information will be provided. . Cooler temperatures and any observations of bubbles in sample containers will be provided in the data packages. . Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Notes:

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere

3-2. SVOCs using USEPA Methods 8000C/8270D quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be extracted and analyzed within holding time.	Extract within 7 days from collection for aqueous samples; 14 days from collection for soil samples. Analyze extracts within 40 days of extraction. For SPLP - 14 days from collection to extract generation. 7 days from extract generation to extraction. 40 days from extraction to analysis See Table 1 for sample collection information.	If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the QAO since re-sampling may be required.
MS Tuning (Accuracy)	Once every 12 hours prior to initial calibration and calibration verification. Must contain 50ng/uL of 4,4-DDT, pentachlorophenol, and benzidine.	1. DFTPP key ions and abundance criteria listed in the method or Laboratory SOP must be met for all 13 ions and analyses must be performed within 12 hours of injection of the DFTPP. 2. Part of the DFTPP peak will not be background subtracted to meet tune criteria. 3. Documentation of all DFTPP analyses and evaluations must be included in the data packages. 4. Degradation of 4,4-DDT <20%. 5. Tailing factor of ≤2 for benzidine and pentachlorophenol.	1. Tune the mass spectrometer. 2. Document any observations and corrective action in the case narrative - samples cannot be analyzed until control limit criteria have been met.

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3-2. SVOCs using USEPA Methods 8000C/8270D quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Initial Calibration Verification (ICV) (Accuracy) **Initial Calibration Verification (ICV) (Accuracy)**	Prior to sample analysis and when calibration verification criteria are not met. Initial calibration will contain all target analytes in each standard. Quantitation of analyses will utilize the initial calibration results.	1. A minimum of five concentrations bracketing expected concentration range for all compounds of interest with one standard at or less than the RL 2. One second-source standard should be analyzed immediately following the initial calibration at the mid-calibration concentration. This standard must be within 30% recovery or within laboratory control limits. 3. It is also recommended that a separate standard at the MDL level be analyzed after calibration is complete to check sensitivity. 4. RFs must meet criteria listed in Method 8270D; remaining RFs must be 0.05. 6. For compounds with %RSD >20, quantification must be performed using a separate calibration curve and the COD must be ≥ 0.99. If linear regression is used for the calibration curve, the low level initial calibration standard should be evaluated for accuracy using criteria of %D < 30% from the true value. 8. Relative retention for each target analyte in each calibration standard must agree within ± 0.06 units.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document any observations and corrective action in the case narrative - samples should not be analyzed until calibration control limit criteria are met.
Calibration Verification (Accuracy)	Every 12 hours, following DFTPP. Calibration verification will contain all target analytes in each standard at a concentration that is representative of the midpoint of the initial calibration.	1. Within method specified criteria, percent drift or percent difference (%D) ≤ 20 for target analytes. Response factor requirements as listed in initial calibration. *2.* The internal standards areas and retention times must meet the method criteria.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document any observations and corrective action in the case narrative - samples should not be analyzed until calibration control limit criteria are met.
Preparation Blank Analysis (Sensitivity)	Prepared with each extraction batch of no more than 20 analytical samples.	1. Common laboratory contaminants (phthalate) less than 5 x RL. Remaining analytes less than RL. 2. RLs and MDLS will be provided along with the preparation blank results.	1. Reanalyze blank. 2. If limits are still exceeded, clean instrument, recalibrate analytical system and re-extract and reanalyze all samples if detected for same compounds as in the blank. 3. Document any observations and corrective action in the case narrative - samples should not be analyzed until blank criteria have been met.

3-2. SVOCs using USEPA Methods 8000C/8270D quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Field Blank Analysis (Sensitivity)	Collected per QAPP requirements.	1. Common laboratory contaminants (phthalate) less than 5 x RL. Remaining analytes less than RL.	1. Investigate problem. 2. Document any observations and corrective actions in the case narrative.
Laboratory Control Sample Analysis (Accuracy)	Prepared with each extraction batch, of no more than 20 analytical samples. Prepared independently from calibration standards. Spike must contain all target compounds and should be at a concentration that is approximately in the lower 1/2 of the calibration curve.	Recovery within laboratory control limits. For compounds without established laboratory control limits, 70 to 130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. If recovery failures are above control limits and these compounds are not detected in the associated samples, no corrective action is required. 2. If recovery failures are below the control limits, reanalyze LCS and examine results of other QC analyses. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document any observations and corrective action in the case narrative.
Internal Standards (Accuracy)	All samples and blanks (including MS/MSD).	Response -50% - +200% of the internal standards from the continuing cal of the day. RT must be ± 30 sec. from calibration verification of that sequence.	Reanalyze. If the re-analysis meets criteria or demonstrates fewer excursions, report the re-analysis result. If the re-analysis does not meet criteria or demonstrates fewer excursions, report the initial analysis and include raw data for both analyses in the data package. Document corrective action in the case narrative.

3-2. SVOCs using USEPA Methods 8000C/8270D quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Surrogate Spike (Accuracy)	All samples, and blanks (including MS/MSD).	Recovery within laboratory control limits. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if more than 1 AE or 1 BN fails or if any one surrogate recovery is < 10%. 2. If re-analysis meets criteria, report re-analysis result. 3. If reanalysis recovery fails criteria but recovery is >10%: a. Report the analysis that demonstrates fewer excursions and include raw data for both analyses in the data package. 4. If re-analysis recovery is < 10%, re-extract and re-analyze sample. 5. For re-extracted sample, report the analysis that meets criteria or demonstrates fewer excursions and include raw data for both analyses in the data package. 6. Document corrective action in the case narrative.
Matrix Spike/ Matrix Spike Dup. (MS/MSD) Analysis (Accuracy/Precision)	Collected per QAPP requirements. Samples from the investigation must be used for MS/MSD analysis. Spike must contain complete list of target analytes.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. It is recommended that if reanalysis is < 10%, report both analyses and document in the case narrative. 3. If reanalysis is >10%, and LCS criteria are met, document in the case narrative. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; i.e. surrogate recoveries for extraction efficiency and calibration data for instrument performance issues; re-extract or reanalyze samples and associated MS/MSD and LCSs as required.
Field Duplicate Analysis (Precision)	Collected per QAPP requirements. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.

3-2. SVOCs using USEPA Methods 8000C/8270D quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Target Analyte Identification (Accuracy)	As required for identification of target analytes	1. The intensities of the characteristic ions of a compound maximize in the same scan or within one scan of each other. Selection of a peak by a data system target compound search routine where the search is based on the presence of a target chromatographic peak containing ions specific for the target compound at a compound-specific retention time will be accepted as meeting this criterion. 2. The relative retention time (RRT) of the sample component is within ± 0.06 RRT units of the RRT of the standard component. 3. The relative intensities of the characteristic ions agree within 30% of the relative intensities of these ions in the reference spectrum. (Example: For an ion with an abundance of 50% in the reference spectrum, the corresponding abundance in a sample spectrum can range between 20% and 80%.) 4. Structural isomers that produce very similar mass spectra should be identified as individual isomers if they have sufficiently different GC retention times. 5. Identification is hampered when sample components are not resolved chromatographically and produce mass spectra containing ions contributed by more than one analyte. When gas chromatographic peaks obviously represent more than one sample component (i.e., a broadened peak with shoulder(s) or a valley between two or more maxima), appropriate selection of analyte spectra and background spectra is important.	Not applicable
Target Analyte Identification (Accuracy)		6. Examination of extracted ion current profiles of appropriate ions can aid in the selection of spectra, and in qualitative identification of compounds. When analytes co-elute (i.e., only one chromatographic peak is apparent), the identification criteria may be met, but each analyte spectrum will contain extraneous ions contributed by the co-eluting compound.	

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3-2. SVOCs using USEPA Methods 8000C/8270D quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Screening samples	As required for samples suspected to contain high concentrations or matrix interferences	It is highly recommended that samples be screened prior to analysis. Screening data (performed prior to the initial analysis) does not need to be included in the data package. Data for samples analyzed at dilutions for initial or subsequent analyses is required to be included in the data package.	Not applicable
Cleanup	Gel permeation chromatography (GPC) should be performed for water extracts with high molecular weight contaminants.	Calibrate according to method. Criteria must be met as listed in method for calibration and blank analysis.	Clean GPC column or replace.
Tentatively Identified Compound (Accuracy)	If required, for each sample and blank analysis. Non-target compounds will be reported using a Mass Spectral Library search.	Not applicable	Not applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Percent solids	For solid samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). 3. Samples should be cleaned up during sample preparation/extraction procedure using appropriate methods when matrix interference is present. 4. Laboratory will note in the data deliverables which analytical runs were reported.	The laboratory will not dilute samples unless elevated concentrations of target analytes or matrix interference is demonstrated in the samples.	Not applicable

3-2. SVOCs using USEPA Methods 8000C/8270D quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Laboratory control limits	1. Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated biannually.	Not applicable	Not applicable
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. It is recommended that an example calculation be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. For the initial data package, standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Notes:

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding Times **(Sensitivity)**	Samples must be extracted and analyzed within holding time.	Extract within 7 days from collection for aqueous samples and 14 days from collection for solid samples. Analyze extracts within 40 days of extraction. For SPLP - 14 days from collection to extract generation. 7 days from extract generation to extraction. 40 days from extraction to analysis See Table 1 for sample collection information.	If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the QAO since re-sampling may be required.

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Initial Calibration Initial Calibration Verification (ICV) **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration. Calibrations must contain all target analytes. Quantitation of analyses will utilize the initial calibration results.	1. Minimally five concentrations for Aroclor 1016/1260 (one point calibration for the remaining Aroclors), one calibration standard must be at concentration less than or equal to the RL. 2. One second-source standard (ICV) should be analyzed immediately following the initial calibration at the mid-calibration concentration. This standard must be within 30% recovery. 3. It is recommended that if results are reported below the RL, a separate standard at the MDL level analyzed after calibration is complete to check sensitivity. 4 It is recommended that if results are reported below the RL, a second-source standard (initial validation verification) at the MDL level analyzed after calibration is complete to check sensitivity with %D <30. at the mid-calibration concentration. 4. If RSD ≤20%, the average relative response factor (internal calibration) or average calibration factor (external calibration) is used for quantitation. If RSD >20%, a linear regression calibration that does not pass through the origin with a correlation coefficient (r) ≥0.990 is used for quantitation; or a nonlinear first or second order calibration curve with a coefficient of determination (COD) of ≥0.990 is used for quantitation.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document any observations and corrective action in the case narrative - samples should not be analyzed until calibration control limit criteria are met.
Calibration **Verification (Accuracy)**	Calibration standards must contain Aroclor 1016/1260 at the mid-range concentration. Calibration verification standards must be analyzed every 20 samples and must bracket each end of the sample sequence. In the case that Aroclors are detected above the MDL concentration in the associated samples, the identified Aroclor must be analyzed within the same 48 hour period as the sample in a valid analytical sequence.	Calibration verification response %D ≤ 20%. RT for each target analyte must be within established RT windows.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document corrective action in the case narrative.

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Retention Time Windows **(Accuracy)**	Retention time windows (absolute retention time) must be established in accordance with USEPA Method 8000B/8000C or relative retention times must be used if internal standards are employed.	Compounds must be within established retention time windows or within laboratory established relative retention time criteria for the succeeding calibration standards. It is recommended that retention time windows be provided for each calibration verification. Retention times for each surrogate analyzed for samples and QC samples should be provided on a summary form.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. 3. Document corrective action in the case narrative.
Method Blank Analysis **(Sensitivity)**	Prepared with each extraction batch of no more than 20 analytical samples.	1. Less than RL. 2. RLs and MDLS will be provided along with the preparation blank results.	1. Reanalyze blank. 2. If limits are still exceeded, clean instrument, recalibrate analytical system and re-extract and reanalyze all samples if detected for same compounds as in the blank. 3. Document any observations and corrective action in the case narrative - samples should not be analyzed until blank criteria have been met.
Field Blank Analysis **(Sensitivity)**	Collected per QAPP requirements.	Less than RL	Investigate problem. Document any observation or in the case narrative.
Instrument Blank Analysis **(Sensitivity)**	Must be analyzed at the beginning of 12 hour sequence, following the initial calibration verification standard.	Less than RL	1. Reanalyze. 2. If limits are still exceeded, re-extract and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document corrective action in the case narrative.

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Laboratory Control Sample Analysis **(Accuracy)**	Prepared with each extraction batch, of no more than 20 analytical samples. Prepared independently from calibration standards LCS will be spiked with the Aroclor 1016/1260 at concentrations near the mid point of the calibration curve. Other Aroclors may be used in the LCS analysis if requested.	Recovery within laboratory control limits. For compounds without established laboratory control limits, 70 to 130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. If recovery failures are above control limits and these compounds are not detected in the associated samples, no corrective action is required. 2. If recovery failures are below the control limits, reanalyze LCS and examine results of other QC analyses. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document any observations and corrective action in the case narrative.
Matrix Spike/ **Matrix Spike Dup. (MS/MSD) Analysis** **(Accuracy/Precision)**	Field collected at a frequency listed in the QAPP MS/MSDs will be spiked with the Aroclor 1016/1260 at concentrations near the midpoint of the calibration curve. Other Aroclors maybe be used in the MS/MSD analysis if requested. Samples from the investigation must be used for MS/MSD analysis.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. It is recommended that if reanalysis is < 10%, report both analyses and document in the case narrative. 3. If reanalysis is >10%, and LCS criteria are met, document in the case narrative. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; i.e. surrogate recoveries for extraction efficiency and calibration data for instrument performance issues; re-extract or reanalyze samples and associated MS/MSD and LCSs as required.

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Surrogate Spike **(Accuracy)**	Samples, blanks, MS/MSDs, and LCSs must be spiked with method specified surrogate compounds on each column used in the analysis.	Recovery within laboratory control limits. Corrective action is not required if one of the four surrogates (for two columns) has recovery outside of control limits if the recovery is >10% and the remaining three surrogates are within control limits. Surrogate recoveries for each surrogate on each column must be provided in a summary form. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze. 2. If re-analysis meets criteria, report re-analysis result. 3. If reanalysis recovery fails criteria but recovery is >10%: a. Report the analysis that demonstrates fewer excursions and include raw data for both analyses in the data package. 4. If re-analysis recovery is < 10%, re-extract and re-analyze sample. 5. For re-extracted sample, report the analysis that meets criteria or demonstrates fewer excursions and include raw data for both analyses in the data package. 6. Document corrective action in the case narrative.
Field Dup. Analysis (Precision)	Collected per QAPP requirements. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Target Analyte Identification **(Accuracy)**	As required for identification of target analytes	Retention times must be within established retention time windows or must meet relative retention time criteria. Confirmation analysis is required. It is recommended that retention time windows must be provided for each calibration verification. USEPA CLP Form 10 Summary form, providing the percent difference and retention times for all detected analytes in samples and QC samples, will be provided.	1. Investigate problem; reanalyze calibration standards to check for retention time shift. 2. Document corrective action in the case narrative.

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Quantitation (Accuracy)	Samples, blanks, and QC data.	Confirmation analysis is required. Internal or external standard method may be used. Verify concentration is within linear calibration range of standards. Percent difference must be less than 40% (method requirement): Percent Difference - Difference between Primary column concentration and the Confirmation column divided by the Primary column times 100. If result for lower concentration is reported, Percent Difference - Difference between lower concentration and higher concentration divided by lower concentration times 100. Aroclor concentration is determined using response factor for each of the characteristic peaks and then averaging the five concentrations. Peak areas from a minimum of three Aroclor peaks unique to the target Aroclor will be used to quantitate the Aroclor concentration. Every effort must be made to meet specified RL requirements. Lab must state the technique used for quantitation of results for the samples.	1. If concentration is above linear calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document corrective action in the case narrative.
Chromatography Presentation	For each standard, sample and QC sample analysis.	Copies of chromatograms provided in the data package must be large enough to view during validation; detail of each peak involved in the Aroclor identification, including peak shape and associated baseline. In the case that matrix interference is detected or manual integration is performed, enlarged copies of those manipulations will be included in the data package for review.	1. Provide requested information.
Cleanup	Acid wash clean-up is required for PCB extracts.	Not applicable	Not applicable

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Screening samples	As required for samples suspected to contain high concentrations or matrix interferences	It is highly recommended that samples be screened prior to analysis. Screening data (performed prior to the initial analysis) does not need to be included in the data package. Data for samples analyzed at dilutions for initial or subsequent analyses is required to be included in the data package.	Not applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages. USEPA Form 8 Summary form, providing the date, time of analysis of samples and QC samples, surrogate retention times and surrogate retention time window, should be provided.	Not applicable	Not applicable
Confirmation Analysis	Dual column quantitation and qualitative confirmation is required. The information presented in CLP Form 10 will be provided in the data package for evaluation.	Not Applicable	Not Applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). 3. Samples should be cleaned up during sample preparation/extraction procedure using appropriate methods when matrix interference is present. 4. Laboratory will note in the data deliverables which analytical runs were reported.	The laboratory will not dilute samples unless elevated concentrations of target analytes or matrix interference is demonstrated in the samples.	Not applicable
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. It is recommended that an example calculation be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. For the initial data package, standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-3. PCBs using USEPA Methods 8000C/8082A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding Times **(Sensitivity)**	Samples must be extracted and analyzed within holding time.	Extract within 7 days from collection for aqueous samples and 14 days from collection for solid samples. Analyze extracts within 40 days of extraction. For SPLP - 14 days from collection to extract generation. 7 days from extract generation to extraction. 40 days from extraction to analysis See Table 1 for sample collection information.	1. If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the Project Manager immediately since re-sampling may be required. 2. Document any observations and corrective action in the case narrative.

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Initial Calibration Initial Calibration Verification (ICV) **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration. Calibrations must contain all target analytes. Quantitation of analyses will utilize the initial calibration results.	1. Minimally five concentrations for each single component analyte. One calibration standard must be at concentration less than or equal to the RL. 2. It is recommended that one second-source ICV standard be analyzed immediately following the initial calibration at the mid-calibration concentration. This standard must be within 30% recovery. 3. It is recommended that if results are reported below the RL, a separate standard at the MDL level analyzed after calibration is complete to check sensitivity. 4. Toxaphene requires a single point calibration. If detected in samples, the samples are re-analyzed behind a five-point calibration for each detected analyte. 5. If RSD ≤20% the average relative response factor (internal calibration) or average calibration factor (external calibration) is used for quantitation. If RSD >20% a linear regression calibration that does not pass through the origin with a correlation coefficient (r) ≥0.990 is used for quantitation; or a nonlinear first or second order calibration curve with a coefficient of determination (COD) of ≥0.990 is used for quantitation. 6. 8081B- Degradation of 4,4'-DDT/ endrin to 4,4'-DDE, 4,4'-DDD/ endrin ketone, endrin breakdown must be less than 15%.	1. Identify and correct problem. 2. Recalibrate instrument; samples should not be analyzed until initial calibration criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Calibration Verification (Accuracy)	Single component analyte calibration standards must contain each target analyte at mid-range concentration. Calibration verification standards must be analyzed at the beginning of 12 hour sequence and every 20 samples (every 10 samples is recommended), and at the close of the sequence. Pesticides- A standard containing 4,4-DDT and endrin must be analyzed at the beginning of each 12 hour sequence.	Calibration verification response (% difference) or concentration (% drift) ≤ 20%. Pesticides- Degradation for 4,4-DDT and endrin must be <15%. Method 8081B- Degradation of 4,4'-DDT/ endrin to 4,4'-DDE, 4,4'-DDD/ endrin ketone, endrin breakdown must be less than 15%.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document any observations and corrective action in the case narrative.
Retention Time Windows (Accuracy)	Retention time windows (absolute retention time) must be established in accordance with USEPA Method 8000B/8000C or relative retention times must be used if internal standards are employed.	Compounds must be within established retention time windows or within laboratory established relative retention time criteria for the succeeding calibration standards. It is recommended that retention time windows be provided for each calibration verification. Retention times for each surrogate analyzed for samples and QC samples should be provided on a summary form.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. 3. Document any observations and corrective action in the case narrative.
Method Blank Analysis (Sensitivity)	Method Blank : 1 per 20 samples of similar matrix extracted at the same time and undergo same cleanup procedures as samples or a separate cleanup blank must be prepared and analyzed. Instrument blank: Must be analyzed at the beginning of 12 hour sequence, following the initial calibration verification standard.	Target analyte concentrations must be less than RL.	1. Reanalyze. 2. If limits are still exceeded, re-extract and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
	Collected per QAPP requirements.		
Field Blank Analysis **(Sensitivity)**		1. Common laboratory contaminants (phthalate) less than 5 x RL. Remaining analytes less than RL. 2. RLs and MDLS will be provided along with the blank results.	1. Investigate problem. 2. Document any observations and corrective actions in the case narrative.
Laboratory Control Sample **(Accuracy)**	Prepared with each extraction batch, of no more than 20 analytical samples. Prepared independently from calibration standards. LCSs must be spiked with each of the single component analyte at concentrations near the mid point of the calibration curve.	Percent recoveries must be within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. If recovery failures are above control limits and these compounds are not detected in the associated samples, no corrective action is required. 2. If recovery failures are below the control limits, reanalyze LCS and examine results of other QC analyses. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document any observations and corrective action in the case narrative.
Matrix Spike/ **Matrix Spike Dup. (MS/MSD) Analysis** **(Accuracy/Precision)**	Collected per QAPP requirements. MS/MSDs must be spiked with each of the single component analyte at concentrations near the mid point of the calibration curve. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. It is recommended that, if reanalysis is < 10%, report both analyses and document in the case narrative. 3. If reanalysis is >10%, and LCS criteria are met, document in the case narrative. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; i.e. surrogate recoveries for extraction efficiency and calibration data for instrument performance issues; re-extract or reanalyze samples and associated MS/MSD and LCSs as required.

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Surrogate Spike (Accuracy)	Samples, blanks, MS/MSDs, and LCSs must be spiked with method specified surrogate compounds on each column used in the analysis.	Recovery within laboratory control limits. Corrective action is not required if one of the four surrogates (for two columns) has recovery outside of control limits if the recovery is >10% and the remaining three surrogates are within control limits. Surrogate recoveries for each surrogate on each column must be provided in a summary form. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze. 2. If re-analysis meets criteria, report re-analysis result. 3. If reanalysis recovery fails criteria but recovery is >10%: a. Report the analysis that demonstrates fewer excursions and include raw data for both analyses in the data package. 4. If re-analysis recovery is < 10%, re-extract and re-analyze sample. 5. For re-extracted sample, report the analysis that meets criteria or demonstrates fewer excursions and include raw data for both analyses in the data package. 6. Document corrective action in the case narrative.
Field Duplicate Analysis (Precision)	Collected per QAPP requirements. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Target Analyte Identification **(Accuracy)**	As required for identification of target analytes	Retention times must be within established retention time windows or must meet relative retention time criteria. Dual column confirmation (quantitative and qualitative) analysis is required. Retention time windows must be provided for each calibration verification. USEPA CLP Form 10 Summary form, providing the percent difference and retention times for all detected analytes in samples and QC samples, will be provided. Percent difference must be less than 40 %D. %D calculation: Difference between Higher concentration of sample and Lower concentration of sample divided by the Lower concentration of sample times 100.	1. Investigate problem; reanalyze calibration standards to check for retention time shift. 2. Document any observations and corrective action in the case narrative.
Screening samples	As required for samples suspected to contain high concentrations or matrix interferences	It is highly recommended that samples be screened prior to analysis. Screening data (performed prior to the initial analysis) does not need to be included in the data package. Data for samples analyzed at dilutions for initial or subsequent analyses is required to be included in the data package.	Not applicable

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Quantitation	Samples, blanks, and QC data.	Confirmation analysis is required. Internal or external standard method may be used. Verify concentration is within linear calibration range of standards. Every effort must be made to meet specified RL requirements. Lab must state the technique used for quantitation of results for the samples.	1. If concentration is above linear calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document any observations and corrective action in the case narrative.
Chromatography Presentation	For each standard, sample and QC sample analysis.	Copies of chromatograms provided in the data package must be large enough to view during validation. In the case that matrix interference is detected or manual integration is performed, enlarged copies of those manipulations will be included in the data package for review.	1. Provide requested information.
Cleanup (Where applicable)	GPC must be performed for all pesticide solids or water extracts with high molecular weight contaminants. Sulfur cleanup must be performed for all sample extracts contaminated with sulfur. Florisil cartridge cleanups should be performed for all pesticide extracts.	Calibrate according to method. Criteria must be met as listed in method.	For GPC, perform column maintenance, recalibrate. For florisil, obtain a new lot of cartridges.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages. USEPA Form 8 Summary form, providing the date, time of analysis of samples and QC samples, surrogate retention times and surrogate retention time window, should be provided.	Not applicable	Not applicable

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Confirmation Analysis	Dual column quantitation and qualitative confirmation will be performed. The information presented in CLP Form 10 will be provided in the data package for evaluation	Not Applicable	Not Applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). . 3. Samples should be cleaned up during sample preparation/extraction procedure using appropriate methods when matrix interference is present. 4. Laboratory will note in the data deliverables which analytical runs were reported.	1. The reagent blank will meet the method blank criteria.	1. Reanalyze reagent blank until method blank criteria are met.

Table 3-4. Pesticides using USEPA Methods 8000C/8081B quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. It is recommended that an example calculation be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding Times **(Sensitivity)**	Samples must be extracted and analyzed within holding time.	Extract within 7 days from collection for aqueous samples and 14 days from collection for solid samples. Analyze extracts within 40 days of extraction. For SPLP - 14 days from collection to extract generation. 7 days from extract generation to extraction. 40 days from extraction to analysis See Table 1 for sample collection information.	1. If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the Project Manager immediately since re-sampling may be required. 2. Document any observations and corrective action in the case narrative.

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Initial Calibration Initial Calibration Verification (ICV) **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration. Calibrations must contain all target analytes. Quantitation of analyses will utilize the initial calibration results.	1. Minimally five concentrations for each single component analyte. One calibration standard must be at concentration less than or equal to the RL. 2. It is recommended that one second-source ICV standard be analyzed immediately following the initial calibration at the mid-calibration concentration. This standard must be within 30% recovery. 3. It is recommended that if results are reported below the RL, a separate standard at the MDL level analyzed after calibration is complete to check sensitivity. 4. Toxaphene requires a single point calibration. If detected in samples, the samples are re-analyzed behind a five-point calibration for each detected analyte. 5. If RSD ≤20% the average relative response factor (internal calibration) or average calibration factor (external calibration) is used for quantitation. If RSD >20% a linear regression calibration that does not pass through the origin with a correlation coefficient (r) ≥0.990 is used for quantitation; or a nonlinear first or second order calibration curve with a coefficient of determination (COD) of ≥0.990 is used for quantitation. 6. 8081B- Degradation of 4,4'-DDT/ endrin to 4,4'-DDE, 4,4'-DDD/ endrin ketone, endrin breakdown must be less than 15%.	1. Identify and correct problem. 2. Recalibrate instrument; samples should not be analyzed until initial calibration criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Calibration **Verification (Accuracy)**	Single component analyte calibration standards must contain each target analyte at mid-range concentration. Calibration verification standards must be analyzed at the beginning of 12 hour sequence and every 20 samples (every 10 samples is recommended), and at the close of the sequence. Pesticides- A standard containing 4,4-DDT and endrin must be analyzed at the beginning of each 12 hour sequence.	Calibration verification response (% difference) or concentration (% drift) ≤ 20%. Pesticides- Degradation for 4,4-DDT and endrin must be <15%. Method 8081B- Degradation of 4,4'-DDT/ endrin to 4,4'-DDE, 4,4'-DDD/ endrin ketone, endrin breakdown must be less than 15%.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document any observations and corrective action in the case narrative.
Retention Time Windows **(Accuracy)**	Retention time windows (absolute retention time) must be established in accordance with USEPA Method 8000B/8000C or relative retention times must be used if internal standards are employed.	Compounds must be within established retention time windows or within laboratory established relative retention time criteria for the succeeding calibration standards. It is recommended that retention time windows be provided for each calibration verification. Retention times for each surrogate analyzed for samples and QC samples should also be provided on a summary form.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. 3. Document any observations and corrective action in the case narrative.
Method Blank Analysis **(Sensitivity)**	Method Blank : 1 per 20 samples of similar matrix extracted at the same time and undergo same cleanup procedures as samples or a separate cleanup blank must be prepared and analyzed. Instrument blank: Must be analyzed at the beginning of 12 hour sequence, following the initial calibration verification standard.	Target analyte concentrations must be less than RL.	1. Reanalyze. 2. If limits are still exceeded, re-extract and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
	Collected per QAPP requirements.		
Field Blank Analysis **(Sensitivity)**		1. Common laboratory contaminants (phthalate) less than 5 x RL. Remaining analytes less than RL. 2. RLs and MDLS will be provided along with the blank results.	1. Investigate problem. 2. Document any observations and corrective actions in the case narrative.
Laboratory Control Sample **(Accuracy)**	Prepared with each extraction batch, of no more than 20 analytical samples. Prepared independently from calibration standards. LCSs must be spiked with each of the single component analyte at concentrations near the low end of the calibration curve.	Percent recoveries must be within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. If recovery failures are above control limits and these compounds are not detected in the associated samples, no corrective action is required. 2. If recovery failures are below the control limits, reanalyze LCS and examine results of other QC analyses. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document any observations and corrective action in the case narrative.
Matrix Spike/ **Matrix Spike Dup. (MS/MSD) Analysis** **(Accuracy/Precision)**	Collected per QAPP requirements. MS/MSDs must be spiked with each of the single component analyte at concentrations near the low end of the calibration curve. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. If reanalysis is < 10%, it is recommended that the lab report both analyses and document in the case narrative. 3. If reanalysis is >10%, and LCS criteria are met, document in the case narrative. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; i.e. surrogate recoveries for extraction efficiency and calibration data for instrument performance issues; re-extract or reanalyze samples and associated MS/MSD and LCSs as required.

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Surrogate Spike **(Accuracy)**	Samples, blanks, MS/MSDs, and LCSs must be spiked with method specified surrogate compounds on each column used in the analysis.	Recovery within laboratory control limits. Corrective action is not required if one of the four surrogates (for two columns) has recovery outside of control limits if the recovery is >10% and the remaining three surrogates are within control limits. Surrogate recoveries for each surrogate on each column must be provided in a summary form. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze. 2. If re-analysis meets criteria, report re-analysis result. 3. If reanalysis recovery fails criteria but recovery is >10%: a. Report the analysis that demonstrates fewer excursions and include raw data for both analyses in the data package. 4. If re-analysis recovery is < 10%, re-extract and re-analyze sample. 5. For re-extracted sample, report the analysis that meets criteria or demonstrates fewer excursions and include raw data for both analyses in the data package. 6. Document corrective action in the case narrative.
Internal Standards **(Accuracy) Where applicable**	All samples and blanks (including MS/MSD).	Response -50% - +200% of the internal standards from the continuing cal of the day. RT must be ± 30 sec. from calibration verification of that sequence.	Reanalyze. If the re-analysis meets criteria or demonstrates fewer excursions, report the re-analysis result. If the re-analysis does not meet criteria or demonstrates fewer excursions, report the initial analysis and include raw data for both analyses in the data package. Document corrective action in the case narrative.
Field Duplicate Analysis (Precision)	Collected per QAPP requirements. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Target Analyte Identification **(Accuracy)**	As required for identification of target analytes	Retention times must be within established retention time windows or must meet relative retention time criteria. Dual column confirmation (quantitative and qualitative) analysis is required. Retention time windows must be provided for each calibration verification. USEPA CLP Form 10 Summary form, providing the percent difference and retention times for all detected analytes in samples and QC samples, will be provided. Percent difference must be less than 25 %D. %D calculation: Difference between Higher concentration of sample and Lower concentration of sample divided by the Lower concentration of sample times 100.	1. Investigate problem; reanalyze calibration standards to check for retention time shift. 2. Document any observations and corrective action in the case narrative.
Screening samples	As required for samples suspected to contain high concentrations or matrix interferences	It is highly recommended that samples be screened prior to analysis. Screening data (performed prior to the initial analysis) does not need to be included in the data package. Data for samples analyzed at dilutions for initial or subsequent analyses is required to be included in the data package.	Not applicable
Quantitation	Samples, blanks, and QC data.	Confirmation analysis is required. Internal or external standard method may be used. Verify concentration is within linear calibration range of standards. Every effort must be made to meet specified RL requirements. Lab must state the technique used for quantitation of results for the samples.	1. If concentration is above linear calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document any observations and corrective action in the case narrative.

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Chromatography Presentation	For each standard, sample and QC sample analysis.	Copies of chromatograms provided in the data package must be large enough to view during validation. In the case that matrix interference is detected or manual integration is performed, enlarged copies of those manipulations will be included in the data package for review.	1. Provide requested information.
Cleanup	GPC must be performed for all pesticide solids or water extracts with high molecular weight contaminants. Sulfur cleanup must be performed for all sample extracts contaminated with sulfur. Florisil cartridge cleanups should be performed for all pesticide extracts.	Calibrate according to method. Criteria must be met as listed in method.	For GPC, perform column maintenance, recalibrate. For florisil, obtain a new lot of cartridges.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages. USEPA Form 8 Summary form, providing the date, time of analysis of samples and QC samples, surrogate retention times and surrogate retention time window, should be provided.	Not applicable	Not applicable
Confirmation Analysis	Dual column quantitation and qualitative confirmation will be performed. The information presented in CLP Form 10 will be provided in the data package for evaluation	Not Applicable	Not Applicable

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). . 3. Samples should be cleaned up during sample preparation/extraction procedure using appropriate methods when matrix interference is present. 4. Laboratory will note in the data deliverables which analytical runs were reported.	1. The reagent blank will meet the method blank criteria.	1. Reanalyze reagent blank until method blank criteria are met.

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Deliverables	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. It is recommended that an example calculation be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-4A. Herbicides using USEPA Methods 8000C/8151A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Laboratory Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For soil samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be extracted and analyzed within holding time.	Solids: Extract within 14 days from collection. Analyze extracts within 40 days of extraction.	If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the QAO since re-sampling may be required.

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Initial Calibration Initial Calibration Verification (ICV) **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration. 24 hour clock or a 20 sample analytical batch. Sequence begins with initial calibration standard or continuing calibration standard and ends with a closing calibration standard. FID External Standard Calibration for Quantitation of EPH. Calibrate with an initial five-point calibration with concentrations for each individual component and each surrogate for each fraction of 20 ng/uL, 100 ng/ul, 250ng/uL, 500 ng/uL and 1000 ng/uL and 100 ng/uL. The surrogate OTP and the fractionating surrogates are included in the Aromatic Hydrocarbon Standard. The surrogate COD is included in the Aliphatic Hydrocarbon Standard. A calibration factor (CF) must be established for each individual component. A separate calibration factor (CF) must be established for each carbon range of interest. Calculate CFs for the C9-C12, C12-C16, C16-C-21 and C21-C40 Aliphatic Hydrocarbon carbon ranges from the appropriate aliphatic analysis chromatogram. Calculate CFs for C10-C12, C12-C16, C16-C-21 and C21-C36 Aromatic Hydrocarbon carbon ranges from the appropriate aromatic analysis chromatogram. The areas for the surrogates must be subtracted out from the area summation of the range in which they elute. Areas associated with naphthalene and 2-methylnaphthalene in the aliphatic fraction must be subtracted out from the appropriate carbon range. Quantitation of analyses will utilize the initial calibration results.	The percent relative standard deviation (%RSD) of the calibration factors for each carbon range for the compounds and surrogates must be ≤ 25% over the working calibration range. The response ratio of C30/C20 shall be ≥ 0.8. If less than 0.8, the column should be repositioned until the mass discrimination is minimized.	1. Identify and correct problem. 2. Recalibrate instrument; samples should not be analyzed until initial calibration criteria are met. 3. Document corrective action in the case narrative.

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Calibration **Check Standard / Verification** **(Accuracy)**	Calibration check/verification standards must be analyzed each working day, after every 20 samples or every 24 hours (whichever is more frequent) and at the end of the analytical sequence by the injection of the mid-level calibration standards (both aliphatic and aromatic). Surrogate Standards responses and retention times in the calibration check standard must be evaluated during or immediately after data acquisition.	Calibration check/verification response for each compound, for each carbon range for each fraction- % Difference (%D) for any carbon range is ≤ 25% (≤ 30% for any single compound in a range). The area(s) for the SS changes must not change by more than ±50% from the last daily calibration standard check. The retention time of any surrogate at the beginning of the analytical shift must not fall outside of the ± 3 SD window (minimum ±0.10 min. The response ratio of C30/C20 shall be ≥ 0.8. If less than 0.8, the column should be repositioned until the mass discrimination is minimized.	1. Samples must be bracketed by compliant calibration standards. 2. Document corrective action in the case narrative.
Retention Time Windows **(Accuracy)**	Retention time windows must be established in accordance with the method. Using Aromatic Hydrocarbon and Aliphatic Hydrocarbon standard mixtures make serial injections over a 72 hr period at a minimum. Calculate the mean and the standard deviation of the three retention times (absolute retention time or relative retention time) for each individual compound. Use plus or minus three times the standard deviation of the mean retention times for each compound to define the retention time window. Use a default value of ± 0.1 minutes, if the standard deviation is close to zero.	Sample results must be within established retention time windows and the succeeding calibration standards. It is recommended that retention time windows be provided for each calibration verification. Retention times for each surrogate analyzed for samples and QC samples should also be provided on a summary form.	. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. 3. Document corrective action in the case narrative.

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Blank Analysis	Method Blank : Not greater than 5X MDL. If method blank concentration is greater than 5X MDL and the sample concentrations present in the samples are less than 10X the blank level, the affected samples should be re-extracted and re-analyzed. Reagent/Instrument blank: Each day before calibration and after the calibration and after high concentration samples. Peaks will not be detected above the RL within the retention time window of any carbon range of interest.	Target analyte concentrations will not be detected above the RL concentrations as appropriate and within the retention time window of any carbon range of interest.	1. Re-extract and re-analyze all associated samples. 2. Samples must not be analyzed until method and instrument blank criteria are met. 3. Document corrective action in the case narrative.
Laboratory Control Sample (LCS) Analysis/ Laboratory Control Sample Duplicate (LCSD) **(Accuracy and Precision)**	1 per 20 samples for each batch of samples extracted at the same times. Spiking Solution will contain the following: Aliphatic Hydrocarbons: n-Nonane (C9), n-Decane (C10), n-Dodecane (C12), n-Tetradecane (C14), n-Hexadecane (C16), n-Octadecane (C18), n-Eicosane (C20), n-Heneicosane (C21), n-Docosane (C22), n-Tetracosane (C24), n-Hexacosane (C26), n-Octacosane (C28), n-Triacontane (C30), n-Dotriacontane (C32), n-Tetratriacontane (C34), n-Hexatriacontane (C36), n-Octatriacontane (C38), n-Tetracontane (C40) Aromatic Hydrocarbons: Acenaphthene (C15.5), Acenaphthylene (C15.06), Anthracene (C19.43), Benzo[a]anthracene (C26.37), Benzo[a]pyrene (C31.34), Benzo[b]fluoranthene (C30.14), Benzo[g,h,i]perylene (C34.01), Benzo[k]fluoranthene (C30.14), Chrysene (C27.41), Dibenz[a,h]anthracene (C30.36), Fluoranthene (C21.85), Fluorene (C16.55), Indeno[1,2,3-cd]pyrene (C35.01), 2-Methylnaphthalene (C12.89), Naphthalene (C11.7), Phenanthrene (C19.36), Pyrene (C20.8), 1,2,3-Trimethylbenzene (C10.1)	LCS recoveries must be between 40% - 140%. n-Nonane must be greater than 25%. Each of the carbon range is also reported. LCSD recoveries must be between 40% - 140%. n-Nonane must be greater than 25%. Each of the carbon range is also reported. Precision is determined from the Relative Percent Difference (RPD) of the concentrations LCS/LCSD pair. RPDs for the aliphatic and aromatic carbon range concentrations (the sum of the individual compounds' concentrations within a carbon range) must be ≤25%. Concentration of naphthalene or 2-methyl-naphthalene must not exceed 5% of the total concentration for naphthalene or 2-methylnaphthalene in the LCS or LCS duplicate.	1, Re-extract and re-analyze all associated samples. 2. If either the concentration of naphthalene or 2-methylnaphthalene in the aliphatic fraction exceeds 5% of the total concentration for naphthalene or 2-methylnaphthalene in the LCS or LCS duplicate, then fractionation must be repeated on all stored affected sample extracts. 3. Samples must not be analyzed until LCS criteria are met. 4. Document corrective action in the case narrative.

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Matrix Spike/ Matrix Spike Dup. (MS/MSD) Analysis (Accuracy/Precision)	Collected per QAPP requirements. Spiking Solution will contain the following: Aliphatic Hydrocarbons: n-Nonane (C9), n-Decane (C10), n-Dodecane (C12), n-Tetradecane (C14), n-Hexadecane (C16), n-Octadecane (C18), n-Eicosane (C20), n-Heneicosane (C21), n-Docosane (C22), n-Tetracosane (C24), n-Hexacosane (C26), n-Octacosane (C28), n-Triacontane (C30), n-Dotriacontane (C32), n-Tetratriacontane (C34), n-Hexatriacontane (C36), n-Octatriacontane (C38), n-Tetracontane (C40) Aromatic Hydrocarbons: Acenaphthene (C15.5), Acenaphthylene (C15.06), Anthracene (C19.43), Benzo[a]anthracene (C26.37), Benzo[a]pyrene (C31.34), Benzo[b]fluoranthene (C30.14), Benzo[g,h,i]perylene (C34.01), Benzo[k]fluoranthene (C30.14), Chrysene (C27.41), Dibenz[a,h]anthracene (C30.36), Fluoranthene (C21.85), Fluorene (C16.55), Indeno[1,2,3-cd]pyrene (C35.01), 2-Methylnaphthalene (C12.89), Naphthalene (C11.7), Phenanthrene (C19.36), Pyrene (C20.8), 1,2,3-Trimethylbenzene (C10.1) Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Laboratory should establish acceptance criteria for %R. Recoveries of 40-140% should be achieved for each compound. The lowest acceptable control limits for recovery will be 10%. Laboratory should establish acceptance criteria for RPD. RPD of $\leq$50 should be achieved for each compound.	1. If LCS criteria are met, document in case narrative; no additional corrective action required. 2. If LCS criteria are exceeded also, examine other QC data for source of problem; *i.e.,* surrogate recoveries for extraction efficiency and calibration data for instrument performance issues. 3. Re-extract or reanalyze samples and associated MS/MSD and LCSs as required. 4. Document corrective action in the case narrative.
Duplicate Analysis (MS/MSD precision analysis)	Collected per QAPP requirements. Samples from the investigation must be used.	RPD within laboratory control limits. For compounds without established laboratory control limits, 5RPD will be used.	1. Document corrective action in the case narrative.

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Surrogates and Fractionating Surrogates **(Accuracy)**	Samples, blanks, MS/MSDs, and LCS/LCSDs must be spiked with surrogate compounds. Spike all extracts with fractionating surrogate compounds prior to the extract being separated into aliphatic and aromatic fractions.	The recovery must be within 40% - 140%.	1. Reanalyze. 2. If COD recovery is below the acceptance range and is observed in the aromatic fraction and/or OTP recovery is below the acceptance range and is observed in the aliphatic fraction, then re-fractionate the extract with the remaining 1 mL aliquot of extract and analyze the new extracts. 3. If the surrogate could not be measured because the sample was diluted prior to analysis, then qualify the surrogate recovery. Qualify the out of range surrogate on the data table. No additional corrective action is required. 4. Document corrective action in the case narrative.
Target Analyte Identification **(Accuracy)**	As required for identification of target analytes	Retention times must be within established retention time windows or must meet relative retention time criteria. It is recommended that retention time windows be provided for each calibration verification.	1. Investigate problem; reanalyze calibration standards to check for retention time shift. 2. Document corrective action in the case narrative.

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Quantitation	Samples, blanks, and QC data.	External standard method. Verify concentration is within linear calibration range of standards. To calculate the concentration of carbon ranges in the sample, the area response attributed to the petroleum must first be determined. This area includes all of the resolved peaks and the unresolved "envelope." This total area must be adjusted to remove area response of the solvent, surrogates and the GC column bleed. The area of the surrogates must be subtracted from their corresponding carbon range summed area. Areas for naphthalene and/or 2-methylnaphthalene in an aliphatic carbon range are subtracted from the appropriate aliphatic carbon range summed area prior to calculating the calibration factors. Every effort must be made to meet specified RL requirements. Lab must state the technique used for quantitation of results for the samples.	1. If concentration is above linear calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document corrective action in the case narrative.
Field Blank Analysis **(Sensitivity)**	Collected per QAPP requirements.	Compounds concentrations must be <RL.	1. Investigate problem; reanalyze to verify laboratory cross contamination is not a factor. 2. Document in the case narrative.
Field Dup. Analysis (Precision)	Collected per QAPP requirements. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Chromatography Presentation	For each standard, sample and QC sample analysis.	Copies of chromatograms provided in the data package must be large enough to view during validation; detail of each peak involved in the Aroclor identification, including peak shape and associated baseline. In the case that matrix interference is detected or manual integration is performed, enlarged copies of those manipulations will be included in the data package for review.	1. Provide requested information.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages. USEPA Form 8 Summary form, or an equivalent form, providing the date, time of analysis of samples and QC samples, surrogate retention times and surrogate retention time window, should be provided.	Not applicable	Not applicable
Laboratory control limits	1. Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative. 3. Laboratory will note in the data deliverables which analytical runs were reported.	1. The reagent blank will meet the method blank criteria.	1. Reanalyze reagent blank until method blank criteria are met.
Deliverables	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. It is recommended that an example calculation be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-4B. EPH using NJDEP Method EPH 08/10 Rev 3 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action

Notes:

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be extracted and analyzed within holding time.	Extract within 30 days of collection for extraction; 45 days from extraction to analysis for aqueous and solid samples. Cleanup using acid-wash, silica/alumina silica gel and carbon as described in Method 8290A Section 11.5.	If holding times are exceeded for initial or any reanalyses required due to QC excursions, notify QAO since re-sampling may be required.
MS Performance (Accuracy)	Operating in EI/SIM mode with a total cycle time of one second or less.. At the beginning and end of the 12 hour sequence. Prior to calibration, blank, sample and QC sample analysis.	Tune instrument using PFK in accordance with Section 11.6.2 and Table 6 in Method 8290A. Minimally, the mass spectrometer must have a resolving power of at least 10,000 (10% valley) at 304.9824 or any other signal close to m/z 303.9016 (TCDF). Verify PFK the exact mass of m/z 380.9760 is within 5 ppm of the required value. The resolving power values and peak profiles will be provided n the data package for each mass measured for evaluation as described in Method 8290A. Note that the selection of the low- and high-mass ions must be such that they provide the largest voltage jump performed in any of the five mass descriptors (Table 6). Document instrument resolving power by recording the peak profile of the high-mass reference signal (m/z 380.9760) obtained during the above peak matching experiment by using the low mass PFK ion at m/z 304.9824 as a reference. The minimum resolving power of 10,000 must be demonstrated on the high-mass ion while it is transmitted at a lower accelerating voltage than the low-mass reference ion, which is transmitted at full sensitivity. The format of the peak profile representation (Figure 5 Method 8290A) must allow manual determination of the resolution, i.e., the horizontal axis must be a calibrated mass scale (amu or ppm per division). The result of the peak width measurement (performed at 5 percent of the maximum, which corresponds to the 10 percent valley definition) must appear on the hard copy and cannot exceed 100 ppm at m/z 380.9760 (or 0.038 amu at that particular mass).	1. Identify and correct problem. 2. Re-tune the mass spectrometer; samples must not be analyzed until tuning criteria are met. 3. Document any observation or corrective action in the case narrative

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
		Must contain the first and last for each homologous series tetra- through heptachlorinated congeners. It also contains other TCDD isomers and $^{13}C_{12}$-2,3,7,8-TCDD to document resolution (refer to Table 7 of Method 8290A).	
		Method 8290A Section 9.3.1 must be met.	
		Chromatographic resolution between 2378-TCDD and the peaks representing any other unlabeled TCDD isomers must be resolved with a valley $\leq$25%.	
GC Column Performance (Window defining mixture)	At the beginning of 12 hour sequence, prior to initial calibration or continuing calibration standard.	GC column performance standard is also used to determine the retention times for quantitative determination of the non -2378-substituted congeners.	1. Identify and correct problems
		Data presentation - All congener peaks will be labeled and identified on the Selected Ion Current Profiles (SICPs) along with retention times (RTs). Additionally, first eluters must be labeled with the letter F, and the last eluters with the letter L.	2. Reanalyze; samples must not be analyzed until GC column performance check criteria are established. 3. Document any observation or corrective action in the case narrative
		Switching of SIM ions from one homologous series to the next higher must be indicated in the SICP. Allowable tolerance on the daily verification with the GC performance check should be better than 10 sec for the absolute retention times of all the components of the mixture. The switching time between the last TCDD congener (i.e., 1,2,8,9-TCDD) and the first PeCDF congener (i.e., 1,3,4,6,8-PeCDF), should be noted as these two Target analytes elute within 15 sec of each other.	

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Selective Ion Monitoring (SIM) Descriptors and Lock Masses	Acquire SIM data for all ions listed in the five descriptors. Monitor Lock Masses. Data presentation - **SICPS must be clearly labeled with congener names and RTs.**	The ions listed in Method 8290A, Table 6 must be monitored. The tetra and penta chlorinated dioxins and furans can be combined. All congener peaks will be labeled and identified on the SICPs along with RTs. Note that with the exception of the last descriptor (OCDD/OCDF), all descriptors contain 10 ions. The selection (Table 6) of the molecular ions M and M+2 for 13C-HxCDF and 13C-HpCDF rather than M+2 and M+4 (for consistency) was made to eliminate, even under high-resolution mass spectrometric conditions, interferences occurring in these two ion channels for samples containing high levels of native HxCDDs and HpCDDs. It is important to maintain the same set of ions for both calibration and sample extract analyses. To monitor long term mass stability, a lock-mass ion from PFK is selected based on the masses of the ions monitored within each descriptor. Table 6 offers some suggestions; an acceptable lock-mass ion at any mass between the lightest and heaviest ion in each descriptor can be used to monitor and correct mass drifts. The level of the reference compound (PFK) metered into the ion chamber during HRGC/HRMS analyses should be adjusted so that the amplitude of the most intense selected lock-mass ion signal (regardless of the descriptor number) does not exceed 10 percent of the full scale deflection for a given set of detector parameters. Under those conditions, sensitivity changes that might occur during the analysis can be more effectively monitored.	1. Identify and correct problems. 2. Document any observation or corrective action in the case narrative

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
	Before any samples are analyzed, when criteria are exceeded for continuing calibration, and if calibration, sample fortification (internal standard) or recovery standard solutions are replaced with a different lot.	Minimally five concentrations, using the calibration range specified in Table 5 of EPA Method 8290A. The ratio of integrated ion current for the ions appearing in Table 8 (homologous series quantitation ions) must be within the indicated control limits (set for each homologous series) for all unlabeled calibration standards in Table 5.	
Initial Calibration **Accuracy)**	Calibration standard consists of 17 unlabeled target Target analytes spiked with the 5 labeled internals, and 2 labeled recovery standards. Additionally, 7 labeled PCDDs/PCDFs may be used by the laboratory as surrogate and alternative standards. Apply standard concentrations listed in 8290A Table 5 and list concentrations in the case narrative.	The ratio of integrated ion current for the ions belonging to the carbon-labeled internal and recovery standards specified in EPA method 8290A Table 8 must be met. For each SICP and for each GC signal corresponding to the elution of a target analyte and of its labeled standards, the signal-to-noise ratio (S/N) must be better than or equal to 10. Measurement of S/N is required for any GC peak that has an apparent S/N of less than 5:1. The result of the calculation must appear on the SICP above the GC peak in question. The calibration solutions do not contain 13C12-OCDF as an internal standard. RSD $\leq$20% for the 17 unlabeled PCDDs/PCDFs relative to the internal standard and $\leq$20% for the nine labeled internal standards relative to the recovery standards.	1. Identify and correct problem. 2. Recalibrate instrument; samples must not be analyzed until initial calibration criteria are met. 3. Document any observation or corrective action in the case narrative
	All congener peaks will be labeled and identified on the SICPs along with RTs.	If the criterion is met, the mean RFs will be used for all calculations until the routine calibration criteria (Sec. 11.7.4) are no longer met. At such time, new values will be calculated from a new set of injections of the calibration solutions.	

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
		Relative ion abundance criteria specified in EPA method 8290A Table 8 must be met.	
Continuing Calibration Verification (CCV)	high-resolution concentration calibration solution No. 3 (HRCC-3; see Table 5 Method 8290A)	The RFs must be within 20% of the mean values from the IC for the 17 unlabeled standards and must be within 30% for the nine labeled standards from the IC.	1. Reanalyze.
(Accuracy)	Analyze at beginning of the 12-hour sequence following the GC performance check standard and at the end of the 12-hour sequence.	If the continuing calibration check performed at the end of a 12 hr period fails by no more than 25 percent RPD for the 17 unlabeled Target analytes and 35 percent RPD for the 9 labeled reference Target analytes, use the mean to the two "daily" RF values from the two daily routine calibration runs to compute the analyte concentrations, instead of the R&F & values obtained from the initial calibration. A new initial calibration (new R&F &s) is required immediately (within 2 hr) following the analysis of the samples, whenever the RPD from the end-of-shift routine calibration exceeds 25 percent or 35 percent, respectively. Failure to perform a new initial calibration immediately following the analysis of the samples will automatically require reanalysis of all positive sample extracts analyzed before the failed end-of-shift continuing calibration check.	2. If criteria are still not met, identify and correct problem, recalibrate; samples cannot be analyzed until continuing calibration criteria are met. 3. Document any observation or corrective action in the case narrative
Internal Standards	Samples, blanks, MS/MSDs, LCSs are spiked with labeled internal standards prior to extraction as listed in Method 8290A.	Percent recoveries must be within 40% to 135% for all 2,3,7,8-substituted internal standards.	1. Re-extract and/or re-analyze.
(Accuracy)		HPCDD, HPCDF, and OCDD percent recoveries must be within 25 to 130%.	2. If re-extraction and re-analysis does not solve problem and other QC criteria were met, submit both runs and discuss in narrative report.
		Ion abundance criteria specified in EPA Method 8290A must be met.	3. Document any observation or corrective action in the case narrative
Surrogate or Alternate Standards	Samples, blanks, and MS/MSDs are spiked with seven labeled standards after extraction and prior to cleanup.	Percent recoveries must be within 40% to 130% for the tetra through hexachlorinated surrogates and 25% to 130% fro the heptachlorinated surrogates.	1. Re-extract and/or re-analyze.
(Accuracy)			2. If re-extraction and re-analysis does not solve problem and other QC criteria were met, submit both runs and discuss in narrative report
			3. Document any observation or corrective action in the case narrative

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Recovery Standard **(Accuracy)**	Consists of 13C12 1,2,3,4-TCDD and 13C12 1,2,3,7,8,9-HxCDD which are added to field samples, blanks, QC samples prior to sample injection.	Recovery standard are used to calculate internal standard recovery. Recovery standards are evaluated during data validation for recovery and retention time as compared to associated CCV area and RT. Laboratory will report the areas and retention times of the recovery standards for each CCV, sample, blank and QC analysis in a summary form.	Not applicable
Method Blank Analysis **(Sensitivity)**	One for every 20 samples of similar matrix extracted at the same time and treated in the same manner as the samples, analyzed between the calibration standard and samples.	Compound concentrations must be <RL.	1. Reanalyze. 2. If limits are still exceeded, re-extract and reanalyze method blank and associated samples if holding times have not elapsed. 3. Document any observation or corrective action in the case narrative
MS/MSD Analysis **(Accuracy and Precision)**	One for each matrix type and every 20 samples of similar matrix. MS/MSDs must be spiked with Target analytes specified in the Method 8290, Table 5.	Recovery within laboratory limits. RPD within 20%.	1. Reanalyze. 2. If recovery or RPD is still outside limits, document in case narrative report. 3. Document any observation or corrective action in the case narrative
Duplicate Analysis **(Precision)**	One for every sample batch.	RPD within 20%.	1. Reanalyze. 2. If RPD is still outside limits, document in case narrative report. 3. Document any observation or corrective action in the case narrative

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
		Acquire SIM data using the same acquisition and mass spectrometer operating condition. Ions characteristic of polychlorinated diphenyl ethers are included in the descriptors listed in Table 6. SICP for the lock-mass ions (one per mass descriptor) must also be recorded and included in the data package. These SICPs must be true representations of the evolution of the lock-mass ions amplitudes during the HRGC/HRMS run for the proper level of reference compound to be metered into the ion chamber). For 2,3,7,8-substituted congeners, which have an isotopically-labeled internal or recovery standard present in the sample extract (this represents a total of 10 congeners including OCDD; Tables 2 and 3), the retention time (RRT; at maximum peak height) of the sample components (i.e., the two ions used for quantitation purposes listed in Table 6) must be within -1 to +3 sec of the isotopically-labeled standard.	
Sample analysis and **Identification**	Samples, blanks, and QC data.	For 2,3,7,8-substituted Target analytes that do not have an isotopically-labeled internal standard present in the sample extract (this represents a total of six congeners; Table 3), the retention time must fall within 0.005 retention time units of the relative retention times measured in the routine calibration. Identification of OCDF is based on its retention time relative to 13C12-OCDD as determined from the daily routine calibration results. For non-2,3,7,8-substituted Target analytes (tetra through octa; totaling 119 congeners), the retention time must be within the corresponding homologous retention time windows established by analyzing the column performance check solution (Sec. 9.6.2). The ion current response for both ions must reach a maximum with ±2 seconds. The ion current responses for both ions used for quantitative purposes must reach maximum simultaneously (± 2 sec). The ion current responses for both ions used for the labeled standards must reach maximum simultaneously (± 2 sec). The analyst is required to verify the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF in the SICPs of the daily performance checks. Ion abundance rations specified in Method 8290A Table 8 must be met. All ion current intensities must be # 2.5 times noise level for positive identification of an unlabeled PCDD/PCDF compound or a group of coeluting isomers. Labeled analytes must have an S/N > 10. The RRT of the 2,3,7,8-substituted congeners for which no carbon-labeled analogues are available must fall within 0.006 units of the carbon-labeled standard RRT.	1. If identification criteria are not all met, but in the judgment of the operator the target compound is present, proceed with quantitation and document reasoning in the data package. 2. Document any observation or corrective action in the case narrative

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Identification Interference	Samples, blanks, and QC data.	The identification of PCDFs is made only if no S/N ☐2.5 is detected at the same retention time (±2 seconds) in the corresponding polychlorinated diphenyl ether channel. Internal and external standard method. The relative response factors to be used for the determination of the concentration of total isomers in a homologous series are calculated as follows: 1- For congeners that belong to a homologous series containing only one isomer (or only one 2,3,7,8-substituted isomer the Ave RF used will be the same as determined in Sec. 11.7.1.4.5. 2 - For congeners that belong to a homologous series containing more than one 2,3,7,8-substituted isomer (Table 4), the Ave RF used for those homologous series will be the mean of the RFs calculated for all individual 2,3,7,8-substituted congeners using the equation in 11.7.1.4.6. If the analyte is identified as one of the 2,3,7,8-substituted PCDDs or PCDFs, Ave RF is the value calculated using the equation in Sec. 11.7.1.4.5. For non- 2,3,7,8-substituted congener, the Ave RF value is the one calculated using the equation in Sec. 11.7.1.4.6 (RFk, for k = 27 to 30).	Identify problem and correct.
Quantitation	Samples, blanks, and QC data.	If the concentration in the final extract of any of the fifteen 2,3,7,8- substituted PCDD/PCDF Target analytes (Table 3) exceeds the upper method calibration limits (MCL) listed in Table 1 the linear range of response versus concentration may have been exceeded, and a second analysis of the sample should be undertaken. The volumes of the internal and recovery standard solutions should remain the same as described for the sample preparation (Secs. 11.0). The total concentration for each homologous series of PCDD and PCDF is calculated by summing up the concentrations of all positively identified isomers of each homologous series. Soil and sediment samples concentrations must be corrected to dry weight. The concentration of the 2,3,7,8-TCDF is obtained from the analysis of the sample extract on the 30-m DB-225.. The chromatographic separation between the 2,3,7,8-TCDF and its close eluters (2,3,4,7-TCDF and 1,2,3,9-TCDF) must be equal or less than 25 percent valley. May use SP-2330 GC column instead of the DB-5 column. provided the criteria listed in Sec. 9.3.1 are met and the requirements described in Sec. 9.6.2 are followed.	1. If peak is saturated, dilute sample and reanalyze. 2. If 2,3,7,8-substituted PCDD/PCDF concentration is greater than the calibration limit, a second analysis using dilution is performed (see Method 8290A, Section 11.9) 3. Perform appropriate cleanup procedures as necessary to minimize sample matrix effects. 4. Document any observation or corrective action in the case narrative

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Sample Specific Estimated Quantitation Limit (ERL)	Sample specific ERL is the concentration of a target analyte required to produce a signal with a peak height of at least 2.5 times the background signal.	Calculate an EDL for each 2,3,7,8-substituted congener that is not identified. See Section 11.9.5.1: 1- Samples giving a response for both quantitation ions (Tables 6 and 9) that is less than 2.5 times the background level - Calculate EDL for each 2,3,7,8- substituted PCDD/PCDF that does not have a response with S/N ≥ 2.5. The background level is determined by measuring the range of the noise (peak to peak) for the two quantitation ions (Table 6) of a particular 2,3,7,8-substituted isomer within an homologous series, in the region of the SICP trace corresponding to the elution of the internal standard (if the congener possesses an internal standard) or in the region of the SICP where the congener is expected to elute by comparison with the routine calibration data (for those congeners that do not have a 13C-labeled standard), multiplying that noise height by 2.5, and relating the product to an estimated concentration that would produce that peak height.	**Data presentation - Data must be provided so that an ERL can be independently calculated using data presented in the data package for each applicable sample result.** **Provide an example calculation in the case narrative demonstrating one ERL calculation from the project results; identify all data sources used in the calculation in the data package case narrative.**
Estimated Maximum Possible Concentration (EMPC)	EMPCs will be reported for all samples, blanks, QC data, where applicable.	EMPC is calculated for 2,3,7,8-substituted isomers that are characterized by a response with an S/N of at least 2.5 for both the quantitation ions, and meet all of the identification criteria in Sec. 11.8.4 except the ion abundance ratio criteria or when a peak representing a PCDPE has been detected. An EMPC is a worst-case estimate of the concentration. Calculate the EMPC according to the expression shown in Sec. 11.9.1. Provide an example calculation in the case narrative demonstrating one EMPC calculation from the project results; identify all data sources used in the calculation in the data package case narrative.	**Data presentation - Data must be provided so that an EMPC can be independently calculated using data presented in the data package for each applicable sample result.**
Field / Equipment Blank Analysis **(Sensitivity)**	Field collected as per QAPP	Target analytes concentrations must be <RL.	Investigate problem; reanalyze to verify laboratory cross contamination is not a factor.

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Field Duplicate Analysis (Precision)	Field collected as per QAPP	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis during the validation process.
Percent solids	For solid samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Toxicity Equivalents (TEs)	As requested	The 2,3,7,8-TCDD toxicity equivalents (TE) of PCDDs and PCDFs present in the sample are calculated, if requested by the data user, according to the method recommended by the Chlorinated Dioxins Workgroup (CDWG) of the EPA and the Center for Disease Control (CDC). This method assigns a 2,3,7,8-TCDD toxicity equivalency factor (TEF) to each of the fifteen 2,3,7,8-substituted PCDDs and PCDFs (Table 3) and to OCDD and OCDF, as shown in Table 10. The 2,3,7,8-TCDD equivalent of the PCDDs and PCDFs present in the sample is calculated by summing the TEF times their concentration for each of the Target analytes or groups of Target analytes listed in Table 10.	Not applicable

Table 3-5. Dioxins and Dibenzofurans by USEPA Method 8290A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Deliverables where required	The laboratory data package must provide summary forms and supportive documentation for each audit parameter with applicable control limits presented in summary form..	For data presentation, SICPS must be clearly labeled with congener names and RTs. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. Example calculations (as described in this table) will be provided for each analysis, for each type of matrix in the data package using samples from the project. IMPORTANT- Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations (on-column concentration units) for calibrations, spikes, internal standards, recovery standards, any other spikes used be presented in summary form. Standard tracing information will be provided for one data package. Cooler temperatures will be provided in the data packages. Run logs with all lab notations clearly explained will be provided in the data packages.	**Data presentation - Data must be provided for both 1- and 2- types of sample result calculation, as described in the quantitation parameter in this table, can be performed independently using data presented in the data package for each applicable sample result.** **Provide an example calculation in the case narrative demonstrating each of the 2 types of sample result calculations from the project results; identify all data sources used in the calculations in the data package case narrative.**
Method and QAPP requirements	The laboratory will perform the method and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be extracted and analyzed within holding time.	Extract within 7 days from collection for aqueous samples; 14 days for soil samples. Analyze extracts within 40 days of extraction.	If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the QAO since re-sampling may be required.
Initial Calibration **High Performance Liquid Chromatography (HPLC)** **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration. Calibrations must contain all target analytes. Quantitation of analyses will utilize the initial calibration results.	1. Minimally five concentrations for each target analyte. One calibration standard must be at concentration less than or equal to the RL. 2. It is recommended that if results are reported below the RL, a separate standard at the MDL level analyzed after calibration is complete to check sensitivity. 3. If RSD ≤20% the average relative response factor (internal calibration) or average calibration factor (external calibration) is used for quantitation. If RSD >20% a linear regression calibration that does not pass through the origin with a correlation coefficient (r) ≥0.990 is used for quantitation; or a nonlinear first or second order calibration curve with a coefficient of determination (COD) of ≥0.990 is used for quantitation.	1. Identify and correct problem. 2. Recalibrate instrument; samples should not be analyzed until initial calibration criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Initial Calibration Verification (ICV) **Continuing Calibration Verification (CCV)** **(Accuracy)**	ICV analyzed after the IC. CCVs must contain each target analyte at mid-range concentration. CCVs must be analyzed at the beginning of 12 hour sequence and every 20 samples (every 10 samples is recommended), and at the close of the sequence.	ICV/CCV ≤ 20%.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document any observations and corrective action in the case narrative.
Retention Time Windows	Retention time windows (absolute retention time) must be established in accordance with USEPA Method 8000B/8000C or relative retention times must be used if internal standards are employed.	Compounds must be within established retention time windows or within laboratory established relative retention time criteria for the succeeding calibration standards. Retention time windows must be provided for each calibration verification. Retention times for each surrogate analyzed for samples and QC samples must be provided on a summary form.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. 3. Document any observations and corrective action in the case narrative.
Method Blank Analysis **(Sensitivity)**	Method Blank : 1 per 20 samples of similar matrix e	Less than RL.	1. Reanalyze. 2. If limits are still exceeded, re-extract and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Laboratory Control Sample (Accuracy)	1 per 20 samples of similar matrix extracted at the same times. LCSs should be spiked with each of the single component analyte at concentrations near the midpoint of the calibration curve.	Percent recoveries must be within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze and examine results of other QC analyses. 2. If the percent recovery is above laboratory control limits and the affected compound is not detected in the associated samples, corrective action is not required; document in case narrative. 3. If percent recovery is below laboratory control limits or <10%, reanalyze LCS. If recoveries remain below limits and other QC criteria have been met, report both analyses and document in case narrative report. 4. If recoveries are below laboratory control limits and additional QC excursions are observed, locate and correct problem, recalibrate instrument and re-extract and/or re-analyze samples since last satisfactory LCS. 5. Document any observations and corrective action in the case narrative.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
MS/MSD Analysis **(Accuracy and Precision)**	1 per 20 samples of similar matrix extracted at the same times. MS/MSDs must be spiked with each of the single component analyte at concentrations near the midpoint of the calibration curve. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. If reanalysis is still <10%, report both analyses and document in the case narrative. 3. If re-analysis is >10% and LCS criteria are met, document in case narrative; no additional corrective action required. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; *i.e.*, surrogate recoveries for extraction efficiency and calibration data for instrument performance issues. 5. Re-extract or reanalyze samples and associated MS/MSD and LCSs as required. 6. Document any observations and corrective action in the case narrative.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Surrogate Spike (Accuracy)	Samples, blanks, MS/MSDs, and LCSs must be spiked with method specified surrogate compounds on each column used in the analysis.	Recovery within laboratory control limits. Corrective action is not required if one of the two surrogates (for two columns) has recovery outside of control limits if the recovery is >10% and the remaining surrogate is within control limits. Surrogate recoveries for each surrogate on each column must be provided in a summary form. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze. 2. If reanalysis recovery fails criteria but is >10%, report both analyses and document in case narrative report. 3. If reanalysis recovery is <10%, re-extract and reanalyze the sample. Special Circumstances. If matrix interference is present (as documented in the case narrative): 1. Reanalyze sample; may be at a higher dilution. 2. Report both analyses. Document any observations and corrective action in the case narrative.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Identification	Samples, blanks, and QC data.	Retention times must be within established retention time windows or must meet relative retention time criteria. Dual column confirmation (quantitative and qualitative) analysis is required. Retention time windows must be provided for each calibration verification. USEPA CLP Form 10 Summary form, providing the percent difference and retention times for all detected analytes in samples and QC samples, will be provided. Percent difference must be less than 40 %D. %D calculation: Difference between Higher concentration of sample and Lower concentration of sample divided by the Lower concentration of sample times 100.	1. Investigate problem; reanalyze calibration standards to check for retention time shift. 2. Document any observations and corrective action in the case narrative.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Quantitation	Samples, blanks, and QC data.	Confirmation analysis is required. Internal or external standard method may be used. Verify concentration is within linear calibration range of standards. Every effort must be made to meet specified RL requirements. Lab must state the technique used for quantitation of results for the samples.	1. If concentration is above linear calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document any observations and corrective action in the case narrative.
Field Blank Analysis (Sensitivity)	As per QAPP	Less than RL.	1. Investigate problem; reanalyze to verify laboratory cross contamination is not a factor. 2. Document any observations and in the case narrative.
Field Duplicate Analysis (Precision)	As per QAPP	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis during the validation process.
Chromatography Presentation	For each standard, sample and QC sample analysis.	Copies of chromatograms provided in the data package must be large enough to view during validation. In the case that matrix interference is detected or manual integration is performed, enlarged copies of those manipulations will be included in the data package for review.	1. Provide requested information.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Confirmation Analysis	USEPA Form 8 Summary form, providing the date, time of analysis of samples and QC samples, surrogate retention times and surrogate retention time window, will be provided. Dual column quantitation and qualitative confirmation will be performed. The information presented in CLP Form 10 will be provided in the data package for evaluation.	Not Applicable	Not Applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). . 3. Laboratory will note in the data deliverables which analytical runs were reported.	1. The reagent blank will meet the method blank criteria.	1. Reanalyze reagent blank until method blank criteria are met.
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs with laboratory notations clearly defined will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.

Table 3-6. Explosives using USEPA Methods 8330A quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be extracted and analyzed within holding time.	Extract within 7 days from collection for aqueous samples; 14 days for soil samples. Analyze extracts within 40 days of extraction.	If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the QAO since re-sampling may be required.
Initial Calibration **Gas Chromatography (GC)** **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration. Calibrations must contain all target analytes. Quantitation of analyses will utilize the initial calibration results.	1. Minimally five concentrations for each target analyte. One calibration standard must be at concentration less than or equal to the RL. 2. It is recommended that if results are reported below the RL, a separate standard at the MDL level analyzed after calibration is complete to check sensitivity. 3. Using power regression, correlation coefficient should be (r) ≥0.990.	1. Identify and correct problem. 2. Recalibrate instrument; samples should not be analyzed until initial calibration criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Calibration Verification (Accuracy)	Calibration standards must contain each target analyte at mid-range concentration. Calibration verification standards must be analyzed at the beginning of after every 10 to 20 samples.	Calibration verification response (% difference) or concentration (% drift) ≤ 20%. The target compounds are known to decompose if the injection port of the GC becomes activated/contaminated due to dirty samples. Therefore, when a calibration verification standard fails, the analyst must evaluate whether the calibration has drifted out of the acceptable range due to normal calibration drift or active sites in the injection port causing degradation of the target compounds. Degradation of the target compounds would be expected to lead to lower responses.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document any observations and corrective action in the case narrative.
Retention Time Windows	Retention time windows established from standard curve. Retention time windows established as ±0.06 minutes.	Compounds must be within established retention time windows or within laboratory established relative retention time criteria for the succeeding calibration standards. Retention time windows must be provided for each calibration verification. Retention times for each surrogate analyzed for samples and QC samples must be provided on a summary form.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. 3. Document any observations and corrective action in the case narrative.
Method Blank Analysis (Sensitivity)	Method Blank: 1 per 20 samples of similar matrix.	Less than RL.	1. Reanalyze. 2. If limits are still exceeded, re-extract and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Laboratory Control Sample **(Accuracy)**	1 per 20 samples of similar matrix extracted at the same times. LCSs should be spiked with each of the single component analyte at concentrations near the low end of the calibration curve.For soil samples, spike at 4X low standard. For waters, spike at 40X low standard.	Percent recoveries must be within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze and examine results of other QC analyses. 2. If the percent recovery is above laboratory control limits and the affected compound is not detected in the associated samples, corrective action is not required; document in case narrative. 3. If percent recovery is below laboratory control limits or <10%, reanalyze LCS. If recoveries remain below limits and other QC criteria have been met, report both analyses and document in case narrative report. 4. If recoveries are below laboratory control limits and additional QC excursions are observed, locate and correct problem, recalibrate instrument and re-extract and/or re-analyze samples since last satisfactory LCS. 5. Document any observations and corrective action in the case narrative.
MS/MSD Analysis **(Accuracy and Precision)**	1 per 20 samples of similar matrix extracted at the same times. MS/MSDs must be spiked with each of the single component analyte at concentrations near the low end of the calibration curve as previously described. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. If reanalysis is still <10%, report both analyses and document in the case narrative. 3. If re-analysis is >10% and LCS criteria are met, document in case narrative; no additional corrective action required. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; *i.e.,* surrogate recoveries for extraction efficiency and calibration data for instrument performance issues. 5. Re-extract or reanalyze samples and associated MS/MSD and LCSs as required. 6. Document any observations and corrective action in the case narrative.

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Surrogate Spike **(Accuracy)**	Samples, blanks, MS/MSDs, and LCSs must be spiked with method specified surrogate compounds on each column used in the analysis.	Recovery within laboratory control limits. Surrogate recoveries for the surrogate on each column must be provided in a summary form. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze. 2. If reanalysis recovery fails criteria but is >10%, report both analyses and document in case narrative report. 3. If reanalysis recovery is <10%, re-extract and reanalyze the sample. Special Circumstances. If matrix interference is present (as documented in the case narrative): 1. Reanalyze sample; may be at a higher dilution. 2. Report both analyses. Document any observations and corrective action in the case narrative.
Internal Standards **(Accuracy)**	Where applicable: All samples and blanks (including MS/MSD)	Response -50% to +300% (water only) of internal standards from continuing calibration of the day.	1. Reanalyze. 2. If still outside of the limits, report both analyses. 3. Document any observations and corrective action in the case narrative.

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Identification	Samples, blanks, and QC data.	Retention times must be within established retention time windows or must meet relative retention time criteria. **Dual column confirmation (quantitative and qualitative) analysis is required.** Retention time windows must be provided for each calibration verification. USEPA CLP Form 10 Summary form, providing the percent difference and retention times for all detected analytes in samples and QC samples, will be provided. Percent difference must be less than 40 %D. %D calculation: Difference between A-B, divided by average of A and B, times 100.	1. Investigate problem; reanalyze calibration standards to check for retention time shift. 2. Document any observations and corrective action in the case narrative.
Quantitation	Samples, blanks, and QC data.	**Confirmation analysis is required.** Internal or external standard method may be used. Verify concentration is within linear calibration range of standards. Every effort must be made to meet specified RL requirements. Lab must state the technique used for quantitation of results for the samples.	1. If concentration is above calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document any observations and corrective action in the case narrative.
Field Blank Analysis **(Sensitivity)**	As per QAPP	Less than RL.	1. Investigate problem; reanalyze to verify laboratory cross contamination is not a factor. 2. Document any observations and in the case narrative.

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Field Duplicate Analysis **(Precision)**	As per QAPP	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis during the validation process.
Chromatography Presentation	For each standard, sample and QC sample analysis.	Copies of chromatograms provided in the data package must be large enough to view during validation. In the case that matrix interference is detected or manual integration is performed, enlarged copies of those manipulations will be included in the data package for review.	1. Provide requested information.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages. USEPA Form 8 Summary form, providing the date, time of analysis of samples and QC samples, surrogate retention times and surrogate retention time window, will be provided.	Not applicable	Not applicable
Confirmation Analysis	Dual column quantitation and qualitative confirmation will be performed. The information presented in CLP Form 10 will be provided in the data package for evaluation.	Not Applicable	Not Applicable

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). 3. Laboratory will note in the data deliverables which analytical runs were reported.		

Table 3-7. Explosives using USEPA Method 8095 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency (Applies to both primary and confirmation columns)	Control Limits (Applies to both primary and confirmation columns)	Laboratory Corrective Action (Applies to both primary and confirmation columns)
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs with laboratory notations clearly defined will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-8. Perchlorate using USEPA Method 6850 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be extracted and analyzed within holding time.	Aqueous - Analysis 28 days from collection. Solid - Extract within 28 days from collection. Analyze extracts within 28 days of extraction.	1. If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the Project Manager immediately since re-sampling may be required. 2. Document any observations and corrective action in the case narrative.
Tuning (Accuracy)	Once every 24 hours (daily) prior to initial calibration and calibration verifications.	Autotune the instrument. Documentation of tune results must be included in the data packages.	Re-tune the instrument. Document any observations and corrective action in the case narrative. Samples cannot be analyzed until control limit criteria have been met.
Initial Calibration **For Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)** **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration verification. Quantitation of analyses will utilize the initial calibration results. Initial calibration verification (ICV)	1.Six concentrations, method suggested range from 0.4 to 25 ug/L. One calibration standard should be at concentration less than or equal to the RL. It is recommended that if results are reported below the RL, a separate standard at the MDL level analyzed after calibration is complete to check sensitivity. 2. Linear regression calibration that does not pass through the origin with a correlation coefficient (r) >0.995 is used for quantitation; or a nonlinear first or second order calibration curve with a coefficient of determination (COD) of >0.9950 is used for quantitation.	1. Identify and correct problem. 2. Recalibrate instrument; samples should not be analyzed until initial calibration and ICV criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-8. Perchlorate using USEPA Method 6850 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Initial Calibration Verification (ICV) (Accuracy)	Second source calibration verification standards must be analyzed after the initial calibration.	Second Source ICV result must be within 15% of the true value.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document any observations and corrective action in the case narrative.
Calibration Verification (Accuracy)	Second source calibration verification standards must be analyzed after every 10 samples and at the close of the sequence. CCV concentrations alternate between low and mid-range of the calibration curve range.	Second Source CCV result must be within 50% of the true value for the low-range and 15% of the true value for the mid-range.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document any observations and corrective action in the case narrative.
Method Blank Analysis (Sensitivity)	Method Blank : 1 per 20 samples of similar matrix prepared at the same time as the samples.	Less than RL.	1. Reanalyze. 2. If limits are still exceeded, re-prepare and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document any observations and corrective action in the case narrative.

Table 3-8. Perchlorate using USEPA Method 6850 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Laboratory Control Sample/LCSD **(Accuracy and Precision)**	1 per 20 samples of similar matrix extracted at the same times. LCSs should be spiked at concentration near the mid point of the calibration curve.	Percent recoveries must be within laboratory control limits. For compounds without established laboratory control limits, 80-120% recovery will be used. For precision, RPD of 15% for sample concentrations near the mid-range of the calibration and RPD of 50% for sample concentrations near the low-range of the calibration. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze and examine results of other QC analyses. 2. If the percent recovery is above laboratory control limits and the affected compound is not detected in the associated samples, corrective action is not required; document in case narrative. 3. If percent recovery is below laboratory control limits or <10%, reanalyze LCS. If recoveries remain below limits and other QC criteria have been met, report both analyses and document in case narrative report. 4. If recoveries are below laboratory control limits and additional QC excursions are observed, locate and correct problem, recalibrate instrument and re-extract and/or re-analyze samples since last satisfactory LCS. 5. Document any observations and corrective action in the case narrative.
MS/MSD Analysis **(Accuracy and Precision)**	1 per 20 samples of similar matrix extracted at the same times. MS/MSDs must be spiked at concentration near the mid point of the calibration curve. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery and RPD within laboratory control limits. For aqueous – 80-120%R. For solids – 70-130%R For precision, RPD of 15% for sample concentrations near the mid-range of the calibration and RPD of 50% for sample concentrations near the low-range of the calibration. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. If reanalysis is still <10%, report both analyses and document in the case narrative. 3. If re-analysis is >10% and LCS criteria are met, document in case narrative; no additional corrective action required. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; *i.e.,* surrogate recoveries for extraction efficiency and calibration data for instrument performance issues. 5. Re-extract or reanalyze samples and associated MS/MSD and LCSs as required. 6. Document any observations and corrective action in the case narrative.

Table 3-8. Perchlorate using USEPA Method 6850 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Internal Standards **(Accuracy)**	Where applicable: All samples and blanks (including MS/MSD)	Response -50% to +150% of average internal standard area from the ICAL. RT must be ± 30 sec. from associated calibration verification standard of that sequence.	1. Reanalyze. 2. If still outside of the limits, report both analyses. 3. Document any observations and corrective action in the case narrative.
Identification	Samples, blanks, and QC data.	The retention times of the mass-to-charge ratio for ions 83 and 85 must not vary by greater than 0.2 minutes. Compare relative abundance of mass-to-charge ratio ions 83 and 85; the 83/85 peak area counts must be within 30% of the average peak area count of the mid-range standard. Summary documentation of retention time and peak area count evaluation must be included in the data packages.	1. Investigate problem; reanalyze samples. 2. Document any observations and corrective action in the case narrative.
Quantitation	Samples, blanks, and QC data.	Internal standard method used. Verify concentration is within linear calibration range of standards. Every effort must be made to meet specified RL requirements.	1. If concentration is above linear calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document any observations and corrective action in the case narrative.
Field Blank Analysis **(Sensitivity)**	Collected per QAPP requirements.	Less than RL.	1. Investigate problem; reanalyze to verify laboratory cross contamination is not a factor. 2. Document any observations and in the case narrative.

Table 3-8. Perchlorate using USEPA Method 6850 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Field Duplicate Analysis **(Precision)**	Collected per QAPP requirements.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis during the validation process.
Chromatography Presentation	For each standard, sample and QC sample analysis.	Copies of chromatograms provided in the data package must be large enough to view during validation. In the case that matrix interference is detected or manual integration is performed, enlarged copies of those manipulations will be included in the data package for review.	1. Provide requested information.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable

Table 3-8. Perchlorate using USEPA Method 6850 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). . 3. Laboratory will note in the data deliverables which analytical runs were reported.	The reagent blank will meet the method blank criteria.	1. Reanalyze reagent blank until method blank criteria are met.
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations for calibrations, LCS, MS/MSD and internal standards will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs with lab notations clearly identified will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.

Table 3-8. Perchlorate using USEPA Method 6850 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-9. Nitrocellulose using CT Laboratories SOPs VO 008 / WC 037 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be prepared and analyzed within holding time.	Aqueous - 28 days from collection to analysis Solid - 28 days from collection to analysis	1. If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the Project Manager immediately since re-sampling may be required. 2. Document any observations and corrective action in the case narrative.
Initial Calibration (IC) **(Accuracy)**	Prior to start up and when criteria are exceeded for continuing calibration. Quantitation of analyses will utilize the initial calibration results.	1. Minimally ten concentrations. One calibration standard must be at concentration less than or equal to the RL. 2. It is recommended that if results are reported below the RL, a separate standard at the MDL level analyzed after calibration is complete to check sensitivity. 3. A nonlinear first or second order calibration curve correlation coefficient of greater than 0.995.	1. Identify and correct problem. 2. Recalibrate instrument; samples should not be analyzed until initial calibration criteria are met. 3. Document any observations and corrective action in the case narrative.
Initial Calibration Verification (ICV) Continuing Calibration **Verification (CCV)** **(Accuracy)**	ICV is analyzed after each IC. CCVs must be analyzed every 10 samples and at the close of the sequence.	Recovery must be 90 to 110%	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; reanalyze samples back to last compliant calibration standard. Samples must be bracketed by compliant calibration standards. 3. Document any observations and corrective action in the case narrative.

Table 3-9. Nitrocellulose using CT Laboratories SOPs VO 008 / WC 037 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Initial Calibration Blank (ICB) **Continuing Calibration Blank (CCV)** **(Sensitivity)**	ICB is analyzed after each IC. CCBs must be analyzed every 10 samples and at the close of the sequence.	Less than RL	1. Reanalyze. 2. If limits are still exceeded, re-prepare and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document any observations and corrective action in the case narrative.
Method Blank Analysis **(Sensitivity)**	Method Blank : 1 per 20 samples	Less than RL.	1. Reanalyze. 2. If limits are still exceeded, re-prepare and reanalyze method blank and associated samples. Samples must not be analyzed until method blank criteria are met. 3. Document any observations and corrective action in the case narrative.
Laboratory Control Sample **(Accuracy)**	1 per 20 samples of similar matrix extracted at the same times. LCSs must be spiked at concentrations near the low end of the calibration curve.	Percent recoveries must be within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze and examine results of other QC analyses. 2. If the percent recovery is above laboratory control limits and the affected compound is not detected in the associated samples, corrective action is not required; document in case narrative. 3. If percent recovery is below laboratory control limits or <10%, reanalyze LCS. If recoveries remain below limits and other QC criteria have been met, report both analyses and document in case narrative report. 4. If recoveries are below laboratory control limits and additional QC excursions are observed, locate and correct problem, recalibrate instrument and re-extract and/or re-analyze samples since last satisfactory LCS. 5. Document any observations and corrective action in the case narrative.

Table 3-9. Nitrocellulose using CT Laboratories SOPs VO 008/WC 037 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
MS/MSD Analysis **(Accuracy and Precision)**	1 per 20 samples of similar matrix extracted at the same times. MS/MSDs must be spiked at concentrations near the low end of the calibration curve. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery and RPD within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze if <10%. 2. If reanalysis is still <10%, report both analyses and document in the case narrative. 3. If re-analysis is >10% and LCS criteria are met, document in case narrative; no additional corrective action required. 4. If LCS criteria are exceeded also, examine other QC data for source of problem; *i.e.*, surrogate recoveries for extraction efficiency and calibration data for instrument performance issues. 5. Re-extract or reanalyze samples and associated MS/MSD and LCSs as required. 6. Document any observations and corrective action in the case narrative.
Identification	Samples, blanks, and QC data.	Retention times must be within established retention time windows or must meet relative retention time criteria.	1. Investigate problem; reanalyze calibration standards to check for retention time shift. 2. Document any observations and corrective action in the case narrative.
Quantitation	Samples, blanks, and QC data.	External standard method used. Verify concentration is within linear calibration range of standards. Every effort must be made to meet specified RL requirements. Lab must state the technique used for quantitation of results for the samples.	1. If concentration is above linear calibration range, dilute sample and reanalyze. Dilution should result in concentration in the upper calibration range of the instrument. 2. Document any observations and corrective action in the case narrative.
Field Blank Analysis **(Sensitivity)**	Frequency as required by the Project.	Less than RL.	1. Investigate problem; reanalyze to verify laboratory cross contamination is not a factor. 2. Document any observations and in the case narrative.

Table 3-9. Nitrocellulose using CT Laboratories SOPs VO 008 / WC 037 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Field Duplicate Analysis **(Precision)**	Frequency as required by the Project. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters and 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis during the validation process.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Percent solids	For solids samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable

Table 3-9. Nitrocellulose using CT Laboratories SOPs VO 008 / WC 037 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Dilutions	1. When target analyte concentration exceed upper limit of calibration curve. 2. When matrix interference demonstrated by lab and documented in the case narrative (highly viscous samples or a large number of non-target peaks on the chromatogram). 3. Laboratory will note in the data deliverables which analytical runs were reported.	Not applicable	Not applicable

Table 3-9. Nitrocellulose using CT Laboratories SOPs VO 008 / WC 037 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-9. Nitrocellulose using CT Laboratories SOPs VO 008 / WC 037 quality control requirements and corrective actions

Audit Parameter (DQI)	Frequency	Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-10. TOC using USEPA Method 9060A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C, For aqueous samples, HCl to pH<2. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be analyzed within holding time.	Analyze 28 days from collection.	1. If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the QAO since re-sampling may be required.
Initial Calibration, Initial Calibration Verification (ICV) and Calibration Verification (CCV) **(Accuracy)**	At a minimum three to five standards (depending on method requirements) and a blank, prior to sample analysis and when calibration verification criteria are not met. One standard must be at the RL concentration. ICV accompanies each initial calibration. CCV is analyzed following calibration, after every 10 samples and at the end of the sequence to bracket sample analyses.	For initial calibration, correlation coefficient for first or second order curve must be ≥ 0.995. For ICV, CCV - 90% to 110% of expected value.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
Calibration Blank (CB) **(Sensitivity)**	At beginning and end of run and at a rate of 10% during run.	Target analytes less than RL.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document corrective action in the case narrative 4. Samples cannot be analyzed until blank control limit criteria have been met.

Table 3-10. TOC using USEPA Method 9060A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Preparation / Method Blank Analysis **(Sensitivity)**	1 per batch of samples analyzed in the sample batch.	Target analytes less than RL.	1. Reanalyze blank. 2. If limits are still exceeded, clean instrument and recalibrate analytical system and reanalyze affected samples if detected. 3. Document corrective action - samples cannot be analyzed until blank criteria are met.
Laboratory Control Sample Analysis **(Accuracy)**	Every 20 samples or each batch. Prepared independently from calibration standards.	Recovery within laboratory control limits or 80% to 120%. The lowest acceptable control limits for recovery will be 10%.	1. If recovery failures are above control limits and these target analytes are not detected in the associated samples, no corrective action is required. 2. If recovery failures are below the control limits, reanalyze LCS and examine results of other QC analyses. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document corrective action in the case narrative.
Matrix Spike Analysis **(Accuracy)**	Collected per QAPP requirements. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery within laboratory control limits or 75-125%. Recovery does not apply if sample concentration > 4 X spike concentration. The lowest acceptable laboratory control limits for recovery will be 10%.	1. Investigate problem. 2. Document in the case narrative.

Table 3-10. TOC using USEPA Method 9060A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Laboratory Duplicate or Matrix Spike Duplicate Analysis **(Precision)**	Collected per QAPP requirements. Samples from the investigation must be used for Laboratory Duplicate and MSD analysis. If samples were not designated as QC samples, contact QA Officer upon receipt of samples at the laboratory.	Laboratory control limit or 20% for RPD shall be used for original and duplicate sample values greater than or equal to five times the RL. A control limit of the RL value shall be used if either the sample or duplicate value is less than five times the RL.	1. Investigate problem. 2. Document in the case narrative.
Field/Equipment Blank Analysis **(Sensitivity)**	Collected per QAPP requirements.	Target analytes less than RL.	1. Investigate problem. 2. Document in the case narrative.
Field Dup. Analysis **(Precision)**	Collected per QAPP requirements. Field duplicate will not be identified to the laboratory.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Dilutions	Dilute and reanalyze samples with concentrations that are greater than the linear range of the instrument or method technique. The laboratory will note in the data package which analytical runs were used to report the sample results.	Not applicable	Not applicable. .
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable

Table 3-10. TOC using USEPA Method 9060A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Deliverables as required	1.Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-10. TOC using USEPA Method 9060A quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Laboratory Control Limits	Laboratory Corrective Action
Note			
Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.			
Communications with O'Brien & Gere will be documented and included in the data packages.			
Source: O'Brien & Gere			

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be digested and analyzed within holding time.	Metals: 180 days from collection to analysis.	If holding times are exceeded for initial or any re-analyses required due to QC excursions. Notify QAO since re-sampling may be required. Document corrective action in the case narrative.
ICP/MS tuning, mass calibration and resolution checks **(Accuracy)**	Analyze tune solution at least 4 times after the instrument has equilibrated prior to sample analysis. Evaluate mass calibration and resolution checks in the mass regions of interest. Solution contains elements representing all the of mass regions of interest (such as Li, Co, In, Tl) to verify resolution and mass calibration within criteria.	1. RSD must be <15% for analytes in the tune solution, with 200 continuous scans. 2. If mass calibration is >0.1amu from the true value, mass calibration must be adjusted to correct values. 3. Resolution must be less than 0.9amu of full width at 10% of peak height. 4. Documentation of mass calibration and resolution evaluations may be requested.	1. Identify and correct problem, and retune instrument - samples cannot be analyzed until tune criteria is met.
Initial Calibration Verification and Continuous Calibration Verification **(ICV, CCV)** **(Accuracy)**	ICP calibration curve is analyzed on a daily basis that employs a minimum of a calibration blank and three standards for each target analyte. After calibration, Initial calibration verification (ICV) is performed. The ICV is from a source independent of the calibration standards. A continuing calibration verification (CCV) is analyzed at the beginning of the run, at 10%. Also verify at the end of each run.	ICV, CCV - 90% to 110% of expected value for ICP, AA, colorimeter, and spectrophotometer. ICV for Mercury – 90% to 110% of expected true value. CCV for Mercury - 80% to 120% of expected true value. Correlation coefficient for first or second order curve must be ≥ 0.995.	Reanalyze. If criteria are still not met, identify and correct problem, recalibrate. Document corrective action in the case narrative - samples should not be analyzed until calibration control limit criteria have been met.

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
ICP/MS **Initial and continuing calibration verification** **(ICV, CCV)** **(Accuracy)**	ICP/MS calibration curve is analyzed on a daily basis that employs a minimum of a calibration blank and three standards for each target analyte. Calibration standard solutions must contain appropriate internal standard for each target element. Calibration solution must be initially verified using a QC standard and monitored weekly for stability. The initial calibration verification (ICV) must be prepared in the same matrix as the calibration standards but as a independent standard near the midpoint of the linear range at a concentration other than the calibration standards. . Verify calibration with ICV, ICB immediately after calibration. Verify with CCV, CCB at frequency of every 10 samples and at the end of the sequence. For ICP/MS, prior to preparing standards, each stock solution must be analyzed separately to determine any interferences.	ICV, CCV must be 90% to 110% of expected value for ICP/MS, and cyanide. If the ICP/MS is resloped or recalibrated after the ICV is analyzed, a new CCV, CCB must be analyzed prior to sample analysis. Provide documentation of calibration standard monitoring and evaluation.	1. Reanalyze. 2. If criteria are still not met, terminate analysis, identify and correct problem, recalibrate, and contact QAO. 3. Document corrective action in case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
Lower Limit of Quantitation Check (LLQC) **(Accuracy)**	For ICP, LLQC is a standard at the RL concentration analyzed quarterly for all elements at the RL level.	The percent recovery of the LLQC must meet the laboratory established control limits.	The LLQC shall be re-analyzed immediately for those analytes; if the results of the re-analysis for those analytes fall within the control limits, no further corrective action is required. If the results of the re-analysis for those analytes do not fall within the control limits, the analysis shall be terminated, the problem corrected, the instrument recalibrated, the LLQC analyzed, and the samples associated with the LLQC re-analyzed. Document any observation or corrective action in the case narrative.

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Internal Standard **(Accuracy)**	Monitored for all samples, blanks, standards, and QC samples analyzed.	Internal standard counts should be within 30% of Internal standard counts of the calibration standard for all samples and standards.	1. If internal standard area is not within 30%, review the internal areas of the closest calibration blanks for compliance. If the calibration blanks meet criteria; dilute the sample five fold and reanalyze. 2. If the internal standard area of the calibration blank is also outside of 30%, stop sample analysis and recalibrate.
Internal Standard for ICP/MS **(Accuracy)**	Appropriate internal standard as listed in Method 6020 is required for each analyte. The internal standard should be no more than 50 amu from the target element. Recommended internal standards include 6Li, 45 Sc, 89Y, 103 Rh, 115In, 159Tb, 169Ho, 209Bi.	Intensity of all internal standards must be monitored for every analysis. The intensity of any internal standard must be >70% or <130% of the intensity of the internal standard in the initial calibration standard or blank. Document internal standard intensity and the evaluation for each analysis performed and include in the data package.	If sample analysis fails, dilute the sample fivefold (1+4), adjust internal standard and reanalyze. Repeat until internal standard intensify meets criteria. If the CCB or CCV intensity fails, terminate analysis, identify and correct problem, recalibrate, verify calibration and reanalyze samples, document in the case narrative, and contact QAO.
Low level Standard Analysis (Accuracy)	For ICP, Low Level Standard is the RL concentration at the beginning of each run for all elements at the RL level	The percent recovery of the Low Level Standard must meet the control limits of 80-120%.	The CRDL shall be re-analyzed immediately for those analytes; if the results of the re-analysis for those analytes fall within the control limits, no further corrective action is required. If the results of the re-analysis for those analytes do not fall within the control limits, the analysis shall be terminated, the problem corrected, the instrument recalibrated, the CRDL analyzed, and the samples associated with the CRDL re-analyzed. Document corrective action in case narrative.
Initial and Continuing Calibration Blank (ICB/CCB) **(Metals, mercury, cyanide)**	After ICV, CCV, at beginning and end of run and at a rate of 10th sample.	The absolute value of the ICB and CCB must not exceed the RL.	Identify and correct problem. If criteria are still not met, recalibrate and reanalyze affected samples. Document corrective action in the case narrative - samples should not be analyzed until blank control limit criteria have been met.

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Preparation Blank Analysis **(Sensitivity)**	1 per batch of samples digested, or 1 in 20, whichever is greater. PB shall be carried through the complete procedure and contain the same acid concentration in the final solution as the sample solution used for analysis.	The absolute value of the method blank must not exceed the RL.	Reanalyze blank. If limits are still exceeded, clean instrument and recalibrate analytical system and re-preparation and reanalyze affected samples if detected. Document corrective action in the case narrative - samples cannot be analyzed until blank criteria are met.
Field Blank Analysis **(Sensitivity)**	Collected one per 10 samples or once per sampling event.	Less than RL	Investigate problem. Document in the case narrative.
Laboratory Control Sample (LCS) Analysis **(Accuracy)**	Every 20 samples or each digestion batch. Prepared independently from calibration standards. LCS must contain all target analytes.	Recovery within laboratory control limits. The lowest acceptable control limits for recovery will be 10%.	Reanalyze LCS and examine results of other QC analyses. If recovery is still outside limits, and other QC criteria are met, report both runs. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. Document corrective action in the case narrative.
Serial Dilution Analysis for ICP (Accuracy)	Required once per analytical batch when analyte concentration is >50 times the instrument IDL or MDL. Samples from the investigation must be used for Serial dilution analysis.	An analysis of a 1:5 dilution of the sample should provide a result within 20%Dof the original determination (for concentrations 25x the MDL.	Report results. Document corrective action in the case narrative.
Serial Dilution Analysis for ICP/MS **(Accuracy)**	Required when analyte concentration is >100 times the reagent blank and is within the linear range of the ICP/MS. Performed for every 20 samples for each matrix or per batch.	An analysis of a 1:5 dilution of the sample should provide a result within 20%D of the original determination (for concentrations 25x the MDL).	Qualify data. Document corrective action in the case narrative.

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Spectral Interference Check (SIC) Solution Analysis for ICP **(Accuracy)**	Beginning of each analytical for ICP. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents.	Results for the unspiked analytes must be less than 2xRL. Percent recoveries for the spiked analytes must be within 80-120%R.	Reanalyze. If limits are still exceeded, adjust instrument. Restart analytical run and reanalyze samples analyzed since last satisfactory SIC solution. Document corrective action in the case narrative.
Spectral Interference Check (SIC) Solultion Analysis for ICP/MS **(Accuracy)**	Beginning of each analytical run or once during every 12 hours, whichever is more frequent for ICP/MS. For measurement of elemental, molecular-ion isobaric interference corrections. SIC solutioncontains known concentration of interfering elements that will demonstrate the magnitude of the molecular-ion isobaric interferences to verify that the interferences are corrected by the data system within the control limits.	Percent recovery of spiked elements must be within current laboratory control limits. Results for the unspiked analytes must be <2xRL.	Reanalyze. If limits are still exceeded, adjust interference corrections for instrument, contact QAO, samples cannot be analyzed until ICSA/ICSAB control limit criteria have been met. Restart analytical run and reanalyze samples analyzed since last satisfactory ICS. Document corrective action in the case narrative.
Matrix Spike/ **Matrix Spike Dup. (MS/MSD) Analysis** **(Accuracy/Precision)**	Collected per QAPP requirements. Samples from the investigation must be used for MS/MSD analysis. Spike must contain complete list of target analytes.	Recovery within laboratory control limits or 75-125%, or in-house laboratory limits. Recovery does not apply if sample concentration > 4 X spike concentration. Spike must contain all analytes. The lowest acceptable laboratory control limits for recovery will be 10%.	Analyze post-digestion/post-distillation spike. Document corrective action in the case narrative.
Post-Digestion Spike (Recommended for Metals) **(Accuracy)**	Spike must contain all target elements. Performed when MS/MSD fails.	Recovery within 75-125% of true value.	Dilute sample and reanalyze. If recovery is outside limits, document in the case narrative. Standard additions may be used to compensate for matrix effects.

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Internal standard **(Metals)** **(Accuracy)**	May be used for each sample instead of post-digestion spike.	Internal Standard counts must be within 30% of Internal Standard counts of ICB	Reanalyze.
Laboratory Duplicate or Matrix Spike Duplicate Analysis **(Precision)**	Collected one per 20 samples or one per matrix (for less than 20 samples) Samples from the investigation must be used for Laboratory Duplicate and MSD analysis	Laboratory control limit or 20% for RPD shall be used for original and duplicate sample values greater than or equal to five times the RL. A control limit of the RL value shall be used if either the sample or duplicate value is less than five times the CRRL.	Investigate problem and reanalyze. Document corrective action in the case narrative.
Field Duplicate Analysis **(Precision)**	Collected 1 per matrix; every 20 samples of similar matrix. The field duplicate identification will not be provided to the laboratory.	Validation criteria: 30% RPD for waters and 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Percent solids	For solid samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
IDL Determination for ICP	Recommended within 30 days of the start of analysis and semiannually.	Not applicable	Not applicable

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
System Operation for ICP/MS	Use an average of 3 integrations for both the calibration and sample analysis. All masses which could affect data quality will be monitored to determine the potential effect from the matrix. Isotopes listed in the method should be used.	Not applicable	Not applicable
Interference monitoring for ICP/MS	The analyst is required to monitor potential sources of interferences by measuring the elements of interest or a molecular species that may indicate the presence of an interferent and by taking appropriate action to ensure data of known quality. Interferences must be corrected by using correction equations based on observed isotopic signals and by monitoring the intensity of the internal standards. Samples exhibiting isobaric elemental interferences (isotopes of different elements with similar mass to charge ratio or very high ion currents at adjacent masses) require resolution improvement, matrix separation, or alternate isotopes. The rinse period between samples must be long enough to eliminate significant memory interferences. 5. Extensive QC for interference corrections must be performed.	Not applicable	Not applicable

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Analyte quantitation	Concentrations for ICP/MS analysis are reported based on dry weight of the sample. Calculations for the ICP/MS should include appropriate interference corrections, internal standard normalization, and summation of signals at 206, 207, and 208 mass to charge for lead. All QC criteria must be met when applying correction equations. If interference is detected, elements impacted are flagged to indicate percentage interference correction applied to the data or an uncorrected interference because of the equation used for quantitation.	Not applicable	Not applicable
Dilutions for ICP/MS	Analyze samples at a 1:5 dilution. Dilute and reanalyze samples with concentrations that are still greater than the linear range of the instrument. The laboratory will note in the data package which analytical runs were used to report the sample results.	Not applicable	Not applicable
MDL Determination	Before any field samples are analyzed, the MDLs shall be determined for non-prepared analyses, each digestion procedure and instrument used, prior to the start of analyses, and annually thereafter.	Not applicable	Not Applicable
Linear Range Analysis for ICP	Every 6 months.	Not applicable	Not applicable

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Interelement Correction For ICP	Within 6 months of the start of analysis and annually.	Not applicable	Not applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Dilutions	When target analyte concentration exceed upper limit of calibration curve. When matrix interference demonstrated by lab and documented in the case narrative. Laboratory will note in the data deliverables which analytical runs were reported.	Not applicable	Not applicable
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. An example calculation may be requeted for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.

Table 3-11A. Metals using USEPA Methods 6010D/6020B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Method and QAPP Requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Notes:

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-11B. Mercury using USEPA Methods 7470A/7471B, total cyanide using USEPA Method 9012B and pH quality control requirements and corrective action

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be digested and analyzed within holding time.	Mercury: 28 days from collection to analysis. Total Cyanide: 14 days from collection to analysis. pH: Method hold time is 15 minutes from collection to analysis. Mercury prepared by SPLP - 28 days from collection to extract generation, 28 days from extraction to analysis.	If holding times are exceeded for initial or any re-analyses required due to QC excursions. Notify QAO since re-sampling may be required. Document corrective action in the case narrative.
Initial Calibration Verification and Continuous Calibration Verification **(ICV, CCV)** **(Accuracy)**	Five point calibration for Hg including a blank. Five point calibration for remaining methods, with one standard at the RL level. Calibrate each time instrument is set up. After calibration, Initial calibration verification (ICV) is performed. The ICV is from a source independent of the calibration standards. A continuing calibration verification (CCV) is analyzed at the beginning of the run, at 10% or every 2 hours. Also verify at the end of each run.	ICV, CCV - 90% to 110% of expected value for ICP, AA, colorimeter, and spectrophotometer. ICV for Mercury – 90% to 110% of expected true value. CCV for Mercury - 80% to 120% of expected true value. Correlation coefficient for first or second order curve must be ≥ 0.995. For cyanide the ICV must meet 85 to 115% recovery. For cyanide the CCV must meet 90-110% recovery For pH repeat adjustments on successive portions of the two buffer solutions until readings are within 0.05 pH units of the buffer solution value..	Reanlyze. If criteria are still not met, identify and correct problem, recalibrate. Document corrective action in the case narrative - samples should not be analyzed until calibration control limit criteria have been met.

Table 3-11B. Mercury using USEPA Methods 7470A/7471B, total cyanide using USEPA Method 9012B and pH quality control requirements and corrective action

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Lower Limit of Quantitation Check (LLQC) **(Accuracy)**	For AA, and cyanide, LLQC is the RL concentration at the beginning of each run for all elements at the RL level	The percent recovery of the LLQC must meet the control limits of 70-130%.	The LLQC shall be re-analyzed immediately for those analytes; if the results of the re-analysis for those analytes fall within the control limits, no further corrective action is required. If the results of the re-analysis for those analytes do not fall within the control limits, the analysis shall be terminated, the problem corrected, the instrument recalibrated, the LLQC analyzed, and the samples associated with the LLQC re-analyzed. Document corrective action in case narrative.
Initial and Continuing Calibration Blank (ICB/CCB) **(Metals, mercury, cyanide)**	After ICV, CCV, at beginning and end of run and at a rate of 10th sample or every 2 hours during run.	The absolute value of the ICB and CCB must not exceed the RL.	Identify and correct problem. If criteria are still not met, recalibrate and reanalyze affected samples. Document corrective action in the case narrative - samples should not be analyzed until blank control limit criteria have been met.
Preparation Blank Analysis **(Sensitivity)**	1 per batch of samples digested, or 1 in 20, whichever is greater. PB shall be carried through the complete procedure and contain the same acid concentration in the final solution as the sample solution used for analysis.	The absolute value of the method blank must not exceed the RL.	Reanalyze blank. If limits are still exceeded, clean instrument and recalibrate analytical system and re-preparation and reanalyze affected samples if detected. Document corrective action in the case narrative - samples cannot be analyzed until blank criteria are met.
Field Blank Analysis **(Sensitivity)**	Collected one per 10 samples or once per sampling event.	Less than RL	Investigate problem. Document in the case narrative.
Rinse Blank **(Sensitivity)**	Rinse blank must be analyzed following every sample and standard to flush the instrument.	Not applicable.	Not applicable.

Table 3-11B. Mercury using USEPA Methods 7470A/7471B, total cyanide using USEPA Method 9012B and pH quality control requirements and corrective action

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Laboratory Control Sample (LCS) Analysis **(Accuracy)**	Every 20 samples or each digestion batch. Prepared independently from calibration standards. LCS must contain all target analytes.	Recovery within laboratory control limits. The lowest acceptable control limits for recovery will be 10%.	Reanalyze LCS and examine results of other QC analyses. If recovery is still outside limits, and other QC criteria are met, report both runs. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. Document corrective action in the case narrative.
Matrix Spike/ **Matrix Spike Dup. (MS/MSD) Analysis** **(Accuracy/Precision)**	Collected per QAPP requirements. Samples from the investigation must be used for MS/MSD analysis. Spike must contain complete list of target analytes.	Recovery within laboratory control limits or 75-125%, or in-house laboratory limits. Recovery does not apply if sample concentration > 4 X spike concentration. Spike must contain all analytes. The lowest acceptable laboratory control limits for recovery will be 10%.	Analyze post-digestion/post-distillation spike. Document corrective action in the case narrative.
Post-Digestion Spike Accuracy)	Spike must contain all target elements. Performed every 20 samples as necessary.	Recovery within 75-125% of true value.	Dilute sample and reanalyze. If recovery is outside limits, document in the case narrative. Standard additions may be used to compensate for matrix effects.
Internal standard **(Accuracy)**	May be used for each sample instead of post-digestion spike.	Internal Standard counts must be within 30% of Internal Standard counts of ICB	Reanalyze.
Laboratory Duplicate or Matrix Spike Duplicate Analysis **(Precision)**	Collected one per 20 samples or one per matrix (for less than 20 samples) Samples from the investigation must be used for Laboratory Duplicate and MSD analysis	Laboratory control limit or 20% for RPD shall be used for original and duplicate sample values greater than or equal to five times the RL. A control limit of the RL value shall be used if either the sample or duplicate value is less than five times the CRRL.	Investigate problem and reanalyze. Document corrective action in the case narrative.

Table 3-11B. Mercury using USEPA Methods 7470A/7471B, total cyanide using USEPA Method 9012B and pH quality control requirements and corrective action

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Field Duplicate Analysis **(Precision)**	Collected 1 per matrix; every 20 samples of similar matrix. The field duplicate identification will not be provided to the laboratory.	Validation criteria: 30% RPD for waters and 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Percent solids	For solid samples, the percent solids will be determined and sample results will be corrected for percent solids.	Not applicable	Not applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Analyte quantitation	Concentrations for ICP/MS, cyanide and mercury analysis are reported based on dry weight of the sample. Calculations for the ICP/MS should include appropriate interference corrections, internal standard normalization, and summation of signals at 206, 207, and 208 mass to charge for lead. All QC criteria must be met when applying correction equations. If interference is detected, elements impacted are flagged to indicate percentage interference correction applied to the data or an uncorrected interference because of the equation used for quantitation.	Not applicable	Not applicable

Table 3-11B. Mercury using USEPA Methods 7470A/7471B, total cyanide using USEPA Method 9012B and pH quality control requirements and corrective action

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
MDL Determination	Before any field samples are analyzed, the MDLs shall be determined for non-prepared analyses, each digestion procedure and instrument used, prior to the start of analyses, and annually thereafter.	Not applicable	Not Applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Dilutions	When target analyte concentration exceed upper limit of calibration curve. When matrix interference demonstrated by lab and documented in the case narrative. Laboratory will note in the data deliverables which analytical runs were reported.	Not applicable	Not applicable

Table 3-11B. Mercury using USEPA Methods 7470A/7471B, total cyanide using USEPA Method 9012B and pH quality control requirements and corrective action

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. An example calculation may be requested for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP Requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-11B. Mercury using USEPA Methods 7470A/7471B, total cyanide using USEPA Method 9012B and pH quality control requirements and corrective action

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action

Notes:

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-12. Total Phenols using USEPA Method 9066 and nitrate using USEPA Method 353.2/300.0 quality control requirements and corrective actions.

Audit Parameter (DQI) where applicable	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous samples: cooler temperature ≤6°C, preserve with H_2SO_4 to pH≤2. For solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be prepared and analyzed within holding time.	Phenols: Analyze 28 days from collection. Nitrate: Analyze 48 hrs from collection. 28 days from collection to analysis if preserved	1. If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the Quality Assurance Officer (QAO) since re-sampling may be required.
Initial Calibration and Calibration Verification **(ICV, CCV)** **(Accuracy)**	At a minimum three to five standards (depending on method requirements) and a blank, prior to sample analysis and when calibration verification criteria are not met.. One standard must be at the QL concentration. ICV accompanies each initial calibration. CCV is analyzed following calibration, after every 10 samples and at the end of the sequence to bracket sample analyses.	Linear calibration with correlation coefficient greater than 0.995. For ICV, CCV - 90% to 110% of expected value.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration criteria have been met.
Calibration Blank **(Sensitivity)**	At beginning and end of run and at a rate of 10% during analysis sequence.	The absolute value of the target analyte must be less than QL.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document corrective action in the case narrative 4. Samples cannot be analyzed until blank control limit criteria have been met.

Table 3-12. Total Phenols using USEPA Method 9066 and nitrate using USEPA Method 353.2/300.0 quality control requirements and corrective actions.

Audit Parameter (DQI) where applicable	Frequency	Control Limits	Corrective Action
Preparation/Method Blank Analysis **(Sensitivity)**	1 for each batch of samples prepared in the sample batch.	Target analytes less than QL.	1. Reanalyze blank. 2. If limits are still exceeded, clean instrument and recalibrate analytical system and re-preparation and reanalyze affected samples if detected. 3. Document corrective action - samples cannot be analyzed until blank criteria are met.
Laboratory Control Sample Analysis **(Accuracy)**	Every 20 samples or each preparation batch. Prepared independently from calibration standards.	Recovery within laboratory control limits or 80% to 120%. The lowest acceptable control limits for recovery will be 10%.	1. If recovery failures are above control limits and these target analytes are not detected in the associated samples, no corrective action is required. 2. If recovery failures are below the control limits, reanalyze LCS and examine results of other QC analyses. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document corrective action in the case narrative.
Matrix Spike Analysis **(Accuracy)**	Collected per QAPP requirements. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery within laboratory control limits or 75-125%. Recovery does not apply if sample concentration > 4 X spike concentration. Spike must contain all analytes. The lowest acceptable laboratory control limits for recovery will be 10%.	1.Re-aAnalyze 2. Document corrective action in the case narrative.

Table 3-12. Total Phenols using USEPA Method 9066 and nitrate using USEPA Method 353.2/300.0 quality control requirements and corrective actions.

Audit Parameter (DQI) where applicable	Frequency	Control Limits	Corrective Action
Laboratory Duplicate or Matrix Spike Duplicate Analysis **(Precision)**	Collected per QAPP requirements. Samples from the investigation must be used for Laboratory Duplicate and MSD analysis. If samples were not designated as QC samples, contact QAO upon receipt of samples at the laboratory.	Laboratory control limit or 20% for RPD shall be used for original and duplicate sample values greater than or equal to five times the QL. A control limit of the QL value shall be used if either the sample or duplicate value is less than five times the QL.	1. Investigate problem and reanalyze. 2. Document corrective action in the case narrative.
Field / Equipment Blank Analysis **(Sensitivity)**	Collected per project requirements.	Target analytes less than QL.	1. Investigate problem. 2. Document in the case narrative.
Field Duplicate Analysis **(Precision)**	Collected per project requirements.	Validation criteria: 50% RPD for waters, 100% RPD for solids. For sample results that are less than or equal to five times the QL, the criterion of plus or minus two times the QL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Dilutions	Dilute and reanalyze samples with concentrations that are greater than the linear range of the instrument or method technique. The laboratory will note in the data package which analytical runs were used to report the sample results.	Not applicable	Not applicable. .

Table 3-12. Total Phenols using USEPA Method 9066 and nitrate using USEPA Method 353.2/300.0 quality control requirements and corrective actions.

Audit Parameter (DQI) where applicable	Frequency	Control Limits	Corrective Action
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project.	Not applicable	Not applicable
Laboratory control limits	Non-project information will not be included in the data packages. Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.

Table 3-12. Total Phenols using USEPA Method 9066 and nitrate using USEPA Method 353.2/300.0 quality control requirements and corrective actions.

Audit Parameter (DQI) where applicable	Frequency	Control Limits	Corrective Action
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous samples: cooler temperature ≤6°C. For solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Method Summary – Methyl Mercury in aqueous or solid media, USEPA Modified Method 1630, Based on Eurofins Frontier Global Sciences SOP **EFASF-T-AFS-SOP2808**	Mono Methyl Mercury measured by Cold Vapor- Gas Chromatography- Atomic Fluorescence Spectrometry (CV-GC-AFS). The sample is pH adjusted and ethylated in a closed vessel. The volatile Elemental Mercury [Hg (0)] and ethyl derivatives and labile Hg (II) (methyl ethyl and diethyl mercury) are purged onto a trap. The trap is dried then placed into a train; analytes are thermally desorbed into an inert gas, separated by a GC column, passed through a pyrolytic column to convert to detectable Elemental Mercury, then to the CVAFS for detection. Aqueous samples are collected directly into a rigorously cleaned, pretested, polyethylene terephthalate glycol-modified (PETG) bottle using sample handling techniques designed for collection of mercury at trace levels, with minimum headspace and acid-preserved. Solid samples are collected into clean wide mouth glass or high density polyethylene or glass jars with Teflon-lined caps and are preserved by freezing to -11 °C upon receipt. Maximum holding time is 180 days from collection to analysis.		
Holding times (Sensitivity)	Samples must be digested and analyzed within holding time.	Aqueous samples are collected directly into a rigorously cleaned, pretested, polyethylene terephthalate glycol-modified (PETG) bottle using sample handling techniques designed for collection of mercury at trace levels. Aqueous samples are acid preserved upon receipt at the laboratory. For preserved samples, the time to analysis is 6 months if kept in the dark and cool. Solid samples are collected into wide mouth glass or high density polyethylene jars and are preserved by freezing upon receipt. Solid samples must be analyzed 180 days from collection.	1. If holding times are exceeded for initial or any reanalysis required due to QC excursions, notify the QAO since re-sampling may be required. 2. Document any observation or corrective action in the case narrative.

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Initial Calibration **(Accuracy)**	Initial calibration consists of at least five calibration standards (0.05 to 4 ng/L) and one instrument calibration blank (IBL) following ICV. The lowest calibration point must be at the quantitation limit (QL) or lower.	Subtract the peak area of the IBL for each standard and sample. Calculate the calibration factor for Hg in each of the five standards. Criteria for the calibration: 1. RSD ≤ 15%. 2. Recovery for the lowest standard (0.05 ng/L) 65-135%R.	1. If RSD ≤ 15%, calculate sample results using the average response factor. 2. If RSD > 15% or if the recovery of the lowest standard is not in the range of 65-135%, recalibrate the analytical system and repeat the calibration check. 3. Document any observation or corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
Initial Calibration Verification and Calibration Verification **(ICV/CCV)** **(Accuracy)**	Analyze the ICV after initial calibration and CCV solution (0.5 ng/L) after every 10 analyses and at the end of the sequence.	ICV/CCV Criteria: ICV - Recovery must be within 67-133%. CCV - Recovery must be within 67-133%.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate and re-analyze samples. 3. Document any observation or corrective action in the case narrative – samples cannot be reported until ICV/CCV criteria have been met at the beginning and end of each batch.
Instrument Calibration Blank (ICB) **(Sensitivity)**	Instrument calibration blanks are analyzed to demonstrate freedom from system contamination. The ICB must be analyzed per analytical batch, after the ICV. The blank for an analytical batch, if within acceptance criteria, is subtracted from all raw data for that batch prior to the calculation of results.	1. If the blank is greater than the RL the system is out of control.	1. The problem must be investigated and remedied, and the associated samples must be reanalyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until blank criteria have been met.

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Continuing Calibration Blank (CCB) **(Sensitivity)**	CCBs are analyzed to demonstrate freedom from system contamination. The CCB must be analyzed every 10 samples.	1. If the blank is greater than the RL the system is out of control.	1. The problem must be investigated and remedied, and the associated samples must be reanalyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until blank criteria have been met.
Method Blank **(Sensitivity)**	Method blanks are used to demonstrate that the analytical system is free from contamination that could otherwise compromise sample results and are prepared and analyzed using sample containers, labware, reagents, and analytical procedures identical to those used to prepare and analyze the samples. A minimum of three method blanks per analytical batch are required.	1. The mean for 3 method blanks must be less than 0.045 ng/L Hg with standard deviation of <0.015 ng/L or the system is out of control. 2. Mercury in the analytical system must be reduced until a method blank is free from contamination at the 0.045 ng/L level. Samples associated with a contaminated method blank must be reanalyzed. 3. The average method blank for an analytical batch, if within acceptance criteria, is subtracted from all raw data for that batch prior to the calculation of results.	1. The problem must be investigated and remedied and samples re-analyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until method blank control limit criteria have been met.
Field Blank Analysis **(Sensitivity)**	Field collected - Field blank(s) are samples collected as per the QAPP, from the same site at the same time, to a maximum of 10 samples. Analyze the blank immediately before analyzing the samples in the batch.	1. If Hg is found in the field blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the field blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Equipment Blank Analysis **(Sensitivity)**	Before any sampling equipment is used at a given site equipment blanks are generated on all sampling equipment that will be used to demonstrate that the sampling equipment is free from contamination. Equipment blanks are generated i by processing reagent water through the sampling devices using the same procedures that are used in the field. Therefore, the "clean hands/dirty hands" technique used during field sampling should be followed when preparing equipment blanks at the laboratory or cleaning facility for low level mercury measurements.	1. If Hg is found in the equipment blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the equipment blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.
Quality Control Sample (QCS) / Laboratory Control Sample Analysis / LCSD **(Accuracy)**	Prepared independently from calibration standards at mid-point of the concentration range or at the CCV concentration and analyzed at the mid-point of the analytical batch.	Recovery must be within 70-130%. RPD must be <25RPD.	1. Reanalyze LCS and examine results of other QC analyses. 2. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate and reanalyze samples since last satisfactory LCS. 3. Document any observation or corrective action in the case narrative.
Matrix Spike Analysis / Matrix Spike Duplicate **(Accuracy and Precision)**	One for each batch of 10 samples of similar matrix.	1. Recovery must be within 65-130%. 2. RPD less than or equal to 35.	1. Reanalyze and examine results of other QC analyses. 2. Document any observation or corrective action in the case narrative.

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Field Duplicate Analysis (Precision)	Collected per the QAPP	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicate.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Target Analyte Identification	Not applicable	Species are eluted according to molecular weights, with the following peaks being typical for most analysis. A peak corresponding to elemental mercury, Hg(0), appears first. The second peak corresponds to methyl ethyl mercury. This is the peak of interest, the ethylation product of methyl mercury. The third peak corresponds to diethyl mercury, resulting from the ethylation of Hg(II)—inorganic mercury in the reagents and sample. This is not quantitative for Hg(II), however, as most Hg(II) is excluded by the distillation procedure.	Not applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 5-10 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
MDL Determination	Each time this Method is modified, the laboratory is required to repeat the procedure to demonstrate that an MDL (40 CFR Part 136, Appendix B) less than or equal to one-third the regulatory compliance level or less than or equal to the MDL of this Method, whichever is greater, can be achieved.	Not applicable	Not applicable
Preparation Batch / Analytical Run	An analytical run is a set of samples prepared with the same batch of analytical reagents, and analyzed during the same 12-hour shift. Multiple preparation batches could exist on a single analytical run. A preparation batch may be from 1 to 20 samples prepared with the same batch of reagents at the same time. Each batch must be accompanied by at least three blanks, and a LCS/LCSD. In addition, there must be one MS and one MSD sample for every 10 samples (a frequency of 10%).	Not applicable	Not applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Dilutions	When target analyte concentration exceed upper limit of calibration curve or when non-target analytes exceed the high limit of the system. When matrix interference demonstrated by lab and documented in the case narrative. Laboratory will note in the data deliverables which analytical runs were reported.	Not applicable	Not applicable
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.

Table 3-13. Methyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous samples: cooler temperature ≤6°C. For solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Method Summary – Dimethyl Mercury in aqueous or solid media, USEPA Modified Method 1630, Based on Eurofins Frontier Global Sciences EFAFS-T-AFS-SOP2816	Dimethyl Mercury ($(CH_3)_2Hg$) in aqueous and solids measured by Cold Vapor- Gas Chromatography- Atomic Fluorescence Spectrometry (CV-GC-AFS). Samples are stored unpreserved in a cool, dark location until analysis. Solids are digested to release bound methyl mercury. In the aqueous sample/extract, volatile dimethyl mercury is separated from the matrix by purging onto a trap. The trap is thermally desorbed into an inert gas, separated by a GC column, then to the CVAFS for detection.		
Sample Collection and Holding times (Sensitivity)	Samples must be digested and analyzed within holding time.	Unfiltered aqueous samples are collected using rigorous ultra-clean protocols into a rigorously cleaned, glass or quartz bottle with Teflon™ lined caps. Samples are unpreserved in a cool, dark location for less than 48 hours until analysis. If samples cannot be analyzed within 48 hours of sampling the sample should be purged onto a carbo trap to extend the holding time to 28 days. Solid samples are collected into 60 -125 milliliter glass jars with Teflon™ lined caps to 80-90% full, placed on ice and overnight shipped to the laboratory where they are preserved by freezing to -11 °C upon receipt. Analysis holding time is six months from collection.	1. If holding times are exceeded for initial or any reanalysis required due to QC excursions, notify the QAO since re-sampling may be required. 2. Document any observation or corrective action in the case narrative.

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Initial Calibration **(Accuracy)**	Initial calibration consists of at least five calibration standards (0.128 to 5.12ng/L) and one instrument calibration blank (IBL) following ICV. The lowest calibration point must be at the quantitation limit (QL).	Subtract the peak area of the IBL for each standard. Calculate the calibration factor for Hg in each of the five standards. Criteria for the calibration: 1. RSD ≤ 15%. 2. Recovery for the lowest standard (0.128 ng/L) 65-135%R.	1. If RSD ≤ 15%, calculate sample results using the average response factor. 2. If RSD > 15% or if the recovery of the lowest standard is not in the range of 65-135%, recalibrate the analytical system and repeat the calibration check. 3. Document any observation or corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
Initial Calibration Verification and Continuing Calibration Verification **(ICV/CCV)** **(Accuracy)**	Analyze the ICV after initial calibration and CCV solution (1.57 ng/L) after every 10 analyses and at the end of the sequence.	ICV/CCV Criteria: ICV - Recovery must be within 67-133%. CCV - Recovery must be within 67-133%.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate and re-analyze samples. 3. Document any observation or corrective action in the case narrative – samples cannot be reported until ICV/CCV criteria have been met at the beginning and end of each batch.
Instrument Calibration Blank (ICB) **(Sensitivity)**	Instrument calibration blanks are analyzed to demonstrate freedom from system contamination. The ICB must be analyzed per analytical batch, after ICV.. The blank for an analytical batch, if within acceptance criteria, is subtracted from standard raw data for that batch prior to the calculation of results.	1. If the blank is greater than the RL the system is out of control.	1. The problem must be investigated and remedied, and the associated samples must be reanalyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until blank criteria have been met.

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Continuing Calibration Blank (CCB) **(Sensitivity)**	CCBs are analyzed to demonstrate freedom from system contamination. The CCB must be analyzed every 10 samples.	1. If the blank is greater than the RL the system is out of control.	1. The problem must be investigated and remedied, and the associated samples must be reanalyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until blank criteria have been met.
Method Blank **(Sensitivity)**	Method blanks are used to demonstrate that the analytical system is free from contamination that could otherwise compromise sample results and are prepared and analyzed using sample containers, labware, reagents, and analytical procedures identical to those used to prepare and analyze the samples. A minimum of three method blanks per analytical batch are required.	1. The 3 method blanks must be less than 0.128 ng/L Hg or the system is out of control. 3. The average method blank for an analytical batch, if within acceptance criteria, is subtracted from all raw data for that batch prior to the calculation of results.	1. The problem must be investigated and remedied and samples re-analyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until method blank control limit criteria have been met.
Field Blank Analysis **(Sensitivity)**	Field collected - Field blank(s) are samples collected as per the QAPP, from the same site at the same time, to a maximum of 10 samples. Analyze the blank immediately before analyzing the samples in the batch.	1. If Dimethyl mercury is found in the field blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the field blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Equipment Blank Analysis **(Sensitivity)**	Before any sampling equipment is used at a given site equipment blanks are generated on all sampling equipment that will be used to demonstrate that the sampling equipment is free from contamination. Equipment blanks are generated by processing reagent water through the sampling devices using the same procedures that are used in the field. Therefore, the "clean hands/dirty hands" technique used during field sampling should be followed when preparing equipment blanks at the laboratory or cleaning facility for low level mercury measurements.	1. If Dimethyl mercury is found in the equipment blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the equipment blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.
Quality Control Sample (QCS) / Laboratory Control Sample Analysis / LCSD **(Accuracy)**	Prepared independently from calibration standards at mid-point of the concentration range or at the CCV concentration and analyzed at the mid-point of the analytical batch.	Aqueous samples: Recovery must be within 75-125%. RPD must be ≤25%. Solid samples: Recovery must be within 67-133%. RPD must be ≤35%.	1. Reanalyze LCS and examine results of other QC analyses. 2. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate and reanalyze samples since last satisfactory LCS. 3. Document any observation or corrective action in the case narrative.
Ongoing Precision and Recovery (OCR) Analysis **(Accuracy)**	Prepared independently from calibration standards and analyzed at the beginning and end of each analytical batch.	Recovery must be within 67-133%.	1. Reanalyze and examine results of other QC analyses. 2. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate and reanalyze samples since last satisfactory OCR. 3. Document any observation or corrective action in the case narrative.

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Matrix Spike Analysis / Matrix Spike Duplicate **(Accuracy and Precision)**	One for each batch of 10 samples of similar matrix.	Aqueous samples: Recovery must be within 65-130%. RPD must be ≤35%. Solid samples: Recovery must be within 65-130%. RPD must be ≤35%.	1. Reanalyze and examine results of other QC analyses. 2. Document any observation or corrective action in the case narrative.
Field Duplicate Analysis **(Precision)**	Collected per the QAPP	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicate.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Laboratory control limits	Generated with results for an analyte from a minimum of 5-10 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
MDL Determination	Each time this Method is modified, the laboratory is required to repeat the procedure to demonstrate that an MDL (40 CFR Part 136, Appendix B) less than or equal to one-third the regulatory compliance level or less than or equal to the MDL of this Method, whichever is greater, can be achieved.	Not applicable	Not applicable
Analytical Batch	An analytical batch is a set of samples analyzed during the same 12-hour shift. A batch may be from 1 to 20 samples. Each batch must be accompanied by at least three blanks,and an LCS/LCSD. In addition, there must be one MS and one MSD sample for every 10 samples (a frequency of 10%).	Not applicable	Not applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Dilutions	When target analyte concentration exceed upper limit of calibration curve. When matrix interference demonstrated by lab and documented in the case narrative. Laboratory will note in the data deliverables which analytical runs were reported.	Not applicable	Not applicable

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-13A. Dimethyl Mercury using USEPA Modified Method 1630 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Note			
Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.			
Communications with the QAO will be documented and included in the data packages.			
Source: O'Brien & Gere			

Table 3-14. Mercury using USEPA Modified Method 1631 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous samples: cooler temperature ≤6°C. For solid samples: cooler temperature ≤6°C, See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Method Summary - Total Mercury in Aqueous or Solid Media, USEPA Modified Method 1631, Based on Eurofins Frontier Global Sciences SOP **EFASF-T-AFS-SOP2822**	Total mercury is measured by Flow Injection Atomic Fluorescence Spectrometry (AFS). Total mercury includes all bromine monochloride-oxidizable mercury forms found in an unfiltered aqueous solution. This includes, but is not limited to, Hg(II), Hg(0), strongly organo-complexed Hg(II) compounds, adsorbed particulate Hg (P), and several tested covalently bound organo-mercurials (e.g., CH_3HgCl, $(CH_3)_2Hg$, and $C_6H_5HgOOCCH_3$). The recovery of Hg bound within microbial cells may require the additional preparation. Aqueous samples are collected directly into a rigorously cleaned, pretested, polyethylene terephthalate glycol-modified (PETG) bottle using sample handling techniques designed for collection of mercury at trace levels. Aqueous samples are preserved upon receipt at the laboratory with 0.2N BrCL (pre-tested for mercury). Solid samples are collected into clean wide mouth glass or high density polyethylene or glass jars with Teflon-lined caps and are preserved by freezing to -11 °C upon receipt. Maximum holding time is 180 days. Solid samples are digested using modified EPA 1631b Aqua-Regia. Prior to analysis, Hg is oxidized to Hg(II). After oxidation, the sample is sequentially reduced with NH_2OH-HCl to destroy the free halogens, then reduced with stannous chloride (SnCl2) to convert Hg(II) to volatile Hg(0). The Hg(0) is separated from solution by purging with argon. The Hg(0) is collected onto traps, thermally desorbed from the analytical trap into a gas stream that carries the Hg into the an AFS for detection. Quality is assured through calibration and testing of the oxidation, purging, and detection systems.	
Selective Sequential Extraction of Geological Samples for Mercury Fractionation	Extraction fraction procedure to determine the following: Volatile Free Elemental Mercury (Hg^0) F-1 Water Soluble Mercury (solid samples only) F-2 pH 2 Soluble Mercury (solid samples only) F-3 1N KOH Extractable Mercury (solid samples only) F-4-12N HNO3 Soluble Mercury (solid samples only) F-5-Aqua Regia Soluble Mercury (solid samples only) F-6 Mineral-Bound Mercury (solid samples only) F-S Total Mercury by Sum of Species (solid samples only)		

Table 3-14. Mercury using USEPA Modified Method 1631 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Holding times (Sensitivity)	Samples must be digested and analyzed within holding time.	Aqueous samples are collected directly into a rigorously cleaned, pretested, polyethylene terephthalate glycol-modified (PETG) bottle using sample handling techniques designed for collection of mercury at trace levels. Aqueous samples are preserved (oxidized) upon receipt at the laboratory with 0.2N BrCL (pre-tested for mercury). Samples must be either preservedwithin 48 hours of collection unless preservation occurs with the original bottle of which preservation needs to occur within 28 days. Solid samples are collected into wide mouth glass or high density polyethylene or fluoropolymer jars and are preserved by freezing upon receipt. Solid samples must be analyzed 180 days from collection.	1. If holding times are exceeded for initial or any reanalysis required due to QC excursions, notify the QAO since re-sampling may be required. 2. Document any observation or corrective action in the case narrative.
Initial Calibration **(Accuracy)**	Initial calibration consists of at least five calibration standards (0.5 to 40 ng/L) and three instrument calibration blanks (IBLs). The lowest calibration point must be at the quantitation limit (QL) or below the QL.	Subtract the average peak area of the IBL for each standard and sample. Calculate the calibration factor for Hg in each of the five standards. Criteria for the calibration: 1. RSD ≤ 15%. 2. Recovery for the lowest standard (0.5 ng/L) 75-125%R.	1. If RSD ≤ 15%, calculate sample results using the average response factor. 2. If RSD > 15% or if the recovery of the lowest standard is not in the range of 75-125%, recalibrate the analytical system and repeat the calibration check. 3. Document any observation or corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
Initial Calibration Verification and Calibration Verification **(ICV/CCV)** **(Accuracy)**	Analyze the ICV after initial calibration and CCV solution (5 ng/L) after every 10 analyses and at the end of the sequence.	ICV/CCV Criteria: ICV - Recovery must be within 79-121%. CCV - Recovery must be within 77-123%.	1. Reanalyze in duplicate. 2. If criteria are still not met, identify and correct problem, recalibrate and re-analyze samples. 3. Document any observation or corrective action in the case narrative – samples cannot be reported until ICV/CCV criteria have been met at the beginning and end of each batch.

Table 3-14. Mercury using USEPA Modified Method 1631 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Instrument Calibration Blank (ICB) **(Sensitivity)**	Instrument calibration blanks are analyzed to demonstrate freedom from system contamination. At least three blanks must be run per analytical batch, prior to calibration standards. The average blank for an analytical batch, if within acceptance criteria, is subtracted from all raw data for that batch prior to the calculation of results.	1. If the blank is found to contain more than 0.5 ng/L Hg, the system is out of control. 2. The mean instrument blank must be ≤0.25 ng/L with a standard deviation of 0.1 ng/L.	1. The problem must be investigated and remedied, and the associated samples must be reanalyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until blank criteria have been met.
1% BrCl Method Blank **(Sensitivity)**	1% BrCl method blanks are used to demonstrate that the analytical system is free from contamination that could otherwise compromise sample results and are prepared and analyzed using sample containers, labware, reagents, and analytical procedures identical to those used to prepare and analyze the samples. A minimum of three 1% BrCl method blanks per analytical batch are required.	1. If the result for any method blank containing the nominal amount of reagent used to prepare a sample is found to contain > 0.50 ng/L Hg, the system is out of control. 2. Mercury in the analytical system must be reduced until a method blank is free from contamination at the 0.50 ng/L level. Samples associated with a contaminated method blank must be reanalyzed.	1. The problem must be investigated and remedied and samples re-analyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until method blank control limit criteria have been met.
Field Blank Analysis **(Sensitivity)**	Field collected - Field blank(s) are samples collected as per the QAPP, from the same site at the same time, to a maximum of 10 samples. Analyze the blank in the same batch as the samples at the beginning.	1. If Hg is found in the field blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the field blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.

Table 3-14. Mercury using USEPA Modified Method 1631 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Equipment Blank Analysis **(Sensitivity)**	Before any sampling equipment is used at a given site equipment blanks are generated on all sampling equipment that will be used to demonstrate that the sampling equipment is free from contamination. Equipment blanks are generated by processing reagent water through the sampling devices using the same procedures that are used in the field. Therefore, the "clean hands/dirty hands" technique used during field sampling should be followed when preparing equipment blanks at the laboratory or cleaning facility for low level mercury measurements.	1. If Hg is found in the equipment blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the equipment blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.
Quality Control Sample (QCS) / Laboratory Control Sample Analysis / **LCSD** **(Accuracy)**	Prepared independently from calibration standards at mid-point of the concentration range or at the CCV concentration and analyzed at the mid-point of the analytical batch.	Recovery must be within 80-120%. RPD must be ≤24	1. Reanalyze LCS and examine results of other QC analyses. 2. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate and reanalyze samples since last satisfactory LCS. 3. Document any observation or corrective action in the case narrative.
Ongoing Precision and Recovery (OCR) Analysis **(Accuracy)**	Prepared independently from calibration standards and analyzed at the beginning and end of each analytical batch.	Recovery must be within 77-123%.	1. Reanalyze and examine results of other QC analyses. 2. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate and reanalyze samples since last satisfactory OCR. 3. Document any observation or corrective action in the case narrative.
Matrix Spike Analysis / Matrix Spike Duplicate **(Accuracy and Precision)**	One for each batch of 10 samples of similar matrix.	1. Recovery must be within 71-125%. 2. RPD must be ≤24	1. Reanalyze and examine results of other QC analyses. 2. Document any observation or corrective action in the case narrative.

Table 3-14. Mercury using USEPA Modified Method 1631 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Field Duplicate Analysis **(Precision)**	Collected per the QAPP	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicate.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Laboratory control limits	Generated with results for an analyte from a minimum of 5-10 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
MDL Determination	Each time this Method is modified, the laboratory is required to repeat the procedure to demonstrate that an MDL (40 CFR Part 136, Appendix B) less than or equal to one-third the regulatory compliance level or less than or equal to the MDL of this Method, whichever is greater, can be achieved.	Not applicable	Not applicable

Table 3-14. Mercury using USEPA Modified Method 1631 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Preparation Batch / Analytical Run	An analytical run is a set of samples/QC prepared with the same batch of analytical reagents, and analyzed during the same 12-hour shift. For a water preparation batch may be from 1 to 20 samples and only the method blanks with the samples as this is a preservation step only. The LCS/LCSD, analytical duplicates and analytical matrix spikes/spike duplicates are created during the analytical run for the matrix A solid preparation batch may be from 1 to 20 samples. Each batch must be accompanied by at least three blanks, a LCS/LCSD, . In addition, there must be one MS and one MSD sample for every 10 samples (a frequency of 10%).	Not applicable	Not applicable
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Dilutions	When target analyte concentration exceed upper limit of calibration curve. When matrix interference demonstrated by lab and documented in the case narrative. Laboratory will note in the data deliverables which analytical runs were reported.	Not applicable	Not applicable

Table 3-14. Mercury using USEPA Modified Method 1631 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with the QAO will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-15. Arsenic Speciation using USEPA Modified Method 1632 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous samples: cooler temperature ≤6°C. For solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Method Summary – Arsenic Speciation or Solid Media, USEPA Modified Method 1632, Based on Eurofins Frontier Global Sciences SOP **EFAFS-T-AFS-SOP2987**	Arsenic Speciation in aqueous and solids by Hydride Generation Cryogenic Trapping Gas Chromatography- Atomic Absorption Spectrophotometry (HG-CT-GC-AAS). Applied to arsenite [As(III)], total inorganic arsenic (TIA), and arsenate [As(V)] by calculation. Arsenic species (TIAs/MMA/DMA) are selectively volatilized from solution by controlling the pH then reducing to corresponding hydrides with borohydride in the reaction vessel. The arsines are purged from the solution by a helium gas flow then trapped onto a liquid nitrogen cooled 'U' column. Heating the column re-volatilizes the arsines and allows for chromatographic separation based on increasing boiling points. The arsines are carried into a quartz furnace with a hydrogen-air flame where they are atomized and detected via atomic absorption spectrophotometry. The elution order is as follows: TIAs eluting first and MMA and DMA a several minutes later. As(III) is selectively volatilized from solution by adding a tris buffer to the reaction vessel.		
Holding times (Sensitivity)	Samples must be digested and analyzed within holding time.	Aqueous samples are acidified to pH <2 with hydrochloric acid and stored in polyethylene bags at 0-6°C from the time of collection until analysis. Analyze 28 days from collection. Solid samples are collected into plastic zip type bags (double bagged) or wide-mouth jars with Teflon lined lids. Analyze 180 days from collection at < -11 °C.	1. If holding times are exceeded for initial or any reanalysis required due to QC excursions, notify the QAO since re-sampling may be required. 2. Document any observation or corrective action in the case narrative.
Initial Calibration **(Accuracy)**	Initial calibration consists of at least three calibration standards (0.01 to 0.5 µg/L) for arsenite (AsIII) and total inorganic arsenic (TIAs) and one instrument calibration blank (IBL) following ICV. The lowest calibration point must be at the quantitation limit (QL).	Calculate the calibration factor for Hg in each of the three standards. Criteria for the calibration: 1. RSD ≤ 20% or correlation coefficient ≥ 0.995.	1. If RSD ≤ 20% or correlation coefficient ≥ 0.995, calculate sample results using the average response factor. 2. If RSD > 20% or correlation coefficient < 0.995 recalibrate the analytical system and repeat the calibration check. 3. Document any observation or corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.

Table 3-15. Arsenic Speciation using USEPA Modified Method 1632 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Initial Calibration Verification and Calibration Verification **(ICV/CCV)** **(Accuracy)**	Analyze the ICV after initial calibration and CCV solution at mid-level concentration after every 10 analyses and at the end of the sequence.	ICV/CCV Criteria: As III/– ICV/CCV - Recovery must be within 70-130%. TIAs (Total Inorganic Arsenic)/– ICV/CCV - Recovery must be within 80-120%.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate and re-analyze samples. 3. Document any observation or corrective action in the case narrative – samples cannot be reported until ICV/CCV criteria have been met at the beginning and end of each batch.
Instrument Calibration Blank (ICB) **(Sensitivity)**	Instrument calibration blanks are analyzed to demonstrate freedom from system contamination.	1. If the blank is greater than the RL the system is out of control.	1. The problem must be investigated and remedied, and the associated samples must be reanalyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until blank criteria have been met.
Method Blank **(Sensitivity)**	Method blank is used to demonstrate that the analytical system is free from contamination that could otherwise compromise sample results and is prepared and analyzed using sample containers, labware, reagents, and analytical procedures identical to those used to prepare and analyze the samples.	The method blanks must be less than the RL or the system is out of control.	1. The problem must be investigated and remedied and samples re-analyzed. 2. Document any observation or corrective action in the case narrative – samples cannot be analyzed until method blank control limit criteria have been met.
Field Blank Analysis **(Sensitivity)**	Field collected - Field blank(s) are samples collected as per the QAPP, from the same site at the same time, to a maximum of 10 samples. Analyze the blank immediately before analyzing the samples in the batch.	If found in the field blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the field blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.

Table 3-15. Arsenic Speciation using USEPA Modified Method 1632 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Equipment Blank Analysis **(Sensitivity)**	Before any sampling equipment is used at a given site equipment blanks are generated on all sampling equipment that will be used to demonstrate that the sampling equipment is free from contamination.	1. If found in the equipment blank at a concentration equal to or greater than the RL, results for associated samples may be the result of contamination and may not be reported.	If contamination of the equipment blank and associated samples is known or suspected, the laboratory should communicate this to the sampling team so that the source of contamination can be identified.
Quality Control Sample (QCS) / Laboratory Control/LCSD Sample Analysis **(Accuracy)**	Prepared independently from calibration standards at mid-point of the concentration range or at the CCV concentration and analyzed at the mid-point of the analytical batch.	As III – Recovery must be within 30-170%. RPD <35.	1. Reanalyze LCS and examine results of other QC analyses. 2. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate and reanalyze samples since last satisfactory LCS. 3. Document any observation or corrective action in the case narrative.
Matrix Spike Analysis/Matrix Spike Duplicate **(Accuracy and Precision)**	One for each batch of 10 samples of similar matrix.	As III – Recovery must be within 30-170%. RPD <35.	1. Reanalyze and examine results of other QC analyses. 2. Document any observation or corrective action in the case narrative.
Field Duplicate Analysis **(Precision)**	Collected per the QAPP	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicate.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.

Table 3-15. Arsenic Speciation using USEPA Modified Method 1632 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Laboratory control limits	Generated with results for an analyte from a minimum of 5-10 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
MDL Determination	Each time this Method is modified, the laboratory is required to repeat the procedure to demonstrate that an MDL (40 CFR Part 136, Appendix B) less than or equal to one-third the regulatory compliance level or less than or equal to the MDL of this Method, whichever is greater, can be achieved.	Not applicable	Not applicable
Preparation Batch / Analytical Run	A preparation batch is a set of samples/QC prepared with the same batch of reagents. A batch may be from 1 to 20 samples. Each batch must be accompanied by one blank per 10 samples, a LCS/LCSD and there must be one MS and one MSD sample for every 10 samples (a frequency of 10%). An analytical batch is a set of samples prepared with the same batch of analytical reagents, and analyzed during the same analytical day. Many preparation batches could exist on an analytical run.	Not applicable	Not applicable

Table 3-15. Arsenic Speciation using USEPA Modified Method 1632 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Dilutions	When target analyte concentration exceed upper limit of calibration curve ornon target analyte concentrations quench analytical reagents. When matrix interference demonstrated by lab and documented in the case narrative. Laboratory will note in the data deliverables which analytical runs were reported.	Not applicable	Not applicable

Table 3-15. Arsenic Speciation using USEPA Modified Method 1632 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-15. Arsenic Speciation using USEPA Modified Method 1632 quality control requirements and corrective actions

Audit	Frequency	Control Limits	Corrective Action
Note			
Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.			
Communications with the QAO will be documented and included in the data packages.			
Source: O'Brien & Gere			

Table 3-16. AVS/SEM using USEPA 821-R-91-100 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be prepared and analyzed within holding time.	1. Preserve at 4°C (± 2°C) as soon as possible after sample collection. 2. Analyze within 14 days from collection. 3. Sulfide ion is unstable in the presence of oxygen. Protect samples from exposure to oxygen during sample collection and handling. 4. During storage sulfide can be formed or lost due to biological activity and sulfide can be lost by volatilization or oxidation. Metal species can change as a result of changes in sulfide concentration and as a result of other changes to the sample. 5. Samples should be collected in wide mouth jars with a minimum of air space above the sediment. If possible, the headspace should be filled with oxygen-free nitrogen or argon. The jar lids must have Teflon or polyethylene liners.	If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify QAO since re-sampling may be required. Document corrective action in the case narrative.
Calibration for AVS (Accuracy)	Initial calibration using five standard calibration curve every three months. Continuing calibration analyzed with each sample batch.	90-110 % Recovery	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.

Table 3-16. AVS/SEM using USEPA 821-R-91-100 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Control Limits	Corrective Action
Calibration for SEM- Metals **(ICV, CCV)** **(Accuracy)**	Calibrate daily or once every 24 hours using a blank and at least three standards. An ICV is analyzed following the calibration using an independent standard at a concentration within the calibration range. A CCV standard at the mid-range level concentration, is analyzed at the beginning of the run, every 2 hours or at a frequency of 10%, and at the end of each run.	90-110 % Recovery	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
SEM- LLQC Standard for ICP. **(Accuracy)**	For ICP, spiked at the Reporting Limit.	70-130% recovery	1. If recovery is outside of 70-130 % Recovery, stop analysis. 2. Identify and correct problem, recalibrate if necessary, re-verify calibration, and reanalyze affected samples.
SEM- Calibration **Blank** **(Sensitivity)**	ICB must be analyzed after ICV. CCB must be analyzed after CCV, at beginning and end of run and at a rate of 10% or every 2 hours during analysis sequence.	Evaluate whether ICB or CCB exceeds the RL.	If CCB or ICB exceeds the RL, stop analysis. Identify and correct problem, recalibrate and reanalyze affected samples. Document corrective action - **samples cannot be analyzed until blank criteria have been met.**
AVS- Preparation Blank Analysis **(Sensitivity)**	One prepared with every batch of samples prepared.	Evaluate whether preparation blank exceeds the RL.	1. If preparation blank exceeds the RL, stop analysis. 2. Identify and correct problem, re-prepare and reanalyze affected samples. Document corrective action - **samples cannot be analyzed until blank criteria have been met.**

Table 3-16. AVS/SEM using USEPA 821-R-91-100 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Control Limits	Corrective Action
SEM- Preparation Blank Analysis **(Sensitivity)**	One prepared with every batch of samples prepared.	Evaluate whether ICB or CCB exceeds the RL.	1. If preparation blank exceeds the RL, and if concentration of the analyte in the associated samples is greater than the RL and less than 10 times the blank concentration, stop analysis. 2. If preparation blank is less than the negative RL, and the concentration of the analyte in the associated samples is less than 10 times the RL, stop analysis 3. Identify and correct problem, re-prepare and reanalyze affected samples. Document corrective action - **samples cannot be analyzed until blank criteria have been met.**
Field/ **Equipment Blank Analysis** **(Sensitivity)**	At the frequency listed in the QAPP.	Evaluate whether blank exceeds the RL.	blank exceeds the RL investigate problem and contact QAO. ocument in case narrative.
AVS- LCS Analysis **(Accuracy)**	Every 20 samples or each preparation batch. Prepared independently from calibration standards.	Recovery must be within laboratory control limits. If laboratory limits not established, use 85-105 %Recovery.	If recovery is outside of 50 –150 %Recovery, stop analysis. Correct problem. Re-prepare and reanalyze samples since last satisfactory LCS. Document corrective action.
SEM- LCS Analysis **(Accuracy)**	Every 20 samples or each preparation batch. Prepared independently from calibration standards.	Recovery must be within laboratory control limits.	1. If recovery is outside of 50 –150 %Recovery, stop analysis. 2. Correct problem. - prepare and reanalyze samples since last satisfactory LCS. - Document corrective action.
SEM- ICP Serial Dilution Analysis **(Accuracy)**	Every group of samples of similar matrix. Only required when analyte concentration is >50 times the IDL in the original sample.	Must agree within 10% of the original determination.	Report result

Table 3-16. AVS/SEM using USEPA 821-R-91-100 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Control Limits	Corrective Action
SEM- ICP Interference Check Sample Analysis **(Accuracy)**	Beginning and end of each analytical run or twice during every 8 hours, whichever is more frequent for ICP.	Results for Solution AB – 80-120% Recovery	Stop analysis. Correct problem and recalibrate. Reanalyze samples analyzed since last satisfactory ICS. Document corrective action.
AVS- MS/MSD Analysis **(Accuracy and Precision)**	One per group of similar concentration and matrix, every 20 samples.	If spike concentration is greater than 10% of the un-spiked sample concentration, recovery must be within laboratory control limits. If laboratory limits not established, use 85-105 %Recovery.	If recovery is outside of 50 –150 %Recovery, stop analysis. Investigate. Re-prepare and reanalyze samples one time. Document corrective action.
SEM- MS/MSD Analysis **(Accuracy and Precision)**	One per group of similar concentration and matrix.	If sample concentration does not exceed the spike concentration by a factor of four or more, 75-125% Recovery	If recovery is outside of 50-150 % Recovery, reanalyze. For ICP, if recovery is outside of 75-125 % Recovery, analyze post-digestion spike at two times the CRRL or two times the indigenous level, whichever is greater. Document corrective action.
SEM- MS/MSD or Laboratory Duplicate Analysis **(Precision)**	One per group of similar concentration and matrix.	20% RPD for values greater than or equal to 5 times the RL. For values less than 5 times the CRRL, .± the RL	Report result.
Field Duplicate Analysis **(Precision)**	At the frequency listed in the QAPP.	Validation criteria: 30% RPD for waters, 50% RPD for solids. For sample results that are less than or equal to five times the RL, the criterion of plus or minus two times the RL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case by case basis during the validation process.
AVS- colorimetric method procedure	Between 30 minutes and 120 minutes after adding mixed diamine reagent to develop the color, measure the absorbance.	If the absorbance is greater than 0.6, dilute 10f-fold and compare to the high range concentration curve.	NA
AVS- MDL or IDL Determination	Performed annually	Prepared as per method	NA
SEM- IDL Determination	Within 30 days of the start of analysis and semiannually.	Prepared as per method.	NA

Table 3-16. AVS/SEM using USEPA 821-R-91-100 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Control Limits	Corrective Action
AVS - Linear Range Analysis	Not required for AVS	Performed as per method	NA
SEM- Linear Range Analysis	Every 6 months.	Within 5% of the true value.	NA
SEM- Interelement Correction For ICP	Within 6 months of the start of analysis and annually. Correction factors for Al, Ca, Fe, and Mg must be reported and for others if they are applied.	As per method procedures.	NA
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document corrective action in the case narrative 4. Samples cannot be analyzed until blank control limit criteria have been met.
Dilutions	Dilute and reanalyze samples with concentrations that are greater than the linear range of the instrument or method technique. The laboratory will note in the data package which analytical runs were used to report the sample results.	Not applicable	Not applicable. .
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable

Table 3-16. AVS/SEM using USEPA 821-R-91-100 quality control requirements and corrective actions.

Audit Parameter (DQI)	Frequency	Control Limits	Corrective Action
Deliverables as required	1. Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-17. Nitrate and Nitrite using USEPA Methods 9056A, 353.2 and 300.0 quality control requirements and corrective actions

Audit (Where applicable)	Frequency (Where applicable)	Control Limits (Where applicable)	Corrective Action (Where applicable)
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and solid samples: cooler temperature ≤6°C, See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding Times	Samples must be prepared and analyzed within holding time.	Nitrate, Nitrite: Analyze 48 hours from collection.	1. If holding times are exceeded for initial or any reanalysis required due to QC excursions, notify the QAO since re-sampling may be required. 2. Document corrective action in the case narrative.
Initial Calibration	Three to six point calibration standards prior to sample analysis. One standard must be at the QL concentration.	Linear calibration using response factor with RSD less than or equal to 10%. If RSD <10% the average calibration factor (external calibration) is used for quantitation. For compounds with RSD greater than 10% use linear calibration that does not pass through the origin with least squares regression (r for un-weighted least squares regression, Coefficient of Determination or r2 must be greater than 0.990) or non-linear calibration using no more than third order with seven standards, (COD or r2 must be greater than 0.990).	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
Initial and Continuing Calibration Verification **(ICV, CCV)**	ICV analyzed following calibration and CCV after every 10 samples and at the end of the sequence. CCV is also analyzed daily in lieu of a full initial calibration.	ICV, CCV recovery must be within 90-110% of the true value.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.

Table 3-17. Nitrate and Nitrite using USEPA Methods 9056A, 353.2 and 300.0 quality control requirements and corrective actions

Audit (Where applicable)	Frequency (Where applicable)	Control Limits (Where applicable)	Corrective Action (Where applicable)
Initial and Continuing Calibration Blank (ICB/CCB)	After ICV/CCV at beginning and end of run and at a rate of 10%.	The absolute value of the ICB and CCB must not exceed the QL.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate and reanalyze affected samples. 3. Document corrective action in the case narrative - samples cannot be analyzed until blank control limit criteria have been met.
Preparation Blank Analysis	1 per batch of samples prepared or 1 in 20, whichever is greater.	The absolute value of the method blank must not exceed the QL. Preparation blank for turbidity and color interference check is subtracted for phosphate analysis.	1. Reanalyze blank. 2. If limits are still exceeded, re-prepare and reanalyze affected samples. 3. Document corrective action in the case narrative - samples cannot be analyzed until blank criteria are met.
Laboratory Control Sample Analysis	Every 20 samples or each preparation batch. Prepared independently from calibration standards.	Recovery within laboratory control limits. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze LCS and examine results of other QC analyses. 2. If recovery is still outside limits, and other QC criteria are met, report both runs. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, reanalyze samples since last satisfactory LCS. 4. Document corrective action in the case narrative.
Matrix Spike Analysis	Collected at the frequency listed in the QAPP. Samples from the investigation must be used for MS/MSD or MS/Duplicate analysis.	Recovery within laboratory control limits or 75-125%. Recovery does not apply if sample concentration > 4 X spike concentration. Spike must contain all analytes. The lowest acceptable laboratory control limits for recovery will be 10%.	1. If LCS criteria are met, document in the case narrative. 2. If LCS criteria are not met, examine other QC data to identify the source of the problem. 3. Re-prepare/ reanalyze samples associated with the matrix spike and LCS. 4. Document corrective action.

Table 3-17. Nitrate and Nitrite using USEPA Methods 9056A, 353.2 and 300.0 quality control requirements and corrective actions

Audit (Where applicable)	Frequency (Where applicable)	Control Limits (Where applicable)	Corrective Action (Where applicable)
Laboratory Duplicate or Matrix Spike Duplicate Analysis	Collected at the frequency listed in the QAPP. Samples from the investigation must be used for Laboratory Duplicate and MSD analysis	RPD within laboratory control limits or 20% for RPD shall be used for original and duplicate sample values greater than or equal to five times the QL. A control limit of the QL value shall be used if either the sample or duplicate value is less than five times the CRQL.	1. Investigate problem and reanalyze. 2. Document corrective action.
Field/Equipment Blank Analysis	Collected at the frequency listed in the QAPP.	Less than QL	1. Investigate problem. 2. Document in the case narrative.
Field Duplicate Analysis	Collected at the frequency listed in the QAPP. The field duplicate identification will not be provided to the laboratory.	Validation criteria: 50% RPD for waters. For sample results that are less than or equal to five times the QL, the criterion of plus or minus two times the QL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Dilutions	1. Dilute and reanalyze samples with concentrations that are greater than the linear range of the instrument. 2. The laboratory will note in the data package which analytical runs were used to report the sample results.	Not applicable	Not applicable. .
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable

Table 3-17. Nitrate and Nitrite using USEPA Methods 9056A, 353.2 and 300.0 quality control requirements and corrective actions

Audit (Where applicable)	Frequency (Where applicable)	Control Limits (Where applicable)	Corrective Action (Where applicable)
Deliverables	1.Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation may be requested for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Note

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-18. Ammonia using USEPA Method 350.1 quality control requirements and corrective actions.

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature 4°C, H_2SO_4 to pH<2. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be prepared and analyzed within holding time.	Ammonia: Analyze 28 days from collection.	1. If holding times are exceeded for initial or any re-analyses required due to QC excursions, notify the Quality Assurance Officer (QAO) since re-sampling may be required.
Initial Calibration and Calibration Verification **(ICV, CCV)** **(Accuracy)**	At a minimum three to six standards (depending on method requirements) and a blank, prior to sample analysis and when calibration verification criteria are not met.. One standard must be at the QL concentration. ICV accompanies each initial calibration. CCV is analyzed following calibration, after every 10 samples and at the end of the sequence to bracket sample analyses.	Linear calibration using response factor with RSD less than or equal to 10%. If RSD <10% the average calibration factor (external calibration) is used for quantitation. For compounds with RSD greater than 10% use linear calibration that does not pass through the origin with least squares regression (r for un-weighted least squares regression, Coefficient of Determination or r2 must be greater than 0.995) or non-linear calibration using no more than third order with seven standards, (COD or r2 must be greater than 0.995). For ICV, CCV - 90% to 110% of expected value.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration criteria have been met.
Calibration Blank **(Sensitivity)**	At beginning and end of run and at a rate of 10% during run.	The absolute value of the target analyte must be less than QL.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document corrective action in the case narrative 4. Samples cannot be analyzed until blank control limit criteria have been met.

Table 3-18. Ammonia using USEPA Method 350.1 quality control requirements and corrective actions.

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Preparation / Method Blank Analysis **(Sensitivity)**	1 per batch of samples prepared in the sample batch.	Target analytes less than QL.	1. Reanalyze blank. 2. If limits are still exceeded, clean instrument and recalibrate analytical system and re-preparation and reanalyze affected samples if detected. 3. Document corrective action - samples cannot be analyzed until blank criteria are met.
Laboratory Control Sample Analysis **(Accuracy)**	Every 20 samples or each preparation batch. Prepared independently from calibration standards.	Recovery within laboratory control limits or 80% to 120%. The lowest acceptable control limits for recovery will be 10%.	1. If recovery failures are above control limits and these target analytes are not detected in the associated samples, no corrective action is required. 2. If recovery failures are below the control limits, reanalyze LCS and examine results of other QC analyses. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document corrective action in the case narrative.
Matrix Spike Analysis **(Accuracy**	Collected per project requirements. Samples from the investigation must be used for MS/MSD analysis. If samples were not designated as MS/MSD samples, contact QAO upon receipt of samples at the laboratory.	Recovery within laboratory control limits or 75-125%. Recovery does not apply if sample concentration > 4 X spike concentration. Spike must contain all analytes. The lowest acceptable laboratory control limits for recovery will be 10%.	1. Document corrective action in the case narrative.

Table 3-18. Ammonia using USEPA Method 350.1 quality control requirements and corrective actions.

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Laboratory Duplicate or Matrix Spike Duplicate Analysis **(Precision)**	Collected per project requirements. Samples from the investigation must be used for Laboratory Duplicate and MSD analysis. If samples were not designated as QC samples, contact QAO upon receipt of samples at the laboratory.	Laboratory control limit or 20% for RPD shall be used for original and duplicate sample values greater than or equal to five times the QL. A control limit of the QL value shall be used if either the sample or duplicate value is less than five times the QL.	1. Investigate problem and reanalyze. 2. Document corrective action in the case narrative.
Field / Equipment Blank Analysis **(Sensitivity)**	Collected per project requirements.	Target analytes less than QL.	1. Investigate problem. 2. Document in the case narrative.
Field Duplicate Analysis **(Precision)**	Collected per project requirements.	Validation criteria: 50% RPD for waters, 100% RPD for solids. For sample results that are less than or equal to five times the QL, the criterion of plus or minus two times the QL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Dilutions	Dilute and reanalyze samples with concentrations that are greater than the linear range of the instrument or method technique. The laboratory will note in the data package which analytical runs were used to report the sample results.	Not applicable	Not applicable. .
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable

Table 3-18. Ammonia using USEPA Method 350.1 quality control requirements and corrective actions.

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. An example calculation may be requested for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP Requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Table 3-18. Ammonia using USEPA Method 350.1 quality control requirements and corrective actions.

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action

Notes:

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere

Table 3-19. Ignitability using USEPA Method 1010A, corrosivity using USEPA Method 9040C/9045D, total sulfide using USEPA Method 9030B/9034 and paint filter using USEPA Method 9095B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Sample preservation	Samples must be preserved based on method and QAPP requirements	For aqueous and soil samples: cooler temperature 4°C. See Table 1 for sample preservation information.	Notify Project Manager since re-sampling may be required. Document corrective action in the case narrative.
Holding times (Sensitivity)	Samples must be prepared and analyzed within holding time.	Ignitability, corrosivity, total sulfide: Analyze 2 days from collection. Paint Filter- Analyze 28 days from collection.	1. If holding times are exceeded for initial or any reanalysis required due to QC excursions, notify the QAO since re-sampling may be required. 2. Document corrective action in the case narrative.
Initial Calibration **(Accuracy)**	Three to five point calibration standards prior to sample analysis. One standard must be at the QL concentration.	1. Linear calibration using response factor with RSD less than or equal to 10%. If RSD <10% the average calibration factor (external calibration) is used for quantitation. 2. For compounds with RSD greater than 10% use linear calibration that does not pass through the origin with least squares regression (r for un-weighted least squares regression, Coefficient of Determination or r^2 must be greater than 0.990) or non-linear calibration using no more than third order with seven standards, (COD or r^2 must be greater than 0.990).	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.
Initial Calibration and Calibration Verification **(ICV, CCV)** **(Accuracy)**	ICV analyzed following calibration and CCV after every 10 samples and at the end of the sequence.	ICV, CCV recovery must be within 90-110% of the true value.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action in the case narrative - samples cannot be analyzed until calibration control limit criteria have been met.

Table 3-19. Ignitability using USEPA Method 1010A, corrosivity using USEPA Method 9040C/9045D, total sulfide using USEPA Method 9030B/9034 and paint filter using USEPA Method 9095B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Initial and Continuing Calibration Blank (ICB/CCB) (Sensitivity)	After ICV/CCV at beginning and end of run and at a rate of 10% or every 2 hours during run.	The absolute value of the ICB and CCB must not exceed the QL.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate and reanalyze affected samples. 3. Document corrective action in the case narrative - samples cannot be analyzed until blank control limit criteria have been met.
Preparation Blank Analysis (Sensitivity)	1 per batch of samples prepared or 1 in 20, whichever is greater.	The absolute value of the method blank must not exceed the QL. Preparation blank for turbidity and color interference check is subtracted for phosphate analysis.	1. Reanalyze blank. 2. If limits are still exceeded, re-prepare and reanalyze affected samples. 3. Document corrective action in the case narrative - samples cannot be analyzed until blank criteria are met.
Laboratory Control Sample Analysis (Accuracy)	Every 20 samples or each preparation batch. Prepared independently from calibration standards.	Recovery within laboratory control limits. The lowest acceptable control limits for recovery will be 10%.	1. Reanalyze LCS and examine results of other QC analyses. 2. If recovery is still outside limits, and other QC criteria are met, report both runs. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, reanalyze samples since last satisfactory LCS. 4. Document corrective action in the case narrative.
Matrix Spike Analysis (Accuracy)	Collected one per 20 samples or one per matrix (for less than 20 samples) Samples from the investigation must be used for MS/MSD or MS/Duplicate analysis.	Recovery within laboratory control limits or 75-125%. Recovery does not apply if sample concentration > 4 X spike concentration. Spike must contain all analytes. The lowest acceptable laboratory control limits for recovery will be 10%.	1. If LCS criteria are met, document in the case narrative. 2. If LCS criteria are not met, examine other QC data to identify the source of the problem. 3. Re-prepare/ reanalyze samples associated with the matrix spike and LCS. 4. Document corrective action.

Table 3-19. Ignitability using USEPA Method 1010A, corrosivity using USEPA Method 9040C/9045D, total sulfide using USEPA Method 9030B/9034 and paint filter using USEPA Method 9095B quality control requirements and corrective actions

Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Laboratory Duplicate or Matrix Spike Duplicate Analysis (Precision)	Collected one per 20 samples or one per matrix (for less than 20 samples) Samples from the investigation must be used for Laboratory Duplicate and MSD analysis	RPD within laboratory control limits or 20% for RPD shall be used for original and duplicate sample values greater than or equal to five times the QL. A control limit of the QL value shall be used if either the sample or duplicate value is less than five times the CRQL.	Investigate problem 2. Document corrective action.
Field/Equipment Blank Analysis (Sensitivity)	Collected one per sampling event, or one per 20 samples or one per matrix (for less than 20 samples)	Less than QL	1. Investigate problem. 2. Document in the case narrative.
Field Duplicate Analysis (Precision)	Collected 1 per matrix; every 20 samples of similar matrix. The field duplicate identification will not be provided to the laboratory.	Validation criteria: 50% RPD for waters. For sample results that are less than or equal to five times the QL, the criterion of plus or minus two times the QL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Dilutions	1. Dilute and reanalyze samples with concentrations that are greater than the linear range of the instrument. 2. The laboratory will note in the data package which analytical runs were used to report the sample results.	Not applicable	Not applicable. .
Laboratory control limits	Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable

Table 3-19. Ignitability using USEPA Method 1010A, corrosivity using USEPA Method 9040C/9045D, total sulfide using USEPA Method 9030B/9034 and paint filter using USEPA Method 9095B quality control requirements and corrective actions

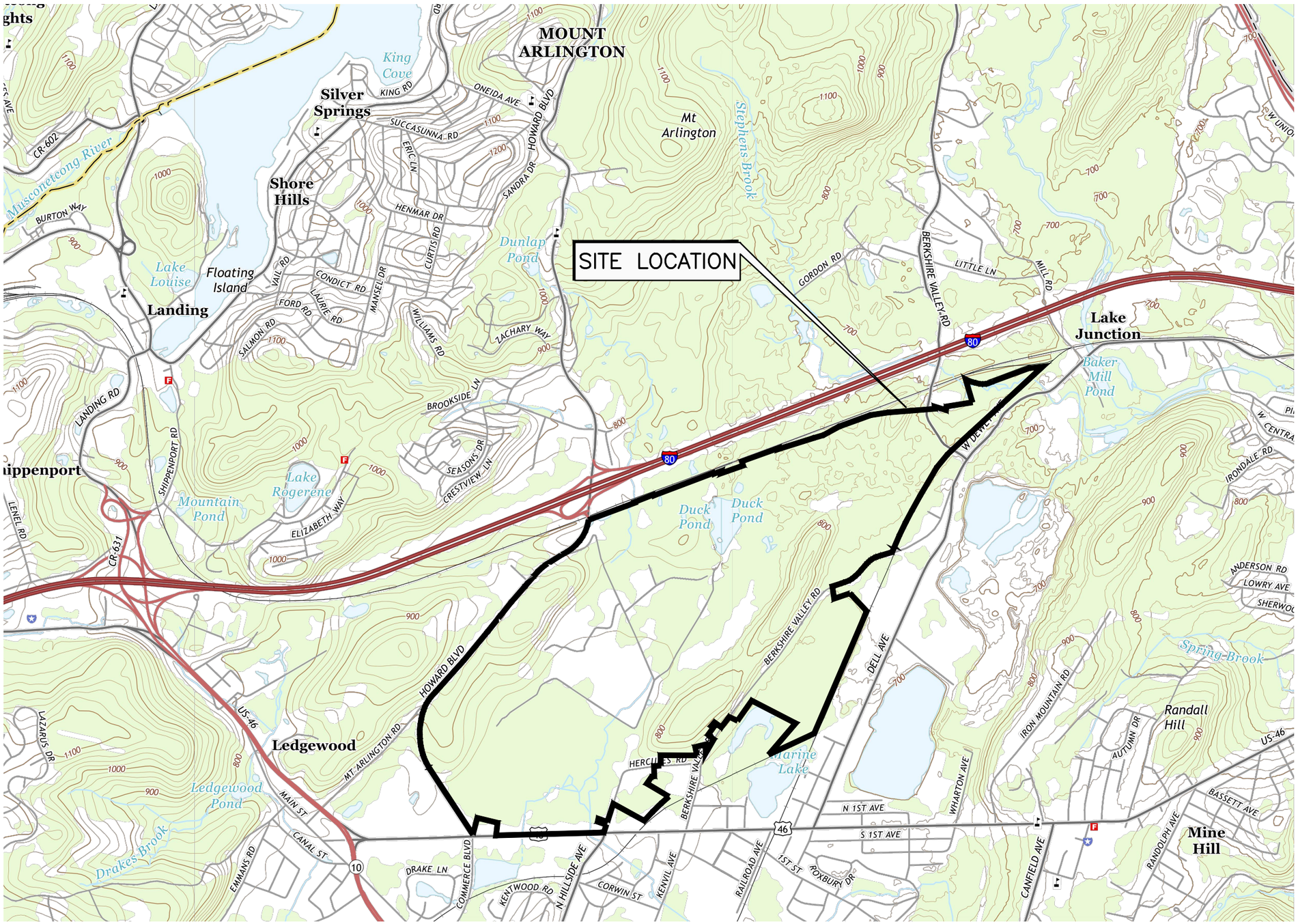
Audit (DQI) (where applicable)	Frequency	Control Limits	Corrective Action
Deliverables as required	Full NJDEP deliverables must be provided to document each audit item for easy reference and inspection. It is recommended that an example calculation be provided for each analysis, for each type of matrix in the data package using samples from the project. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. Final spiking concentrations will be presented in summary form. Standard tracing information will be provided. Cooler temperatures will be provided in the data packages. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.
Method and QAPP Requirements	The laboratory will perform the method as presented in this QAPP and will adhere to the QAPP requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the QAPP in the data package case narrative.	Not applicable	Not applicable

Notes:

Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.

Communications with O'Brien & Gere will be documented and included in the data packages.

Source: O'Brien & Gere



ADAPTED FROM DOVER AND STANHOPE NEW JERSEY U.S.G.S. QUADRANGLE

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

SCALE: 1:24000

N

QUADRANGLE LOCATION

HERCULES INCORPORATED-
KENVIL WORKS FACILITY

ANALYTICAL QUALITY ASSURANCE
PROJECT PLAN
REPORT UPDATE
KENVIL, NEW JERSEY

SITE LOCATION MAP

FILE NO. 2420.50725-300
JUNE 2019

O'BRIEN & GERE ENGINEERS, INC.

6/21/2019 9:26 AM

I:\Ashland.2420\50725.Kenvil-Remedial\Docs\DWG\Sheets\B-1 SITE LOCATION PLAN.dwg

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ Group # _____ Sample # _____

| | | |

eurofins | Frontier Global Sciences

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
Phone: 425-686-1996
Fax: 425-686-3096
info@FrontierGS.com
http://www.Eurofinsus.com/Frontier/

Client:	Contact:	FGS PM:	
Address:	Phone: Fax:	Date:	
	E-mail:	TAT (business days): **20** (std) **15 10 5 4 3 2 24 hrs.** (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)	
Project Name:	Contract/PO:		
Report To:	Invoice To:	Saturday delivery? ☐ Y ☐N (If yes, please contact PM)	
Address:	Address:		
Phone: Fax:	Phone: Fax:	EDD ☐ Y ☐ N	
E-mail:	E-mail:	QA ☐ Standard ☐ High	

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested						Comments
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

For Laboratory Use Only		Matrix Codes:	Relinquished By:	Received By:	Received By:
COC Seal:	Comments:	**FW:** Fresh Water			
Cooler Temp:		**WW:** Waste Water	Name:	Name:	Name:
Carrier:		**SB:** Sea and Brackish Water	Organization:	Organization:	Organization:
VTSR:		**SS:** Soil and Sediment	Date & Time:	Date & Time:	Date & Time:
# of Coolers:		**TS:** Plant and Animal Tissue **HC:** Hydrocarbons **TR:** Trap **OT:** Other	Tracking number:		

Sample Disposal:
☐ Return (shipping fees may apply)
☐ Standard Disposal – 30 Days after report
☐ Retain for ____ weeks after report (storage fees may apply)

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Customer Approval: _____ Date: _____

Rev. 4/2010

CHAIN OF CUSTODY

Page _____ of _____

Company:
Project Contact:
Telephone:
Project Name:
Project #:
Location:
Sampled By:

CT LABORATORIES

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Lab Use Only
Place Header Sticker Here:

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____

PO #

Report To:
EMAIL:
Company:
Address:

Invoice To:*
EMAIL:
Company:
Address:

**Client Special Instructions*

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Matrix:
GW – groundwater **SW** - surface water **WW** - wastewater **DW** - drinking water
S - soil/sediment **SL** - sludge **A** - air **M** - misc/waste

Turnaround Time
Normal RUSH*
Date Needed:
_____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample ID Description	Filtered? Y/N	ANALYSES REQUESTED	Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
						Fill in Spaces with Bottles per Test			

Relinquished By:	Date/Time	Received By:	Date/Time
Received by:	Date/Time	Received for Laboratory by:	Date/Time

Lab Use Only
Ice Present Yes No
Temperature _____
Cooler # _____

CT Laboratories Terms and Conditions

Where a purchaser (Client) places an order for laboratory, consulting or sampling services from CT Laboratories (CTL), CTL shall provide the ordered services pursuant to these Terms and Conditions, and the related Quotation, or as agreed in a negotiated contract. In the absence of a written agreement to the contrary, the Order constitutes an acceptance by the Client of CTL's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by CTL in advance of the start of the project and in writing.

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy)

1.1 The Client may place the Order (i.e., specify a Scope of Work) either by submitting a purchase order to CTL in writing, by telephone (confirmed in writing) or by negotiated contract. Whichever option the Client selects for placing the Order, the Order shall not be valid unless it contains sufficient specification to enable CTL to carry out the Client's requirements. It is the policy of CT Laboratories that samples not meeting the acceptance criteria, outlined in the NELAC standards and Section 5.8.3.2 of the DOD QSM, will not be accepted by the laboratory or will be qualified on the final report. All samples submitted to the laboratory must: (1) be accompanied by proper, full and complete documentation, including sample identification, location, date and time of collection, the collector's name, type of preservation (if any), type of sample, any special comments concerning the sample and any additional pertinent fields on the chain-of-custody. In the absence of any of the required information, the laboratory will attempt to contact the client to obtain the information; if unable to obtain the necessary information, the final report will be qualified. (2) be labeled appropriately with a unique sample identification written with indelible ink on water resistant labels. If the laboratory cannot determine the identity of a sample, it will be rejected and the client will be contacted for further instructions or resampling. (3) be in an appropriate sample container. If the container is inappropriate, the client will be contacted for further instructions or resampling. If analysis is possible, the final report will be qualified. CT Laboratories can provide a sampling guide containing approved containers and preservations for analytical methods requested. (4) adhere to specified holding times. If samples are received with less than ½ the holding time remaining for the requested test, CT Laboratories will make its best effort to analyze the samples and notify the client. If holding times are exceeded, the final report will be qualified. (5) contain adequate sample volume to perform the necessary testing. If sufficient volume is not present, the sample will be rejected and the client will be contacted for further instructions or resampling. If samples show signs of damage, contamination or inadequate preservation, the client will be notified. If analysis can be performed, the final report will be qualified. If not, the samples will be rejected and the client notified for further instructions or resampling.

1.2 CT Laboratories must be supplied with complete written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. Where any samples which were not accompanied by the required disclosure, cause interruptions in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean up and recovery.

1.3 Prior to Sample Acceptance, the entire risk of loss or damage to samples remains with the Client. In no event will CTL have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from CTL's premises. Client is responsible to assure that any sample containing any hazardous substance which is to be delivered to CTL's premises will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

2. PAYMENT TERMS

2.1 Services performed by CTL will be in accordance with prices quoted and later confirmed in writing or as stated in the Price Schedule. Invoices may be submitted to Client upon completion of any sample delivery group. Payment in advance is required for all Clients except those whose credit has been established with CTL. For Clients with approved credit, payment terms are net 30 days from the date of invoice by CTL. All overdue payments are subject to an additional interest and service charge of one and one-half percent (1.5%) (or the maximum rate permissible by law, whichever is lesser) per month or portion thereof from the due date until the date of payment. All fees are charged or billed directly to the Client. The billing of a third party will not be accepted without a statement, signed by the third party that acknowledges and accepts payment responsibility. CTL may suspend work and withhold delivery of data under this order at any time in the event Client fails to make timely payment of its invoices. Client shall be responsible for all costs and expenses of collection including reasonable attorney's fees. CTL reserves the right to refuse to proceed with work at any time based upon an unfavorable Client credit report.

3. CHANGE ORDERS, TERMINATION

3.1 Changes to the Scope of Work, price, or result delivery date may be initiated by CTL after Sample Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. CTL will not proceed with such changes until an agreement with the Client is reached on the amount of any cost, schedule change or technical change to the Scope of Work, and such agreement is documented in writing.

3.2 Changes to the Scope of Work, including but not limited to increasing or decreasing the work, changing test and analysis specification or acceleration in the performance of the work may be initiated by the Client after sample acceptance. Such a change will be documented in writing and may result in a change in cost and turnaround time commitment. CTL's acceptance of such changes is contingent upon technical feasibility and operational capacity.

3.3 Suspension or termination of all or any part of the work may be initiated by the Client. CTL will be compensated consistent with Section 2 of these Terms and Conditions. CTL will complete all work in progress and be paid in full for all work completed.

4. WARRANTIES AND LIABILITY

4.1 Where applicable, CTL will use analytical methodologies which are in substantial conformity with published test methods. CTL has implemented these methods in its Laboratory Quality Manuals and referenced Standard Operating Procedures and where the nature or composition of the sample requires it, CTL reserves the right to deviate from these methodologies as necessary or appropriate, based on the reasonable judgment of CTL, which deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or CTL's Laboratory Quality Manuals. Client may request that CTL perform according to a mutually agreed Quality Assurance Project Plan (QAPP). In the event that samples arrive prior to agreement on a QAPP, CTL will proceed with analyses under its standard Quality Manuals then in effect, and CTL will not be responsible for any resampling or other charges if work must be repeated to comply with a subsequently finalized QAPP.

4.2 CTL shall start preparation and/or analysis within holding times provided that Sample Acceptance occurs within 48 hours of sampling or 1/2 of the holding time for the test, whichever is less. Where resolution of inconsistencies leading to Sample Acceptance does not occur within this period, CTL will use its best efforts to meet holding times and will proceed with the work provided that, in CTL's judgment, the chain-of-custody or definition of the Scope of Work provide sufficient guidance. Reanalysis of samples to comply with CTL's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met.

4.3 CTL warrants that it possesses and maintains all licenses and certifications which are required to perform services under these Terms and Conditions provided that such requirements are specified in writing to CTL prior to Sample Acceptance. CTL will notify the Client in writing of any decertification or revocation of any license, or notice of either, which affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by CTL in connection with any services performed by CTL or any Results generated from such services, and CTL gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representative of CTL is authorized to give or make any other representation or warranty or modify this warranty in any way.

4.5 Client's sole and exclusive remedy for the breach of warranty in connection with any services performed by CTL, will be limited to repeating any services performed, contingent on the Client's providing, at the request of CTL and at the Client's expense, additional sample(s) if necessary. Any reanalysis requested by the Client generating Results consistent with the original Results will be at the Client's expense. If resampling is necessary, CTL's liability for resampling costs will be limited to actual cost or one hundred or one hundred fifty dollars ($150) per sample, whichever is less.

4.6 CTL's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services performed or $100,000. All claims, including those for negligence, shall be deemed waived unless suit thereon is filed within one year after CTL's completion of the services. Under no circumstances, whether arising in contract, tort (including negligence), or otherwise, shall CTL be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared.

4.7 In no event shall CTL have any responsibility or liability to the Client for any failure or delay in performance by CTL which results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of CTL. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown highly contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond CTL's reasonable control.

5. RESULTS, WORK PRODUCT

5.1 Data or information provided to CTL or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by CTL of payment for the whole Order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by CTL for performance of work will be retained by CTL, and Client shall not disclose such information to any third party.

5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by CTL shall be held in confidence (unless such information is generally available to the public or is in the public domain or Client has failed to pay CTL for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.

5.3 Should the Results delivered by CTL be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold CTL's right to independently defend its data.

5.4 CTL reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in CTL's sole judgment, it is reasonably necessary, appropriate or advisable to do so, and with the Client's permission. CTL will in no way be liable for any subcontracted services and all applicable warranties, guarantees and insurance are those of the subcontracted laboratory.

5.5 CTL shall dispose of the Client's samples 30 days after the analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable Federal, state or local requirements. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at their own expense. CTL reserves the right to return to the Client any sample or unused portion of a sample that is not within CTL's permitted capability or the capabilities of CTL's designated waste disposal vendor(s).

5.6 Unless a different time period is agreed to in any order under these Terms and Conditions, CTL agrees to retain all records for five (5) years.

5.7 In the event that CTL is required to respond to legal process related to services for Client, Client agrees to reimburse CTL for hourly charges for personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation.

6. INSURANCE

6.1 CTL shall maintain in force during the performance of services under these Terms and Conditions, Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over CTL's employees who are engaged in the performance of the work. CTL shall also maintain during such period, Comprehensive General and Contractual Liability (limit of $2,000,000 per occurrence/ aggregate), Comprehensive Automobile Liability, owned and hired, ($1,000,000 combined single limit), and Professional/Pollution Liability Insurance (limit of $5,000,000 per occurrence/aggregate). Any Client required changes to these limits or conditions may result in a change in cost to the Client.

7. AUDIT

7.1 Upon prior notice to CTL, the Client may audit and inspect CTL's records and accounts covering reimbursable costs related to work done for the Client, for a period of one (1) year after completion of the work. The purpose of any such audit shall be only for verification of such costs, and CTL shall not be required to provide access to cost records where prices are expressed as fixed fees or published unit prices

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Environmental Chemistry
Chain of Custody

EMSL Order Number (*Lab Use Only*):

PHONE:
FAX:

Report To Contact Name:			**Bill To Company:**		
Company Name:			**Attention To:**		
Street:			**Street:**		
City:	**State/Province:**	**Zip/Postal Code:**	**City:**	**State/Province:**	**Zip/Postal Code:**
Phone:	**Fax:**		**Phone:**	**Fax:**	
Project Name:		**Email Results To:**			**Purchase Order:**
U.S. State where Samples Collected:		**Number of Samples in Shipment:**			**Date of Shipment:**
Sample for Compliance? Yes ☐ No ☐ If yes, NPDES? ☐ Other (Specify):			**PWS ID #:**		**State Reporting Required? (Y/N) _____**
Samples Collected by: EMSL ☐ Client ☐ check one		**Sampled By (Signature):**			**Samples Received Chilled? (Y/N) _____**
Standard Turnaround Time: ☐ 2 Weeks		**The following TATs are subject to lab approval: ☐ 1 Week ☐ 4 Days ☐ 3 Days ☐ 2 Days ☐ 1 Day**			

Failure to complete will hinder processing of samples				**Matrix**	**Preservative**	**List Test(s) Needed**								
Client Sample ID	**Comp**	**Grab**	**Collect Date/Time**	**W=Water S=Soil A=Air SL=Sludge O= Other**	**1=HCL 2=HNO3 3=H2SO4 4=ICE 5=Other**					Field pH	Field pH Test Time	Field Temp. Deg C	Field Temp. Test Time	**Comments**
	☐	☐												
	☐	☐												
	☐	☐												
	☐	☐												
	☐	☐												

Released By (Signature)	**Date & Time**	**Received By**	**Date & Time**

Please indicate reporting requirements: ☐ Results Only ☐ Results and QC ☐ Reduced Deliverables ☐ Disk Deliverable ☐ Other _____

Instructions or Comments:

Note: Field pH and Field Temperature are tested on the same day as the date of sample collection. **(Lab) Received Temperature: _____°C**

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Environmental Chemistry Chain of Custody

EMSL Order Number (*Lab Use Only*):

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Failure to complete will hinder processing of samples				Matrix	Preservative	List Test(s) Needed								
Client Sample ID	Comp	Grab	Collect Date/Time	W=Water S=Soil A=Air SL=Sludge O= Other	1=HCL 2=HNO3 3=H2SO4 4=ICE 5=Other					Field pH	Field pH Test Time	Field Temp Deg C	Field Temp Test Time	Comments
	☐	☐												
	☐	☐												
	☐	☐												
	☐	☐												
	☐	☐												
	☐	☐												
	☐	☐												
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	☐	☐												

Note: Field pH and Field Temperature are tested on the same day as the date of sample collection. **(Lab) Received Temperature: _____°C**

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A
Required Client Information:

Company:	
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name:
Project Number:

Section C
Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location
STATE: _____

Requested Analysis Filtered (Y/N)

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes
MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COLLECTED: COMPOSITE START TIME	COLLECTED: COMPOSITE END/GRAB DATE	COLLECTED: COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test											Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1																												
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY):

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Instructions for completing Chain of Custody (COC)

1. **Section A and B:** Complete all Client information at top of sheet: company name, address, phone, fax, contact (the person to contact if there are questions, and who will receive the final report.), e-mail address (if available), PO#, Project Name and/or Project Number as you would like to see it appear on the report.

2. **Section C:** Invoice Information: Billing information is included in this section. This information should include the name and address of the person receiving the invoice.

3. Quote Reference should be completed if a quotation was provided by Pace Analytical. The Project Manager, and Profile No. will be completed by Pace Analytical Services.

4. **Site Location:** A separate COC must be filled out for each day of sample collection. Record the two letter postal code for the US state in which the samples were collected.

5. **Regulatory Agency:** List the program that is guiding the work to ensure proper regulations are followed.

6. **Section D:** Complete a Sample Description in the "SAMPLE ID' section as you would like it to appear on the laboratory report. The following information should also be included: the sample matrix, sample type (G (grab) or C (composite). When collecting a composite, the start time and end time should be documented in the respective boxes. The collection time for a grab (G) sample should be entered in the boxes marked 'Composite End/Grab'), Sample temp at collection (if required by state), the total number of containers, and preservative used.

7. Mark if the sample was filtered in the field by marking Y or N in 'Filtered' row by the Analysis requested.

8. Requested Analysis: List the required analysis and methods on the lines provided and place a check in the column for the samples requiring the analysis. Additional comments should be referenced in the bottom left hand corner or include attachments for extended lists of parameters.

9. The sampler should print their name in the space provided and sign their name followed by the date of the sampling event at the bottom of the COC in the spaces designated for 'SAMPLER NAME AND SIGNATURE'.

10. When relinquishing custody of the samples to a representative of the laboratory or other organization, indicate the Item Numbers of those samples being transferred; sign relinquished by, date and time, and include your affiliation.

***Important Note:**

Standard Turnaround Time is 2 Weeks/10 business days. Results will be delivered by end of business on the date due unless other arrangements have been made with your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be included on the chain of custody in the Additional Comments section.

APPENDIX A
LABORATORY CERTIFICATIONS

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to

CT Laboratories LLC
1230 Lange Court
Baraboo, Wisconsin 53913

Agency Interest No. 115843
Activity No. ACC20170002

According to the Louisiana Administrative Code, Title 33, Part I, Subpart 3, LABORATORY ACCREDITATION, the State of Louisiana formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and agrees to adapt to any changes in the requirements. It also acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part I and the 2009 TNI Standard by which the laboratory was assessed. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status.

Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory. To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:I.4711.

Cheryl Sonnier Nolan
Administrator
Public Participation and Permit Support Services Division

Issued Date: 15 June 2017

Effective Date: July 1, 2017
Expiration Date: June 30, 2018
Certificate Number: 04091

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

CT Laboratories LLC
AI Number: 115843
Activity No. ACC20170002

Effective Date: July 1, 2017

Expiration Date: June 30, 2018

1230 Lange Court, Baraboo, Wisconsin 53913

Certificate Number: 04091

Air Emissions

Analyte	Method Name	Method Code	Type	AB
NONE	NONE	NONE	NONE	NONE

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
100790 - ERO/ORO/RRO	EPA 8015C (extended)	2331	NELAP	LA
6657 - Propylene Glycol	EPA 8015C (extended)	2331	NELAP	LA
2017 - Sulfur	EPA 6010 (extended)	2829	NELAP	LA
2005 - Sulfide	EPA 9030/9034	2877	NELAP	LA
3755 - Carbon dioxide	SM 4500-CO2 D-2011	2938	NELAP	LA
6014 - 2,3-Dinitrotoluene	EPA 8270D SIM (extended)	3004	NELAP	LA
100743 - 2,5-Dinitrotoluene (2,5-DNT)	EPA 8270D SIM (extended)	3004	NELAP	LA
100604 - 3,4-Dinitrotoluene (3,4-DNT)	EPA 8270D SIM (extended)	3004	NELAP	LA
100744 - 3,5-Dinitrotoluene (3,5-DNT)	EPA 8270D SIM (extended)	3004	NELAP	LA
7005 - Alachlor	EPA 8270D SIM (extended)	3004	NELAP	LA
4627 - Dichlorofluoromethane (Freon 21)	EPA 8260C (extended)	3005	NELAP	LA
4855 - Hexane	EPA 8260C (extended)	3005	NELAP	LA
4990 - Methyl methacrylate	EPA 8260C (extended)	3005	NELAP	LA
6462 - 2-Nitroguanidine	EPA 8330A (extended)	3006	NELAP	LA
6462 - 2-Nitroguanidine	EPA 8330B (extended)	3007	NELAP	LA
9577 - Thiodiglycol	CTL SOP SV018	3838	NELAP	LA
1923 - Reactive Cyanide	EPA 7.3.3.2, Rev.3	10001204	NELAP	LA
1925 - Reactive sulfide	EPA 7.3.4.2, Rev.3	10001408	NELAP	LA
1970 - Residue-volatile	EPA 160.4	10010205	NELAP	LA
2055 - Turbidity	EPA 180.1, Rev.2	10011800	NELAP	LA
1000 - Aluminum	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1005 - Antimony	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1010 - Arsenic	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1015 - Barium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1020 - Beryllium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1025 - Boron	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1030 - Cadmium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1035 - Calcium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1040 - Chromium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1050 - Cobalt	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1055 - Copper	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1070 - Iron	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1075 - Lead	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1085 - Magnesium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1090 - Manganese	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1100 - Molybdenum	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1105 - Nickel	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1125 - Potassium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1140 - Selenium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1150 - Silver	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1155 - Sodium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1160 - Strontium	EPA 200.7, Rev.4.4	10013806	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1165 - Thallium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1175 - Tin	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1180 - Titanium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1185 - Vanadium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1190 - Zinc	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1005 - Antimony	EPA 200.9, Rev.2.2	10015404	NELAP	LA
1010 - Arsenic	EPA 200.9, Rev.2.2	10015404	NELAP	LA
1075 - Lead	EPA 200.9, Rev.2.2	10015404	NELAP	LA
1140 - Selenium	EPA 200.9, Rev.2.2	10015404	NELAP	LA
1150 - Silver	EPA 200.9, Rev.2.2	10015404	NELAP	LA
1165 - Thallium	EPA 200.9, Rev.2.2	10015404	NELAP	LA
1095 - Mercury	EPA 245.1, Rev.3	10036609	NELAP	LA
1095 - Mercury	EPA 245.7	10038003	NELAP	LA
1825 - Total Nitrate+Nitrite	EPA 300.0	10053006	NELAP	LA
1540 - Bromide	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1575 - Chloride	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1730 - Fluoride	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1805 - Nitrate	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1835 - Nitrite	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1840 - Nitrite as N	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1870 - Orthophosphate as P	EPA 300.0, Rev.2.1	10053200	NELAP	LA
2000 - Sulfate	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1505 - Alkalinity as CaCO3	EPA 310.2	10055002	NELAP	LA
1515 - Ammonia as N	EPA 350.1	10063408	NELAP	LA
1795 - Kjeldahl nitrogen - total	EPA 351.2, Rev.2	10065404	NELAP	LA
1820 - Nitrate-Nitrite	EPA 353.2	10067400	NELAP	LA
1825 - Total Nitrate+Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
1910 - Total Phosphorus	EPA 365.1, Rev.2	10070005	NELAP	LA
1910 - Total Phosphorus	EPA 365.4	10071202	NELAP	LA
2005 - Sulfide	EPA 376.1	10074201	NELAP	LA
1565 - Chemical oxygen demand	EPA 410.4, Rev.2	10077404	NELAP	LA
2040 - Total Organic Carbon	EPA 415.1	10078407	NELAP	LA
4375 - Benzene	EPA 602	10102202	NELAP	LA
4765 - Ethylbenzene	EPA 602	10102202	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 602	10102202	NELAP	LA
5140 - Toluene	EPA 602	10102202	NELAP	LA
5260 - Xylene (total)	EPA 602	10102202	NELAP	LA
5240 - m+p-xylene	EPA 602	10102202	NELAP	LA
5250 - o-Xylene	EPA 602	10102202	NELAP	LA
7355 - 4,4'-DDD	EPA 608	10103603	NELAP	LA
7360 - 4,4'-DDE	EPA 608	10103603	NELAP	LA
7365 - 4,4'-DDT	EPA 608	10103603	NELAP	LA
7025 - Aldrin	EPA 608	10103603	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 608	10103603	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 608	10103603	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 608	10103603	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 608	10103603	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 608	10103603	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 608	10103603	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 608	10103603	NELAP	LA
7250 - Chlordane (tech.)	EPA 608	10103603	NELAP	LA
7470 - Dieldrin	EPA 608	10103603	NELAP	LA
7510 - Endosulfan I	EPA 608	10103603	NELAP	LA
7515 - Endosulfan II	EPA 608	10103603	NELAP	LA
7520 - Endosulfan sulfate	EPA 608	10103603	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7540 - Endrin	EPA 608	10103603	NELAP	LA
7530 - Endrin aldehyde	EPA 608	10103603	NELAP	LA
7535 - Endrin ketone	EPA 608	10103603	NELAP	LA
7685 - Heptachlor	EPA 608	10103603	NELAP	LA
7690 - Heptachlor epoxide	EPA 608	10103603	NELAP	LA
7810 - Methoxychlor	EPA 608	10103603	NELAP	LA
8250 - Toxaphene (Chlorinated camphene)	EPA 608	10103603	NELAP	LA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 608	10103603	NELAP	LA
7240 - alpha-Chlordane	EPA 608	10103603	NELAP	LA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 608	10103603	NELAP	LA
7105 - delta-BHC	EPA 608	10103603	NELAP	LA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 608	10103603	NELAP	LA
7245 - gamma-Chlordane	EPA 608	10103603	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 624	10107207	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 624	10107207	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 624	10107207	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 624	10107207	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 624	10107207	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 624	10107207	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 624	10107207	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 624	10107207	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 624	10107207	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 624	10107207	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 624	10107207	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 624	10107207	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 624	10107207	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 624	10107207	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 624	10107207	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 624	10107207	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 624	10107207	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 624	10107207	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 624	10107207	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 624	10107207	NELAP	LA
4665 - 2,2-Dichloropropane	EPA 624	10107207	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 624	10107207	NELAP	LA
4535 - 2-Chlorotoluene	EPA 624	10107207	NELAP	LA
4860 - 2-Hexanone	EPA 624	10107207	NELAP	LA
4540 - 4-Chlorotoluene	EPA 624	10107207	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 624	10107207	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 624	10107207	NELAP	LA
4315 - Acetone	EPA 624	10107207	NELAP	LA
4375 - Benzene	EPA 624	10107207	NELAP	LA
4385 - Bromobenzene	EPA 624	10107207	NELAP	LA
4390 - Bromochloromethane	EPA 624	10107207	NELAP	LA
4395 - Bromodichloromethane	EPA 624	10107207	NELAP	LA
4400 - Bromoform	EPA 624	10107207	NELAP	LA
4450 - Carbon disulfide	EPA 624	10107207	NELAP	LA
4455 - Carbon tetrachloride	EPA 624	10107207	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4475 - Chlorobenzene	EPA 624	10107207	NELAP	LA
4575 - Chlorodibromomethane	EPA 624	10107207	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 624	10107207	NELAP	LA
4505 - Chloroform	EPA 624	10107207	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 624	10107207	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 624	10107207	NELAP	LA
4765 - Ethylbenzene	EPA 624	10107207	NELAP	LA
4835 - Hexachlorobutadiene	EPA 624	10107207	NELAP	LA
4900 - Isopropylbenzene	EPA 624	10107207	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 624	10107207	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 624	10107207	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 624	10107207	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 624	10107207	NELAP	LA
5005 - Naphthalene	EPA 624	10107207	NELAP	LA
5100 - Styrene	EPA 624	10107207	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 624	10107207	NELAP	LA
5140 - Toluene	EPA 624	10107207	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 624	10107207	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 624	10107207	NELAP	LA
5225 - Vinyl acetate	EPA 624	10107207	NELAP	LA
5235 - Vinyl chloride	EPA 624	10107207	NELAP	LA
5260 - Xylene (total)	EPA 624	10107207	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 624	10107207	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 624	10107207	NELAP	LA
5240 - m+p-xylene	EPA 624	10107207	NELAP	LA
4435 - n-Butylbenzene	EPA 624	10107207	NELAP	LA
5090 - n-Propylbenzene	EPA 624	10107207	NELAP	LA
5250 - o-Xylene	EPA 624	10107207	NELAP	LA
4440 - sec-Butylbenzene	EPA 624	10107207	NELAP	LA
4445 - tert-Butylbenzene	EPA 624	10107207	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 624	10107207	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 624	10107207	NELAP	LA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 625	10107401	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 625	10107401	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 625	10107401	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 625	10107401	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 625	10107401	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 625	10107401	NELAP	LA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 625	10107401	NELAP	LA
6835 - 2,4,5-Trichlorophenol	EPA 625	10107401	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 625	10107401	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 625	10107401	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 625	10107401	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 625	10107401	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 625	10107401	NELAP	LA
6005 - 2,6-Dichlorophenol	EPA 625	10107401	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 625	10107401	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 625	10107401	NELAP	LA
5800 - 2-Chlorophenol	EPA 625	10107401	NELAP	LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 625	10107401	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6385 - 2-Methylnaphthalene	EPA 625	10107401	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 625	10107401	NELAP	LA
6460 - 2-Nitroaniline	EPA 625	10107401	NELAP	LA
6490 - 2-Nitrophenol	EPA 625	10107401	NELAP	LA
5945 - 3,3'-Dichlorobenzidine	EPA 625	10107401	NELAP	LA
6465 - 3-Nitroaniline	EPA 625	10107401	NELAP	LA
5660 - 4-Bromophenyl phenyl ether	EPA 625	10107401	NELAP	LA
5700 - 4-Chloro-3-methylphenol	EPA 625	10107401	NELAP	LA
5745 - 4-Chloroaniline	EPA 625	10107401	NELAP	LA
5825 - 4-Chlorophenyl phenylether	EPA 625	10107401	NELAP	LA
6410 - 4-Methylphenol (p-Cresol)	EPA 625	10107401	NELAP	LA
6470 - 4-Nitroaniline	EPA 625	10107401	NELAP	LA
6500 - 4-Nitrophenol	EPA 625	10107401	NELAP	LA
5500 - Acenaphthene	EPA 625	10107401	NELAP	LA
5505 - Acenaphthylene	EPA 625	10107401	NELAP	LA
5545 - Aniline	EPA 625	10107401	NELAP	LA
5555 - Anthracene	EPA 625	10107401	NELAP	LA
5575 - Benz(a)anthracene	EPA 625	10107401	NELAP	LA
5595 - Benzidine	EPA 625	10107401	NELAP	LA
5580 - Benzo(a)pyrene	EPA 625	10107401	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 625	10107401	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 625	10107401	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 625	10107401	NELAP	LA
5610 - Benzoic acid	EPA 625	10107401	NELAP	LA
5630 - Benzyl alcohol	EPA 625	10107401	NELAP	LA
5670 - Butyl benzyl phthalate	EPA 625	10107401	NELAP	LA
5680 - Carbazole	EPA 625	10107401	NELAP	LA
5855 - Chrysene	EPA 625	10107401	NELAP	LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 625	10107401	NELAP	LA
5925 - Di-n-butyl phthalate	EPA 625	10107401	NELAP	LA
6200 - Di-n-octyl phthalate	EPA 625	10107401	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 625	10107401	NELAP	LA
5905 - Dibenzofuran	EPA 625	10107401	NELAP	LA
6070 - Diethyl phthalate	EPA 625	10107401	NELAP	LA
6135 - Dimethyl phthalate	EPA 625	10107401	NELAP	LA
6265 - Fluoranthene	EPA 625	10107401	NELAP	LA
6270 - Fluorene	EPA 625	10107401	NELAP	LA
6275 - Hexachlorobenzene	EPA 625	10107401	NELAP	LA
4835 - Hexachlorobutadiene	EPA 625	10107401	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 625	10107401	NELAP	LA
4840 - Hexachloroethane	EPA 625	10107401	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 625	10107401	NELAP	LA
6320 - Isophorone	EPA 625	10107401	NELAP	LA
5005 - Naphthalene	EPA 625	10107401	NELAP	LA
5015 - Nitrobenzene	EPA 625	10107401	NELAP	LA
6605 - Pentachlorophenol	EPA 625	10107401	NELAP	LA
6615 - Phenanthrene	EPA 625	10107401	NELAP	LA
6625 - Phenol	EPA 625	10107401	NELAP	LA
6665 - Pyrene	EPA 625	10107401	NELAP	LA
5095 - Pyridine	EPA 625	10107401	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 625	10107401	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 625	10107401	NELAP	LA
5780 - bis(2-Chloroisopropyl) ether	EPA 625	10107401	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 625	10107401	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6530 - n-Nitrosodimethylamine	EPA 625	10107401	NELAP	LA
6535 - n-Nitrosodiphenylamine	EPA 625	10107401	NELAP	LA
1860 - Oil & Grease	EPA 1664A (HEM)	10127807	NELAP	LA
100003 - Acid Digestion of waters for Total Recoverable or Dissolved Metals	EPA 3005A	10133207	NELAP	LA
100641 - Acid Digestion of Aqueous samples and Extracts for Total Metals (HNO3 + HCl)	EPA 3010A	10133605	NELAP	LA
100642 - Acid Digestion of Aqueous samples and Extracts for Total Metals (HNO3 only)	EPA 3020A	10134404	NELAP	LA
1444 - Separatory Funnel Liquid-liquid extraction	EPA 3510	10137607	NELAP	LA
1444 - Separatory Funnel Liquid-liquid extraction	EPA 3510C	10138202	NELAP	LA
1448 - Solid-Phase Extraction (SPE)	EPA 3535A	10139409	NELAP	LA
1414 - Florisil Clean-up	EPA 3620C	10146006	NELAP	LA
1418 - Gel Permeation Clean-Up	EPA 3640A	10147203	NELAP	LA
1456 - Sulfur Clean-Up	EPA 3660B	10148400	NELAP	LA
2020 - Sulfuric acid/permanganate clean-up	EPA 3665A	10148808	NELAP	LA
1406 - Purge and trap for aqueous phase samples	EPA 5030B	10153409	NELAP	LA
1000 - Aluminum	EPA 6010C	10155803	NELAP	LA
1005 - Antimony	EPA 6010C	10155803	NELAP	LA
1010 - Arsenic	EPA 6010C	10155803	NELAP	LA
1015 - Barium	EPA 6010C	10155803	NELAP	LA
1020 - Beryllium	EPA 6010C	10155803	NELAP	LA
1025 - Boron	EPA 6010C	10155803	NELAP	LA
1030 - Cadmium	EPA 6010C	10155803	NELAP	LA
1035 - Calcium	EPA 6010C	10155803	NELAP	LA
1040 - Chromium	EPA 6010C	10155803	NELAP	LA
1050 - Cobalt	EPA 6010C	10155803	NELAP	LA
1055 - Copper	EPA 6010C	10155803	NELAP	LA
1070 - Iron	EPA 6010C	10155803	NELAP	LA
1075 - Lead	EPA 6010C	10155803	NELAP	LA
1085 - Magnesium	EPA 6010C	10155803	NELAP	LA
1090 - Manganese	EPA 6010C	10155803	NELAP	LA
1100 - Molybdenum	EPA 6010C	10155803	NELAP	LA
1105 - Nickel	EPA 6010C	10155803	NELAP	LA
1125 - Potassium	EPA 6010C	10155803	NELAP	LA
1140 - Selenium	EPA 6010C	10155803	NELAP	LA
1990 - Silica as SiO2	EPA 6010C	10155803	NELAP	LA
1150 - Silver	EPA 6010C	10155803	NELAP	LA
1155 - Sodium	EPA 6010C	10155803	NELAP	LA
1160 - Strontium	EPA 6010C	10155803	NELAP	LA
1165 - Thallium	EPA 6010C	10155803	NELAP	LA
1175 - Tin	EPA 6010C	10155803	NELAP	LA
1180 - Titanium	EPA 6010C	10155803	NELAP	LA
1183 - Tungsten	EPA 6010C	10155803	NELAP	LA
1185 - Vanadium	EPA 6010C	10155803	NELAP	LA
1190 - Zinc	EPA 6010C	10155803	NELAP	LA
1005 - Antimony	EPA 7010	10157809	NELAP	LA
1010 - Arsenic	EPA 7010	10157809	NELAP	LA
1075 - Lead	EPA 7010	10157809	NELAP	LA
1140 - Selenium	EPA 7010	10157809	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1150 - Silver	EPA 7010	10157809	NELAP	LA
1165 - Thallium	EPA 7010	10157809	NELAP	LA
1045 - Chromium VI	EPA 7196	10162206	NELAP	LA
1095 - Mercury	EPA 7470A	10165807	NELAP	LA
9369 - Diesel range organics (DRO)	EPA 8015C	10173805	NELAP	LA
4785 - Ethylene glycol	EPA 8015C	10173805	NELAP	LA
9408 - Gasoline range organics (GRO)	EPA 8015C	10173805	NELAP	LA
4375 - Benzene	EPA 8021B	10174808	NELAP	LA
4765 - Ethylbenzene	EPA 8021B	10174808	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021B	10174808	NELAP	LA
5005 - Naphthalene	EPA 8021B	10174808	NELAP	LA
5140 - Toluene	EPA 8021B	10174808	NELAP	LA
5260 - Xylene (total)	EPA 8021B	10174808	NELAP	LA
5245 - m-Xylene	EPA 8021B	10174808	NELAP	LA
5250 - o-Xylene	EPA 8021B	10174808	NELAP	LA
5255 - p-Xylene	EPA 8021B	10174808	NELAP	LA
8580 - 2,4'-DDD	EPA 8081B	10178800	NELAP	LA
8585 - 2,4'-DDE	EPA 8081B	10178800	NELAP	LA
8590 - 2,4'-DDT	EPA 8081B	10178800	NELAP	LA
7355 - 4,4'-DDD	EPA 8081B	10178800	NELAP	LA
7360 - 4,4'-DDE	EPA 8081B	10178800	NELAP	LA
7365 - 4,4'-DDT	EPA 8081B	10178800	NELAP	LA
7025 - Aldrin	EPA 8081B	10178800	NELAP	LA
7250 - Chlordane (tech.)	EPA 8081B	10178800	NELAP	LA
7470 - Dieldrin	EPA 8081B	10178800	NELAP	LA
7510 - Endosulfan I	EPA 8081B	10178800	NELAP	LA
7515 - Endosulfan II	EPA 8081B	10178800	NELAP	LA
7520 - Endosulfan sulfate	EPA 8081B	10178800	NELAP	LA
7540 - Endrin	EPA 8081B	10178800	NELAP	LA
7530 - Endrin aldehyde	EPA 8081B	10178800	NELAP	LA
7535 - Endrin ketone	EPA 8081B	10178800	NELAP	LA
7685 - Heptachlor	EPA 8081B	10178800	NELAP	LA
7690 - Heptachlor epoxide	EPA 8081B	10178800	NELAP	LA
7810 - Methoxychlor	EPA 8081B	10178800	NELAP	LA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081B	10178800	NELAP	LA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7240 - alpha-Chlordane	EPA 8081B	10178800	NELAP	LA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7105 - delta-BHC	EPA 8081B	10178800	NELAP	LA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081B	10178800	NELAP	LA
7245 - gamma-Chlordane	EPA 8081B	10178800	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	LA
8912 - Aroclor-1262 (PCB-1262)	EPA 8082A	10179201	NELAP	LA
8913 - Aroclor-1268 (PCB-1268)	EPA 8082A	10179201	NELAP	LA
8545 - 2,4-D	EPA 8151A	10183207	NELAP	LA
8650 - Silvex (2,4,5-TP)	EPA 8151A	10183207	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8270D	10186002	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6155 - 1,2-Dinitrobenzene	EPA 8270D	10186002	NELAP	LA
6220 - 1,2-Diphenylhydrazine	EPA 8270D	10186002	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	LA
6835 - 2,4,5-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 8270D	10186002	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 8270D	10186002	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	LA
6005 - 2,6-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 8270D	10186002	NELAP	LA
5800 - 2-Chlorophenol	EPA 8270D	10186002	NELAP	LA
5866 - 2-Ethoxyethanol (cellosolve)	EPA 8270D	10186002	NELAP	LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270D	10186002	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270D	10186002	NELAP	LA
6430 - 2-Naphthylamine	EPA 8270D	10186002	NELAP	LA
6460 - 2-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6490 - 2-Nitrophenol	EPA 8270D	10186002	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8270D	10186002	NELAP	LA
6412 - 3+4 Methylphenol	EPA 8270D	10186002	NELAP	LA
5945 - 3,3'-Dichlorobenzidine	EPA 8270D	10186002	NELAP	LA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270D	10186002	NELAP	LA
6465 - 3-Nitroaniline	EPA 8270D	10186002	NELAP	LA
5660 - 4-Bromophenyl phenyl ether	EPA 8270D	10186002	NELAP	LA
5700 - 4-Chloro-3-methylphenol	EPA 8270D	10186002	NELAP	LA
5745 - 4-Chloroaniline	EPA 8270D	10186002	NELAP	LA
5825 - 4-Chlorophenyl phenylether	EPA 8270D	10186002	NELAP	LA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270D	10186002	NELAP	LA
6470 - 4-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP	LA
5500 - Acenaphthene	EPA 8270D	10186002	NELAP	LA
5505 - Acenaphthylene	EPA 8270D	10186002	NELAP	LA
5510 - Acetophenone	EPA 8270D	10186002	NELAP	LA
5545 - Aniline	EPA 8270D	10186002	NELAP	LA
5555 - Anthracene	EPA 8270D	10186002	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D	10186002	NELAP	LA
5570 - Benzaldehyde	EPA 8270D	10186002	NELAP	LA
5595 - Benzidine	EPA 8270D	10186002	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270D	10186002	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D	10186002	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D	10186002	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D	10186002	NELAP	LA
5610 - Benzoic acid	EPA 8270D	10186002	NELAP	LA
5630 - Benzyl alcohol	EPA 8270D	10186002	NELAP	LA
5640 - Biphenyl	EPA 8270D	10186002	NELAP	LA
5670 - Butyl benzyl phthalate	EPA 8270D	10186002	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7180 - Caprolactam	EPA 8270D	10186002	NELAP	LA
5680 - Carbazole	EPA 8270D	10186002	NELAP	LA
5855 - Chrysene	EPA 8270D	10186002	NELAP	LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270D	10186002	NELAP	LA
5925 - Di-n-butyl phthalate	EPA 8270D	10186002	NELAP	LA
6200 - Di-n-octyl phthalate	EPA 8270D	10186002	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D	10186002	NELAP	LA
5905 - Dibenzofuran	EPA 8270D	10186002	NELAP	LA
6070 - Diethyl phthalate	EPA 8270D	10186002	NELAP	LA
6135 - Dimethyl phthalate	EPA 8270D	10186002	NELAP	LA
6265 - Fluoranthene	EPA 8270D	10186002	NELAP	LA
6270 - Fluorene	EPA 8270D	10186002	NELAP	LA
6275 - Hexachlorobenzene	EPA 8270D	10186002	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 8270D	10186002	NELAP	LA
4840 - Hexachloroethane	EPA 8270D	10186002	NELAP	LA
6290 - Hexachlorophene	EPA 8270D	10186002	NELAP	LA
6295 - Hexachloropropene	EPA 8270D	10186002	NELAP	LA
6320 - Isophorone	EPA 8270D	10186002	NELAP	LA
5005 - Naphthalene	EPA 8270D	10186002	NELAP	LA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP	LA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP	LA
6615 - Phenanthrene	EPA 8270D	10186002	NELAP	LA
6625 - Phenol	EPA 8270D	10186002	NELAP	LA
6665 - Pyrene	EPA 8270D	10186002	NELAP	LA
5095 - Pyridine	EPA 8270D	10186002	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 8270D	10186002	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 8270D	10186002	NELAP	LA
5780 - bis(2-Chloroisopropyl) ether	EPA 8270D	10186002	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 8270D	10186002	NELAP	LA
6525 - n-Nitrosodiethylamine	EPA 8270D	10186002	NELAP	LA
6530 - n-Nitrosodimethylamine	EPA 8270D	10186002	NELAP	LA
6535 - n-Nitrosodiphenylamine	EPA 8270D	10186002	NELAP	LA
6565 - n-Nitrosopyrrolidine	EPA 8270D	10186002	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8310	10187607	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8310	10187607	NELAP	LA
5500 - Acenaphthene	EPA 8310	10187607	NELAP	LA
5505 - Acenaphthylene	EPA 8310	10187607	NELAP	LA
5555 - Anthracene	EPA 8310	10187607	NELAP	LA
5575 - Benz(a)anthracene	EPA 8310	10187607	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8310	10187607	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8310	10187607	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8310	10187607	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8310	10187607	NELAP	LA
5855 - Chrysene	EPA 8310	10187607	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8310	10187607	NELAP	LA
6265 - Fluoranthene	EPA 8310	10187607	NELAP	LA
6270 - Fluorene	EPA 8310	10187607	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8310	10187607	NELAP	LA
5005 - Naphthalene	EPA 8310	10187607	NELAP	LA
6615 - Phenanthrene	EPA 8310	10187607	NELAP	LA
6665 - Pyrene	EPA 8310	10187607	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330A	10190008	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330A	10190008	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330A	10190008	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330A	10190008	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330A	10190008	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330A	10190008	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8330A	10190008	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8330A	10190008	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330A	10190008	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8330A	10190008	NELAP	LA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330A	10190008	NELAP	LA
5015 - Nitrobenzene	EPA 8330A	10190008	NELAP	LA
6485 - Nitroglycerin	EPA 8330A	10190008	NELAP	LA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330A	10190008	NELAP	LA
9558 - Pentaerythritoltetranitrate	EPA 8330A	10190008	NELAP	LA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330A	10190008	NELAP	LA
1645 - Total Cyanide	EPA 9010B	10193007	NELAP	LA
1635 - Cyanide	EPA 9012A	10193405	NELAP	LA
1610 - Conductivity	EPA 9050	10198604	NELAP	LA
6484 - Nitrocellulose	EPA 9056	10199209	NELAP	LA
1540 - Bromide	EPA 9056A	10199607	NELAP	LA
1575 - Chloride	EPA 9056A	10199607	NELAP	LA
1730 - Fluoride	EPA 9056A	10199607	NELAP	LA
1805 - Nitrate	EPA 9056A	10199607	NELAP	LA
1835 - Nitrite	EPA 9056A	10199607	NELAP	LA
1870 - Orthophosphate as P	EPA 9056A	10199607	NELAP	LA
2000 - Sulfate	EPA 9056A	10199607	NELAP	LA
1825 - Total Nitrate+Nitrite	EPA 9056A	10199607	NELAP	LA
1905 - Total Phenolics	EPA 9066	10200609	NELAP	LA
4323 - Acetylene	EPA RSK-175 (GC/FID)	10212905	NELAP	LA
3755 - Carbon dioxide	EPA RSK-175 (GC/FID)	10212905	NELAP	LA
4747 - Ethane	EPA RSK-175 (GC/FID)	10212905	NELAP	LA
4752 - Ethene	EPA RSK-175 (GC/FID)	10212905	NELAP	LA
4926 - Methane	EPA RSK-175 (GC/FID)	10212905	NELAP	LA
1780 - Ignitability	EPA 1010A	10234807	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8270D SIM	10242509	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	LA
6014 - 2,3-Dinitrotoluene	EPA 8270D SIM	10242509	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D SIM	10242509	NELAP	LA
100743 - 2,5-Dinitrotoluene (2,5-DNT)	EPA 8270D SIM	10242509	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D SIM	10242509	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	LA
100604 - 3,4-Dinitrotoluene (3,4-DNT)	EPA 8270D SIM	10242509	NELAP	LA
100744 - 3,5-Dinitrotoluene (3,5-DNT)	EPA 8270D SIM	10242509	NELAP	LA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP	LA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP	LA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP	LA
7065 - Atrazine	EPA 8270D SIM	10242509	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D SIM	10242509	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7300 - Chlorpyrifos	EPA 8270D SIM	10242509	NELAP	LA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D SIM	10242509	NELAP	LA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP	LA
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP	LA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP	LA
1900 - pH	EPA 9040C	10244403	NELAP	LA
2040 - Total Organic Carbon	EPA 9060A	10244801	NELAP	LA
1900 - pH	EPA 150.1	10255808	NELAP	LA
1960 - Residue-nonfilterable (TSS)	EPA 160.2	10256403	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260C	10307003	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 8260C	10307003	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260C	10307003	NELAP	LA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260C	10307003	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 8260C	10307003	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 8260C	10307003	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 8260C	10307003	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 8260C	10307003	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260C	10307003	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260C	10307003	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260C	10307003	NELAP	LA
4697 - 1,2-Dichloro-1;1,2-trifluoroethane	EPA 8260C	10307003	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260C	10307003	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 8260C	10307003	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260C	10307003	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 8260C	10307003	NELAP	LA
4619 - 1,4-Dichloro-2-butene	EPA 8260C	10307003	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260C	10307003	NELAP	LA
4510 - 1-Chlorohexane	EPA 8260C	10307003	NELAP	LA
4665 - 2,2-Dichloropropane	EPA 8260C	10307003	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260C	10307003	NELAP	LA
4500 - 2-Chloroethyl vinyl ether	EPA 8260C	10307003	NELAP	LA
4535 - 2-Chlorotoluene	EPA 8260C	10307003	NELAP	LA
4860 - 2-Hexanone	EPA 8260C	10307003	NELAP	LA
5020 - 2-Nitropropane	EPA 8260C	10307003	NELAP	LA
4540 - 4-Chlorotoluene	EPA 8260C	10307003	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260C	10307003	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260C	10307003	NELAP	LA
4315 - Acetone	EPA 8260C	10307003	NELAP	LA
4325 - Acrolein (Propenal)	EPA 8260C	10307003	NELAP	LA
4340 - Acrylonitrile	EPA 8260C	10307003	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4375 - Benzene	EPA 8260C	10307003	NELAP	LA
4385 - Bromobenzene	EPA 8260C	10307003	NELAP	LA
4390 - Bromochloromethane	EPA 8260C	10307003	NELAP	LA
4395 - Bromodichloromethane	EPA 8260C	10307003	NELAP	LA
4400 - Bromoform	EPA 8260C	10307003	NELAP	LA
4450 - Carbon disulfide	EPA 8260C	10307003	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260C	10307003	NELAP	LA
4475 - Chlorobenzene	EPA 8260C	10307003	NELAP	LA
4575 - Chlorodibromomethane	EPA 8260C	10307003	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260C	10307003	NELAP	LA
4505 - Chloroform	EPA 8260C	10307003	NELAP	LA
4555 - Cyclohexane	EPA 8260C	10307003	NELAP	LA
4560 - Cyclohexanone	EPA 8260C	10307003	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260C	10307003	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260C	10307003	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260C	10307003	NELAP	LA
4725 - Diethyl ether	EPA 8260C	10307003	NELAP	LA
4755 - Ethyl acetate	EPA 8260C	10307003	NELAP	LA
4765 - Ethylbenzene	EPA 8260C	10307003	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8260C	10307003	NELAP	LA
4870 - Iodomethane (Methyl iodide)	EPA 8260C	10307003	NELAP	LA
4900 - Isopropylbenzene	EPA 8260C	10307003	NELAP	LA
4940 - Methyl acetate	EPA 8260C	10307003	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260C	10307003	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260C	10307003	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260C	10307003	NELAP	LA
4965 - Methylcyclohexane	EPA 8260C	10307003	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260C	10307003	NELAP	LA
5005 - Naphthalene	EPA 8260C	10307003	NELAP	LA
9579 - Propylene oxide	EPA 8260C	10307003	NELAP	LA
5100 - Styrene	EPA 8260C	10307003	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260C	10307003	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA 8260C	10307003	NELAP	LA
5140 - Toluene	EPA 8260C	10307003	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260C	10307003	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260C	10307003	NELAP	LA
5225 - Vinyl acetate	EPA 8260C	10307003	NELAP	LA
5235 - Vinyl chloride	EPA 8260C	10307003	NELAP	LA
5260 - Xylene (total)	EPA 8260C	10307003	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 8260C	10307003	NELAP	LA
5245 - m-Xylene	EPA 8260C	10307003	NELAP	LA
4435 - n-Butylbenzene	EPA 8260C	10307003	NELAP	LA
5090 - n-Propylbenzene	EPA 8260C	10307003	NELAP	LA
5250 - o-Xylene	EPA 8260C	10307003	NELAP	LA
5255 - p-Xylene	EPA 8260C	10307003	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4420 - tert-Butyl alcohol	EPA 8260C	10307003	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4685 - trans-1,3-Dichloropropylene	EPA 8260C	10307003	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260C SIM	10307105	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330B	10308006	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330B	10308006	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330B	10308006	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330B	10308006	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330B	10308006	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330B	10308006	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8330B	10308006	NELAP	LA
6150 - 3,5-Dinitroaniline	EPA 8330B	10308006	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8330B	10308006	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330B	10308006	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8330B	10308006	NELAP	LA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330B	10308006	NELAP	LA
5015 - Nitrobenzene	EPA 8330B	10308006	NELAP	LA
6485 - Nitroglycerin	EPA 8330B	10308006	NELAP	LA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330B	10308006	NELAP	LA
9558 - Pentaerythritoltetranitrate	EPA 8330B	10308006	NELAP	LA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330B	10308006	NELAP	LA
1950 - Residue-total	SM 2540 B, 18th ED	20004608	NELAP	LA
1960 - Residue-nonfilterable (TSS)	SM 2540 D, 18th ED	20004802	NELAP	LA
1900 - pH	SM 4500-H+ B, 18th ED	20022406	NELAP	LA
1515 - Ammonia as N	SM 4500-NH3 H, 18th ED	20023409	NELAP	LA
1530 - Biochemical oxygen demand	SM 5210 B, 18th ED	20027401	NELAP	LA
1565 - Chemical oxygen demand	SM 5220 D, 18th ED	20027809	NELAP	LA
1750 - Hardness	SM 2340 B, 18th ED	20045801	NELAP	LA
1750 - Hardness	SM 2340 B-2011	20046611	NELAP	LA
1950 - Residue-total	SM 2540 B-2011	20049416	NELAP	LA
1955 - Residue-filterable (TDS)	SM 2540 C, 18th ED	20049609	NELAP	LA
1955 - Residue-filterable (TDS)	SM 2540 C-2011	20050413	NELAP	LA
1960 - Residue-nonfilterable (TSS)	SM 2540 D-2011	20051212	NELAP	LA
1540 - Bromide	SM 4110 B, 18th ED	20076204	NELAP	LA
1575 - Chloride	SM 4110 B, 18th ED	20076204	NELAP	LA
1730 - Fluoride	SM 4110 B, 18th ED	20076204	NELAP	LA
1805 - Nitrate	SM 4110 B, 18th ED	20076204	NELAP	LA
1810 - Nitrate as N	SM 4110 B, 18th ED	20076204	NELAP	LA
1835 - Nitrite	SM 4110 B, 18th ED	20076204	NELAP	LA
1870 - Orthophosphate as P	SM 4110 B, 18th ED	20076204	NELAP	LA
2000 - Sulfate	SM 4110 B, 18th ED	20076204	NELAP	LA
1820 - Nitrate-Nitrite	SM 4110 B-2000	20076908	NELAP	LA
1540 - Bromide	SM 4110 B-2011	20076919	NELAP	LA
1575 - Chloride	SM 4110 B-2011	20076919	NELAP	LA
1730 - Fluoride	SM 4110 B-2011	20076919	NELAP	LA
1805 - Nitrate	SM 4110 B-2011	20076919	NELAP	LA
1820 - Nitrate-Nitrite	SM 4110 B-2011	20076919	NELAP	LA
1835 - Nitrite	SM 4110 B-2011	20076919	NELAP	LA
1870 - Orthophosphate as P	SM 4110 B-2011	20076919	NELAP	LA
2000 - Sulfate	SM 4110 B-2011	20076919	NELAP	LA
1900 - pH	SM 4500-H+ B-2011	20105220	NELAP	LA
3751 - Ammonia	SM 4500-NH3 H-2011	20112214	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
2005 - Sulfide	SM 4500-$S2^-$ F-97, Online Edition	20126607	NELAP	LA
2005 - Sulfide	SM 4500-$S2^-$ F-2011	20126663	NELAP	LA
1530 - Biochemical oxygen demand	SM 5210 B-2011	20135266	NELAP	LA
1565 - Chemical oxygen demand	SM 5220 D-2011	20136816	NELAP	LA
2040 - Total Organic Carbon	SM 5310 B, 18th ED	20137002	NELAP	LA
2040 - Total Organic Carbon	SM 5310 B-2011	20137820	NELAP	LA
9344 - Chlorophyll a	SM 10200 H, 21st ED	20300225	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
100790 - ERO/ORO/RRO	EPA 8015C (extended)	2331	NELAP	LA
6657 - Propylene Glycol	EPA 8015C (extended)	2331	NELAP	LA
4668 - 2,3-Dichloropropene	EPA 8260C (extended)	3005	NELAP	LA
4627 - Dichlorofluoromethane (Freon 21)	EPA 8260C (extended)	3005	NELAP	LA
4855 - Hexane	EPA 8260C (extended)	3005	NELAP	LA
6462 - 2-Nitroguanidine	EPA 8330A (extended)	3006	NELAP	LA
6462 - 2-Nitroguanidine	EPA 8330B (extended)	3007	NELAP	LA
6657 - Propylene Glycol	EPA 8015B (modified)	3008	NELAP	LA
1923 - Reactive Cyanide	EPA 7.3.3.2, Rev.3	10001204	NELAP	LA
1925 - Reactive sulfide	EPA 7.3.4.2, Rev.3	10001408	NELAP	LA
1515 - Ammonia as N	EPA 350.1, Rev.2	10063602	NELAP	LA
1795 - Kjeldahl nitrogen - total	EPA 351.2, Rev.2	10065404	NELAP	LA
1910 - Total Phosphorus	EPA 365.1, Rev.2	10070005	NELAP	LA
1910 - Total Phosphorus	EPA 365.4	10071202	NELAP	LA
1565 - Chemical oxygen demand	EPA 410.4, Rev.2	10077404	NELAP	LA
1466 - Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311	10118806	NELAP	LA
1460 - Synthetic Precipitation Leaching Procedure	EPA 1312	10119003	NELAP	LA
100007 - Acid Digestion of Sediments, Sludges, and soils	EPA 3050B	10135601	NELAP	LA
1402 - Alkaline Digestion for Hexavalent Chromium	EPA 3060A	10136604	NELAP	LA
1452 - Soxhlet Extraction	EPA 3540C	10140202	NELAP	LA
1442 - Pressurized Fluid Extraction (PFE)	EPA 3545	10140804	NELAP	LA
1442 - Pressurized Fluid Extraction (PFE)	EPA 3545A	10141001	NELAP	LA
1428 - Microwave Extraction	EPA 3546	10141205	NELAP	LA
1470 - Waste Dilution	EPA 3580A	10143007	NELAP	LA
1414 - Florisil Clean-up	EPA 3620	10145401	NELAP	LA
1446 - Silica Gel Clean-up	EPA 3630C	10146802	NELAP	LA
1418 - Gel Permeation Clean-Up	EPA 3640A	10147203	NELAP	LA
1456 - Sulfur Clean-Up	EPA 3660B	10148400	teLAP	LA
2020 - Sulfuric acid/permanganate clean-up	EPA 3665A	10148808	NELAP	LA
100017 - Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	EPA 5035	10154004	NELAP	LA
1000 - Aluminum	EPA 6010C	10155803	NELAP	LA
1005 - Antimony	EPA 6010C	10155803	NELAP	LA
1010 - Arsenic	EPA 6010C	10155803	NELAP	LA
1015 - Barium	EPA 6010C	10155803	NELAP	LA
1020 - Beryllium	EPA 6010C	10155803	NELAP	LA
1025 - Boron	EPA 6010C	10155803	NELAP	LA
1030 - Cadmium	EPA 6010C	10155803	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
1035 - Calcium	EPA 6010C	10155803	NELAP	LA
1040 - Chromium	EPA 6010C	10155803	NELAP	LA
1050 - Cobalt	EPA 6010C	10155803	NELAP	LA
1055 - Copper	EPA 6010C	10155803	NELAP	LA
1070 - Iron	EPA 6010C	10155803	NELAP	LA
1075 - Lead	EPA 6010C	10155803	NELAP	LA
1085 - Magnesium	EPA 6010C	10155803	NELAP	LA
1090 - Manganese	EPA 6010C	10155803	NELAP	LA
1100 - Molybdenum	EPA 6010C	10155803	NELAP	LA
1105 - Nickel	EPA 6010C	10155803	NELAP	LA
1125 - Potassium	EPA 6010C	10155803	NELAP	LA
1140 - Selenium	EPA 6010C	10155803	NELAP	LA
1150 - Silver	EPA 6010C	10155803	NELAP	LA
1155 - Sodium	EPA 6010C	10155803	NELAP	LA
1160 - Strontium	EPA 6010C	10155803	NELAP	LA
2017 - Sulfur	EPA 6010C	10155803	NELAP	LA
1165 - Thallium	EPA 6010C	10155803	NELAP	LA
1175 - Tin	EPA 6010C	10155803	NELAP	LA
1180 - Titanium	EPA 6010C	10155803	NELAP	LA
1183 - Tungsten	EPA 6010C	10155803	NELAP	LA
1185 - Vanadium	EPA 6010C	10155803	NELAP	LA
1190 - Zinc	EPA 6010C	10155803	NELAP	LA
1010 - Arsenic	EPA 7010	10157809	NELAP	LA
1075 - Lead	EPA 7010	10157809	NELAP	LA
1140 - Selenium	EPA 7010	10157809	NELAP	LA
1165 - Thallium	EPA 7010	10157809	NELAP	LA
1045 - Chromium VI	EPA 7196A	10162400	NELAP	LA
1095 - Mercury	EPA 7471A	10166208	NELAP	LA
4785 - Ethylene glycol	EPA 8015B	10173601	NELAP	LA
9369 - Diesel range organics (DRO)	EPA 8015C	10173805	NELAP	LA
9408 - Gasoline range organics (GRO)	EPA 8015C	10173805	NELAP	LA
4375 - Benzene	EPA 8021B	10174808	NELAP	LA
4765 - Ethylbenzene	EPA 8021B	10174808	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021B	10174808	NELAP	LA
5140 - Toluene	EPA 8021B	10174808	NELAP	LA
5260 - Xylene (total)	EPA 8021B	10174808	NELAP	LA
5250 - o-Xylene	EPA 8021B	10174808	NELAP	LA
8580 - 2,4'-DDD	EPA 8081B	10178800	NELAP	LA
8585 - 2,4'-DDE	EPA 8081B	10178800	NELAP	LA
8590 - 2,4'-DDT	EPA 8081B	10178800	NELAP	LA
7355 - 4,4'-DDD	EPA 8081B	10178800	NELAP	LA
7360 - 4,4'-DDE	EPA 8081B	10178800	NELAP	LA
7365 - 4,4'-DDT	EPA 8081B	10178800	NELAP	LA
7025 - Aldrin	EPA 8081B	10178800	NELAP	LA
7250 - Chlordane (tech.)	EPA 8081B	10178800	NELAP	LA
7470 - Dieldrin	EPA 8081B	10178800	NELAP	LA
7510 - Endosulfan I	EPA 8081B	10178800	NELAP	LA
7515 - Endosulfan II	EPA 8081B	10178800	NELAP	LA
7520 - Endosulfan sulfate	EPA 8081B	10178800	NELAP	LA
7540 - Endrin	EPA 8081B	10178800	NELAP	LA
7530 - Endrin aldehyde	EPA 8081B	10178800	NELAP	LA
7535 - Endrin ketone	EPA 8081B	10178800	NELAP	LA
7685 - Heptachlor	EPA 8081B	10178800	NELAP	LA
7690 - Heptachlor epoxide	EPA 8081B	10178800	NELAP	LA
7810 - Methoxychlor	EPA 8081B	10178800	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
8250 - Toxaphene (Chlorinated camphene)	EPA 8081B	10178800	NELAP	LA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7240 - alpha-Chlordane	EPA 8081B	10178800	NELAP	LA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7105 - delta-BHC	EPA 8081B	10178800	NELAP	LA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081B	10178800	NELAP	LA
7245 - gamma-Chlordane	EPA 8081B	10178800	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	LA
8912 - Aroclor-1262 (PCB-1262)	EPA 8082A	10179201	NELAP	LA
8913 - Aroclor-1268 (PCB-1268)	EPA 8082A	10179201	NELAP	LA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8270D	10186002	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6155 - 1,2-Dinitrobenzene	EPA 8270D	10186002	NELAP	LA
6220 - 1,2-Diphenylhydrazine	EPA 8270D	10186002	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D	10186002	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6165 - 1,4-Dinitrobenzene	EPA 8270D	10186002	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	LA
6835 - 2,4,5-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 8270D	10186002	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 8270D	10186002	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	LA
6005 - 2,6-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 8270D	10186002	NELAP	LA
5800 - 2-Chlorophenol	EPA 8270D	10186002	NELAP	LA
5866 - 2-Ethoxyethanol (cellosolve)	EPA 8270D	10186002	NELAP	LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270D	10186002	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270D	10186002	NELAP	LA
6460 - 2-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6490 - 2-Nitrophenol	EPA 8270D	10186002	NELAP	LA
5945 - 3,3'-Dichlorobenzidine	EPA 8270D	10186002	NELAP	LA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270D	10186002	NELAP	LA
6465 - 3-Nitroaniline	EPA 8270D	10186002	NELAP	LA
5660 - 4-Bromophenyl phenyl ether	EPA 8270D	10186002	NELAP	LA
5700 - 4-Chloro-3-methylphenol	EPA 8270D	10186002	NELAP	LA
5745 - 4-Chloroaniline	EPA 8270D	10186002	NELAP	LA
5825 - 4-Chlorophenyl phenylether	EPA 8270D	10186002	NELAP	LA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270D	10186002	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6470 - 4-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP	LA
5500 - Acenaphthene	EPA 8270D	10186002	NELAP	LA
5505 - Acenaphthylene	EPA 8270D	10186002	NELAP	LA
5510 - Acetophenone	EPA 8270D	10186002	NELAP	LA
5535 - Aminoazobenzene	EPA 8270D	10186002	NELAP	LA
5545 - Aniline	EPA 8270D	10186002	NELAP	LA
5555 - Anthracene	EPA 8270D	10186002	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D	10186002	NELAP	LA
5570 - Benzaldehyde	EPA 8270D	10186002	NELAP	LA
5595 - Benzidine	EPA 8270D	10186002	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270D	10186002	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D	10186002	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D	10186002	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D	10186002	NELAP	LA
5610 - Benzoic acid	EPA 8270D	10186002	NELAP	LA
5630 - Benzyl alcohol	EPA 8270D	10186002	NELAP	LA
5640 - Biphenyl	EPA 8270D	10186002	NELAP	LA
5670 - Butyl benzyl phthalate	EPA 8270D	10186002	NELAP	LA
7180 - Caprolactam	EPA 8270D	10186002	NELAP	LA
5680 - Carbazole	EPA 8270D	10186002	NELAP	LA
5855 - Chrysene	EPA 8270D	10186002	NELAP	LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270D	10186002	NELAP	LA
5925 - Di-n-butyl phthalate	EPA 8270D	10186002	NELAP	LA
6200 - Di-n-octyl phthalate	EPA 8270D	10186002	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D	10186002	NELAP	LA
5905 - Dibenzofuran	EPA 8270D	10186002	NELAP	LA
6070 - Diethyl phthalate	EPA 8270D	10186002	NELAP	LA
6135 - Dimethyl phthalate	EPA 8270D	10186002	NELAP	LA
6265 - Fluoranthene	EPA 8270D	10186002	NELAP	LA
6270 - Fluorene	EPA 8270D	10186002	NELAP	LA
6275 - Hexachlorobenzene	EPA 8270D	10186002	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 8270D	10186002	NELAP	LA
4840 - Hexachloroethane	EPA 8270D	10186002	NELAP	LA
6290 - Hexachlorophene	EPA 8270D	10186002	NELAP	LA
6295 - Hexachloropropene	EPA 8270D	10186002	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D	10186002	NELAP	LA
6320 - Isophorone	EPA 8270D	10186002	NELAP	LA
5005 - Naphthalene	EPA 8270D	10186002	NELAP	LA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP	LA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP	LA
6615 - Phenanthrene	EPA 8270D	10186002	NELAP	LA
6625 - Phenol	EPA 8270D	10186002	NELAP	LA
6665 - Pyrene	EPA 8270D	10186002	NELAP	LA
5095 - Pyridine	EPA 8270D	10186002	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 8270D	10186002	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 8270D	10186002	NELAP	LA
5780 - bis(2-Chloroisopropyl) ether	EPA 8270D	10186002	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 8270D	10186002	NELAP	LA
6525 - n-Nitrosodiethylamine	EPA 8270D	10186002	NELAP	LA
6530 - n-Nitrosodimethylamine	EPA 8270D	10186002	NELAP	LA
6535 - n-Nitrosodiphenylamine	EPA 8270D	10186002	NELAP	LA
6565 - n-Nitrosopyrrolidine	EPA 8270D	10186002	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8310	10187607	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6385 - 2-Methylnaphthalene	EPA 8310	10187607	NELAP	LA
5500 - Acenaphthene	EPA 8310	10187607	NELAP	LA
5505 - Acenaphthylene	EPA 8310	10187607	NELAP	LA
5555 - Anthracene	EPA 8310	10187607	NELAP	LA
5575 - Benz(a)anthracene	EPA 8310	10187607	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8310	10187607	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8310	10187607	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8310	10187607	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8310	10187607	NELAP	LA
5855 - Chrysene	EPA 8310	10187607	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8310	10187607	NELAP	LA
6265 - Fluoranthene	EPA 8310	10187607	NELAP	LA
6270 - Fluorene	EPA 8310	10187607	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8310	10187607	NELAP	LA
5005 - Naphthalene	EPA 8310	10187607	NELAP	LA
6615 - Phenanthrene	EPA 8310	10187607	NELAP	LA
6665 - Pyrene	EPA 8310	10187607	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330A	10190008	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330A	10190008	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330A	10190008	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330A	10190008	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330A	10190008	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330A	10190008	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8330A	10190008	NELAP	LA
6150 - 3,5-Dinitroaniline	EPA 8330A	10190008	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8330A	10190008	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330A	10190008	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8330A	10190008	NELAP	LA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330A	10190008	NELAP	LA
5015 - Nitrobenzene	EPA 8330A	10190008	NELAP	LA
6485 - Nitroglycerin	EPA 8330A	10190008	NELAP	LA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330A	10190008	NELAP	LA
9558 - Pentaerythritoltetranitrate	EPA 8330A	10190008	NELAP	LA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330A	10190008	NELAP	LA
1635 - Cyanide	EPA 9010B	10193007	NELAP	LA
1635 - Cyanide	EPA 9012A	10193405	NELAP	LA
6484 - Nitrocellulose	EPA 9056	10199209	NELAP	LA
1540 - Bromide	EPA 9056A	10199607	NELAP	LA
1575 - Chloride	EPA 9056A	10199607	NELAP	LA
1730 - Fluoride	EPA 9056A	10199607	NELAP	LA
1805 - Nitrate	EPA 9056A	10199607	NELAP	LA
1835 - Nitrite	EPA 9056A	10199607	NELAP	LA
1870 - Orthophosphate as P	EPA 9056A	10199607	NELAP	LA
2000 - Sulfate	EPA 9056A	10199607	NELAP	LA
1905 - Total Phenolics	EPA 9066	10200609	NELAP	LA
1860 - Oil & Grease	EPA 9070	10201000	NELAP	LA
1860 - Oil & Grease	EPA 9071	10201204	NELAP	LA
1434 - Paint Filter Test	EPA 9095	10204009	NELAP	LA
1780 - Ignitability	EPA 1010A	10234807	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6014 - 2,3-Dinitrotoluene	EPA 8270D SIM	10242509	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D SIM	10242509	NELAP	LA
100743 - 2,5-Dinitrotoluene (2,5-DNT)	EPA 8270D SIM	10242509	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D SIM	10242509	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	LA
100604 - 3,4-Dinitrotoluene (3,4-DNT)	EPA 8270D SIM	10242509	NELAP	LA
100744 - 3,5-Dinitrotoluene (3,5-DNT)	EPA 8270D SIM	10242509	NELAP	LA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP	LA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP	LA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D SIM	10242509	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D SIM	10242509	NELAP	LA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP	LA
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP	LA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP	LA
1625 - Corrosivity (pH)	EPA 9040C	10244403	NELAP	LA
1900 - pH	EPA 9045D	10244607	NELAP	LA
2040 - Total Organic Carbon	EPA 9060A	10244801	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260C	10307003	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 8260C	10307003	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260C	10307003	NELAP	LA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260C	10307003	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 8260C	10307003	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 8260C	10307003	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 8260C	10307003	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 8260C	10307003	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260C	10307003	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260C	10307003	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260C	10307003	NELAP	LA
4697 - 1,2-Dichloro-1,1,2-trifluoroethane	EPA 8260C	10307003	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260C	10307003	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 8260C	10307003	NELAP	LA
6800 - 1,3,5-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260C	10307003	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 8260C	10307003	NELAP	LA
4619 - 1,4-Dichloro-2-butene	EPA 8260C	10307003	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260C	10307003	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
4510 - 1-Chlorohexane	EPA 8260C	10307003	NELAP	LA
4665 - 2,2-Dichloropropane	EPA 8260C	10307003	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260C	10307003	NELAP	LA
4500 - 2-Chloroethyl vinyl ether	EPA 8260C	10307003	NELAP	LA
4535 - 2-Chlorotoluene	EPA 8260C	10307003	NELAP	LA
4860 - 2-Hexanone	EPA 8260C	10307003	NELAP	LA
5020 - 2-Nitropropane	EPA 8260C	10307003	NELAP	LA
4540 - 4-Chlorotoluene	EPA 8260C	10307003	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260C	10307003	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260C	10307003	NELAP	LA
4315 - Acetone	EPA 8260C	10307003	NELAP	LA
4325 - Acrolein (Propenal)	EPA 8260C	10307003	NELAP	LA
4340 - Acrylonitrile	EPA 8260C	10307003	NELAP	LA
4375 - Benzene	EPA 8260C	10307003	NELAP	LA
4385 - Bromobenzene	EPA 8260C	10307003	NELAP	LA
4390 - Bromochloromethane	EPA 8260C	10307003	NELAP	LA
4395 - Bromodichloromethane	EPA 8260C	10307003	NELAP	LA
4400 - Bromoform	EPA 8260C	10307003	NELAP	LA
4450 - Carbon disulfide	EPA 8260C	10307003	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260C	10307003	NELAP	LA
4475 - Chlorobenzene	EPA 8260C	10307003	NELAP	LA
4575 - Chlorodibromomethane	EPA 8260C	10307003	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260C	10307003	NELAP	LA
4505 - Chloroform	EPA 8260C	10307003	NELAP	LA
4555 - Cyclohexane	EPA 8260C	10307003	NELAP	LA
4560 - Cyclohexanone	EPA 8260C	10307003	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260C	10307003	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260C	10307003	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260C	10307003	NELAP	LA
4725 - Diethyl ether	EPA 8260C	10307003	NELAP	LA
4755 - Ethyl acetate	EPA 8260C	10307003	NELAP	LA
4765 - Ethylbenzene	EPA 8260C	10307003	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8260C	10307003	NELAP	LA
4870 - Iodomethane (Methyl iodide)	EPA 8260C	10307003	NELAP	LA
4900 - Isopropylbenzene	EPA 8260C	10307003	NELAP	LA
4940 - Methyl acetate	EPA 8260C	10307003	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260C	10307003	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260C	10307003	NELAP	LA
4990 - Methyl methacrylate	EPA 8260C	10307003	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260C	10307003	NELAP	LA
4965 - Methylcyclohexane	EPA 8260C	10307003	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260C	10307003	NELAP	LA
5005 - Naphthalene	EPA 8260C	10307003	NELAP	LA
9579 - Propylene oxide	EPA 8260C	10307003	NELAP	LA
5100 - Styrene	EPA 8260C	10307003	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260C	10307003	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA 8260C	10307003	NELAP	LA
5140 - Toluene	EPA 8260C	10307003	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260C	10307003	NELAP	LA
5175 - Trichlorofluoromethane	EPA 8260C	10307003	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
(Fluorotrichloromethane, Freon 11)				
5225 - Vinyl acetate	EPA 8260C	10307003	NELAP	LA
5235 - Vinyl chloride	EPA 8260C	10307003	NELAP	LA
5260 - Xylene (total)	EPA 8260C	10307003	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 8260C	10307003	NELAP	LA
5240 - m+p-xylene	EPA 8260C	10307003	NELAP	LA
4435 - n-Butylbenzene	EPA 8260C	10307003	NELAP	LA
5090 - n-Propylbenzene	EPA 8260C	10307003	NELAP	LA
5250 - o-Xylene	EPA 8260C	10307003	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4420 - tert-Butyl alcohol	EPA 8260C	10307003	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 8260C	10307003	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260C SIM	10307105	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330B	10308006	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330B	10308006	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330B	10308006	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330B	10308006	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330B	10308006	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330B	10308006	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8330B	10308006	NELAP	LA
6150 - 3,5-Dinitroaniline	EPA 8330B	10308006	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8330B	10308006	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330B	10308006	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8330B	10308006	NELAP	LA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330B	10308006	NELAP	LA
5015 - Nitrobenzene	EPA 8330B	10308006	NELAP	LA
6485 - Nitroglycerin	EPA 8330B	10308006	NELAP	LA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330B	10308006	NELAP	LA
9558 - Pentaerythritoltetranitrate	EPA 8330B	10308006	NELAP	LA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330B	10308006	NELAP	LA
1950 - Residue-total	SM 2540 B, 18th ED	20004608	NELAP	LA
1970 - Residue-volatile	SM 2540 G, 18th ED	20005203	NELAP	LA
1970 - Residue-volatile	SM 2540 G-2011, Rev.22nd	20005270	NELAP	LA
1515 - Ammonia as N	SM 4500-NH3 H, 18th ED	20023409	NELAP	LA
1950 - Residue-total	SM 2540 B-2011	20049416	NELAP	LA
1955 - Residue-filterable (TDS)	SM 2540 C-2011	20050413	NELAP	LA
1515 - Ammonia as N	SM 4500-NH3 H-2011	20112214	NELAP	LA
2040 - Total Organic Carbon	SM 5310 B, 18th ED	20137002	NELAP	LA
2040 - Total Organic Carbon	SM 5310 B-2011	20137820	NELAP	LA
2040 - Total Organic Carbon	Lloyd Kahn	60041001	NELAP	LA

Biological Tissue

Analyte	Method Name	Method Code	Type	AB
1000 - Aluminum	EPA 6010C	10155803	NELAP	LA
1005 - Antimony	EPA 6010C	10155803	NELAP	LA

Biological Tissue

Analyte	Method Name	Method Code	Type	AB
1010 - Arsenic	EPA 6010C	10155803	NELAP	LA
1015 - Barium	EPA 6010C	10155803	NELAP	LA
1020 - Beryllium	EPA 6010C	10155803	NELAP	LA
1025 - Boron	EPA 6010C	10155803	NELAP	LA
1030 - Cadmium	EPA 6010C	10155803	NELAP	LA
1035 - Calcium	EPA 6010C	10155803	NELAP	LA
1040 - Chromium	EPA 6010C	10155803	NELAP	LA
1050 - Cobalt	EPA 6010C	10155803	NELAP	LA
1055 - Copper	EPA 6010C	10155803	NELAP	LA
1070 - Iron	EPA 6010C	10155803	NELAP	LA
1075 - Lead	EPA 6010C	10155803	NELAP	LA
1080 - Lithium	EPA 6010C	10155803	NELAP	LA
1085 - Magnesium	EPA 6010C	10155803	NELAP	LA
1090 - Manganese	EPA 6010C	10155803	NELAP	LA
1100 - Molybdenum	EPA 6010C	10155803	NELAP	LA
1105 - Nickel	EPA 6010C	10155803	NELAP	LA
1125 - Potassium	EPA 6010C	10155803	NELAP	LA
1140 - Selenium	EPA 6010C	10155803	NELAP	LA
1150 - Silver	EPA 6010C	10155803	NELAP	LA
1155 - Sodium	EPA 6010C	10155803	NELAP	LA
1160 - Strontium	EPA 6010C	10155803	NELAP	LA
1165 - Thallium	EPA 6010C	10155803	NELAP	LA
1175 - Tin	EPA 6010C	10155803	NELAP	LA
1185 - Vanadium	EPA 6010C	10155803	NELAP	LA
1190 - Zinc	EPA 6010C	10155803	NELAP	LA
1095 - Mercury	EPA 7471	10166004	NELAP	LA
1095 - Mercury	EPA 7471B, Rev.2	10166457	NELAP	LA
8580 - 2,4'-DDD	EPA 8081B	10178800	NELAP	LA
8585 - 2,4'-DDE	EPA 8081B	10178800	NELAP	LA
8590 - 2,4'-DDT	EPA 8081B	10178800	NELAP	LA
7355 - 4,4'-DDD	EPA 8081B	10178800	NELAP	LA
7360 - 4,4'-DDE	EPA 8081B	10178800	NELAP	LA
7365 - 4,4'-DDT	EPA 8081B	10178800	NELAP	LA
7025 - Aldrin	EPA 8081B	10178800	NELAP	LA
7250 - Chlordane (tech.)	EPA 8081B	10178800	NELAP	LA
7510 - Endosulfan I	EPA 8081B	10178800	NELAP	LA
7515 - Endosulfan II	EPA 8081B	10178800	NELAP	LA
7520 - Endosulfan sulfate	EPA 8081B	10178800	NELAP	LA
7540 - Endrin	EPA 8081B	10178800	NELAP	LA
7530 - Endrin aldehyde	EPA 8081B	10178800	NELAP	LA
7535 - Endrin ketone	EPA 8081B	10178800	NELAP	LA
7685 - Heptachlor	EPA 8081B	10178800	NELAP	LA
7690 - Heptachlor epoxide	EPA 8081B	10178800	NELAP	LA
7810 - Methoxychlor	EPA 8081B	10178800	NELAP	LA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081B	10178800	NELAP	LA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7240 - alpha-Chlordane	EPA 8081B	10178800	NELAP	LA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7105 - delta-BHC	EPA 8081B	10178800	NELAP	LA
7120 - gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7245 - gamma-Chlordane	EPA 8081B	10178800	NELAP	LA
7470 - Dieldrin	EPA 8081B, Rev.2	10178811	NELAP	LA

Biological Tissue

Analyte	Method Name	Method Code	Type	AB
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	LA

State of New Jersey
Department of Environmental Protection
Certifies That

EUROFINS FRONTIER GLOBAL SCIENCES

Laboratory Certification ID # WA014
is hereby approved as a
Nationally Accredited Environmental Laboratory
to perform the analyses as indicated on the Annual Certified Parameter List
which must accompany this certificate to be valid

having duly met the requirements of the
Regulations Governing the Certification of
Laboratories and Environmental Measurements N.J.A.C. 7:18 et. seq.
and
having been found compliant with the 2009 TNI Standard approved by the
The NELAC Institute

Expires June 30, 2018

NELAP RECOGNIZED TNI ACCREDITATION BODY

Michele M. Potter
Manager

THE GREAT SEAL OF THE STATE OF NEW JERSEY

NJDEP is a NELAP Recognized Accreditation Body

This certificate is to be conspicuously displayed at the laboratory with the annual certified parameter list in a location on the premises visible to the public. Consumers are urged to verify the laboratory's current accreditation status with the State of NJ, NELAP.

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2017 until 06/30/2018

Laboratory Name: EUROFINS FRONTIER GLOBAL SCIENCES Laboratory Number: WA014 Activity ID: NLC 170001
11720 NORTH CREEK PKWY NORTH STE 400
BOTHELL WA 98011

Category: BT08 --BT - Lab Developed/Non-Std Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Applied	No	BT08.00001	Methyl Mercury	Cold Vapor Atomic Fluorescence Spectrometry	User Defined FGS-070/CV-GC-AFS	LA

Category: NPW07--Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW07.02200	Mercury	Purge & Trap Atomic Fluorescence	EPA 1631E	LA
Certified	Yes	NPW07.02250	Methyl Mercury	Purge & Trap Atomic Fluorescence	EPA 1630	LA

Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.00130	Aluminum	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.00300	Antimony	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.00450	Arsenic	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.00590	Barium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.00760	Beryllium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.00940	Boron	ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.01110	Cadmium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.01270	Calcium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.01430	Chromium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.01610	Cobalt	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.01770	Copper	Digestion, ICP/MS	EPA 200.8	LA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2017 until 06/30/2018

Laboratory Name: EUROFINS FRONTIER GLOBAL SCIENCES Laboratory Number: WA014 Activity ID: NLC 170001
11720 NORTH CREEK PKWY NORTH STE 400
BOTHELL WA 98011

Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.02110	Iron	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.02290	Lead	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.02490	Magnesium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.02660	Manganese	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.02830	Molybdenum	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.02990	Nickel	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.03200	Potassium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.03390	Selenium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.03650	Silver	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.03810	Sodium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.04030	Thallium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.04190	Tin	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.04280	Titanium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.04510	Vanadium	Digestion, ICP/MS	EPA 200.8	LA
Certified	Yes	NPW08.04690	Zinc	Digestion, ICP/MS	EPA 200.8	LA

Category: SCM06--Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM06.00690	Methyl Mercury	Cold Vapor Atomic Fluorescence Spectrometry	User Defined EPA 1630	LA

Michele M. Potter, Manager

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

State of New Jersey
Department of Environmental Protection
Certifies That

EUROFINS LANCASTER LABS ENVIRONMENTAL

Laboratory Certification ID # PA011
is hereby approved as a

Nationally Accredited Environmental Laboratory

to perform the analyses as indicated on the Annual Certified Parameter List
which must accompany this certificate to be valid

having duly met the requirements of the

Regulations Governing the Certification of Laboratories and Environmental Measurements N.J.A.C. 7:18 et. seq.

and
having been found compliant with the 2009 TNI Standard approved by the

The NELAC Institute

Expires June 30, 2018

Michele M. Potter
Manager

NJDEP is a NELAP Recognized Accreditation Body

This certificate is to be conspicuously displayed at the laboratory with the annual certified parameter list in a location on the premises visible to the public. Consumers are urged to verify the laboratory's current accreditation status with the State of NJ, NELAP.

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 12/06/2017 until 6/30/2018

Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: AE04 –Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	AE04.00390	Volatile organics	GC	EPA 18	LA
Certified	Yes	AE04.00660	Non-Methane Organic Compounds	FID	EPA 25	LA
Certified	Yes	AE04.02990	Benzene	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03000	Benzyl chloride	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03010	Bromodichloromethane	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03020	Bromoform	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03030	Bromomethane	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03040	Carbon disulfide	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03050	Carbon tetrachloride	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03060	Chlorobenzene	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03070	Chloroethane	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03080	Chloroform	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03090	Chloromethane	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03110	Dibromoethane (1,2-) (EDB)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03120	Dichlorobenzene (1,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03130	Dichlorobenzene (1,3-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03140	Dichlorobenzene (1,4-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03150	Dichlorodifluoromethane	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03160	Dichloroethane (1,1-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03170	Dichloroethane (1,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03180	Dichloroethene (1,1-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03190	Dichloroethene (cis-1,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03200	Dichloroethene (trans-1,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03220	Dichloropropane (1,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03230	Dichloropropene (cis-1,3-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03240	Dichloropropene (trans-1,3-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03250	Dichlorotetrafluoroethane (1,2-)	GC/MS, Canisters	EPA TO-14A	LA

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

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Effective as of 12/06/2017 until 6/30/2018

Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: AE04 –Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	AE04.03260	Ethylbenzene	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03270	Hexachlorobutadiene (1,3-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03280	Methyl ethyl ketone (MEK)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03290	Methyl isobutyl ketone (MIBK)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03300	Methyl tert-butyl ether	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03310	Methylene chloride (Dichloromethane)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03320	Styrene	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03330	Tetrachloroethane (1,1,2,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03340	Tetrachloroethene	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03350	Toluene	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03360	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03370	Trichlorobenzene (1,2,4-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03380	Trichloroethane (1,1,1-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03390	Trichloroethane (1,1,2-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03400	Trichloroethene	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03410	Trichlorofluoromethane	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03430	Trimethylbenzene (1,2,4-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03440	Trimethylbenzene (1,3,5-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03450	Vinyl chloride	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03460	Xylene (m-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03470	Xylene (o-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03480	Xylene (p-)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03490	Xylenes (total)	GC/MS, Canisters	EPA TO-14A	LA
Certified	Yes	AE04.03510	Acetone	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03520	Acetonitrile	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03540	Acrolein	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03570	Acrylonitrile	GC/MS, Canisters	EPA TO-15	LA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	AE04.03580	Allyl chloride	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03600	Benzene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03610	Benzyl chloride	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03640	Bromodichloromethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03650	Bromoform	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03660	Bromomethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03670	Butadiene (1,3-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03690	Butylbenzene (n-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03700	Carbon disulfide	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03720	Carbon tetrachloride	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03750	Chlorobenzene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03760	Chloroethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03770	Chloroform	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03780	Chloromethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03800	Chlorotoluene (2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03820	Cyclohexane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03840	Dibromo-3-chloropropane (1,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03850	Dibromochloromethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03860	Dibromoethane (1,2-) (EDB)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03870	Dichlorobenzene (1,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03880	Dichlorobenzene (1,3-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03890	Dichlorobenzene (1,4-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03900	Dichlorodifluoromethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03910	Dichloroethane (1,1-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03920	Dichloroethane (1,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03930	Dichloroethene (1,1-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03940	Dichloroethene (cis-1,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03950	Dichloroethene (trans-1,2-)	GC/MS, Canisters	EPA TO-15	LA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: AE04 –Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	AE04.03960	Dichlorofluoromethane	GC/MS, Canisters	EPA TO-15	PA
Certified	Yes	AE04.03970	Dichloropropane (1,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03980	Dichloropropene (cis-1,3-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.03990	Dichloropropene (trans-1,3-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04000	Dichlorotetrafluoroethane (1,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04070	Dioxane (1,4-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04100	Ethanol	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04110	Ethyl acetate	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04120	Ethyl acrylate	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04140	Ethylbenzene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04170	Ethyltoluene (4-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04200	Heptane (n-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04210	Hexachlorobutadiene (1,3-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04220	Hexachloroethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04230	Hexane (n-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04240	Hexanone (2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04260	Isopropanol	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04270	Isopropylbenzene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04290	Methyl ethyl ketone (MEK)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04300	Methyl iodide	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04310	Methyl isobutyl ketone (MIBK)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04330	Methyl methacrylate	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04340	Methyl tert-butyl ether	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04350	Methylene chloride (Dichloromethane)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04380	Naphthalene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04490	Propylbenzene (n-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04510	Propylene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04540	Sec-butylbenzene	GC/MS, Canisters	EPA TO-15	LA

New Jersey Department of Environment Protection
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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: AE04 –Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	AE04.04550	Styrene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04570	Tert-butyl alcohol	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04580	Tert-butylbenzene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04590	Tetrachloroethane (1,1,2,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04600	Tetrachloroethene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04610	Tetrahydrofuran	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04620	Toluene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04630	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04640	Trichlorobenzene (1,2,4-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04650	Trichloroethane (1,1,1-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04660	Trichloroethane (1,1,2-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04670	Trichloroethene	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04680	Trichlorofluoromethane	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04710	Trimethylbenzene (1,2,4-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04720	Trimethylbenzene (1,3,5-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04730	Trimethylpentane (2,2,4-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04740	Vinyl acetate	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04750	Vinyl bromide	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04760	Vinyl chloride	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04770	Xylene (m-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04780	Xylene (o-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04790	Xylene (p-)	GC/MS, Canisters	EPA TO-15	LA
Certified	Yes	AE04.04800	Xylenes (total)	GC/MS, Canisters	EPA TO-15	LA

Category: DW01 --Microbiology

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: DW01 --Microbiology

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW01.00070	Heterotrophic bacteria	Pour Plate	SM 9215 B	PA
Certified	Yes	DW01.00100	Total coliform / E. coli	ONPG-MUG (Autoanalysis Colilert System) (P-A)	SM 9223 B	PA

Category: DW03 --Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW03.00010	Alkalinity	Electrometric Titration	SM 2320 B	PA
Certified	Yes	DW03.00210	Bromide	Ion Chromatography	EPA 300.0	PA
Certified	Yes	DW03.00420	Chloride	Ion Chromatography	EPA 300.0	PA
Certified	Yes	DW03.00550	Color	Platinum-Cobalt	SM 2120 B	PA
Certified	Yes	DW03.00590	Conductivity	Conductance	SM 2510 B	PA
Certified	Yes	DW03.00720	Cyanide	Spectrophotometric, Distill, Semi Automated	EPA 335.4	PA
Certified	Yes	DW03.00860	Fluoride	Ion Chromatography	EPA 300.0	PA
Certified	Yes	DW03.00900	Fluoride	Manual Potentiometric Ion Select Electrode	SM 4500-F C	PA
Certified	Yes	DW03.00910	Foaming agents	Methylene Blue	SM 5540 C	PA
Certified	Yes	DW03.00940	Nitrate	Automated Cadmium Reduction	EPA 353.2	PA
Certified	Yes	DW03.01070	Nitrate	Ion Chromatography	EPA 300.0	PA
Certified	No	DW03.01140	Nitrate - nitrite	Automated Cadmium Reduction	User Defined EPA 353.2	PA
Certified	Yes	DW03.01160	Nitrite	Automated Cadmium Reduction	EPA 353.2	PA
Certified	Yes	DW03.01220	Nitrite	Ion Chromatography	EPA 300.0	PA
Certified	Yes	DW03.01360	Orthophosphate	Colorimetric	SM 4500-P E	PA
Certified	Yes	DW03.01520	Residue - nonfilterable (TSS)	Gravimetric, 103-105 Deg C, Post Washing - mining	SM 2540 D	PA
Certified	Yes	DW03.01600	Sulfate	Ion Chromatography	EPA 300.0	PA
Certified	Yes	DW03.01660	Total dissolved solids (TDS)	Gravimetric At 180	SM 2540 C	PA
Certified	Yes	DW03.01690	Total hardness	Titrimetric, EDTA	SM 2340 C	PA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: DW03 --Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW03.01730	Total organic carbon (TOC)	Persulfate-UV	SM 5310 C	PA
Certified	Yes	DW03.01790	Turbidity	Nephelometric	EPA 180.1	PA
Certified	Yes	DW03.01850	Turbidity	Nephelometric	SM 2130 B	PA

Category: DW04 --Analyze-Immed. and Continuous Monitoring

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW04.00020	Chlorine - residual	DPD, Ferrous Titrimetric	SM 4500-Cl F	PA
Certified	Yes	DW04.00140	pH	Electrometric	EPA 150.1	PA
Certified	Yes	DW04.00150	pH	Electrometric	SM 4500-H B	PA
Certified	Yes	DW04.00170	Temperature	Thermometric	SM 2550 B	PA

Category: DW06 --Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW06.00480	Mercury	Manual Cold Vapor	EPA 245.1	PA
Certified	Yes	DW06.00610	Silica	Molybdosilicate	SM 4500-SiO2 C (20th Ed.)	PA

Category: DW07 --Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW07.00001	Aluminum	ICP	EPA 200.7	PA
Certified	Yes	DW07.00050	Antimony	ICP/MS	EPA 200.8	PA

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Category: DW07 --Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW07.00070	Arsenic	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00080	Barium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00110	Barium	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00120	Beryllium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00150	Beryllium	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00170	Cadmium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00190	Cadmium	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00200	Calcium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00240	Chromium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00270	Chromium	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00280	Cobalt	ICP	EPA 200.7	PA
Certified	Yes	DW07.00300	Copper	ICP	EPA 200.7	PA
Certified	Yes	DW07.00330	Copper	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00340	Iron	ICP	EPA 200.7	PA
Certified	Yes	DW07.00380	Lead	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00390	Lithium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00400	Magnesium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00430	Manganese	ICP	EPA 200.7	PA
Certified	Yes	DW07.00460	Manganese	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00500	Nickel	ICP	EPA 200.7	PA
Certified	Yes	DW07.00530	Nickel	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00540	Potassium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00560	Selenium	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00600	Silver	ICP	EPA 200.7	PA
Certified	Yes	DW07.00640	Sodium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00660	Strontium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00670	Thallium	ICP/MS	EPA 200.8	PA
Certified	Yes	DW07.00680	Tin	ICP	EPA 200.7	PA

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Category: DW07 --Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW07.00750	Vanadium	ICP	EPA 200.7	PA
Certified	Yes	DW07.00770	Zinc	ICP	EPA 200.7	PA
Certified	Yes	DW07.00800	Zinc	ICP/MS	EPA 200.8	PA

Category: DW08 --Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW08.00710	Dibromo-3-chloropropane (1,2-)	Solvent Extract, GC	EPA 504.1	PA
Certified	Yes	DW08.00720	Dibromoethane (1,2-) (EDB)	Solvent Extract, GC	EPA 504.1	PA
Certified	Yes	DW08.00730	Trichloropropane (1,2,3-)	Solvent Extract, GC	EPA 504.1	PA
Certified	Yes	DW08.02520	Aldicarb	HPLC	EPA 531.1	PA
Certified	Yes	DW08.02530	Aldicarb sulfone	HPLC	EPA 531.1	PA
Certified	Yes	DW08.02540	Aldicarb sulfoxide	HPLC	EPA 531.1	PA
Certified	Yes	DW08.02550	Carbaryl	HPLC	EPA 531.1	PA
Certified	Yes	DW08.02560	Carbofuran (furadan)	HPLC	EPA 531.1	PA
Certified	Yes	DW08.02570	Hydroxy carbofuran (3-)	HPLC	EPA 531.1	PA
Certified	Yes	DW08.02590	Methomyl (Lannate)	HPLC	EPA 531.1	PA
Certified	Yes	DW08.02600	Oxamyl	HPLC	EPA 531.1	PA

Category: DW09 --Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW09.00150	TCDD (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	DW09.02270	Acetone	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02280	Acrylonitrile	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA

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Category: DW09 –Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	DW09.02290	Allyl chloride	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02300	Benzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02310	Bromobenzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02320	Bromochloromethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02330	Bromodichloromethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02340	Bromoform	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02350	Bromomethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02360	Butanone (2-) [Methyl ethyl ketone]	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02370	Butylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02380	Carbon disulfide	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02390	Carbon tetrachloride	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02400	Chloroacetonitrile	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02410	Chlorobenzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02420	Chlorobutane (1-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02430	Chloroethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02440	Chloroform	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02450	Chloromethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02460	Chlorotoluene (2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02470	Chlorotoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02480	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	NJ
Certified	Yes	DW09.02490	Dibromochloromethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02500	Dibromoethane (1,2-) (EDB)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	NJ
Certified	Yes	DW09.02510	Dibromomethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02520	Dichloro-2-butene (trans-1,4-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02530	Dichlorobenzene (1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02540	Dichlorobenzene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02550	Dichlorobenzene (1,4-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02560	Dichlorodifluoromethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA

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Certified	Yes	DW09.02570	Dichloroethane (1,1-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02580	Dichloroethane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02590	Dichloroethene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02600	Dichloroethene (cis-1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02610	Dichloroethene (trans-1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02620	Dichloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02630	Dichloropropane (1,3-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02640	Dichloropropane (2,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02650	Dichloropropanone (1,1-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02660	Dichloropropene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02670	Dichloropropene (cis-1,3-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02680	Dichloropropene (trans-1,3-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02690	Diethyl ether (Ethyl ether)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02700	Ethyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02710	Ethylbenzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02720	Hexachlorobutadiene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02730	Hexachloroethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02750	Hexanone (2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02760	Isopropylbenzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02770	Isopropyltoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02780	Methacrylonitrile	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02790	Methyl acrylate	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02800	Methyl iodide	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02810	Methyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02820	Methyl tert-butyl ether	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02830	Methylene chloride (Dichloromethane)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02840	Naphthalene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02850	Nitrobenzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA

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Certified	Yes	DW09.02860	Nitropropane (2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02870	Pentachloroethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02880	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02890	Propionitrile	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02900	Propylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02910	Sec-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02920	Styrene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02930	Tert-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02940	Tert-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02950	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02960	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02970	Tetrachloroethene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02980	Tetrahydrofuran	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.02990	Toluene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03000	Trichlorobenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03010	Trichlorobenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03030	Trichloroethane (1,1,1-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03040	Trichloroethane (1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03050	Trichloroethene	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03060	Trichlorofluoromethane	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03070	Trichloropropane (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03080	Trimethylbenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03090	Trimethylbenzene (1,3,5-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03100	Vinyl chloride	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03110	Xylene (m- + p-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03120	Xylene (o-)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03130	Xylenes (total)	GC/MS, P & T or Direct Injection, Capillary	EPA 524.2	PA
Certified	Yes	DW09.03930	Acenaphthene	SPE, GC/MS	EPA 525.2	PA

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Certified	Yes	DW09.03940	Acenaphthylene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.03960	Alachlor	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.03970	Aldrin	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.03990	Anthracene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04070	Atrazine	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04080	Benzo(a)anthracene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04090	Benzo(a)pyrene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04100	Benzo(b)fluoranthene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04110	Benzo(ghi)perylene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04120	Benzo(k)fluoranthene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04150	Butachlor	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04170	Butylbenzylphthalate	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04260	Chrysene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04340	Di(2-ethylhexyl)adipate	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04350	Di(2-ethylhexyl)phthalate	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04360	Dibenzo(a,h)anthracene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04380	Dieldrin	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04390	Diethyl phthalate	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04400	Dimethyl phthalate	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04410	Di-n-butyl phthalate	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04480	Endrin	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04540	Fluorene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04560	Heptachlor	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04570	Heptachlor epoxide	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04580	Hexachlorobenzene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04590	Hexachlorocyclopentadiene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04610	Indeno(1,2,3-cd)pyrene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04630	Lindane (gamma BHC)	SPE, GC/MS	EPA 525.2	PA

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Certified	Yes	DW09.04640	Methoxychlor	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04660	Metolachlor	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04670	Metribuzin	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04780	Phenanthrene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04800	Propachlor	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04820	Pyrene	SPE, GC/MS	EPA 525.2	PA
Certified	Yes	DW09.04830	Simazine	SPE, GC/MS	EPA 525.2	PA
Temporary	Yes	DW09.05030	N-ethylperfluorooctanesulfonamidoacetic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05040	N-methylperfluorooctanesulfonamidoacetic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05050	Perfluorobutanesulfonic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05060	Perfluorodecanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05070	Perfluorododecanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05080	Perfluoroheptanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05090	Perfluorohexanesulfonic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05100	Perfluorohexanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05110	Perfluorononanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05120	Perfluorooctanesulfonic acid (PFOS)	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05130	Perfluorooctanoic acid (PFOA)	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05140	Perfluorotetradecanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05150	Perfluorotridecanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Temporary	Yes	DW09.05160	Perfluoroundecanoic acid	LC MS/MS, Electrospray Ionization	EPA 537	NJ
Certified	No	DW09.05280	Diisopropyl Ether [DIPE]	GC/MS, P & T or Direct Injection, Capillary	User Defined EPA 524.2	PA
Certified	Yes	DW09.05290	Ethyl-tert-butyl Ether [ETBE]	GC/MS, P & T or Direct Injection, Capillary	User Defined EPA 524.2	PA
Certified	Yes	DW09.05300	tert-Amylmethyl ether [TAME]	GC/MS, P & T or Direct Injection, Capillary	User Defined EPA 524.2	PA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994
Category: NPW01–Microbiology

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW01.00300	Fecal coliform	Membrane Filter (MF), Single Step	SM 9222 D-97	PA

Category: NPW03–Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW03.00020	Acidity as CaCO3	Electrometric or Phenolphthalein	SM 2310 B-11	PA
Certified	Yes	NPW03.00060	Alkalinity as CaCO3	Electrometric or Color Titration	SM 2320 B-11	PA
Certified	Yes	NPW03.00160	Ammonia	Distillation, Titration	SM 4500-NH3 B plus C-11	PA
Certified	Yes	NPW03.00190	Ammonia	Distillation, Electrode	SM 4500-NH3 B plus D-11	PA
Certified	Yes	NPW03.00250	Ammonia	Distillation or Gas Diffusion, Semi-automated Phenate	EPA 350.1	PA
Certified	Yes	NPW03.00350	Biochemical oxygen demand	Dissolved Oxygen Depletion - Membrane Electrode	SM 5210 B-11	PA
Certified	Yes	NPW03.00540	Bromide	Ion Chromatography	EPA 300.0	PA
Certified	Yes	NPW03.00570	Bromide	Ion Chromatography	SW-846 9056	PA
Certified	Yes	NPW03.00580	Bromide	Ion Chromatography	SW-846 9056A	PA
Certified	Yes	NPW03.00660	Carbonaceous BOD (CBOD)	Diss. Oxygen Depl., Nitrif. Inhib. - Membrane Electrode	SM 5210 B-11	PA
Certified	Yes	NPW03.00800	Chemical oxygen demand	Spectrophotometric Manual/Auto	EPA 410.4	PA
Certified	Yes	NPW03.00970	Chloride	Titrimetric, Mercuric Nitrate	SM 4500-Cl C-11	PA
Certified	Yes	NPW03.01100	Chloride	Ion Chromatography	EPA 300.0	PA
Certified	Yes	NPW03.01150	Chloride	Ion Chromatography	SW-846 9056	PA
Certified	Yes	NPW03.01160	Chloride	Ion Chromatography	SW-846 9056A	PA
Certified	Yes	NPW03.01370	Color	Colorimetric (Platinum-Cobalt)	SM 2120 B-11	PA
Certified	Yes	NPW03.01510	Cyanide	Seg. Flow Inj., In-Line UV Digest., Gas Diff. Amperometry	ASTM D7511-09	PA
Certified	Yes	NPW03.01530	Cyanide	Distillation, Spectrophotometric (Auto)	EPA 335.4	PA
Certified	Yes	NPW03.01550	Cyanide	Colorimetric, Automated	SW-846 9012B	PA

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Category: NPW03--Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW03.01660	Cyanide - amenable to Cl2	Manual Distillation, Titrimetr/Spectro	SM 4500-CN B-11 and G-11	PA
Certified	Yes	NPW03.01670	Cyanide - amenable to Cl2	Manual Distillation, Titrimetr/Spectro	SM 4500-CN C-11 and G-11	PA
Certified	Yes	NPW03.01710	Cyanide - amenable to Cl2	Flow Inj., Ligand Exch., Gas Diff. + Amperometry	Other OIA 1677	PA
Certified	Yes	NPW03.01840	Fluoride	Distillation + Electrode, Manual	SM 4500-F B plus C-11	PA
Certified	Yes	NPW03.01930	Fluoride	Ion Chromatography	EPA 300.0	PA
Certified	Yes	NPW03.01970	Fluoride	Ion Chromatography	SW-846 9056	PA
Certified	Yes	NPW03.01980	Fluoride	Ion Chromatography	SW-846 9056A	PA
Certified	Yes	NPW03.02060	Free Cyanide	Flow Injection, Gas Diffusion, Amperometry	Other OIA-1677	PA
Certified	Yes	NPW03.02110	Hardness - total as CaCO3	Titrimetric, EDTA	SM 2340 C-11	PA
Certified	Yes	NPW03.02470	Kjeldahl nitrogen - total	Digestion, Semiauto. Digestor, Colorimetric	EPA 351.2	PA
Certified	Yes	NPW03.02580	Nitrate	Ion Chromatography	EPA 300.0	PA
Certified	Yes	NPW03.02630	Nitrate	Ion Chromatography	SW-846 9056	PA
Certified	Yes	NPW03.02640	Nitrate	Ion Chromatography	SW-846 9056A	PA
Certified	Yes	NPW03.02790	Nitrate - nitrite	Cadmium Reduction, Automated	EPA 353.2	PA
Certified	Yes	NPW03.03000	Nitrite	Auto, bypass Cd reduction	EPA 353.2	PA
Certified	Yes	NPW03.03080	Nitrite	Ion Chromatography	EPA 300.0	PA
Certified	Yes	NPW03.03130	Nitrite	Ion Chromatography	SW-846 9056	PA
Certified	Yes	NPW03.03140	Nitrite	Ion Chromatography	SW-846 9056A	PA
Certified	Yes	NPW03.03200	Oil & grease - hem-LL	Gravimetric, Hexane Extractable Material-LL	EPA 1664A	PA
Certified	Yes	NPW03.03210	Oil & grease - hem-LL	Gravimetric, Hexane Extractable Material-LL	EPA 1664B	PA
Certified	Yes	NPW03.03240	Oil & grease - hem-SPE	Gravimetric, Hexane Extractable Material-SPE	EPA 1664A	PA
Certified	Yes	NPW03.03250	Oil & grease - hem-SPE	Gravimetric, Hexane Extractable Material-SPE	EPA 1664B	PA
Certified	Yes	NPW03.03290	Oil & grease - sgt-non polar	Gravimetric, Silica Gel Treated-Hem-SPE	EPA 1664B	PA
Certified	Yes	NPW03.03300	Oil & grease - sgt-non polar	Gravimetric, Silica Gel Treated-Hem-SPE	EPA 1664A	PA
Certified	Yes	NPW03.03340	Oil & grease - sgt-non polar	Gravimetric, Silica Gel Treated-Hem-LL	EPA 1664A	PA
Certified	Yes	NPW03.03490	Orthophosphate	Ascorbic Acid, Manual Single Reagent	SM 4500-P E-11	PA

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Category: NPW03--Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW03.03510	Orthophosphate	Ascorbic Acid, Manual Two Reagent	EPA 365.3	PA
Certified	Yes	NPW03.03720	Perchlorate	LC/MS or LC/MS/MS	SW-846 6850	PA
Certified	Yes	NPW03.03810	Phenols	Manual Distillation, Colorimetric Auto	EPA 420.4	PA
Certified	Yes	NPW03.03830	Phenols	Colorimetric, Auto, 4AAP Distillation	SW-846 9066	PA
Certified	Yes	NPW03.03900	Phosphorus (total)	Auto Ascorbic Acid Reduction	EPA 365.1	PA
Certified	Yes	NPW03.03910	Phosphorus (total)	Auto Ascorbic Acid Reduction	SM 4500-P B5-11 plus F-11	PA
Certified	Yes	NPW03.04010	Residue - filterable (TDS)	Gravimetric, 180 Degrees C	SM 2540 C-11	PA
Certified	Yes	NPW03.04050	Residue - nonfilterable (TSS)	Gravimetric, 103-105 Degrees C, Post Washing	SM 2540 D-11	PA
Certified	Yes	NPW03.04080	Residue - settleable	Volumetric (Imhoff Cone) or Gravimetric	SM 2540 F-11	PA
Certified	Yes	NPW03.04100	Residue - total	Gravimetric, 103-105 Degrees C	SM 2540 B-11	PA
Certified	Yes	NPW03.04130	Residue - volatile	Gravimetric, 550 Degrees C	EPA 160.4	PA
Certified	Yes	NPW03.04250	Specific conductance	Wheatstone Bridge	SM 2510 B-11	PA
Certified	Yes	NPW03.04270	Specific conductance	Wheatstone Bridge	SW-846 9050A	PA
Certified	Yes	NPW03.04490	Sulfate	Ion Chromatography	EPA 300.0	PA
Certified	Yes	NPW03.04540	Sulfate	Ion Chromatography	SW-846 9056	PA
Certified	Yes	NPW03.04550	Sulfate	Ion Chromatography	SW-846 9056A	PA
Certified	Yes	NPW03.04650	Sulfides	Titrimetric, Iodine	SM 4500-S B, C plus F-11	PA
Certified	Yes	NPW03.04670	Sulfides	Colorimetric (Methylene Blue)	SM 4500-S B, C plus D-11	PA
Certified	Yes	NPW03.04720	Surfactants	Colorimetric (Methylene Blue)	SM 5540 C-11	PA
Applied	No	NPW03.04790	Total organic carbon (TOC)	Combustion	SM 5310 B-11	PA
Certified	Yes	NPW03.04840	Total organic carbon (TOC)	Heated or UV	SM 5310C-11	PA
Certified	Yes	NPW03.04880	Total organic carbon (TOC)	Infrared Spectrometry or FID	SW-846 9060A	PA
Certified	Yes	NPW03.05010	Turbidity	Nephelometric	EPA 180.1	PA

Category: NPW04--Analyze-Immed. and Continuous Monitoring

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Category: NPW04--Analyze-Immed. and Continuous Monitoring

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW04.00050	Chlorine	DPD-FAS	SM 4500-Cl F-11	PA
Certified	Yes	NPW04.00230	Oxygen (dissolved)	Membrane Electrode	SM 4500-O G-11	PA
Certified	Yes	NPW04.00380	pH	Electrometric	SM 4500-H B-11	PA
Certified	Yes	NPW04.00410	pH (corrosivity)	Aqueous, Electrometric	SW-846 9040B	PA
Certified	Yes	NPW04.00420	pH (corrosivity)	Aqueous, Electrometric	SW-846 9040C	PA
Certified	Yes	NPW04.00470	Sulfite - SO3	Titrimetric, Iodine-Iodate	SM 4500-SO3 B-11	PA

Category: NPW06--Metals - NPW Preparation Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW06.00020	Metals	TCLP, Toxicity Procedure, Shaker	SW-846 1311	PA
Certified	Yes	NPW06.00030	Metals	Synthetic PPT Leachate Procedure	SW-846 1312	PA
Certified	Yes	NPW06.00050	Metals, Total Rec and Dissolved	Acid Digestion/Surface and Groundwater, ICP, FLAA	SW-846 3005A	PA
Certified	Yes	NPW06.00060	Metals, Total	Acid Digestion/Aqueous Samples, ICP, FLAA	SW-846 3010A	PA
Certified	Yes	NPW06.00090	Metals	Acid Digestion For GFAA, Aqueous	SW-846 3020A	PA

Category: NPW07--Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW07.01000	Chromium (VI)	Colorimetric	SW-846 7196A	PA
Certified	Yes	NPW07.01050	Chromium (VI)	Ion Chromatography	SW-846 7199	PA
Certified	Yes	NPW07.01080	Chromium (VI)	0.45u Filter, Ion Chromatography	EPA 218.6	PA
Certified	Yes	NPW07.01690	Iron, Ferrous	Digestion, Colorimetric (Phenanthroline)	SM 3500-Fe B-11	PA
Certified	Yes	NPW07.02160	Mercury	Manual Cold Vapor	EPA 245.1	PA

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Category: NPW07--Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW07.02190	Mercury - liquid waste	AA, Manual Cold Vapor	SW-846 7470A	PA
Certified	Yes	NPW07.02200	Mercury	Purge & Trap Atomic Fluorescence	EPA 1631E	PA
Certified	Yes	NPW07.02860	Silica - dissolved	0.45u Filtration + Colorimetric (Manual)	SM 4500-SiO2 C-11	PA

Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.00001	Aluminum	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.00012	Aluminum	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.00050	Aluminum	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.00070	Aluminum	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.00080	Aluminum	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.00082	Aluminum	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.00130	Aluminum	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.00170	Antimony	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.00180	Antimony	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.00182	Antimony	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.00220	Antimony	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.00240	Antimony	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.00250	Antimony	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.00252	Antimony	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.00300	Antimony	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.00330	Arsenic	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.00340	Arsenic	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.00342	Arsenic	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.00370	Arsenic	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.00390	Arsenic	ICP/MS	SW-846 6020	PA

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Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.00400	Arsenic	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.00402	Arsenic	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.00450	Arsenic	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.00470	Barium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.00480	Barium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.00482	Barium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.00510	Barium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.00530	Barium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.00540	Barium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.00542	Barium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.00590	Barium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.00630	Beryllium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.00640	Beryllium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.00642	Beryllium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.00680	Beryllium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.00700	Beryllium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.00710	Beryllium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.00712	Beryllium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.00760	Beryllium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.00810	Boron	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.00820	Boron	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.00822	Boron	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.00860	Boron	ICP	EPA 200.7	PA
Certified	Yes	NPW08.00880	Boron	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.00890	Boron	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.00892	Boron	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.00940	Boron	ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.00970	Cadmium	ICP	SW-846 6010B	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.00980	Cadmium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.00982	Cadmium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.01030	Cadmium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.01050	Cadmium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.01060	Cadmium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.01062	Cadmium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.01110	Cadmium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.01160	Calcium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.01170	Calcium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.01172	Calcium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.01200	Calcium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.01220	Calcium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.01230	Calcium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.01232	Calcium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.01270	Calcium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.01300	Chromium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.01310	Chromium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.01312	Chromium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.01350	Chromium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.01370	Chromium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.01380	Chromium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.01382	Chromium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.01430	Chromium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.01490	Cobalt	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.01500	Cobalt	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.01502	Cobalt	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.01530	Cobalt	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.01550	Cobalt	ICP/MS	SW-846 6020	PA

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Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.01560	Cobalt	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.01562	Cobalt	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.01610	Cobalt	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.01640	Copper	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.01650	Copper	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.01652	Copper	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.01690	Copper	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.01710	Copper	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.01720	Copper	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.01722	Copper	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.01770	Copper	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.01990	Iron	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.02000	Iron	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.02002	Iron	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.02040	Iron	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.02060	Iron	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.02070	Iron	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.02072	Iron	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.02110	Iron	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.02160	Lead	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.02170	Lead	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.02172	Lead	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.02210	Lead	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.02230	Lead	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.02240	Lead	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.02242	Lead	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.02290	Lead	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.02340	Lithium	Digestion, ICP	EPA 200.7	PA

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Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.02350	Lithium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.02360	Lithium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.02362	Lithium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.02370	Magnesium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.02380	Magnesium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.02382	Magnesium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.02420	Magnesium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.02440	Magnesium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.02450	Magnesium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.02452	Magnesium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.02490	Magnesium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.02530	Manganese	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.02540	Manganese	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.02542	Manganese	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.02580	Manganese	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.02600	Manganese	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.02610	Manganese	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.02612	Manganese	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.02660	Manganese	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.02710	Molybdenum	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.02720	Molybdenum	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.02722	Molybdenum	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.02750	Molybdenum	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.02770	Molybdenum	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.02780	Molybdenum	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.02782	Molybdenum	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.02830	Molybdenum	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.02860	Nickel	ICP	SW-846 6010B	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.02870	Nickel	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.02872	Nickel	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.02910	Nickel	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.02930	Nickel	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.02940	Nickel	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.02942	Nickel	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.02990	Nickel	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.03130	Potassium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.03140	Potassium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.03142	Potassium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.03150	Potassium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.03200	Potassium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.03220	Potassium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.03230	Potassium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.03232	Potassium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.03270	Selenium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.03280	Selenium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.03282	Selenium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.03310	Selenium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.03330	Selenium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.03340	Selenium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.03342	Selenium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.03390	Selenium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.03520	Silver	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.03530	Silver	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.03532	Silver	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.03570	Silver	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.03590	Silver	ICP/MS	SW-846 6020	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.03600	Silver	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.03602	Silver	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.03650	Silver	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.03700	Sodium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.03710	Sodium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.03712	Sodium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.03740	Sodium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.03760	Sodium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.03770	Sodium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.03772	Sodium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.03810	Sodium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.03840	Strontium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.03850	Strontium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.03860	Strontium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.03862	Strontium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.03870	Strontium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.03880	Strontium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.03882	Strontium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.03920	Thallium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.03930	Thallium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.03932	Thallium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.03950	Thallium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.03970	Thallium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.03980	Thallium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.03982	Thallium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.04030	Thallium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.04060	Thorium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.04062	Thorium	ICP	SW-846 6010D	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.04100	Tin	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.04110	Tin	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.04112	Tin	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.04130	Tin	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.04140	Tin	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.04150	Tin	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.04152	Tin	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.04190	Tin	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.04200	Titanium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.04210	Titanium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.04212	Titanium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.04220	Titanium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.04230	Titanium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.04240	Titanium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.04242	Titanium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.04280	Titanium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.04350	Uranium	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.04370	Uranium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.04372	Uranium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.04374	Uranium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.04380	Vanadium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.04390	Vanadium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.04392	Vanadium	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.04430	Vanadium	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.04450	Vanadium	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.04460	Vanadium	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.04462	Vanadium	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.04510	Vanadium	Digestion, ICP/MS	EPA 200.8	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW08–Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW08.04560	Zinc	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.04570	Zinc	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.04572	Zinc	ICP	SW-846 6010D	PA
Certified	Yes	NPW08.04610	Zinc	Digestion, ICP	EPA 200.7	PA
Certified	Yes	NPW08.04630	Zinc	ICP/MS	SW-846 6020	PA
Certified	Yes	NPW08.04640	Zinc	ICP/MS	SW-846 6020A	PA
Certified	Yes	NPW08.04642	Zinc	ICP/MS	SW-846 6020B	PA
Certified	Yes	NPW08.04690	Zinc	Digestion, ICP/MS	EPA 200.8	PA
Certified	Yes	NPW08.04740	Zirconium	ICP	SW-846 6010B	PA
Certified	Yes	NPW08.04742	Zirconium	ICP	SW-846 6010C	PA
Certified	Yes	NPW08.04744	Zirconium	ICP	SW-846 6010D	PA

Category: NPW09–Organics - NPW Preparation Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW09.00040	Organics	Synthetic PPT Leachate Procedure	SW-846 1312	PA
Certified	Yes	NPW09.00080	Semivolatile organics	TCLP, Toxicity Procedure, Shaker	SW-846 1311	PA
Certified	Yes	NPW09.00090	Semivolatile organics	Separatory Funnel Extraction	SW-846 3510C	PA
Certified	Yes	NPW09.00100	Semivolatile organics	Microscale Solvent Extraction - Aqueous	SW-846 3511	PA
Certified	Yes	NPW09.00110	Semivolatile organics	Continuous Liquid-Liquid Extraction	SW-846 3520C	PA
Certified	Yes	NPW09.00170	Semivolatile organics	Cleanup-Florisil	SW-846 3620B	PA
Certified	Yes	NPW09.00180	Semivolatile organics	Cleanup-Florisil	SW-846 3620C	PA
Certified	Yes	NPW09.00190	Semivolatile organics	Cleanup-Silica Gel	SW-846 3630C	PA
Certified	Yes	NPW09.00200	Semivolatile organics	Cleanup-Gel Permeation	SW-846 3640A	PA
Certified	Yes	NPW09.00220	Semivolatile organics	Cleanup-Sulfur Removal	SW-846 3660B	PA
Certified	Yes	NPW09.00290	Volatile organics	TCLP, Toxicity Procedure, ZHE	SW-846 1311	PA
Certified	Yes	NPW09.00330	Volatile organics	Purge & Trap Aqueous	SW-846 5030B	PA

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Category: NPW09--Organics - NPW Preparation Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW09.00340	Volatile organics	Purge & Trap Aqueous	SW-846 5030C	PA

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.01810	Acetonitrile	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.01820	Diethylamine	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.01830	Dimethyl sulfoxide	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.01840	Ethanol	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.01850	Methoxyethanol (2-) (methyl cellosolve)	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.01860	Methyl alcohol (Methanol)	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.01870	Propyl Alcohol (n-)	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.01880	Triethylamine	GC, Direct Injection, FID	EPA 1671A	PA
Certified	Yes	NPW10.02910	Benzene	Purge & Trap, GC (PID)	EPA 602	PA
Certified	Yes	NPW10.02960	Ethylbenzene	Purge & Trap, GC (PID)	EPA 602	PA
Certified	Yes	NPW10.02970	Methyl tert-butyl ether	Purge & Trap, GC (PID)	EPA 602	PA
Certified	Yes	NPW10.02990	Toluene	Purge & Trap, GC (PID)	EPA 602	PA
Certified	Yes	NPW10.03000	Xylenes (total)	Purge & Trap, GC (PID)	EPA 602	PA
Certified	Yes	NPW10.03360	Aldrin	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03370	Alpha BHC	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03380	Beta BHC	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03390	Chlordane	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03430	DDD (4,4'-)	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03440	DDE (4,4'-)	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03450	DDT (4,4'-)	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03460	Delta BHC	Extract/GC (ECD)	EPA 608	PA

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LANCASTER PA 176015994

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.03470	Dieldrin	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03480	Endosulfan I	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03490	Endosulfan II	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03500	Endosulfan sulfate	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03510	Endrin	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03520	Endrin aldehyde	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03550	Heptachlor	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03560	Heptachlor epoxide	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03570	Lindane (gamma BHC)	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03590	PCB 1016	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03600	PCB 1221	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03610	PCB 1232	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03620	PCB 1242	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03630	PCB 1248	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03640	PCB 1254	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03650	PCB 1260	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.03660	Toxaphene	Extract/GC (ECD)	EPA 608	PA
Certified	Yes	NPW10.05210	Azinphos methyl	Extraction, GC, NPD or FPD	EPA 622	PA
Certified	Yes	NPW10.05220	Bolstar	GC	EPA 622	PA
Certified	Yes	NPW10.05230	Chlorpyrifos	GC	EPA 622	PA
Certified	Yes	NPW10.05240	Coumaphos	Extraction, GC, FPD	EPA 622	PA
Certified	Yes	NPW10.05250	Demeton (o-)	Extraction, GC, NPD or FPD	EPA 622	PA
Certified	Yes	NPW10.05260	Demeton (s-)	Extraction, GC, NPD or FPD	EPA 622	PA
Certified	Yes	NPW10.05270	Diazinon	Extraction, GC, NPD or FPD	EPA 622	PA
Certified	Yes	NPW10.05280	Dichlorvos	GC	EPA 622	PA
Certified	Yes	NPW10.05300	Disulfoton	Extraction, GC, NPD or FPD	EPA 622	PA
Certified	Yes	NPW10.05310	EPN	Extraction, GC, FPD	EPA 622	PA
Certified	Yes	NPW10.05320	Ethoprop	GC	EPA 622	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.05330	Fensulfothion	GC	EPA 622	PA
Certified	Yes	NPW10.05340	Fenthion	GC	EPA 622	PA
Certified	Yes	NPW10.05350	Merphos	GC	EPA 622	PA
Certified	Yes	NPW10.05360	Mevinphos	GC	EPA 622	PA
Certified	Yes	NPW10.05370	Naled	GC	EPA 622	PA
Certified	Yes	NPW10.05380	Parathion methyl	GC	EPA 622	PA
Certified	Yes	NPW10.05390	Phorate	GC	EPA 622	PA
Certified	Yes	NPW10.05400	Stirofos	GC	EPA 622	PA
Certified	Yes	NPW10.05430	Tokuthion [Protothiofos]	Extraction, GC, FPD	EPA 622	PA
Certified	Yes	NPW10.05440	Trichloronate	Extraction, GC, FPD	EPA 622	PA
Certified	Yes	NPW10.05970	Petroleum Organics	Extraction, GC, FID	Other Florida - PRO	PA
Certified	Yes	NPW10.06000	Butane	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	PA
Certified	Yes	NPW10.06010	Ethane	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	PA
Certified	Yes	NPW10.06020	Ethene	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	PA
Certified	Yes	NPW10.06040	Methane	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	PA
Certified	Yes	NPW10.06050	Propane	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	PA
Certified	Yes	NPW10.06060	Extractable Petroleum Hydrocarbons	Extraction, GC, FID	Other NJDEP EPH 10/08, Rev. 3	NJ
Certified	Yes	NPW10.07680	Dibromo-3-chloropropane (1,2-)	Microextraction, GC, ECD	SW-846 8011	PA
Certified	Yes	NPW10.07690	Dibromoethane (1,2-) (EDB)	Microextraction, GC, ECD	SW-846 8011	PA
Certified	Yes	NPW10.07750	Butanol (1-)	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07770	Diesel range organic	Extraction, GC, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07790	Ethyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07800	Ethylene glycol	GC, Direct Injection, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07820	Gasoline range organic	GC P&T, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07830	Iso-butyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07840	Isopropyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07850	Methyl alcohol (Methanol)	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	NPW10.07910	Propyl Alcohol (n-)	GC, Direct Injection or P & T, FID	SW-846 8015B	PA

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LANCASTER PA 176015994

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.07920	Propylene glycol	GC, Direct Injection, FID	SW-846 8015B	PA
Certified	Yes	NPW10.08010	Butanol (1-)	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08030	Diesel range organic	Extraction, GC, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08060	Ethyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08070	Ethylene glycol	GC, Direct Injection, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08100	Gasoline range organic	GC P&T, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08120	Iso-butyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08130	Isopropyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08140	Methyl alcohol (Methanol)	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08210	Propyl Alcohol (n-)	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08220	Propylene glycol	GC, Direct Injection, FID	SW-846 8015C	PA
Certified	Yes	NPW10.08330	Butanol (1-)	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08360	Diesel range organic	Extraction, GC, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08370	Diethylene glycol	GC, Direct Injection, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08400	Ethyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08410	Ethylene glycol	GC, Direct Injection, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08440	Gasoline range organic	GC P&T, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08460	Iso-butyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08470	Isopropyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08480	Methyl alcohol (Methanol)	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08550	Propyl Alcohol (n-)	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08560	Propylene glycol	GC, Direct Injection, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08620	Triethylene glycol	GC, Direct Injection, FID	SW-846 8015D	PA
Certified	Yes	NPW10.08630	Benzene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.08860	Ethylbenzene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.08870	Methyl tert-butyl ether	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.08890	Naphthalene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.08930	Toluene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW10–Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.08990	Xylene (m-)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.09000	Xylene (o-)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.09010	Xylene (p-)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.09020	Xylenes (total)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	NPW10.09480	Aldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09490	Alpha BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09510	Beta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09520	Chlordane (alpha) (cis-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09530	Chlordane (gamma) (trans-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09540	Chlordane (technical)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09610	DDD (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09620	DDE (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09630	DDT (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09640	Delta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09650	Dieldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09660	Endosulfan I	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09670	Endosulfan II	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09680	Endosulfan sulfate	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09690	Endrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09700	Endrin aldehyde	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09710	Endrin ketone	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09730	Heptachlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09740	Heptachlor epoxide	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09770	Lindane (gamma BHC)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09780	Methoxychlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09810	Mirex	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09850	Toxaphene	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	NPW10.09880	Aldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW10–Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.09890	Alpha BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.09910	Beta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.09920	Chlordane (alpha) (cis-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.09930	Chlordane (gamma) (trans-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.09940	Chlordane (technical)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10010	DDD (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10020	DDE (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10030	DDT (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10040	Delta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10050	Dieldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10060	Endosulfan I	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10070	Endosulfan II	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10080	Endosulfan sulfate	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10090	Endrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10100	Endrin aldehyde	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10110	Endrin ketone	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10130	Heptachlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10140	Heptachlor epoxide	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10170	Lindane (gamma BHC)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10180	Methoxychlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10210	Mirex	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10250	Toxaphene	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	NPW10.10480	PCB 1016	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10490	PCB 1221	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10500	PCB 1232	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10510	PCB 1242	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10520	PCB 1248	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10530	PCB 1254	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.10540	PCB 1260	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10550	PCB 1262	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10560	PCB 1268	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	NPW10.10780	PCB 1016	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10790	PCB 1221	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10800	PCB 1232	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10810	PCB 1242	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10820	PCB 1248	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10830	PCB 1254	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10840	PCB 1260	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10850	PCB 1262	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.10860	PCB 1268	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	NPW10.11630	Atrazine	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11640	Azinphos methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11650	Bolstar	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11660	Chlorpyrifos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11670	Coumaphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11680	Demeton (o-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11690	Demeton (s-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11700	Diazinon	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11710	Dichlorvos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11730	Disulfoton	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11740	EPN	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11750	Ethoprop	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11760	Fensulfothion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11770	Fenthion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11790	Malathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11800	Merphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.11810	Mevinphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11820	Naled	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11830	Parathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11840	Parathion methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11850	Phorate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11860	Ronnel	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11870	Simazine	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11880	Stirofos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11910	Tokuthion [Protothiofos]	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11920	Trichloronate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	NPW10.11930	Azinphos methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.11940	Bolstar	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.11950	Chlorpyrifos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.11960	Coumaphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.11970	Demeton (o-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.11980	Demeton (s-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.11990	Diazinon	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12000	Dichlorvos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12020	Disulfoton	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12030	EPN	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12040	Ethoprop	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12050	Fensulfothion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12060	Fenthion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12070	Malathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12080	Merphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12090	Mevinphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12100	Naled	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12110	Parathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW10–Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.12120	Parathion methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12130	Phorate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12140	Ronnel	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12150	Stirofos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12180	Tokuthion [Protothiofos]	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12190	Trichloronate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	NPW10.12230	D (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12240	Dalapon	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12250	DB (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12270	Dicamba	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12290	Dichlorprop	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12300	Dinoseb	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12320	MCPA	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12330	MCPP	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12350	Pentachlorophenol	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12360	Picloram	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12370	T (2,4,5-)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12380	TP (2,4,5-) (Silvex)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	NPW10.12550	Acetaldehyde	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	NPW10.12560	Butyl aldehyde	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	NPW10.12570	Formaldehyde	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	NPW10.12580	Tolualdehyde (3-)	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	NPW10.13040	Dinitrobenzene (1,3-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13050	Dinitrotoluene (2,4-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13060	Dinitrotoluene (2,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13070	Dinitrotoluene (2-amino-4,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13080	Dinitrotoluene (4-amino-2,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13090	HMX	HPLC, UV Detector	SW-846 8330	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.13100	Nitrobenzene	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13110	Nitroglycerine	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13120	Nitrotoluene (2-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13130	Nitrotoluene (3-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13140	Nitrotoluene (4-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13150	PETN	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13160	RDX	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13170	Tetryl	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13180	Trinitrobenzene (1,3,5-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13190	Trinitrotoluene (2,4,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	NPW10.13200	Dinitrobenzene (1,3-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13210	Dinitrotoluene (2,4-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13220	Dinitrotoluene (2,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13230	Dinitrotoluene (2-amino-4,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13240	Dinitrotoluene (4-amino-2,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13250	HMX	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13260	Nitrobenzene	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13270	Nitroglycerine	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13280	Nitrotoluene (2-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13290	Nitrotoluene (3-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13300	Nitrotoluene (4-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13310	PETN	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13320	RDX	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13330	Tetryl	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13340	Trinitrobenzene (1,3,5-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13350	Trinitrotoluene (2,4,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	NPW10.13360	Dinitrobenzene (1,3-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13370	Dinitrotoluene (2,4-)	HPLC, UV Detector	SW-846 8330B	PA

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Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW10.13380	Dinitrotoluene (2,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13390	Dinitrotoluene (2-amino-4,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13400	Dinitrotoluene (4-amino-2,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13410	HMX	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13420	Nitrobenzene	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13430	Nitroglycerine	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13440	Nitrotoluene (2-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13450	Nitrotoluene (3-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13460	Nitrotoluene (4-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13470	PETN	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13480	RDX	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13490	Tetryl	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13500	Trinitrobenzene (1,3,5-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.13510	Trinitrotoluene (2,4,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	NPW10.14320	Methoxychlor	Extract/GC (ECD)	User Defined EPA 608	PA
Certified	Yes	NPW10.14340	Mirex	Extract/GC (ECD)	User Defined EPA 608	PA
Certified	Yes	NPW10.14820	Butoxyethanol (2-)	GC, Direct Injection, FID	User Defined SW 846 8270	PA
Certified	Yes	NPW10.14830	Atrazine	GC, Extract or Dir Inj, NPD or FPD,Cap	User Defined SW-846 8141B	PA
Certified	Yes	NPW10.14840	Simazine	GC, Extract or Dir Inj, NPD or FPD,Cap	User Defined SW-846 8141B	PA

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.00010	HpCDD (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00020	HpCDF (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00030	HpCDF (1,2,3,4,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00040	HxCDD (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.00050	HxCDD (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00060	HxCDD (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00070	HxCDF (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00080	HxCDF (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00090	HxCDF (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00100	HxCDF (2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00110	OCDD (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00120	OCDF (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00130	PeCDD (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00140	PeCDF (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00150	PeCDF (2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00160	TCDD (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.00170	TCDF (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	EPA 1613B	PA
Certified	Yes	NPW11.02070	N-Nitrosodimethylamine	Isotope Dilution, GC/MS	EPA 1625B	PA
Certified	Yes	NPW11.02320	Amyl acetate (n-)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02330	Amyl alcohol (n-)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02340	Butyl acetate (n-)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02350	Ethyl acetate	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02360	Heptane (n-)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02370	Hexane (n-)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02380	Isobutyraldehyde	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02390	Isopropanol	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02400	Isopropyl acetate	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02410	Isopropyl ether	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02420	Methyl formate	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02430	Methyl isobutyl ketone (MIBK)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02440	Tert-butyl alcohol	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02450	Tetrahydrofuran	P & T, GC/MS Isotope Dilution	EPA 1666A	PA

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Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.02460	Xylene (m- + p-)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02470	Xylene (o-)	P & T, GC/MS Isotope Dilution	EPA 1666A	PA
Certified	Yes	NPW11.02480	Chlorobiphenyl (2-) (PCB 1)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02490	Chlorobiphenyl (3-) (PCB 2)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02500	Chlorobiphenyl (4-) (PCB 3)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02510	Dichlorobiphenyl (2,2'-) (PCB 4)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02520	Dichlorobiphenyl (2,3-) (PCB 5)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02530	Dichlorobiphenyl (2,3'-) (PCB 6)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02540	Dichlorobiphenyl (2,4-) (PCB 7)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02550	Dichlorobiphenyl (2,4'-) (PCB 8)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02560	Dichlorobiphenyl (2,5-) (PCB 9)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02570	Dichlorobiphenyl (2,6-) (PCB 10)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02580	Dichlorobiphenyl (3,3'-) (PCB 11)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02590	Dichlorobiphenyl (3,4-) (PCB 12)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02600	Dichlorobiphenyl (3,4'-) (PCB 13)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02610	Dichlorobiphenyl (3,5-) (PCB 14)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02620	Dichlorobiphenyl (4,4'-) (PCB 15)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02630	Trichlorobiphenyl (2,2',3-) (PCB 16)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02640	Trichlorobiphenyl (2,2',4-) (PCB 17)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02650	Trichlorobiphenyl (2,2',5-) (PCB 18)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02660	Trichlorobiphenyl (2,2',6-) (PCB 19)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02670	Trichlorobiphenyl (2,3,3'-) (PCB 20)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02680	Trichlorobiphenyl (2,3,4-) (PCB 21)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02690	Trichlorobiphenyl (2,3,4'-) (PCB 22)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02700	Trichlorobiphenyl (2,3,5-) (PCB 23)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02710	Trichlorobiphenyl (2,3,6-) (PCB 24)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02720	Trichlorobiphenyl (2,3',4-) (PCB 25)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02730	Trichlorobiphenyl (2,3',5-) (PCB 26)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.02740	Trichlorobiphenyl (2,3',6-) (PCB 27)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02750	Trichlorobiphenyl (2,4,4'-) (PCB 28)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02760	Trichlorobiphenyl (2,4,5-) (PCB 29)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02770	Trichlorobiphenyl (2,4,6-) (PCB 30)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02780	Trichlorobiphenyl (2,4',5-) (PCB 31)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02790	Trichlorobiphenyl (2,4',6-) (PCB 32)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02800	Trichlorobiphenyl (2,3',4'-) (PCB 33)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02810	Trichlorobiphenyl (2,3',5'-) (PCB 34)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02820	Trichlorobiphenyl (3,3',4-) (PCB 35)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02830	Trichlorobiphenyl (3,3',5-) (PCB 36)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02840	Trichlorobiphenyl (3,4,4'-) (PCB 37)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02850	Trichlorobiphenyl (3,4,5-) (PCB 38)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02860	Trichlorobiphenyl (3,4',5-) (PCB 39)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02870	Tetrachlorobiphenyl (2,2',3,3'-) (PCB 40)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02880	Tetrachlorobiphenyl (2,2',3,4-) (PCB 41)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02890	Tetrachlorobiphenyl (2,2',3,4'-) (PCB 42)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02900	Tetrachlorobiphenyl (2,2',3,5-) (PCB 43)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02910	Tetrachlorobiphenyl (2,2',3,5'-) (PCB 44)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02920	Tetrachlorobiphenyl (2,2',3,6-) (PCB 45)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02930	Tetrachlorobiphenyl (2,2',3,6'-) (PCB 46)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02940	Tetrachlorobiphenyl (2,2',4,4'-) (PCB 47)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.02950	Tetrachlorobiphenyl (2,2',4,5-) (PCB 48)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02960	Tetrachlorobiphenyl (2,2',4,5'-) (PCB 49)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02970	Tetrachlorobiphenyl (2,2',4,6-) (PCB 50)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02980	Tetrachlorobiphenyl (2,2',4,6'-) (PCB 51)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.02990	Tetrachlorobiphenyl (2,2',5,5'-) (PCB 52)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03000	Tetrachlorobiphenyl (2,2',5,6'-) (PCB 53)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03010	Tetrachlorobiphenyl (2,2',6,6'-) (PCB 54)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03020	Tetrachlorobiphenyl (2,3,3',4-) (PCB 55)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03030	Tetrachlorobiphenyl (2,3,3',4'-) (PCB 56)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03040	Tetrachlorobiphenyl (2,3,3',5-) (PCB 57)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03050	Tetrachlorobiphenyl (2,3,3',5'-) (PCB 58)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03060	Tetrachlorobiphenyl (2,3,3',6-) (PCB 59)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03070	Tetrachlorobiphenyl (2,3,4,4'-) (PCB 60)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03080	Tetrachlorobiphenyl (2,3,4,5-) (PCB 61)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03090	Tetrachlorobiphenyl (2,3,4,6-) (PCB 62)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03100	Tetrachlorobiphenyl (2,3,4',5-) (PCB 63)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03110	Tetrachlorobiphenyl (2,3,4',6-) (PCB 64)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.03120	Tetrachlorobiphenyl (2,3,5,6-) (PCB 65)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03130	Tetrachlorobiphenyl (2,3',4,4'-) (PCB 66)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03140	Tetrachlorobiphenyl (2,3',4,5-) (PCB 67)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03150	Tetrachlorobiphenyl (2,3',4,5'-) (PCB 68)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03160	Tetrachlorobiphenyl (2,3',4,6-) (PCB 69)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03170	Tetrachlorobiphenyl (2,3',4',5-) (PCB 70)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03180	Tetrachlorobiphenyl (2,3',4',6-) (PCB 71)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03190	Tetrachlorobiphenyl (2,3',5,5'-) (PCB 72)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03200	Tetrachlorobiphenyl (2,3',5',6-) (PCB 73)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03210	Tetrachlorobiphenyl (2,4,4',5-) (PCB 74)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03220	Tetrachlorobiphenyl (2,4,4',6-) (PCB 75)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03230	Tetrachlorobiphenyl (2,3',4',5'-) (PCB 76)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03240	Tetrachlorobiphenyl (3,3',4,4'-) (PCB 77)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03250	Tetrachlorobiphenyl (3,3',4,5-) (PCB 78)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03260	Tetrachlorobiphenyl (3,3',4,5'-) (PCB 79)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03270	Tetrachlorobiphenyl (3,3',5,5'-) (PCB 80)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03280	Tetrachlorobiphenyl (3,4,4',5-) (PCB 81)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.03290	Pentachlorobiphenyl (2,2',3,3',4-) (PCB 82)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03300	Pentachlorobiphenyl (2,2',3,3',5-) (PCB 83)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03310	Pentachlorobiphenyl (2,2',3,3',6-) (PCB 84)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03320	Pentachlorobiphenyl (2,2',3,4,4'-) (PCB 85)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03330	Pentachlorobiphenyl (2,2',3,4,5-) (PCB 86)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03340	Pentachlorobiphenyl (2,2',3,4,5'-) (PCB 87)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03350	Pentachlorobiphenyl (2,2',3,4,6-) (PCB 88)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03360	Pentachlorobiphenyl (2,2',3,4,6'-) (PCB 89)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03370	Pentachlorobiphenyl (2,2',3,4',5-) (PCB 90)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03380	Pentachlorobiphenyl (2,2',3,4',6-) (PCB 91)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03390	Pentachlorobiphenyl (2,2',3,5,5'-) (PCB 92)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03400	Pentachlorobiphenyl (2,2',3,5,6-) (PCB 93)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03410	Pentachlorobiphenyl (2,2',3,5,6'-) (PCB 94)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03420	Pentachlorobiphenyl (2,2',3,5',6-) (PCB 95)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03430	Pentachlorobiphenyl (2,2',3,6,6'-) (PCB 96)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03440	Pentachlorobiphenyl (2,2',3,4',5'-) (PCB 97)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03450	Pentachlorobiphenyl (2,2',3,4',6'-) (PCB 98)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	NPW11.03460	Pentachlorobiphenyl (2,2',4,4',5-) (PCB 99)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03470	Pentachlorobiphenyl (2,2',4,4',6-) (PCB 100)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03480	Pentachlorobiphenyl (2,2',4,5,5'-) (PCB 101)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03490	Pentachlorobiphenyl (2,2',4,5,6'-) (PCB 102)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03500	Pentachlorobiphenyl (2,2',4,5',6-) (PCB 103)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03510	Pentachlorobiphenyl (2,2',4,6,6'-) (PCB 104)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03520	Pentachlorobiphenyl (2,3,3',4,4'-) (PCB 105)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03530	Pentachlorobiphenyl (2,3,3',4,5-) (PCB 106)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03540	Pentachlorobiphenyl (2,3,3',4',5-) (PCB 107)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03550	Pentachlorobiphenyl (2,3,3',4,5'-) (PCB 108)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03560	Pentachlorobiphenyl (2,3,3',4,6-) (PCB 109)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03570	Pentachlorobiphenyl (2,3,3',4',6-) (PCB 110)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03580	Pentachlorobiphenyl (2,3,3',5,5'-) (PCB 111)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03590	Pentachlorobiphenyl (2,3,3',5,6-) (PCB 112)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03600	Pentachlorobiphenyl (2,3,3',5',6-) (PCB 113)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03610	Pentachlorobiphenyl (2,3,4,4',5-) (PCB 114)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03620	Pentachlorobiphenyl (2,3,4,4',6-) (PCB 115)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	NPW11.03630	Pentachlorobiphenyl (2,3,4,5,6-) (PCB 116)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03640	Pentachlorobiphenyl (2,3,4',5,6-) (PCB 117)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03650	Pentachlorobiphenyl (2,3',4,4',5-) (PCB 118)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03660	Pentachlorobiphenyl (2,3',4,4',6-) (PCB 119)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03670	Pentachlorobiphenyl (2,3',4,5,5'-) (PCB 120)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03680	Pentachlorobiphenyl (2,3',4,5',6-) (PCB 121)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03690	Pentachlorobiphenyl (2,3,3',4',5'-) (PCB 122)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03700	Pentachlorobiphenyl (2,3',4,4',5'-) (PCB 123)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03710	Pentachlorobiphenyl (2,3',4',5,5'-) (PCB 124)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03720	Pentachlorobiphenyl (2,3',4',5',6-) (PCB 125)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03730	Pentachlorobiphenyl (3,3',4,4',5-) (PCB 126)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03740	Pentachlorobiphenyl (3,3',4,5,5'-) (PCB 127)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03750	Hexachlorobiphenyl (2,2',3,3',4,4'-) (PCB 128)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03760	Hexachlorobiphenyl (2,2',3,3',4,5-) (PCB 129)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03770	Hexachlorobiphenyl (2,2',3,3',4,5'-) (PCB 130)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03780	Hexachlorobiphenyl (2,2',3,3',4,6-) (PCB 131)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03790	Hexachlorobiphenyl (2,2',3,3',4,6'-) (PCB 132)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.03800	Hexachlorobiphenyl (2,2',3,3',5,5'-) (PCB 133)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03810	Hexachlorobiphenyl (2,2',3,3',5,6-) (PCB 134)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03820	Hexachlorobiphenyl (2,2',3,3',5,6'-) (PCB 135)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03830	Hexachlorobiphenyl (2,2',3,3',6,6'-) (PCB 136)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03840	Hexachlorobiphenyl (2,2',3,4,4',5-) (PCB 137)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03850	Hexachlorobiphenyl (2,2',3,4,4',5'-) (PCB 138)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03860	Hexachlorobiphenyl (2,2',3,4,4',6-) (PCB 139)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03870	Hexachlorobiphenyl (2,2',3,4,4',6'-) (PCB 140)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03880	Hexachlorobiphenyl (2,2',3,4,5,5'-) (PCB 141)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03890	Hexachlorobiphenyl (2,2',3,4,5,6-) (PCB 142)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03900	Hexachlorobiphenyl (2,2',3,4,5,6'-) (PCB 143)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03910	Hexachlorobiphenyl (2,2',3,4,5',6-) (PCB 144)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03920	Hexachlorobiphenyl (2,2',3,4,6,6'-) (PCB 145)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03930	Hexachlorobiphenyl (2,2',3,4',5,5'-) (PCB 146)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03940	Hexachlorobiphenyl (2,2',3,4',5,6-) (PCB 147)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03950	Hexachlorobiphenyl (2,2',3,4',5,6'-) (PCB 148)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03960	Hexachlorobiphenyl (2,2',3,4',5',6-) (PCB 149)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	NPW11.03970	Hexachlorobiphenyl (2,2',3,4',6,6'-) (PCB 150)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03980	Hexachlorobiphenyl (2,2',3,5,5',6-) (PCB 151)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.03990	Hexachlorobiphenyl (2,2',3,5,6,6'-) (PCB 152)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04000	Hexachlorobiphenyl (2,2',4,4',5,5'-) (PCB 153)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04010	Hexachlorobiphenyl (2,2',4,4',5,6'-) (PCB 154)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04020	Hexachlorobiphenyl (2,2',4,4',6,6'-) (PCB 155)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04030	Hexachlorobiphenyl (2,3,3',4,4',5-) (PCB 156)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04040	Hexachlorobiphenyl (2,3,3',4,4',5'-) (PCB 157)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04050	Hexachlorobiphenyl (2,3,3',4,4',6-) (PCB 158)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04060	Hexachlorobiphenyl (2,3,3',4,5,5'-) (PCB 159)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04070	Hexachlorobiphenyl (2,3,3',4,5,6-) (PCB 160)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04080	Hexachlorobiphenyl (2,3,3',4,5',6-) (PCB 161)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04090	Hexachlorobiphenyl (2,3,3',4',5,5'-) (PCB 162)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04100	Hexachlorobiphenyl (2,3,3',4',5,6-) (PCB 163)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04110	Hexachlorobiphenyl (2,3,3',4',5',6-) (PCB 164)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04120	Hexachlorobiphenyl (2,3,3',5,5',6-) (PCB 165)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04130	Hexachlorobiphenyl (2,3,4,4',5,6-) (PCB 166)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	NPW11.04140	Hexachlorobiphenyl (2,3',4,4',5,5'-) (PCB 167)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04150	Hexachlorobiphenyl (2,3',4,4',5',6-) (PCB 168)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04160	Hexachlorobiphenyl (3,3',4,4',5,5'-) (PCB 169)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04170	Heptachlorobiphenyl (2,2',3,3',4,4', 5-) (PCB 170)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04180	Heptachlorobiphenyl (2,2',3,3',4,4', 6-) (PCB 171)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04190	Heptachlorobiphenyl (2,2',3,3', 4,5,5'-) (PCB 172)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04200	Heptachlorobiphenyl (2,2',3,3', 4,5,6-) (PCB 173)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04210	Heptachlorobiphenyl (2,2',3,3', 4,5,6'-) (PCB 174)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04220	Heptachlorobiphenyl (2,2',3,3',4,5', 6-) (PCB 175)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04230	Heptachlorobiphenyl (2,2',3,3', 4,6,6'-) (PCB 176)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04240	Heptachlorobiphenyl (2,2',3,3',4,5', 6'-) (PCB 177)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04250	Heptachlorobiphenyl (2,2',3,3',5,5', 6-) (PCB 178)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04260	Heptachlorobiphenyl (2,2',3,3', 5,6,6'-) (PCB 179)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04270	Heptachlorobiphenyl (2,2',3,4,4', 5,5'-) (PCB 180)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04280	Heptachlorobiphenyl (2,2',3,4,4', 5,6-) (PCB 181)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04290	Heptachlorobiphenyl (2,2',3,4,4', 5,6'-) (PCB 182)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04300	Heptachlorobiphenyl (2,2',3,4,4',5', 6-) (PCB 183)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	NPW11.04310	Heptachlorobiphenyl (2,2',3,4,4', 6,6'-) (PCB 184)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04320	Heptachlorobiphenyl (2,2',3,4,5,5', 6-) (PCB 185)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04330	Heptachlorobiphenyl (2,2', 3,4,5,6,6'-) (PCB 186)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04340	Heptachlorobiphenyl (2,2',3,4',5,5', 6-) (PCB 187)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04350	Heptachlorobiphenyl (2,2',3,4', 5,6,6'-) (PCB 188)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04360	Heptachlorobiphenyl (2,3,3',4,4', 5,5'-) (PCB 189)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04370	Heptachlorobiphenyl (2,3,3',4,4', 5,6-) (PCB 190)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04380	Heptachlorobiphenyl (2,3,3',4,4',5', 6-) (PCB 191)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04390	Heptachlorobiphenyl (2,3,3',4,5,5', 6-) (PCB 192)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04400	Heptachlorobiphenyl (2,3,3',4',5,5', 6-) (PCB 193)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04410	Octachlorobiphenyl (2,2',3,3',4,4', 5,5'-) (PCB 194)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04420	Octachlorobiphenyl (2,2',3,3',4,4', 5,6-) (PCB 195)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04430	Octachlorobiphenyl (2,2',3,3',4,4', 5,6'-) (PCB 196)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04440	Octachlorobiphenyl (2,2',3,3',4,4', 6,6'-) (PCB 197)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04450	Octachlorobiphenyl (2,2',3,3',4,5,5', 6-) (PCB 198)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04460	Octachlorobiphenyl (2,2',3,3',4,5,5', 6'-) (PCB 199)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04470	Octachlorobiphenyl (2,2',3,3', 4,5,6,6'-) (PCB 200)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	NPW11.04480	Octachlorobiphenyl (2,2',3,3',4,5', 6,6'-) (PCB 201)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04490	Octachlorobiphenyl (2,2',3,3',5,5', 6,6'-) (PCB 202)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04500	Octachlorobiphenyl (2,2',3,4,4',5,5', 6-) (PCB 203)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04510	Octachlorobiphenyl (2,2',3,4,4', 5,6,6'-) (PCB 204)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04520	Octachlorobiphenyl (2,3,3',4,4',5,5', 6-) (PCB 205)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04530	Nonachlorobiphenyl (2,2',3,3',4,4', 5,5',6-) (PCB 206)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04540	Nonachlorobiphenyl (2,2',3,3',4,4', 5,6,6'-) (PCB 207)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04550	Nonachlorobiphenyl (2,2',3,3',4,5,5', 6,6'-) (PCB 208)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.04560	Decachlorobiphenyl (PCB 209)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	NPW11.07870	Acetone	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07880	Acetonitrile	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07890	Acrolein	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07900	Acrylonitrile	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07910	Allyl chloride	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07940	Benzene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07950	Bromobenzene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07960	Bromochloromethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07970	Bromodichloromethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.07990	Bromoform	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08000	Bromomethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08030	Butanone (2-) [Methyl ethyl ketone]	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08040	Butyl acetate (n-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08070	Butylbenzene (n-)	GC/MS, P & T, Capillary Column	EPA 624	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.08080	Carbon disulfide	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08090	Carbon tetrachloride	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08100	Chlorobenzene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08110	Chloroethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08120	Chloroethyl vinyl ether (2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08130	Chloroform	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08140	Chloromethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08150	Chlorotoluene (2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08160	Chlorotoluene (4-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08180	Cyclohexane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08200	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08210	Dibromochloromethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08220	Dibromoethane (1,2-) (EDB)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08230	Dibromomethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08260	Dichlorobenzene (1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08270	Dichlorobenzene (1,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08280	Dichlorobenzene (1,4-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08290	Dichloroethane (1,1-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08300	Dichloroethane (1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08310	Dichloroethene (1,1-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08320	Dichloroethene (cis-1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08330	Dichloroethene (trans-1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08340	Dichloropropane (1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08350	Dichloropropane (1,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08360	Dichloropropane (2,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08370	Dichloropropene (1,1-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08380	Dichloropropene (cis-1,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08390	Dichloropropene (trans-1,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.08410	Diisopropyl Ether [DIPE]	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08420	Dioxane (1,4-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08440	Ethyl acetate	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08450	Ethyl methacrylate	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08460	Ethylbenzene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08470	Ethyl-tert-butyl Ether [ETBE]	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08480	Heptane (n-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08490	Hexachlorobutadiene (1,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08500	Hexane (n-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08510	Hexanone (2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08520	Iso-butyl alcohol	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08540	Isopropanol	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08550	Isopropyl acetate	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08570	Isopropylbenzene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08580	Isopropyltoluene (4-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08590	Methacrylonitrile	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08620	Methyl iodide	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08630	Methyl isobutyl ketone (MIBK)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08640	Methyl methacrylate	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08650	Methyl tert-butyl ether	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08670	Methylene chloride (Dichloromethane)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08700	Pentachloroethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08710	Propionitrile	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08720	Propylbenzene (n-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08730	Sec-butylbenzene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08740	Styrene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08750	tert-Amylmethyl ether [TAME]	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08770	Tert-butyl alcohol	GC/MS, P & T, Capillary Column	EPA 624	PA

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2425 NEW HOLLAND PK
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Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.08780	Tert-butylbenzene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08790	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08800	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08810	Tetrachloroethene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08820	Tetrahydrofuran	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08830	Toluene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08840	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08850	Trichlorobenzene (1,2,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08860	Trichloroethane (1,1,1-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08870	Trichloroethane (1,1,2-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08880	Trichloroethene	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08890	Trichlorofluoromethane	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08900	Trichloropropane (1,2,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08910	Trimethylbenzene (1,2,3-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08920	Trimethylbenzene (1,2,4-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08930	Trimethylbenzene (1,3,5-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08940	Vinyl acetate	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08950	Vinyl chloride	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08960	Xylene (m- + p-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08970	Xylene (m-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08980	Xylene (o-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.08990	Xylene (p-)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.09000	Xylenes (total)	GC/MS, P & T, Capillary Column	EPA 624	PA
Certified	Yes	NPW11.09010	Acenaphthene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09020	Acenaphthylene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09030	Acetophenone	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09050	Alpha - terpineol	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09070	Aniline	Extract, GC/MS	EPA 625	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.09080	Anthracene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09110	Benzidine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09120	Benzo(a)anthracene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09130	Benzo(a)pyrene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09140	Benzo(b)fluoranthene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09150	Benzo(ghi)perylene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09170	Benzo(k)fluoranthene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09180	Benzoic acid	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09190	Benzyl alcohol	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09210	Bis (2-chloroethoxy) methane	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09220	Bis (2-chloroethyl) ether	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09230	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09240	Bis (2-ethylhexyl) phthalate	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09250	Bromophenyl-phenyl ether (4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09260	Butylbenzylphthalate	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09270	Carbazole	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09280	Chloroaniline (4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09310	Chloronaphthalene (2-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09320	Chlorophenol (2-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09330	Chlorophenyl-phenyl ether (4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09340	Chrysene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09350	Decane (n-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09410	Dibenzo(a,h)anthracene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09440	Dibenzofuran	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09450	Dichloroaniline (2,3-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09460	Dichlorobenzidine (3,3'-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09470	Dichlorophenol (2,4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09480	Dichlorophenol (2,6-)	Extract, GC/MS	EPA 625	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.09490	Diethyl phthalate	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09520	Dimethyl phthalate	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09550	Dimethylphenol (2,4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09560	Di-n-butyl phthalate	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09580	Dinitrophenol (2,4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09590	Dinitrophenol (2-methyl-4,6-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09600	Dinitrotoluene (2,4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09610	Dinitrotoluene (2,6-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09620	Di-n-octyl phthalate	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09640	Diphenylhydrazine (1,2-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09650	Docosane (n-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09660	Dodecane (n-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09670	Eicosane (n-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09690	Fluoranthene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09700	Fluorene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09710	Hexachlorobenzene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09720	Hexachlorobutadiene (1,3-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09730	Hexachlorocyclopentadiene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09740	Hexachloroethane	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09770	Hexadecane (n-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09780	Indeno(1,2,3-cd)pyrene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09790	Isophorone	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09799	Methylnaphthalene (1-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09860	Methyl phenol (4-chloro-3-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09880	Methylnaphthalene (2-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09890	Methylphenanthrene (1-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09900	Methylphenol (2-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09910	Methylphenol (3-)	Extract, GC/MS	EPA 625	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.09920	Methylphenol (4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09930	Naphthalene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09970	Nitroaniline (2-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09980	Nitroaniline (3-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.09990	Nitroaniline (4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10000	Nitrobenzene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10010	Nitrophenol (2-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10020	Nitrophenol (4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10030	N-Nitrosodiethylamine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10040	N-Nitrosodimethylamine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10050	N-Nitroso-di-n-butylamine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10060	N-Nitroso-di-n-propylamine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10070	N-Nitrosodiphenylamine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10110	N-Nitrosopyrrolidine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10120	Octadecane (n-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10200	Pentachlorobenzene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10230	Pentachlorophenol	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10250	Phenanthrene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10260	Phenol	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10320	Pyrene	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10330	Pyridine	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10390	Tetrachlorobenzene (1,2,4,5-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10400	Tetrachlorophenol (2,3,4,6-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10410	Tetradecane (n-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10420	Toluidine (2-) (2-Methylaniline)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10440	Trichlorobenzene (1,2,4-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10460	Trichlorophenol (2,4,5-)	Extract, GC/MS	EPA 625	PA
Certified	Yes	NPW11.10470	Trichlorophenol (2,4,6-)	Extract, GC/MS	EPA 625	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.10660	Pentachlorophenol	GC/MS	EPA 625	PA
Certified	Yes	NPW11.13110	Acetone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13120	Acetonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13130	Acrolein	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13140	Acrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13150	Allyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13170	Amyl alcohol (t-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13180	Benzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13190	Benzyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13200	Bromobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13210	Bromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13220	Bromodichloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13240	Bromoform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13250	Bromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13260	Butadiene (2-chloro-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13270	Butanol (1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13280	Butanol (3,3-Dimethyl-1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13290	Butanone (2-) [Methyl ethyl ketone]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13300	Butyl formate (t-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13330	Butylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13340	Carbon disulfide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13350	Carbon tetrachloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13360	Chlorobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13370	Chloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13380	Chloroethyl vinyl ether (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13390	Chloroform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13400	Chloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13410	Chlorotoluene (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.13420	Chlorotoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13430	Cyclohexane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13440	Cyclohexanone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13450	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13460	Dibromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13470	Dibromoethane (1,2-) (EDB)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13480	Dibromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13500	Dichloro-2-butene (trans-1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13510	Dichlorobenzene (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13520	Dichlorobenzene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13530	Dichlorobenzene (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13540	Dichlorodifluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13550	Dichloroethane (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13560	Dichloroethane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13570	Dichloroethene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13580	Dichloroethene (cis-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13590	Dichloroethene (trans-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13600	Dichloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13610	Dichloropropane (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13620	Dichloropropane (2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13630	Dichloropropene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13640	Dichloropropene (cis-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13650	Dichloropropene (trans-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13660	Diethyl ether (Ethyl ether)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13670	Diisopropyl Ether [DIPE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13680	Dioxane (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13690	Ethanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13700	Ethyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.13710	Ethyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13720	Ethylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13730	Ethyl-tert-butyl Ether [ETBE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13740	Heptane (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13750	Hexachlorobutadiene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13760	Hexachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13770	Hexane (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13780	Hexanone (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13790	Iso-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13800	Isopropanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13820	Isopropylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13830	Isopropyltoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13840	Methacrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13850	Methyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13870	Methyl iodide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13880	Methyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13890	Methyl tert-butyl ether	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13900	Methylcyclohexane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13910	Methylene chloride (Dichloromethane)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13940	Naphthalene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13960	Nitropropane (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.13990	Pentachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14010	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14020	Propionitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14030	Propylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14040	Sec-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14050	Styrene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14060	tert-Amylmethyl ether [TAME]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.14070	Tert-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14080	Tert-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14090	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14100	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14110	Tetrachloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14120	Tetrahydrofuran	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14130	Toluene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14150	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14160	Trichlorobenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14170	Trichlorobenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14180	Trichloroethane (1,1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14190	Trichloroethane (1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14200	Trichloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14210	Trichlorofluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14220	Trichloropropane (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14230	Trimethylbenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14240	Trimethylbenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14250	Trimethylbenzene (1,3,5-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14260	Vinyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14270	Vinyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14280	Xylene (m-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14290	Xylene (o-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14300	Xylene (p-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14310	Xylenes (total)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	NPW11.14330	Acetone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14340	Acetonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14350	Acrolein	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14360	Acrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.14370	Allyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14380	Amyl alcohol (t-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14390	Benzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14400	Benzyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14410	Bromobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14420	Bromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14430	Bromodichloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14450	Bromoform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14460	Bromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14470	Butadiene (2-chloro-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14480	Butanol (1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14490	Butanol (3,3-Dimethyl-1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14500	Butanone (2-) [Methyl ethyl ketone]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14510	Butyl formate (t-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14540	Butylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14550	Carbon disulfide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14560	Carbon tetrachloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14570	Chlorobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14580	Chloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14590	Chloroethyl vinyl ether (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14600	Chloroform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14610	Chloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14620	Chlorotoluene (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14630	Chlorotoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14650	Cyclohexane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14660	Cyclohexanone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14670	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14680	Dibromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.14690	Dibromoethane (1,2-) (EDB)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14700	Dibromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14720	Dichloro-2-butene (trans-1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14730	Dichlorobenzene (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14740	Dichlorobenzene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14750	Dichlorobenzene (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14760	Dichlorodifluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14770	Dichloroethane (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14780	Dichloroethane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14790	Dichloroethene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14800	Dichloroethene (cis-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14810	Dichloroethene (trans-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14820	Dichloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14830	Dichloropropane (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14840	Dichloropropane (2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14850	Dichloropropene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14860	Dichloropropene (cis-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14870	Dichloropropene (trans-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14880	Diethyl ether (Ethyl ether)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14890	Diisopropyl Ether [DIPE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14900	Dioxane (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14910	Ethanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14920	Ethyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14930	Ethyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14940	Ethylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14950	Ethyl-tert-butyl Ether [ETBE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14960	Heptane (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14970	Hexachlorobutadiene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA

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Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.14980	Hexachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.14990	Hexane (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15000	Hexanone (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15010	Iso-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15020	Isopropanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15040	Isopropylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15050	Isopropyltoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15060	Methacrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15070	Methyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15090	Methyl iodide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15100	Methyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15110	Methyl tert-butyl ether	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15120	Methylcyclohexane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15130	Methylene chloride (Dichloromethane)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15160	Naphthalene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15180	Nitropropane (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15210	Pentachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15230	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15240	Propionitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15250	Propylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15260	Sec-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15270	Styrene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15280	tert-Amylmethyl ether [TAME]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15300	Tert-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15310	Tert-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15320	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15330	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15340	Tetrachloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.15350	Tetrahydrofuran	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15360	Toluene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15380	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15390	Trichlorobenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15400	Trichlorobenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15410	Trichloroethane (1,1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15420	Trichloroethane (1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15430	Trichloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15440	Trichlorofluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15450	Trichloropropane (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15460	Trimethylbenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15470	Trimethylbenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15480	Trimethylbenzene (1,3,5-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15490	Vinyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15500	Vinyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15510	Xylene (m-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15520	Xylene (o-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15530	Xylene (p-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15540	Xylenes (total)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	NPW11.15580	Acenaphthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15590	Acenaphthylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15600	Acetophenone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15610	Acetylaminofluorene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15650	Aminobiphenyl (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15670	Aniline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15680	Anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15690	Aramite	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15700	Atrazine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.15720	Benzaldehyde	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15740	Benzidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15750	Benzo(a)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15760	Benzo(a)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15770	Benzo(b)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15780	Benzo(ghi)perylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15800	Benzo(k)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15810	Benzoic acid	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15830	Benzyl alcohol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15860	Biphenyl (1,1'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15870	Bis (2-chloroethoxy) methane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15880	Bis (2-chloroethyl) ether	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15890	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15900	Bis (2-ethylhexyl) phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15910	Bromophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15920	Butylbenzylphthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15930	Caprolactam	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15940	Carbazole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15980	Chloroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.15990	Chlorobenzilate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16000	Chloronaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16010	Chloronaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16020	Chlorophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16030	Chlorophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16040	Chrysene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16100	Diallate (cis)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16110	Diallate (trans)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16120	Dibenz(a,h)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.16130	Dibenz(a,j)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16150	Dibenzo(a,h)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16190	Dibenzofuran	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16200	Dichlorobenzene (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16210	Dichlorobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16220	Dichlorobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16230	Dichlorobenzidine (3,3'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16240	Dichlorophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16250	Dichlorophenol (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16270	Diethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16280	Dimethoate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16290	Dimethyl benzidine (3,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16300	Dimethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16310	Dimethylaminoazobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16360	Dimethylbenz(a)anthracene (7,12-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16370	Dimethylphenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16380	Di-n-butyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16390	Dinitrobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16400	Dinitrobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16410	Dinitrophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16420	Dinitrophenol (2-methyl-4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16430	Dinitrotoluene (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16440	Dinitrotoluene (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16450	Di-n-octyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16460	Dinoseb	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16470	Diphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16480	Diphenylhydrazine (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16490	Disulfoton	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.16570	Famphur	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16580	Fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16590	Fluorene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16620	Hexachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16630	Hexachlorobutadiene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16640	Hexachlorocyclopentadiene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16650	Hexachloroethane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16670	Hexachloropropene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16690	Indene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16700	Indeno(1,2,3-cd)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16710	Isodrin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16720	Isophorone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16730	Isosafrole (cis-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16740	Isosafrole (trans-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16750	Kepone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16770	Methanesulfonate (Ethyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16780	Methanesulfonate (Methyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16790	Methapyrilene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16810	Methyl phenol (4-chloro-3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16820	Methylcholanthrene (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16840	Methylnaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16850	Methylphenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16860	Methylphenol (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16870	Methylphenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16880	Naphthalene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16890	Napthoquinone (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16900	Napththylamine (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16910	Napththylamine (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.16920	Nitroaniline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16930	Nitroaniline (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16940	Nitroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16950	Nitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16970	Nitrophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16980	Nitrophenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.16990	N-Nitrosodiethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17000	N-Nitrosodimethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17010	N-Nitroso-di-n-butylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17020	N-Nitroso-di-n-propylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17030	N-Nitrosodiphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17040	N-Nitrosomethylethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17050	N-Nitrosomorpholine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17060	N-Nitrosopiperidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17070	N-Nitrosopyrrolidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17090	Parathion	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17100	Parathion methyl	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17180	Pentachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17200	Pentachloronitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17210	Phenacetin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17220	Phenanthrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17230	Phenylenediamine (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17240	Phenylethylamine (alpha, alpha-Dimethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17250	Phorate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17260	Phosphorothioate (O,O,O-triethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17270	Phosphorothioate (diethyl-O-2-pyrazinyl) [Thionazin]	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17280	Picoline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.17290	Pronamide	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17300	Pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17310	Pyridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17320	Quinoline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17330	Quinoline -1-Oxide (4-Nitro)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17340	Safrole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17350	Sulfotepp	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17370	Tetrachlorobenzene (1,2,3,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17380	Tetrachlorobenzene (1,2,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17390	Tetrachlorobenzene (1,2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17400	Tetrachlorophenol (2,3,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17410	Toluidine (2-) (2-Methylaniline)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17450	Trichlorobenzene (1,2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17460	Trichlorophenol (2,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17480	Trinitrobenzene (1,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17490	Acenaphthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17500	Acenaphthylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17510	Anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17520	Benzo(a)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17530	Benzo(a)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17540	Benzo(b)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17550	Benzo(ghi)perylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17560	Benzo(k)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17570	Chrysene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17580	Dibenzo(a,h)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17594	Dioxane (1,4-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17600	Fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17610	Fluorene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.17620	Hexachlorobenzene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17640	Indeno(1,2,3-cd)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17650	Methylnaphthalene (1-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17660	Methylnaphthalene (2-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17670	Naphthalene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17680	N-Nitrosodimethylamine	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17690	Pentachlorophenol	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17700	Phenanthrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17710	Pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17720	Pentachlorophenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17730	Phenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17740	Trichlorophenol (2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	NPW11.17750	Acenaphthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17760	Acenaphthylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17770	Acetophenone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17780	Acetylaminofluorene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17820	Aminobiphenyl (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17840	Aniline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17850	Anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17860	Aramite	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17870	Atrazine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17890	Benzaldehyde	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17910	Benzidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17920	Benzo(a)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17930	Benzo(a)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17940	Benzo(b)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17950	Benzo(ghi)perylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.17970	Benzo(k)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.17980	Benzoic acid	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18000	Benzyl alcohol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18030	Biphenyl (1,1'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18040	Bis (2-chloroethoxy) methane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18050	Bis (2-chloroethyl) ether	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18060	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18070	Bis (2-ethylhexyl) phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18080	Bromophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18090	Butylbenzylphthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18100	Caprolactam	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18110	Carbazole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18150	Chloroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18160	Chlorobenzilate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18170	Chloronaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18180	Chloronaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18190	Chlorophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18200	Chlorophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18210	Chrysene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18270	Diallate (cis)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18280	Diallate (trans)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18290	Dibenz(a,h)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18300	Dibenz(a,j)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18320	Dibenzo(a,h)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18360	Dibenzofuran	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18370	Dichlorobenzene (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18380	Dichlorobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18390	Dichlorobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18400	Dichlorobenzidine (3,3'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.18410	Dichlorophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18420	Dichlorophenol (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18440	Diethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18450	Dimethoate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18460	Dimethyl benzidine (3,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18470	Dimethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18480	Dimethylaminoazobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18530	Dimethylbenz(a)anthracene (7,12-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18540	Dimethylphenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18550	Di-n-butyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18560	Dinitrobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18570	Dinitrobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18580	Dinitrophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18590	Dinitrophenol (2-methyl-4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18600	Dinitrotoluene (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18610	Dinitrotoluene (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18620	Di-n-octyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18630	Dinoseb	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18634	Dioxane (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18640	Diphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18650	Diphenylhydrazine (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18660	Disulfoton	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18740	Famphur	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18750	Fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18760	Fluorene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18790	Hexachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18800	Hexachlorobutadiene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18810	Hexachlorocyclopentadiene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.18820	Hexachloroethane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18840	Hexachloropropene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18860	Indene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18870	Indeno(1,2,3-cd)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18880	Isodrin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18890	Isophorone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18900	Isosafrole (cis-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18910	Isosafrole (trans-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18920	Kepone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18940	Methanesulfonate (Ethyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18950	Methanesulfonate (Methyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18960	Methapyrilene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18980	Methyl phenol (4-chloro-3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.18990	Methylcholanthrene (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19010	Methylnaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19020	Methylphenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19030	Methylphenol (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19040	Methylphenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19050	Naphthalene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19060	Napthoquinone (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19070	Napththylamine (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19080	Napththylamine (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19090	Nitroaniline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19100	Nitroaniline (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19110	Nitroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19120	Nitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19140	Nitrophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19150	Nitrophenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.19160	N-Nitrosodiethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19170	N-Nitrosodimethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19180	N-Nitroso-di-n-butylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19190	N-Nitroso-di-n-propylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19200	N-Nitrosodiphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19210	N-Nitrosomethylethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19220	N-Nitrosomorpholine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19230	N-Nitrosopiperidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19240	N-Nitrosopyrrolidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19260	Parathion	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19270	Parathion methyl	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19350	Pentachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19370	Pentachloronitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19380	Pentachlorophenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19390	Phenacetin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19400	Phenanthrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19410	Phenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19420	Phenylenediamine (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19430	Phenylethylamine (alpha, alpha-Dimethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19440	Phorate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19450	Phosphorothioate (O,O,O-triethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19460	Phosphorothioate (diethyl-O-2-pyrazinyl) [Thionazin]	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19470	Picoline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19480	Pronamide	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19490	Pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19500	Pyridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19510	Quinoline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.19520	Quinoline -1-Oxide (4-Nitro)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19530	Safrole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19540	Sulfotepp	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19560	Tetrachlorobenzene (1,2,3,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19570	Tetrachlorobenzene (1,2,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19580	Tetrachlorobenzene (1,2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19590	Tetrachlorophenol (2,3,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19600	Toluidine (2-) (2-Methylaniline)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19640	Trichlorobenzene (1,2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19650	Trichlorophenol (2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19660	Trichlorophenol (2,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19680	Trinitrobenzene (1,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19690	Acenaphthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19700	Acenaphthylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19710	Anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19720	Benzo(a)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19730	Benzo(a)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19740	Benzo(b)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19750	Benzo(ghi)perylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19760	Benzo(k)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19770	Chrysene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19780	Dibenzo(a,h)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19794	Dioxane (1,4-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19800	Fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19810	Fluorene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19820	Hexachlorobenzene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19840	Indeno(1,2,3-cd)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19850	Methylnaphthalene (1-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.19860	Methylnaphthalene (2-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19870	Naphthalene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19880	N-Nitrosodimethylamine	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19890	Pentachlorophenol	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19900	Phenanthrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19910	Pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	NPW11.19920	HpCDD (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.19930	HpCDF (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.19940	HpCDF (1,2,3,4,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.19950	HxCDD (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.19960	HxCDD (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.19970	HxCDD (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.19980	HxCDF (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.19990	HxCDF (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20000	HxCDF (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20010	HxCDF (2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20020	OCDD (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20030	OCDF (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20040	PeCDD (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20050	PeCDF (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20060	PeCDF (2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20070	TCDD (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20080	TCDF (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20090	Total HpCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20100	Total HpCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20110	Total HxCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20120	Total HxCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20130	Total PeCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.20140	Total PeCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20150	Total TCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20160	Total TCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	NPW11.20170	HpCDD (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20180	HpCDF (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20190	HpCDF (1,2,3,4,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20200	HxCDD (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20210	HxCDD (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20220	HxCDD (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20230	HxCDF (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20240	HxCDF (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20250	HxCDF (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20260	HxCDF (2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20270	OCDD (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20280	OCDF (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20290	PeCDD (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20300	PeCDF (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20310	PeCDF (2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20320	TCDD (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20330	TCDF (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20340	Total HpCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20350	Total HpCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20360	Total HxCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20370	Total HxCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20380	Total PeCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20390	Total PeCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20400	Total TCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA
Certified	Yes	NPW11.20410	Total TCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290A	PA

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Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	NPW11.20880	Dichlorobenzene (1,2-)	Extract, GC/MS	User Defined EPA 625	PA
Certified	Yes	NPW11.20890	Dichlorobenzene (1,3-)	Extract, GC/MS	User Defined EPA 625	PA
Certified	Yes	NPW11.20900	Dichlorobenzene (1,4-)	Extract, GC/MS	User Defined EPA 625	PA
Certified	Yes	NPW11.21250	Dioxane (1,4-)	GC/MS, Extract, SIM / Isotope Dilution	User Defined SW 846 8260B	PA
Certified	Yes	NPW11.21600	Dichlorodifluoromethane	GC/MS, P & T, Capillary Column	User Defined EPA 624	PA
Certified	Yes	NPW11.21740	Gasoline range organic	GC/MS, P & T, Capillary Column	User Defined SW 846 8260	PA
Certified	Yes	NPW11.21850	Naphthalene	GC/MS, P & T, Capillary Column	User Defined EPA 624	PA
Certified	Yes	NPW11.21980	Trichlorobenzene (1,2,4-)	GC/MS, P & T, Capillary Column	User Defined EPA 624	PA

Category: NPW16--NPW - Lab Developed/Non-Std Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	No	NPW16.02350	Perfluorobutanesulfonic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02370	Perfluorodecanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02380	Perfluorododecanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02390	Perfluoroheptanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02400	Perfluorohexanesulfonic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02410	Perfluorohexanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02420	Perfluorononanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02430	Perfluorooctanesulfonic acid (PFOS)	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02440	Perfluorooctanoic acid (PFOA)	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02460	Perfluorotetradecanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02470	Perfluorotridecanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA
Certified	No	NPW16.02480	Perfluoroundecanoic acid	LC MS/MS, Electrospray Ionization	User Defined EPA 537	PA

Category: SCM02--Characteristics of Hazardous Waste

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Category: SCM02--Characteristics of Hazardous Waste

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM02.00020	Cation-exchange capacity	Soils, Sodium Acetate	SW-846 9081	PA
Certified	Yes	SCM02.00130	Free liquid	Flow-Through Paint Filter, Observation	SW-846 9095	PA
Certified	Yes	SCM02.00140	Free liquid	Flow-Through Paint Filter, Observation	SW-846 9095B	PA
Certified	Yes	SCM02.00170	Ignitability	Pensky Martens	SW-846 1010	PA
Certified	Yes	SCM02.00180	Ignitability	Pensky Martens	SW-846 1010A	PA
Certified	Yes	SCM02.00260	pH - soil and waste	Mix with Water or Calcium Chlorides	SW-846 9045C	PA
Certified	Yes	SCM02.00270	pH - soil and waste	Mix with Water or Calcium Chlorides	SW-846 9045D	PA

Category: SCM03--Inorganic Parameters and Preparation

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM03.00110	Bromide	Ion Chromatography	EPA 300.0	PA
Certified	Yes	SCM03.00130	Bromide	Ion Chromatography	SW-846 9056A	PA
Certified	Yes	SCM03.00200	Chloride	Ion Chromatography	EPA 300.0	PA
Certified	Yes	SCM03.00310	Cyanide	Colorimetric, Automated	SW-846 9012B	PA
Certified	Yes	SCM03.00450	Fluoride	Ion Chromatography	EPA 300.0	PA
Certified	Yes	SCM03.00490	Inorganics	Shake, Extraction with Water	ASTM D3987-85	PA
Certified	Yes	SCM03.00660	Nitrate	Ion Chromatography	EPA 300.0	PA
Certified	Yes	SCM03.00760	Nitrite	Ion Chromatography	EPA 300.0	PA
Certified	Yes	SCM03.00800	Oil & grease - sludge-hem	Extraction & Gravimetric	SW-846 9071B	PA
Certified	Yes	SCM03.00820	Oil & grease - sludge-hem-npm	Extraction & Gravimetric	SW-846 9071B	PA
Certified	Yes	SCM03.00900	Perchlorate	LC/MS or LC/MS/MS	SW-846 6850	PA
Certified	Yes	SCM03.00920	Phenols	Colorimetric, Auto, 4AAP Distillation	SW-846 9066	PA
Certified	Yes	SCM03.00945	Phosphorus (total)	Auto Ascorbic Acid Reduction	EPA 365.1	PA
Certified	Yes	SCM03.00960	Specific conductance	Wheatstone Bridge	SW-846 9050A	PA
Certified	Yes	SCM03.01000	Sulfate	Ion Chromatography	EPA 300.0	PA

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Category: SCM03--Inorganic Parameters and Preparation

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM03.01120	Total organic carbon (TOC)	Infrared Spectrometry or FID	Other NJ Modified SM-846 9060A	PA
Certified	Yes	SCM03.01130	Total organic carbon (TOC)	Pyrolytic	Other Lloyd Kahn	PA
Certified	Yes	SCM03.01190	Total, fixed, and volatile solids (SQAR)	Gravimetric, 500 Degrees C	SM 2540 G SM 18th Ed.	PA

Category: SCM05--Metals - SCM Preparation Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM05.00010	Metals	Acid Digestion, Soil Sediment & Sludge	SW-846 3050B	PA
Certified	Yes	SCM05.00020	Metals	Chromium VI Digestion	SW-846 3060A	PA
Certified	Yes	SCM05.00110	Metals	Shake, Extraction with Water	ASTM D3987-85	PA
Certified	Yes	SCM05.00130	Metals	Synthetic PPT Leachate Procedure	SW-846 1312	PA
Certified	Yes	SCM05.00140	Metals	TCLP, Toxicity Procedure, Shaker	SW-846 1311	PA

Category: SCM06--Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM06.00320	Chromium (VI)	Colorimetric	SW-846 7196A	PA
Certified	Yes	SCM06.00350	Chromium (VI)	Ion Chromatography	SW-846 7199	PA
Certified	Yes	SCM06.00650	Mercury - solid waste	AA, Manual Cold Vapor	SW-846 7471A	PA
Certified	Yes	SCM06.00660	Mercury - solid waste	AA, Manual Cold Vapor	SW-846 7471B	PA

Category: SCM07--Metals - ICP, ICP/MS and DCP

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Category: SCM07–Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM07.00010	Aluminum	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00020	Aluminum	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00022	Aluminum	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00030	Aluminum	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00040	Aluminum	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00042	Aluminum	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00050	Antimony	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00060	Antimony	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00062	Antimony	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00080	Antimony	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00090	Antimony	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00092	Antimony	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00110	Arsenic	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00120	Arsenic	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00122	Arsenic	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00140	Arsenic	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00150	Arsenic	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00152	Arsenic	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00160	Barium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00170	Barium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00172	Barium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00190	Barium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00200	Barium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00202	Barium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00220	Beryllium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00230	Beryllium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00232	Beryllium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00250	Beryllium	ICP/MS	SW-846 6020	PA

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2425 NEW HOLLAND PK
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Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM07.00260	Beryllium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00262	Beryllium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00270	Boron	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00280	Boron	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00282	Boron	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00290	Boron	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00300	Boron	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00302	Boron	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00320	Cadmium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00330	Cadmium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00332	Cadmium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00350	Cadmium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00360	Cadmium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00362	Cadmium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00380	Calcium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00390	Calcium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00392	Calcium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00400	Calcium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00410	Calcium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00412	Calcium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00420	Chromium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00430	Chromium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00432	Chromium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00450	Chromium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00460	Chromium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00462	Chromium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00490	Cobalt	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00500	Cobalt	ICP	SW-846 6010C	PA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM07.00502	Cobalt	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00520	Cobalt	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00530	Cobalt	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00532	Cobalt	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00540	Copper	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00550	Copper	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00552	Copper	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00570	Copper	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00580	Copper	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00582	Copper	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00600	Iron	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00610	Iron	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00612	Iron	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00620	Iron	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00630	Iron	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00632	Iron	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00650	Lead	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00660	Lead	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00662	Lead	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00680	Lead	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00690	Lead	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00692	Lead	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00710	Lithium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00720	Lithium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00722	Lithium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00730	Magnesium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00740	Magnesium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00742	Magnesium	ICP	SW-846 6010D	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM07–Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM07.00750	Magnesium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00760	Magnesium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00762	Magnesium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00780	Manganese	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00790	Manganese	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00792	Manganese	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00810	Manganese	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00820	Manganese	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00822	Manganese	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00840	Molybdenum	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00850	Molybdenum	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00852	Molybdenum	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00870	Molybdenum	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00880	Molybdenum	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00882	Molybdenum	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00900	Nickel	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00910	Nickel	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00912	Nickel	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.00930	Nickel	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.00940	Nickel	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.00942	Nickel	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.00980	Potassium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.00990	Potassium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.00992	Potassium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01000	Potassium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01010	Potassium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01012	Potassium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01030	Selenium	ICP	SW-846 6010B	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM07.01040	Selenium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01042	Selenium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01060	Selenium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01070	Selenium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01072	Selenium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01110	Silver	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01120	Silver	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01122	Silver	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01140	Silver	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01150	Silver	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01152	Silver	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01170	Sodium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01180	Sodium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01182	Sodium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01190	Sodium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01200	Sodium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01202	Sodium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01210	Strontium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01220	Strontium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01222	Strontium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01230	Strontium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01240	Strontium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01242	Strontium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01280	Thallium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01290	Thallium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01292	Thallium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01310	Thallium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01320	Thallium	ICP/MS	SW-846 6020A	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM07.01322	Thallium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01340	Thorium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01342	Thorium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01370	Tin	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01380	Tin	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01382	Tin	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01390	Tin	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01400	Tin	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01402	Tin	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01410	Titanium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01420	Titanium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01422	Titanium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01430	Titanium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01440	Titanium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01500	Uranium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01512	Uranium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01514	Uranium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01520	Vanadium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01530	Vanadium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01532	Vanadium	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01550	Vanadium	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01560	Vanadium	ICP/MS	SW-846 6020A	PA
Certified	Yes	SCM07.01562	Vanadium	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01580	Zinc	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01590	Zinc	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01592	Zinc	ICP	SW-846 6010D	PA
Certified	Yes	SCM07.01610	Zinc	ICP/MS	SW-846 6020	PA
Certified	Yes	SCM07.01620	Zinc	ICP/MS	SW-846 6020A	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM07.01622	Zinc	ICP/MS	SW-846 6020B	PA
Certified	Yes	SCM07.01640	Zirconium	ICP	SW-846 6010B	PA
Certified	Yes	SCM07.01642	Zirconium	ICP	SW-846 6010C	PA
Certified	Yes	SCM07.01644	Zirconium	ICP	SW-846 6010D	PA

Category: SCM08--Organics - SCM Prep. / Screening Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM08.00080	Organics	Synthetic PPT Leachate Procedure	SW-846 1312	PA
Certified	Yes	SCM08.00160	Semivolatile organics	Cleanup-Florisil	SW-846 3620B	PA
Certified	Yes	SCM08.00170	Semivolatile organics	Cleanup-Florisil	SW-846 3620C	PA
Certified	Yes	SCM08.00180	Semivolatile organics	Cleanup-Gel Permeation	SW-846 3640A	PA
Certified	Yes	SCM08.00190	Semivolatile organics	Cleanup-Silica Gel	SW-846 3630C	PA
Certified	Yes	SCM08.00200	Semivolatile organics	Cleanup-Sulfur Removal	SW-846 3660B	PA
Certified	Yes	SCM08.00220	Semivolatile organics	Cleanup-Sulfuric Acid/KMnO4	SW-846 3665A	PA
Certified	Yes	SCM08.00240	Semivolatile organics	Microwave Extraction	SW-846 3546	PA
Certified	Yes	SCM08.00280	Semivolatile organics	Soxhlet Extraction	SW-846 3540C	PA
Certified	Yes	SCM08.00320	Semivolatile organics	TCLP, Toxicity Procedure, Shaker	SW-846 1311	PA
Certified	Yes	SCM08.00340	Semivolatile organics	Ultrasonic Extraction	SW-846 3550B	PA
Certified	Yes	SCM08.00350	Semivolatile organics	Ultrasonic Extraction	SW-846 3550C	PA
Certified	Yes	SCM08.00390	Volatile organics	TCLP, Toxicity Procedure, ZHE	SW-846 1311	PA
Certified	Yes	SCM08.00440	Volatile organics - high conc.	Methanol Extract, Closed System P & T	SW-846 5035A	PA
Certified	Yes	SCM08.00450	Volatile organics - high conc.	Methanol Extract, Closed System P & T	SW-846 5035	PA
Certified	Yes	SCM08.00460	Volatile organics - low conc.	Closed System Purge & Trap	SW-846 5035A	PA
Certified	Yes	SCM08.00470	Volatile organics - low conc.	Closed System Purge & Trap	SW-846 5035	PA

Category: SCM09--Organic Parameters - Chromatography

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM09.00020	Petroleum Organics	Extraction, GC, FID	Other Florida - PRO	PA
Certified	Yes	SCM09.00050	Extractable Petroleum Hydrocarbons	Extraction, GC, FID	Other NJDEP EPH 10/08, Rev. 3	NJ
Certified	Yes	SCM09.00090	Dibromo-3-chloropropane (1,2-)	Microextraction, GC, ECD	SW-846 8011	PA
Certified	Yes	SCM09.00100	Dibromoethane (1,2-) (EDB)	Microextraction, GC, ECD	SW-846 8011	PA
Certified	Yes	SCM09.00110	Trichloropropane (1,2,3-)	Microextraction, GC, ECD	SW-846 8011	PA
Certified	Yes	SCM09.00180	Diesel range organic	Extraction, GC, FID	SW-846 8015B	PA
Certified	Yes	SCM09.00200	Ethyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	SCM09.00210	Ethylene glycol	GC, Direct Injection, FID	SW-846 8015B	PA
Certified	Yes	SCM09.00230	Gasoline range organic	GC P&T, FID	SW-846 8015B	PA
Certified	Yes	SCM09.00250	Isopropyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	SCM09.00260	Methyl alcohol (Methanol)	GC, Direct Injection or P & T, FID	SW-846 8015B	PA
Certified	Yes	SCM09.00440	Diesel range organic	Extraction, GC, FID	SW-846 8015C	PA
Certified	Yes	SCM09.00470	Ethyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	SCM09.00480	Ethylene glycol	GC, Direct Injection, FID	SW-846 8015C	PA
Certified	Yes	SCM09.00510	Gasoline range organic	GC P&T, FID	SW-846 8015C	PA
Certified	Yes	SCM09.00540	Isopropyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	SCM09.00550	Methyl alcohol (Methanol)	GC, Direct Injection or P & T, FID	SW-846 8015C	PA
Certified	Yes	SCM09.00770	Diesel range organic	Extraction, GC, FID	SW-846 8015D	PA
Certified	Yes	SCM09.00810	Ethyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	SCM09.00820	Ethylene glycol	GC, Direct Injection, FID	SW-846 8015D	PA
Certified	Yes	SCM09.00850	Gasoline range organic	GC P&T, FID	SW-846 8015D	PA
Certified	Yes	SCM09.00880	Isopropyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	SCM09.00890	Methyl alcohol (Methanol)	GC, Direct Injection or P & T, FID	SW-846 8015D	PA
Certified	Yes	SCM09.01040	Benzene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01270	Ethylbenzene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01280	Methyl tert-butyl ether	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01300	Naphthalene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01340	Toluene	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM09.01400	Xylene (m-)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01410	Xylene (o-)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01420	Xylene (p-)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01430	Xylenes (total)	GC, Direct Injection or P & T, PID-HECD	SW-846 8021B	PA
Certified	Yes	SCM09.01890	Aldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.01900	Alpha BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.01920	Beta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.01930	Chlordane (alpha) (cis-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.01940	Chlordane (gamma) (trans-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.01950	Chlordane (technical)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02020	DDD (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02030	DDE (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02040	DDT (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02050	Delta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02060	Dieldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02070	Endosulfan I	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02080	Endosulfan II	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02090	Endosulfan sulfate	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02100	Endrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02110	Endrin aldehyde	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02120	Endrin ketone	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02140	Heptachlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02150	Heptachlor epoxide	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02180	Lindane (gamma BHC)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02190	Methoxychlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02220	Mirex	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02260	Toxaphene	GC, Extraction, ECD or HECD, Capillary	SW-846 8081A	PA
Certified	Yes	SCM09.02290	Aldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02300	Alpha BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM09.02320	Beta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02330	Chlordane (alpha) (cis-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02340	Chlordane (gamma) (trans-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02350	Chlordane (technical)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02420	DDD (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02430	DDE (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02440	DDT (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02450	Delta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02460	Dieldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02470	Endosulfan I	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02480	Endosulfan II	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02490	Endosulfan sulfate	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02500	Endrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02510	Endrin aldehyde	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02520	Endrin ketone	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02540	Heptachlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02550	Heptachlor epoxide	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02580	Lindane (gamma BHC)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02590	Methoxychlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02620	Mirex	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02660	Toxaphene	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	PA
Certified	Yes	SCM09.02890	PCB 1016	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.02900	PCB 1221	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.02910	PCB 1232	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.02920	PCB 1242	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.02930	PCB 1248	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.02940	PCB 1254	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.02950	PCB 1260	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.02960	PCB 1262	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM09.02970	PCB 1268	GC, Extraction, ECD or HECD, Capillary	SW-846 8082	PA
Certified	Yes	SCM09.03190	PCB 1016	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03200	PCB 1221	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03210	PCB 1232	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03220	PCB 1242	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03230	PCB 1248	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03240	PCB 1254	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03250	PCB 1260	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03260	PCB 1262	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.03270	PCB 1268	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	PA
Certified	Yes	SCM09.04040	Atrazine	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04050	Azinphos methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04060	Bolstar	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04070	Chlorpyrifos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04080	Coumaphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04090	Demeton (o-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04100	Demeton (s-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04110	Diazinon	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04120	Dichlorvos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04140	Disulfoton	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04150	EPN	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04160	Ethoprop	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04170	Fensulfothion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04180	Fenthion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04200	Malathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04210	Merphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04220	Mevinphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04230	Naled	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04240	Parathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA

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Certified	Yes	SCM09.04250	Parathion methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04260	Phorate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04270	Ronnel	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04280	Simazine	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04290	Stirofos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04320	Tokuthion [Protothiofos]	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04330	Trichloronate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141A	PA
Certified	Yes	SCM09.04340	Azinphos methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04350	Bolstar	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04360	Chlorpyrifos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04370	Coumaphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04380	Demeton (o-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04390	Demeton (s-)	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04400	Diazinon	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04410	Dichlorvos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04430	Disulfoton	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04440	EPN	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04450	Ethoprop	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04460	Fensulfothion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04470	Fenthion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04480	Malathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04490	Merphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04500	Mevinphos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04510	Naled	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04520	Parathion	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04530	Parathion methyl	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04540	Phorate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04550	Ronnel	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04560	Stirofos	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA

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LANCASTER PA 176015994

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Certified	Yes	SCM09.04590	Tokuthion [Protothiofos]	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04600	Trichloronate	GC, Extract or Dir Inj, NPD or FPD,Cap	SW-846 8141B	PA
Certified	Yes	SCM09.04640	D (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04650	Dalapon	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04660	DB (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04680	Dicamba	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04700	Dichlorprop	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04710	Dinoseb	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04730	MCPA	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04740	MCPP	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04760	Pentachlorophenol	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04770	Picloram	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04780	T (2,4,5-)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04790	TP (2,4,5-) (Silvex)	GC, Extraction, ECD, Capillary	SW-846 8151A	PA
Certified	Yes	SCM09.04960	Acetaldehyde	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	SCM09.04970	Butyl aldehyde	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	SCM09.04980	Formaldehyde	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	SCM09.04990	Tolualdehyde (3-)	HPLC, Extraction, Derivatization	SW-846 8315A	PA
Certified	Yes	SCM09.05030	Aldicarb	HPLC, Extraction, Derivatization	SW-846 8318	PA
Certified	Yes	SCM09.05040	Aldicarb sulfone	HPLC, Extraction, Derivatization	SW-846 8318	PA
Certified	Yes	SCM09.05050	Carbaryl	HPLC, Extraction, Derivatization	SW-846 8318	PA
Certified	Yes	SCM09.05060	Carbofuran (furadan)	HPLC, Extraction, Derivatization	SW-846 8318	PA
Certified	Yes	SCM09.05070	Hydroxy carbofuran (3-)	HPLC, Extraction, Derivatization	SW-846 8318	PA
Certified	Yes	SCM09.05080	Methiocarb (mesurol)	HPLC, Extraction, Derivatization	SW-846 8318	PA
Certified	Yes	SCM09.05090	Methomyl (Lannate)	HPLC, Extraction, Derivatization	SW-846 8318	PA
Certified	Yes	SCM09.05100	Aldicarb	HPLC, Extraction, Derivatization	SW-846 8318A	PA
Certified	Yes	SCM09.05110	Aldicarb sulfone	HPLC, Extraction, Derivatization	SW-846 8318A	PA
Certified	Yes	SCM09.05120	Carbaryl	HPLC, Extraction, Derivatization	SW-846 8318A	PA
Certified	Yes	SCM09.05130	Carbofuran (furadan)	HPLC, Extraction, Derivatization	SW-846 8318A	PA

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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Certified	Yes	SCM09.05140	Hydroxy carbofuran (3-)	HPLC, Extraction, Derivatization	SW-846 8318A	PA
Certified	Yes	SCM09.05150	Methiocarb (mesurol)	HPLC, Extraction, Derivatization	SW-846 8318A	PA
Certified	Yes	SCM09.05160	Methomyl (Lannate)	HPLC, Extraction, Derivatization	SW-846 8318A	PA
Certified	Yes	SCM09.05450	Dinitrobenzene (1,3-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05460	Dinitrotoluene (2,4-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05470	Dinitrotoluene (2,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05480	Dinitrotoluene (2-amino-4,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05490	Dinitrotoluene (4-amino-2,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05500	HMX	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05510	Nitrobenzene	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05520	Nitroglycerine	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05530	Nitrotoluene (2-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05540	Nitrotoluene (3-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05550	Nitrotoluene (4-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05560	PETN	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05570	RDX	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05580	Tetryl	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05590	Trinitrobenzene (1,3,5-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05600	Trinitrotoluene (2,4,6-)	HPLC, UV Detector	SW-846 8330	PA
Certified	Yes	SCM09.05610	Dinitrobenzene (1,3-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05620	Dinitrotoluene (2,4-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05630	Dinitrotoluene (2,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05640	Dinitrotoluene (2-amino-4,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05650	Dinitrotoluene (4-amino-2,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05660	HMX	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05670	Nitrobenzene	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05680	Nitroglycerine	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05690	Nitrotoluene (2-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05700	Nitrotoluene (3-)	HPLC, UV Detector	SW-846 8330A	PA

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Certified	Yes	SCM09.05710	Nitrotoluene (4-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05720	PETN	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05730	RDX	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05740	Tetryl	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05750	Trinitrobenzene (1,3,5-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05760	Trinitrotoluene (2,4,6-)	HPLC, UV Detector	SW-846 8330A	PA
Certified	Yes	SCM09.05770	Dinitrobenzene (1,3-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05780	Dinitrotoluene (2,4-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05790	Dinitrotoluene (2,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05800	Dinitrotoluene (2-amino-4,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05810	Dinitrotoluene (4-amino-2,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05820	HMX	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05830	Nitrobenzene	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05840	Nitroglycerine	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05850	Nitrotoluene (2-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05860	Nitrotoluene (3-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05870	Nitrotoluene (4-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05880	PETN	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05890	RDX	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05900	Tetryl	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05910	Trinitrobenzene (1,3,5-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.05920	Trinitrotoluene (2,4,6-)	HPLC, UV Detector	SW-846 8330B	PA
Certified	Yes	SCM09.06450	Atrazine	GC, Extract or Dir Inj, NPD or FPD,Cap	User Defined SW-846 8141B	PA
Certified	Yes	SCM09.06460	Simazine	GC, Extract or Dir Inj, NPD or FPD,Cap	User Defined SW-846 8141B	PA

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State

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Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.00240	Chlorobiphenyl (2-) (PCB 1)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00250	Chlorobiphenyl (3-) (PCB 2)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00260	Chlorobiphenyl (4-) (PCB 3)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00270	Dichlorobiphenyl (2,2'-) (PCB 4)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00280	Dichlorobiphenyl (2,3-) (PCB 5)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00290	Dichlorobiphenyl (2,3'-) (PCB 6)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00300	Dichlorobiphenyl (2,4-) (PCB 7)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00310	Dichlorobiphenyl (2,4'-) (PCB 8)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00320	Dichlorobiphenyl (2,5-) (PCB 9)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00330	Dichlorobiphenyl (2,6-) (PCB 10)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00340	Dichlorobiphenyl (3,3'-) (PCB 11)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00350	Dichlorobiphenyl (3,4-) (PCB 12)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00360	Dichlorobiphenyl (3,4'-) (PCB 13)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00370	Dichlorobiphenyl (3,5-) (PCB 14)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00380	Dichlorobiphenyl (4,4'-) (PCB 15)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00390	Trichlorobiphenyl (2,2',3-) (PCB 16)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00400	Trichlorobiphenyl (2,2',4-) (PCB 17)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00410	Trichlorobiphenyl (2,2',5-) (PCB 18)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00420	Trichlorobiphenyl (2,2',6-) (PCB 19)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00430	Trichlorobiphenyl (2,3,3'-) (PCB 20)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00440	Trichlorobiphenyl (2,3,4-) (PCB 21)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00450	Trichlorobiphenyl (2,3,4'-) (PCB 22)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00460	Trichlorobiphenyl (2,3,5-) (PCB 23)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00470	Trichlorobiphenyl (2,3,6-) (PCB 24)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00480	Trichlorobiphenyl (2,3',4-) (PCB 25)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00490	Trichlorobiphenyl (2,3',5-) (PCB 26)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00500	Trichlorobiphenyl (2,3',6-) (PCB 27)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00510	Trichlorobiphenyl (2,4,4'-) (PCB 28)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.00520	Trichlorobiphenyl (2,4,5-) (PCB 29)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00530	Trichlorobiphenyl (2,4,6-) (PCB 30)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00540	Trichlorobiphenyl (2,4',5-) (PCB 31)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00550	Trichlorobiphenyl (2,4',6-) (PCB 32)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00560	Trichlorobiphenyl (2,3',4'-) (PCB 33)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00570	Trichlorobiphenyl (2,3',5'-) (PCB 34)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00580	Trichlorobiphenyl (3,3',4-) (PCB 35)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00590	Trichlorobiphenyl (3,3',5-) (PCB 36)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00600	Trichlorobiphenyl (3,4,4'-) (PCB 37)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00610	Trichlorobiphenyl (3,4,5-) (PCB 38)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00620	Trichlorobiphenyl (3,4',5-) (PCB 39)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00630	Tetrachlorobiphenyl (2,2',3,3'-) (PCB 40)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00640	Tetrachlorobiphenyl (2,2',3,4-) (PCB 41)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00650	Tetrachlorobiphenyl (2,2',3,4'-) (PCB 42)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00660	Tetrachlorobiphenyl (2,2',3,5-) (PCB 43)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00670	Tetrachlorobiphenyl (2,2',3,5'-) (PCB 44)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00680	Tetrachlorobiphenyl (2,2',3,6-) (PCB 45)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00690	Tetrachlorobiphenyl (2,2',3,6'-) (PCB 46)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00700	Tetrachlorobiphenyl (2,2',4,4'-) (PCB 47)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00710	Tetrachlorobiphenyl (2,2',4,5-) (PCB 48)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.00720	Tetrachlorobiphenyl (2,2',4,5'-) (PCB 49)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00730	Tetrachlorobiphenyl (2,2',4,6-) (PCB 50)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00740	Tetrachlorobiphenyl (2,2',4,6'-) (PCB 51)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00750	Tetrachlorobiphenyl (2,2',5,5'-) (PCB 52)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00760	Tetrachlorobiphenyl (2,2',5,6'-) (PCB 53)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00770	Tetrachlorobiphenyl (2,2',6,6'-) (PCB 54)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00780	Tetrachlorobiphenyl (2,3,3',4-) (PCB 55)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00790	Tetrachlorobiphenyl (2,3,3',4'-) (PCB 56)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00800	Tetrachlorobiphenyl (2,3,3',5-) (PCB 57)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00810	Tetrachlorobiphenyl (2,3,3',5'-) (PCB 58)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00820	Tetrachlorobiphenyl (2,3,3',6-) (PCB 59)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00830	Tetrachlorobiphenyl (2,3,4,4'-) (PCB 60)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00840	Tetrachlorobiphenyl (2,3,4,5-) (PCB 61)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00850	Tetrachlorobiphenyl (2,3,4,6-) (PCB 62)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00860	Tetrachlorobiphenyl (2,3,4',5-) (PCB 63)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00870	Tetrachlorobiphenyl (2,3,4',6-) (PCB 64)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00880	Tetrachlorobiphenyl (2,3,5,6-) (PCB 65)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.00890	Tetrachlorobiphenyl (2,3',4,4'-) (PCB 66)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00900	Tetrachlorobiphenyl (2,3',4,5-) (PCB 67)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00910	Tetrachlorobiphenyl (2,3',4,5'-) (PCB 68)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00920	Tetrachlorobiphenyl (2,3',4,6-) (PCB 69)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00930	Tetrachlorobiphenyl (2,3',4',5-) (PCB 70)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00940	Tetrachlorobiphenyl (2,3',4',6-) (PCB 71)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00950	Tetrachlorobiphenyl (2,3',5,5'-) (PCB 72)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00960	Tetrachlorobiphenyl (2,3',5',6-) (PCB 73)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00970	Tetrachlorobiphenyl (2,4,4',5-) (PCB 74)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00980	Tetrachlorobiphenyl (2,4,4',6-) (PCB 75)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.00990	Tetrachlorobiphenyl (2,3',4',5'-) (PCB 76)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01000	Tetrachlorobiphenyl (3,3',4,4'-) (PCB 77)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01010	Tetrachlorobiphenyl (3,3',4,5-) (PCB 78)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01020	Tetrachlorobiphenyl (3,3',4,5'-) (PCB 79)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01030	Tetrachlorobiphenyl (3,3',5,5'-) (PCB 80)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01040	Tetrachlorobiphenyl (3,4,4',5-) (PCB 81)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01050	Pentachlorobiphenyl (2,2',3,3',4-) (PCB 82)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.01060	Pentachlorobiphenyl (2,2',3,3',5-) (PCB 83)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01070	Pentachlorobiphenyl (2,2',3,3',6-) (PCB 84)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01080	Pentachlorobiphenyl (2,2',3,4,4'-) (PCB 85)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01090	Pentachlorobiphenyl (2,2',3,4,5-) (PCB 86)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01100	Pentachlorobiphenyl (2,2',3,4,5'-) (PCB 87)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01110	Pentachlorobiphenyl (2,2',3,4,6-) (PCB 88)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01120	Pentachlorobiphenyl (2,2',3,4,6'-) (PCB 89)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01130	Pentachlorobiphenyl (2,2',3,4',5-) (PCB 90)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01140	Pentachlorobiphenyl (2,2',3,4',6-) (PCB 91)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01150	Pentachlorobiphenyl (2,2',3,5,5'-) (PCB 92)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01160	Pentachlorobiphenyl (2,2',3,5,6-) (PCB 93)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01170	Pentachlorobiphenyl (2,2',3,5,6'-) (PCB 94)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01180	Pentachlorobiphenyl (2,2',3,5',6-) (PCB 95)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01190	Pentachlorobiphenyl (2,2',3,6,6'-) (PCB 96)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01200	Pentachlorobiphenyl (2,2',3,4',5'-) (PCB 97)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01210	Pentachlorobiphenyl (2,2',3,4',6'-) (PCB 98)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01220	Pentachlorobiphenyl (2,2',4,4',5-) (PCB 99)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.01230	Pentachlorobiphenyl (2,2',4,4',6-) (PCB 100)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01240	Pentachlorobiphenyl (2,2',4,5,5'-) (PCB 101)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01250	Pentachlorobiphenyl (2,2',4,5,6'-) (PCB 102)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01260	Pentachlorobiphenyl (2,2',4,5',6-) (PCB 103)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01270	Pentachlorobiphenyl (2,2',4,6,6'-) (PCB 104)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01280	Pentachlorobiphenyl (2,3,3',4,4'-) (PCB 105)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01290	Pentachlorobiphenyl (2,3,3',4,5-) (PCB 106)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01300	Pentachlorobiphenyl (2,3,3',4',5-) (PCB 107)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01310	Pentachlorobiphenyl (2,3,3',4,5'-) (PCB 108)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01320	Pentachlorobiphenyl (2,3,3',4,6-) (PCB 109)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01330	Pentachlorobiphenyl (2,3,3',4',6-) (PCB 110)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01340	Pentachlorobiphenyl (2,3,3',5,5'-) (PCB 111)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01350	Pentachlorobiphenyl (2,3,3',5,6-) (PCB 112)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01360	Pentachlorobiphenyl (2,3,3',5',6-) (PCB 113)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01370	Pentachlorobiphenyl (2,3,4,4',5-) (PCB 114)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01380	Pentachlorobiphenyl (2,3,4,4',6-) (PCB 115)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01390	Pentachlorobiphenyl (2,3,4,5,6-) (PCB 116)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.01400	Pentachlorobiphenyl (2,3,4',5,6-) (PCB 117)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01410	Pentachlorobiphenyl (2,3',4,4',5-) (PCB 118)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01420	Pentachlorobiphenyl (2,3',4,4',6-) (PCB 119)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01430	Pentachlorobiphenyl (2,3',4,5,5'-) (PCB 120)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01440	Pentachlorobiphenyl (2,3',4,5',6-) (PCB 121)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01450	Pentachlorobiphenyl (2,3,3',4',5'-) (PCB 122)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01460	Pentachlorobiphenyl (2,3',4,4',5'-) (PCB 123)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01470	Pentachlorobiphenyl (2,3',4',5,5'-) (PCB 124)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01480	Pentachlorobiphenyl (2,3',4',5',6-) (PCB 125)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01490	Pentachlorobiphenyl (3,3',4,4',5-) (PCB 126)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01500	Pentachlorobiphenyl (3,3',4,5,5'-) (PCB 127)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01510	Hexachlorobiphenyl (2,2',3,3',4,4'-) (PCB 128)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01520	Hexachlorobiphenyl (2,2',3,3',4,5-) (PCB 129)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01530	Hexachlorobiphenyl (2,2',3,3',4,5'-) (PCB 130)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01540	Hexachlorobiphenyl (2,2',3,3',4,6-) (PCB 131)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01550	Hexachlorobiphenyl (2,2',3,3',4,6'-) (PCB 132)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01560	Hexachlorobiphenyl (2,2',3,3',5,5'-) (PCB 133)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.01570	Hexachlorobiphenyl (2,2',3,3',5,6-) (PCB 134)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01580	Hexachlorobiphenyl (2,2',3,3',5,6'-) (PCB 135)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01590	Hexachlorobiphenyl (2,2',3,3',6,6'-) (PCB 136)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01600	Hexachlorobiphenyl (2,2',3,4,4',5-) (PCB 137)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01610	Hexachlorobiphenyl (2,2',3,4,4',5'-) (PCB 138)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01620	Hexachlorobiphenyl (2,2',3,4,4',6-) (PCB 139)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01630	Hexachlorobiphenyl (2,2',3,4,4',6'-) (PCB 140)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01640	Hexachlorobiphenyl (2,2',3,4,5,5'-) (PCB 141)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01650	Hexachlorobiphenyl (2,2',3,4,5,6-) (PCB 142)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01660	Hexachlorobiphenyl (2,2',3,4,5,6'-) (PCB 143)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01670	Hexachlorobiphenyl (2,2',3,4,5',6-) (PCB 144)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01680	Hexachlorobiphenyl (2,2',3,4,6,6'-) (PCB 145)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01690	Hexachlorobiphenyl (2,2',3,4',5,5'-) (PCB 146)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01700	Hexachlorobiphenyl (2,2',3,4',5,6-) (PCB 147)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01710	Hexachlorobiphenyl (2,2',3,4',5,6'-) (PCB 148)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01720	Hexachlorobiphenyl (2,2',3,4',5',6-) (PCB 149)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01730	Hexachlorobiphenyl (2,2',3,4',6,6'-) (PCB 150)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.01740	Hexachlorobiphenyl (2,2',3,5,5',6-) (PCB 151)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01750	Hexachlorobiphenyl (2,2',3,5,6,6'-) (PCB 152)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01760	Hexachlorobiphenyl (2,2',4,4',5,5'-) (PCB 153)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01770	Hexachlorobiphenyl (2,2',4,4',5,6'-) (PCB 154)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01780	Hexachlorobiphenyl (2,2',4,4',6,6'-) (PCB 155)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01790	Hexachlorobiphenyl (2,3,3',4,4',5-) (PCB 156)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01800	Hexachlorobiphenyl (2,3,3',4,4',5'-) (PCB 157)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01810	Hexachlorobiphenyl (2,3,3',4,4',6-) (PCB 158)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01820	Hexachlorobiphenyl (2,3,3',4,5,5'-) (PCB 159)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01830	Hexachlorobiphenyl (2,3,3',4,5,6-) (PCB 160)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01840	Hexachlorobiphenyl (2,3,3',4,5',6-) (PCB 161)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01850	Hexachlorobiphenyl (2,3,3',4',5,5'-) (PCB 162)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01860	Hexachlorobiphenyl (2,3,3',4',5,6-) (PCB 163)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01870	Hexachlorobiphenyl (2,3,3',4',5',6-) (PCB 164)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01880	Hexachlorobiphenyl (2,3,3',5,5',6-) (PCB 165)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01890	Hexachlorobiphenyl (2,3,4,4',5,6-) (PCB 166)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01900	Hexachlorobiphenyl (2,3',4,4',5,5'-) (PCB 167)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.01910	Hexachlorobiphenyl (2,3',4,4',5',6-) (PCB 168)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01920	Hexachlorobiphenyl (3,3',4,4',5,5'-) (PCB 169)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01930	Heptachlorobiphenyl (2,2',3,3',4,4', 5-) (PCB 170)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01940	Heptachlorobiphenyl (2,2',3,3',4,4', 6-) (PCB 171)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01950	Heptachlorobiphenyl (2,2',3,3', 4,5,5'-) (PCB 172)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01960	Heptachlorobiphenyl (2,2',3,3', 4,5,6-) (PCB 173)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01970	Heptachlorobiphenyl (2,2',3,3', 4,5,6'-) (PCB 174)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01980	Heptachlorobiphenyl (2,2',3,3',4,5', 6-) (PCB 175)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.01990	Heptachlorobiphenyl (2,2',3,3', 4,6,6'-) (PCB 176)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02000	Heptachlorobiphenyl (2,2',3,3',4,5', 6'-) (PCB 177)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02010	Heptachlorobiphenyl (2,2',3,3',5,5', 6-) (PCB 178)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02020	Heptachlorobiphenyl (2,2',3,3', 5,6,6'-) (PCB 179)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02030	Heptachlorobiphenyl (2,2',3,4,4', 5,5'-) (PCB 180)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02040	Heptachlorobiphenyl (2,2',3,4,4', 5,6-) (PCB 181)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02050	Heptachlorobiphenyl (2,2',3,4,4', 5,6'-) (PCB 182)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02060	Heptachlorobiphenyl (2,2',3,4,4',5', 6-) (PCB 183)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02070	Heptachlorobiphenyl (2,2',3,4,4', 6,6'-) (PCB 184)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.02080	Heptachlorobiphenyl (2,2',3,4,5,5', 6-) (PCB 185)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02090	Heptachlorobiphenyl (2,2', 3,4,5,6,6'-) (PCB 186)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02100	Heptachlorobiphenyl (2,2',3,4',5,5', 6-) (PCB 187)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02110	Heptachlorobiphenyl (2,2',3,4', 5,6,6'-) (PCB 188)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02120	Heptachlorobiphenyl (2,3,3',4,4', 5,5'-) (PCB 189)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02130	Heptachlorobiphenyl (2,3,3',4,4', 5,6-) (PCB 190)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02140	Heptachlorobiphenyl (2,3,3',4,4',5', 6-) (PCB 191)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02150	Heptachlorobiphenyl (2,3,3',4,5,5', 6-) (PCB 192)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02160	Heptachlorobiphenyl (2,3,3',4',5,5', 6-) (PCB 193)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02170	Octachlorobiphenyl (2,2',3,3',4,4', 5,5'-) (PCB 194)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02180	Octachlorobiphenyl (2,2',3,3',4,4', 5,6-) (PCB 195)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02190	Octachlorobiphenyl (2,2',3,3',4,4', 5,6'-) (PCB 196)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02200	Octachlorobiphenyl (2,2',3,3',4,4', 6,6'-) (PCB 197)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02210	Octachlorobiphenyl (2,2',3,3',4,5,5', 6-) (PCB 198)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02220	Octachlorobiphenyl (2,2',3,3',4,5,5', 6'-) (PCB 199)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02230	Octachlorobiphenyl (2,2',3,3', 4,5,6,6'-) (PCB 200)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02240	Octachlorobiphenyl (2,2',3,3',4,5', 6,6'-) (PCB 201)	Extraction, SIM, GC/MS	EPA 1668A	PA

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Certified	Yes	SCM10.02250	Octachlorobiphenyl (2,2',3,3',5,5', 6,6'-) (PCB 202)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02260	Octachlorobiphenyl (2,2',3,4,4',5,5', 6-) (PCB 203)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02270	Octachlorobiphenyl (2,2',3,4,4', 5,6,6'-) (PCB 204)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02280	Octachlorobiphenyl (2,3,3',4,4',5,5', 6-) (PCB 205)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02290	Nonachlorobiphenyl (2,2',3,3',4,4', 5,5',6-) (PCB 206)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02300	Nonachlorobiphenyl (2,2',3,3',4,4', 5,6,6'-) (PCB 207)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02310	Nonachlorobiphenyl (2,2',3,3',4,5,5', 6,6'-) (PCB 208)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.02320	Decachlorobiphenyl (PCB 209)	Extraction, SIM, GC/MS	EPA 1668A	PA
Certified	Yes	SCM10.04590	Acetone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04600	Acetonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04610	Acrolein	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04620	Acrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04630	Allyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04650	Amyl alcohol (t-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04660	Benzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04670	Benzyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04680	Bromobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04690	Bromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04700	Bromodichloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04720	Bromoform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04730	Bromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04740	Butadiene (2-chloro-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04750	Butanol (1-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04760	Butanol (3,3-Dimethyl-1-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.04770	Butanone (2-) [Methyl ethyl ketone]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04780	Butyl formate (t-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04810	Butylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04820	Carbon disulfide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04830	Carbon tetrachloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04840	Chlorobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04850	Chloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04860	Chloroethyl vinyl ether (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04870	Chloroform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04880	Chloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04890	Chlorotoluene (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04900	Chlorotoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04910	Cyclohexane	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04920	Cyclohexanone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04930	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04940	Dibromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04950	Dibromoethane (1,2-) (EDB)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04960	Dibromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04980	Dichloro-2-butene (trans-1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.04990	Dichlorobenzene (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05000	Dichlorobenzene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05010	Dichlorobenzene (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05020	Dichlorodifluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05030	Dichloroethane (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05040	Dichloroethane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05050	Dichloroethene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05060	Dichloroethene (cis-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05070	Dichloroethene (trans-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA

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Certified	Yes	SCM10.05080	Dichloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05090	Dichloropropane (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05100	Dichloropropane (2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05110	Dichloropropene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05120	Dichloropropene (cis-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05130	Dichloropropene (trans-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05150	Diisopropyl Ether [DIPE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05160	Dioxane (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05170	Ethanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05180	Ethyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05190	Ethyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05200	Ethylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05210	Ethyl-tert-butyl Ether [ETBE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05230	Hexachlorobutadiene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05260	Hexanone (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05270	Iso-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05280	Isopropanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05300	Isopropylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05310	Isopropyltoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05320	Methacrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05330	Methyl acetate	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05350	Methyl iodide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05360	Methyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05370	Methyl tert-butyl ether	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05380	Methylcyclohexane	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05390	Methylene chloride (Dichloromethane)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05420	Naphthalene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05440	Nitropropane (2-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260B	PA

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Certified	Yes	SCM10.05470	Pentachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05490	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05500	Propionitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05510	Propylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05520	Sec-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05530	Styrene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05540	tert-Amylmethyl ether [TAME]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05550	Tert-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05560	Tert-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05570	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05580	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05590	Tetrachloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05600	Tetrahydrofuran	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05610	Toluene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05630	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05640	Trichlorobenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05650	Trichlorobenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05660	Trichloroethane (1,1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05670	Trichloroethane (1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05680	Trichloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05690	Trichlorofluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05700	Trichloropropane (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05720	Trimethylbenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05730	Trimethylbenzene (1,3,5-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05750	Vinyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05760	Vinyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05770	Xylene (m-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05780	Xylene (o-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.05790	Xylene (p-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05800	Xylenes (total)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260B	PA
Certified	Yes	SCM10.05810	Acetone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05820	Acetonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05830	Acrolein	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05840	Acrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05850	Allyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05860	Amyl alcohol (t-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05870	Benzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05880	Benzyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05890	Bromobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05900	Bromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05910	Bromodichloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05930	Bromoform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05940	Bromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05950	Butadiene (2-chloro-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05960	Butanol (1-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05970	Butanol (3,3-Dimethyl-1-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05980	Butanone (2-) [Methyl ethyl ketone]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.05990	Butyl formate (t-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06020	Butylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06030	Carbon disulfide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06040	Carbon tetrachloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06050	Chlorobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06060	Chloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06070	Chloroethyl vinyl ether (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06080	Chloroform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06090	Chloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.06100	Chlorotoluene (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06110	Chlorotoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06130	Cyclohexane	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06140	Cyclohexanone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06150	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06160	Dibromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06170	Dibromoethane (1,2-) (EDB)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06180	Dibromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06200	Dichloro-2-butene (trans-1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06210	Dichlorobenzene (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06220	Dichlorobenzene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06230	Dichlorobenzene (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06240	Dichlorodifluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06250	Dichloroethane (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06260	Dichloroethane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06270	Dichloroethene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06280	Dichloroethene (cis-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06290	Dichloroethene (trans-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06300	Dichloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06310	Dichloropropane (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06320	Dichloropropane (2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06330	Dichloropropene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06340	Dichloropropene (cis-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06350	Dichloropropene (trans-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06370	Diisopropyl Ether [DIPE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06380	Dioxane (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06390	Ethanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06400	Ethyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.06410	Ethyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06420	Ethylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06430	Ethyl-tert-butyl Ether [ETBE]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06450	Hexachlorobutadiene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06480	Hexanone (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06490	Iso-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06500	Isopropanol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06520	Isopropylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06530	Isopropyltoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06540	Methacrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06550	Methyl acetate	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06570	Methyl iodide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06580	Methyl methacrylate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06590	Methyl tert-butyl ether	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06600	Methylcyclohexane	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06610	Methylene chloride (Dichloromethane)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06640	Naphthalene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06660	Nitropropane (2-)	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06690	Pentachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06710	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06720	Propionitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06730	Propylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06740	Sec-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06750	Styrene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06760	tert-Amylmethyl ether [TAME]	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06780	Tert-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06790	Tert-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06800	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.06810	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06820	Tetrachloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06830	Tetrahydrofuran	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06840	Toluene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06860	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06870	Trichlorobenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06880	Trichlorobenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06890	Trichloroethane (1,1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06900	Trichloroethane (1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06910	Trichloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06920	Trichlorofluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06930	Trichloropropane (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06950	Trimethylbenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06960	Trimethylbenzene (1,3,5-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06980	Vinyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.06990	Vinyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.07000	Xylene (m-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.07010	Xylene (o-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.07020	Xylene (p-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.07030	Xylenes (total)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	PA
Certified	Yes	SCM10.07060	Acenaphthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07070	Acenaphthylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07080	Acetophenone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07090	Acetylaminofluorene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07130	Aminobiphenyl (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07150	Aniline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07160	Anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07170	Aramite	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.07180	Atrazine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07200	Benzaldehyde	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07210	Benzenethiol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07220	Benzidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07230	Benzo(a)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07240	Benzo(a)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07250	Benzo(b)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07260	Benzo(ghi)perylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07280	Benzo(k)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07290	Benzoic acid	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07310	Benzyl alcohol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07340	Biphenyl (1,1'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07350	Bis (2-chloroethoxy) methane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07360	Bis (2-chloroethyl) ether	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07370	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07380	Bis (2-ethylhexyl) phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07390	Bromophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07400	Butylbenzylphthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07410	Caprolactam	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07420	Carbazole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07460	Chloroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07470	Chlorobenzilate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07480	Chloronaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07490	Chloronaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07500	Chlorophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07510	Chlorophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07520	Chrysene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07580	Diallate (cis)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.07590	Diallate (trans)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07600	Dibenz(a,h)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07610	Dibenz(a,j)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07630	Dibenzo(a,h)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07670	Dibenzofuran	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07680	Dichlorobenzene (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07690	Dichlorobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07700	Dichlorobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07710	Dichlorobenzidine (3,3'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07720	Dichlorophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07730	Dichlorophenol (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07750	Diethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07760	Dimethoate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07770	Dimethyl benzidine (3,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07780	Dimethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07840	Dimethylbenz(a)anthracene (7,12-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07850	Dimethylphenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07860	Di-n-butyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07870	Dinitrobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07880	Dinitrobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07890	Dinitrophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07900	Dinitrophenol (2-methyl-4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07910	Dinitrotoluene (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07920	Dinitrotoluene (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07930	Di-n-octyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07950	Diphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07960	Diphenylhydrazine (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.07970	Disulfoton	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.08050	Famphur	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08060	Fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08070	Fluorene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08100	Hexachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08110	Hexachlorobutadiene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08120	Hexachlorocyclopentadiene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08130	Hexachloroethane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08150	Hexachloropropene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08170	Indene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08180	Indeno(1,2,3-cd)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08190	Isodrin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08200	Isophorone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08210	Isosafrole (cis-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08220	Isosafrole (trans-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08230	Kepone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08250	Methanesulfonate (Ethyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08260	Methanesulfonate (Methyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08270	Methapyrilene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08290	Methyl phenol (4-chloro-3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08300	Methylcholanthrene (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08310	Methylnaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08320	Methylnaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08330	Methylphenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08340	Methylphenol (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08350	Methylphenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08360	Naphthalene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08370	Napthoquinone (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08380	Napththylamine (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.08390	Napththylamine (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08400	Nitroaniline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08410	Nitroaniline (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08420	Nitroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08430	Nitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08450	Nitrophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08460	Nitrophenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08470	N-Nitrosodiethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08480	N-Nitrosodimethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08490	N-Nitroso-di-n-butylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08500	N-Nitroso-di-n-propylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08510	N-Nitrosodiphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08520	N-Nitrosomethylethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08530	N-Nitrosomorpholine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08540	N-Nitrosopiperidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08550	N-Nitrosopyrrolidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08570	Parathion	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08580	Parathion methyl	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08660	Pentachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08680	Pentachloronitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08690	Pentachlorophenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08700	Phenacetin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08710	Phenanthrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08720	Phenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08730	Phenylenediamine (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08740	Phenylethylamine (alpha, alpha-Dimethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08750	Phorate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08760	Phosphorothioate (O,O,O-triethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.08770	Phosphorothioate (diethyl-O-2-pyrazinyl) [Thionazin]	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08780	Picoline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08790	Pronamide	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08800	Pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08810	Pyridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08820	Quinoline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08830	Quinoline -1-Oxide (4-Nitro)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08840	Safrole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08850	Sulfotepp	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08870	Tetrachlorobenzene (1,2,3,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08880	Tetrachlorobenzene (1,2,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08890	Tetrachlorobenzene (1,2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08900	Tetrachlorophenol (2,3,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08910	Toluidine (2-) (2-Methylaniline)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08930	Toluidine (5-nitro-2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08950	Trichlorobenzene (1,2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08960	Trichlorophenol (2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08970	Trichlorophenol (2,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.08990	Trinitrobenzene (1,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09000	Acenaphthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09010	Acenaphthylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09020	Anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09030	Benzo(a)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09040	Benzo(a)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09050	Benzo(b)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09060	Benzo(ghi)perylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09070	Benzo(k)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09080	Chrysene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA

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2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.09090	Dibenzo(a,h)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09110	Fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09120	Fluorene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09150	Indeno(1,2,3-cd)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09160	Methylnaphthalene (1-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09170	Methylnaphthalene (2-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09180	Naphthalene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09190	N-Nitrosodimethylamine	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09210	Phenanthrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09220	Pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270C	PA
Certified	Yes	SCM10.09230	Acenaphthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09240	Acenaphthylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09250	Acetophenone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09260	Acetylaminofluorene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09300	Aminobiphenyl (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09320	Aniline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09330	Anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09340	Aramite	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09350	Atrazine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09370	Benzaldehyde	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09380	Benzenethiol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09390	Benzidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09400	Benzo(a)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09410	Benzo(a)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09420	Benzo(b)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09430	Benzo(ghi)perylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09450	Benzo(k)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09460	Benzoic acid	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.09480	Benzyl alcohol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09510	Biphenyl (1,1'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09520	Bis (2-chloroethoxy) methane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09530	Bis (2-chloroethyl) ether	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09540	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09550	Bis (2-ethylhexyl) phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09560	Bromophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09570	Butylbenzylphthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09580	Caprolactam	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09590	Carbazole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09630	Chloroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09640	Chlorobenzilate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09650	Chloronaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09660	Chloronaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09670	Chlorophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09680	Chlorophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09690	Chrysene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09750	Diallate (cis)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09760	Diallate (trans)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09770	Dibenz(a,h)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09780	Dibenz(a,j)acridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09800	Dibenzo(a,h)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09840	Dibenzofuran	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09850	Dichlorobenzene (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09860	Dichlorobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09870	Dichlorobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09880	Dichlorobenzidine (3,3'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09890	Dichlorophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

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Certified	Yes	SCM10.09900	Dichlorophenol (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09920	Diethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09930	Dimethoate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09940	Dimethyl benzidine (3,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.09950	Dimethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10010	Dimethylbenz(a)anthracene (7,12-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10020	Dimethylphenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10030	Di-n-butyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10040	Dinitrobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10050	Dinitrobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10060	Dinitrophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10070	Dinitrophenol (2-methyl-4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10080	Dinitrotoluene (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10090	Dinitrotoluene (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10100	Di-n-octyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10120	Diphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10130	Diphenylhydrazine (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10140	Disulfoton	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10220	Famphur	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10230	Fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10240	Fluorene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10270	Hexachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10280	Hexachlorobutadiene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10290	Hexachlorocyclopentadiene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10300	Hexachloroethane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10320	Hexachloropropene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10340	Indene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10350	Indeno(1,2,3-cd)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 12/06/2017 until 6/30/2018

Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.10360	Isodrin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10370	Isophorone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10380	Isosafrole (cis-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10390	Isosafrole (trans-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10400	Kepone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10420	Methanesulfonate (Ethyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10430	Methanesulfonate (Methyl-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10440	Methapyrilene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10460	Methyl phenol (4-chloro-3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10470	Methylcholanthrene (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10480	Methylnaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10490	Methylnaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10500	Methylphenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10510	Methylphenol (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10520	Methylphenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10530	Naphthalene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10540	Napthoquinone (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10550	Napththylamine (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10560	Napththylamine (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10570	Nitroaniline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10580	Nitroaniline (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10590	Nitroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10600	Nitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10620	Nitrophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10630	Nitrophenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10640	N-Nitrosodiethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10650	N-Nitrosodimethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10660	N-Nitroso-di-n-butylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 12/06/2017 until 6/30/2018

Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.10670	N-Nitroso-di-n-propylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10680	N-Nitrosodiphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10690	N-Nitrosomethylethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10700	N-Nitrosomorpholine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10710	N-Nitrosopiperidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10720	N-Nitrosopyrrolidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10740	Parathion	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10750	Parathion methyl	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10830	Pentachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10850	Pentachloronitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10860	Pentachlorophenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10870	Phenacetin	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10880	Phenanthrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10890	Phenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10900	Phenylenediamine (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10910	Phenylethylamine (alpha, alpha-Dimethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10920	Phorate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10930	Phosphorothioate (O,O,O-triethyl)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10940	Phosphorothioate (diethyl-O-2-pyrazinyl) [Thionazin]	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10950	Picoline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10960	Pronamide	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10970	Pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10980	Pyridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.10990	Quinoline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11000	Quinoline -1-Oxide (4-Nitro)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11010	Safrole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11020	Sulfotepp	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 12/06/2017 until 6/30/2018

Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.11040	Tetrachlorobenzene (1,2,3,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11050	Tetrachlorobenzene (1,2,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11060	Tetrachlorobenzene (1,2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11070	Tetrachlorophenol (2,3,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11080	Toluidine (2-) (2-Methylaniline)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11100	Toluidine (5-nitro-2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11120	Trichlorobenzene (1,2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11130	Trichlorophenol (2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11140	Trichlorophenol (2,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11160	Trinitrobenzene (1,3,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11170	Acenaphthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11180	Acenaphthylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11190	Anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11200	Benzo(a)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11210	Benzo(a)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11220	Benzo(b)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11230	Benzo(ghi)perylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11240	Benzo(k)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11250	Chrysene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11260	Dibenzo(a,h)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11280	Fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11290	Fluorene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11320	Indeno(1,2,3-cd)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11330	Methylnaphthalene (1-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11340	Methylnaphthalene (2-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11350	Naphthalene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11360	N-Nitrosodimethylamine	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.11380	Phenanthrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 12/06/2017 until 6/30/2018

Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM10.11390	Pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	PA
Certified	Yes	SCM10.12330	Dioxane (1,4-)	GC/MS, Extract or Dir Inj, Capillary	User Defined SW 846 8270	PA
Certified	Yes	SCM10.12830	Gasoline range organic	GC/MS, P & T, Capillary Column	User Defined SW 846 8260	PA

Category: SCM11--PCDD / PCDF

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM11.00001	HpCDD (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00010	HpCDF (1,2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00020	HpCDF (1,2,3,4,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00030	HxCDD (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00040	HxCDD (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00050	HxCDD (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00060	HxCDF (1,2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00070	HxCDF (1,2,3,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00080	HxCDF (1,2,3,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00090	HxCDF (2,3,4,6,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00100	OCDD (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00110	OCDF (1,2,3,4,6,7,8,9-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00120	PeCDD (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00130	PeCDF (1,2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00140	PeCDF (2,3,4,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00150	TCDD (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00160	TCDF (2,3,7,8-)	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00170	Total HpCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00180	Total HpCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00190	Total HxCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 12/06/2017 until 6/30/2018

Laboratory Name: EUROFINS LANCASTER LABS ENVIRONMENTAL Laboratory Number: PA011 Activity ID: NLC 170004
2425 NEW HOLLAND PK
LANCASTER PA 176015994

Category: SCM11--PCDD / PCDF

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Aproved Methods	Primary State
Certified	Yes	SCM11.00200	Total HxCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00210	Total PeCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00220	Total PeCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00230	Total TCDD	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA
Certified	Yes	SCM11.00240	Total TCDF	GC/Hi-Res MS, Selected Ion Monitoring	SW-846 8290	PA

Michele M. Potter, Manager

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: KENNEDY/JENKS CONSULTANTS, INC. Laboratory Number: 11048 Activity ID: SLC 190001
214 CARNEGIE CTR STE 103
PRINCETON NJ 08540

Category: NPW03--Inorganic Parameters

Status	Code	Parameter	Technique	Approved Methods
Certified	NPW03.04250	Specific conductance	Wheatstone Bridge	SM 2510 B-11
Certified	NPW03.05020	Turbidity	Nephelometric	SM 2130 B-11

Category: NPW04--Analyze-Immed. and Continuous Monitoring

Status	Code	Parameter	Technique	Approved Methods
Certified	NPW04.00230	Oxygen (dissolved)	Membrane Electrode	SM 4500-O G-11
Certified	NPW04.00380	pH	Electrometric	SM 4500-H B-11
Certified	NPW04.00490	Temperature	Thermometric	SM 2550 B-10

Michele M. Potter

Michele M. Potter, Manager

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

State of New Jersey

Department of Environmental Protection

Certifies That

KENNEDY/JENKS CONSULTANTS, INC.

Laboratory Certification ID # 11048

having duly met the requirements of the

Regulations Governing the Certification of
Laboratories and Environmental Measurements N.J.A.C. 7:18 et. seq.

is hereby approved as a

State Certified Environmental Laboratory

to perform the analyses as indicated on the Annual Certified Parameter List which must accompany this certificate to be valid

Expires June 30, 2020

Michele M. Potter
Manager

THIS CERTIFICATE IS TO BE CONSPICUOUSLY DISPLAYED AT THE LABORATORY WITH THE ANNUAL CERTIFIED PARAMETER LIST IN A LOCATION ON THE PREMISES VISIBLE TO THE PUBLIC

JOHN BEL EDWARDS
GOVERNOR

CHUCK CARR BROWN, PH.D.
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Read Receipt Requested

AI No. 152019
Activity No. ACC20170003
LELAP Lab ID # 04165
Accreditation Year FY 2018
Renewal due FY 2020

Mr. Patrick Letterer
Pace Analytical Services LLC - Mobile Lab Services
2525 Advance Rd
Madison, Wisconsin 53718-6774

Re: Annual Scope of Accreditation

Dear Mr. Letterer:

The Louisiana Department of Environmental Quality's laboratory accreditation program, in accordance with Louisiana Administrative Code, Title 33, Part I, Subpart 3, Laboratory Accreditation, accredits this laboratory for Fiscal Year 2018. This accreditation does not constitute an endorsement of the suitability of the listed methods for any specific purpose. The laboratory is accredited for the method as identified on the application for accreditation; if the method is partially identified on the application for accreditation, the laboratory is accredited for the versions listed on the current application or referenced in the laboratory standard operating procedure.

National Environmental Laboratory Accreditation Program (NELAP) accreditation is granted **only** for those methods/analytes for which "NELAP" is indicated as the type of accreditation. "STATE" is indicated as the type of accreditation for those methods/analytes for which accreditation by the Louisiana Environmental Laboratory Accreditation Program (LELAP) is granted. Accreditation is dependent on the laboratory's successful ongoing compliance with regulations as outlined in the Louisiana Administrative Code, Title 33, Part I, Subpart 3, Laboratory Accreditation, and with the standards adopted by the NELAP Accreditation Council.

The accreditation certificate is the property of the State of Louisiana. Should your accreditation be suspended or revoked, your laboratory must return the certificate of accreditation to the department and delete any electronic copies until your accreditation status is restored.

LAC 33:I.5313.A and/or the 2009 TNI Standard require that the laboratory report include all relevant information. Therefore, the certificate number shall be placed in the upper right corner of all laboratory reports. If the test report includes results of any test for which the laboratory is not accredited, the unaccredited results must be clearly identified as such.

We request that you examine the scope of accreditation attachment for accuracy and completeness. If you find that an analyte for which you expected to be accredited is not listed, please examine your records to ensure that:

1. You have met the requirements for successful participation in proficiency test studies as outlined in LAC 33:I.4711 and in the 2009 TNI Standard.

2. In the case of accreditation by recognition, the requested analyte must be listed for the requested method and matrix on both the certificate issued by the Primary Accreditation Body ***and*** on the Louisiana application form.

If after reviewing this information, the scope and/or certificate are inaccurate, please notify us immediately.

If you have any questions, please contact your assigned assessor Grant Aucoin, Environmental Scientist at (225) 219-3301.

Sincerely,

Cheryl Sonnier Nolan
Administrator
Public Participation and Permit Support Services Division

26 May 2017
Date

CSN:PB:gra

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to

Pace Analytical Services LLC - Mobile Lab Services
2525 Advance Rd
Madison, Wisconsin 53718-6774

Agency Interest No. 152019
Activity No. ACC20170003

According to the Louisiana Administrative Code, Title 33, Part I, Subpart 3, LABORATORY ACCREDITATION, the State of Louisiana formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and agrees to adapt to any changes in the requirements. It also acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part I and the 2009 TNI Standard by which the laboratory was assessed. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status.

Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory. To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:I.4711.

Cheryl Sonnier Nolan
Administrator
Public Participation and Permit Support Services Division

Issued Date: 26 May 2017

Effective Date: July 1, 2017
Expiration Date: June 30, 2018
Certificate Number: 04165

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Pace Analytical Services LLC - Mobile Lab Services
AI Number: 152019
Activity No.: ACC20170003
Expiration Date: June 30, 2018

Effective Date: July 1, 2017

2525 Advance Rd, Madison, Wisconsin 53718-6774

Certificate Number: 04165

Air Emissions

Analyte	Method Name	Method Code	Type	AB
NONE	NONE	NONE	NONE	NONE

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1515 - Ammonia as N	EPA 350.1	10063204	NELAP	LA
1820 - Nitrate-Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
1840 - Nitrite as N	EPA 353.2, Rev.2	10067604	NELAP	LA
100007 - Acid Digestion of Sediments, Sludges, and soils	EPA 3050B	10135601	NELAP	LA
1444 - Separatory Funnel Liquid-liquid extraction	EPA 3510C	10138202	NELAP	LA
1470 - Waste Dilution	EPA 3580A	10143007	NELAP	LA
1456 - Sulfur Clean-Up	EPA 3660	10148002	NELAP	LA
2020 - Sulfuric acid/permanganate clean-up	EPA 3665A	10148808	NELAP	LA
1000 - Aluminum	EPA 6020	10156000	NELAP	LA
1005 - Antimony	EPA 6020	10156000	NELAP	LA
1010 - Arsenic	EPA 6020	10156000	NELAP	LA
1015 - Barium	EPA 6020	10156000	NELAP	LA
1020 - Beryllium	EPA 6020	10156000	NELAP	LA
1030 - Cadmium	EPA 6020	10156000	NELAP	LA
1040 - Chromium	EPA 6020	10156000	NELAP	LA
1050 - Cobalt	EPA 6020	10156000	NELAP	LA
1055 - Copper	EPA 6020	10156000	NELAP	LA
1070 - Iron	EPA 6020	10156000	NELAP	LA
1075 - Lead	EPA 6020	10156000	NELAP	LA
1090 - Manganese	EPA 6020	10156000	NELAP	LA
1095 - Mercury	EPA 6020	10156000	NELAP	LA
1100 - Molybdenum	EPA 6020	10156000	NELAP	LA
1105 - Nickel	EPA 6020	10156000	NELAP	LA
1140 - Selenium	EPA 6020	10156000	NELAP	LA
1150 - Silver	EPA 6020	10156000	NELAP	LA
1165 - Thallium	EPA 6020	10156000	NELAP	LA
1185 - Vanadium	EPA 6020	10156000	NELAP	LA
1190 - Zinc	EPA 6020	10156000	NELAP	LA
1005 - Antimony	EPA 6020A	10156408	NELAP	LA
1010 - Arsenic	EPA 6020A	10156408	NELAP	LA
1015 - Barium	EPA 6020A	10156408	NELAP	LA
1020 - Beryllium	EPA 6020A	10156408	NELAP	LA
1030 - Cadmium	EPA 6020A	10156408	NELAP	LA
1040 - Chromium	EPA 6020A	10156408	NELAP	LA
1050 - Cobalt	EPA 6020A	10156408	NELAP	LA
1055 - Copper	EPA 6020A	10156408	NELAP	LA
1075 - Lead	EPA 6020A	10156408	NELAP	LA
1090 - Manganese	EPA 6020A	10156408	NELAP	LA
1100 - Molybdenum	EPA 6020A	10156408	NELAP	LA
1105 - Nickel	EPA 6020A	10156408	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1140 - Selenium	EPA 6020A	10156408	NELAP	LA
1150 - Silver	EPA 6020A	10156408	NELAP	LA
1165 - Thallium	EPA 6020A	10156408	NELAP	LA
1185 - Vanadium	EPA 6020A	10156408	NELAP	LA
1190 - Zinc	EPA 6020A	10156408	NELAP	LA
8580 - 2,4'-DDD	EPA 8081B	10178800	NELAP	LA
8585 - 2,4'-DDE	EPA 8081B	10178800	NELAP	LA
8590 - 2,4'-DDT	EPA 8081B	10178800	NELAP	LA
7355 - 4,4'-DDD	EPA 8081B	10178800	NELAP	LA
7360 - 4,4'-DDE	EPA 8081B	10178800	NELAP	LA
7365 - 4,4'-DDT	EPA 8081B	10178800	NELAP	LA
7025 - Aldrin	EPA 8081B	10178800	NELAP	LA
7250 - Chlordane (tech.)	EPA 8081B	10178800	NELAP	LA
7470 - Dieldrin	EPA 8081B	10178800	NELAP	LA
7510 - Endosulfan I	EPA 8081B	10178800	NELAP	LA
7515 - Endosulfan II	EPA 8081B	10178800	NELAP	LA
7520 - Endosulfan sulfate	EPA 8081B	10178800	NELAP	LA
7540 - Endrin	EPA 8081B	10178800	NELAP	LA
7530 - Endrin aldehyde	EPA 8081B	10178800	NELAP	LA
7535 - Endrin ketone	EPA 8081B	10178800	NELAP	LA
7685 - Heptachlor	EPA 8081B	10178800	NELAP	LA
7690 - Heptachlor epoxide	EPA 8081B	10178800	NELAP	LA
6275 - Hexachlorobenzene	EPA 8081B	10178800	NELAP	LA
7810 - Methoxychlor	EPA 8081B	10178800	NELAP	LA
7870 - Mirex	EPA 8081B	10178800	NELAP	LA
6600 - Pentachloronitrobenzene	EPA 8081B	10178800	NELAP	LA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081B	10178800	NELAP	LA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7240 - alpha-Chlordane	EPA 8081B	10178800	NELAP	LA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7925 - cis-Nonachlor	EPA 8081B	10178800	NELAP	LA
7105 - delta-BHC	EPA 8081B	10178800	NELAP	LA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081B	10178800	NELAP	LA
7245 - gamma-Chlordane	EPA 8081B	10178800	NELAP	LA
7910 - trans-Nonachlor	EPA 8081B	10178800	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	LA
8912 - Aroclor-1262 (PCB-1262)	EPA 8082A	10179201	NELAP	LA
8913 - Aroclor-1268 (PCB-1268)	EPA 8082A	10179201	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8095	10180004	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8095	10180004	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8095	10180004	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8095	10180004	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8095	10180004	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8095	10180004	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8095	10180004	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
100604 - 3,4-Dinitrotoluene (3,4-DNT)	EPA 8095	10180004	NELAP	LA
6150 - 3,5-Dinitroaniline	EPA 8095	10180004	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8095	10180004	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8095	10180004	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8095	10180004	NELAP	LA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8095	10180004	NELAP	LA
5015 - Nitrobenzene	EPA 8095	10180004	NELAP	LA
6485 - Nitroglycerin	EPA 8095	10180004	NELAP	LA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8095	10180004	NELAP	LA
9558 - Pentaerythritoltetranitrate	EPA 8095	10180004	NELAP	LA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8095	10180004	NELAP	LA
8655 - 2,4,5-T	EPA 8151A	10183207	NELAP	LA
8545 - 2,4-D	EPA 8151A	10183207	NELAP	LA
8560 - 2,4-DB	EPA 8151A	10183207	NELAP	LA
6500 - 4-Nitrophenol	EPA 8151A	10183207	NELAP	LA
8505 - Acifluorfen	EPA 8151A	10183207	NELAP	LA
8530 - Bentazon	EPA 8151A	10183207	NELAP	LA
7145 - Bromoxynil octanate	EPA 8151A	10183207	NELAP	LA
7308 - Clopyralid	EPA 8151A	10183207	NELAP	LA
8550 - Dacthal (DCPA)	EPA 8151A	10183207	NELAP	LA
8555 - Dalapon	EPA 8151A	10183207	NELAP	LA
8595 - Dicamba	EPA 8151A	10183207	NELAP	LA
8605 - Dichloroprop (Dichlorprop)	EPA 8151A	10183207	NELAP	LA
8615 - Diclofop-methyl	EPA 8151A	10183207	NELAP	LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151A	10183207	NELAP	LA
7650 - Garlon (Triclopyr)	EPA 8151A	10183207	NELAP	LA
7775 - MCPA	EPA 8151A	10183207	NELAP	LA
100081 - MCPB	EPA 8151A	10183207	NELAP	LA
7780 - MCPP	EPA 8151A	10183207	NELAP	LA
6605 - Pentachlorophenol	EPA 8151A	10183207	NELAP	LA
8645 - Picloram	EPA 8151A	10183207	NELAP	LA
8650 - Silvex (2,4,5-TP)	EPA 8151A	10183207	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 8260B	10184802	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260B	10184802	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 8260B	10184802	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 8260B	10184802	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 8260B	10184802	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 8260B	10184802	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B	10184802	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260B	10184802	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260B	10184802	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4675 - 1,3-Dichloropropene	EPA 8260B	10184802	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260B	10184802	NELAP	LA
4665 - 2,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260B	10184802	NELAP	LA
4535 - 2-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4860 - 2-Hexanone	EPA 8260B	10184802	NELAP	LA
4540 - 4-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260B	10184802	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260B	10184802	NELAP	LA
4315 - Acetone	EPA 8260B	10184802	NELAP	LA
4375 - Benzene	EPA 8260B	10184802	NELAP	LA
4385 - Bromobenzene	EPA 8260B	10184802	NELAP	LA
4390 - Bromochloromethane	EPA 8260B	10184802	NELAP	LA
4395 - Bromodichloromethane	EPA 8260B	10184802	NELAP	LA
4400 - Bromoform	EPA 8260B	10184802	NELAP	LA
4450 - Carbon disulfide	EPA 8260B	10184802	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260B	10184802	NELAP	LA
4475 - Chlorobenzene	EPA 8260B	10184802	NELAP	LA
4575 - Chlorodibromomethane	EPA 8260B	10184802	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260B	10184802	NELAP	LA
4505 - Chloroform	EPA 8260B	10184802	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260B	10184802	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260B	10184802	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260B	10184802	NELAP	LA
4765 - Ethylbenzene	EPA 8260B	10184802	NELAP	LA
9408 - Gasoline range organics (GRO)	EPA 8260B	10184802	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8260B	10184802	NELAP	LA
4900 - Isopropylbenzene	EPA 8260B	10184802	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260B	10184802	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260B	10184802	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260B	10184802	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260B	10184802	NELAP	LA
5005 - Naphthalene	EPA 8260B	10184802	NELAP	LA
5100 - Styrene	EPA 8260B	10184802	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260B	10184802	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA 8260B	10184802	NELAP	LA
5140 - Toluene	EPA 8260B	10184802	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260B	10184802	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260B	10184802	NELAP	LA
5235 - Vinyl chloride	EPA 8260B	10184802	NELAP	LA
5260 - Xylene (total)	EPA 8260B	10184802	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4680 - cis-1,3-Dichloropropene	EPA 8260B	10184802	NELAP	LA
5240 - m+p-xylene	EPA 8260B	10184802	NELAP	LA
5245 - m-Xylene	EPA 8260B	10184802	NELAP	LA
4435 - n-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4855 - n-Hexane	EPA 8260B	10184802	NELAP	LA
5090 - n-Propylbenzene	EPA 8260B	10184802	NELAP	LA
5250 - o-Xylene	EPA 8260B	10184802	NELAP	LA
5255 - p-Xylene	EPA 8260B	10184802	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 8260B	10184802	NELAP	LA
4310 - Acetochlor	EPA 8270C	10185805	NELAP	LA
7005 - Alachlor	EPA 8270C	10185805	NELAP	LA
7035 - Ametryn	EPA 8270C	10185805	NELAP	LA
7065 - Atrazine	EPA 8270C	10185805	NELAP	LA
8525 - Benfluralin (Benefin)	EPA 8270C	10185805	NELAP	LA
7130 - Bromacil	EPA 8270C	10185805	NELAP	LA
7175 - Butylate	EPA 8270C	10185805	NELAP	LA
7195 - Carbaryl (Sevin)	EPA 8270C	10185805	NELAP	LA
7205 - Carbofuran (Furaden)	EPA 8270C	10185805	NELAP	LA
7310 - Chlorothalonil (Daconil)	EPA 8270C	10185805	NELAP	LA
7300 - Chlorpyrifos	EPA 8270C	10185805	NELAP	LA
7340 - Cyanazine	EPA 8270C	10185805	NELAP	LA
7377 - Deethyl atrazine (Desethyl atrazine)	EPA 8270C	10185805	NELAP	LA
7382 - Deisopropyl atrazine	EPA 8270C	10185805	NELAP	LA
7410 - Diazinon	EPA 8270C	10185805	NELAP	LA
7425 - Dichlobenil (Casoron)	EPA 8270C	10185805	NELAP	LA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8270C	10185805	NELAP	LA
7473 - Dimethazone (Clomazone)	EPA 8270C	10185805	NELAP	LA
7474 - Dimetheneamid	EPA 8270C	10185805	NELAP	LA
7475 - Dimethoate	EPA 8270C	10185805	NELAP	LA
8625 - Disulfoton	EPA 8270C	10185805	NELAP	LA
7555 - EPTC (Eptam, s-ethyl-dipropyl thio carbamate)	EPA 8270C	10185805	NELAP	LA
7560 - Ethalfluralin (Sonalan)	EPA 8270C	10185805	NELAP	LA
7565 - Ethion	EPA 8270C	10185805	NELAP	LA
7570 - Ethoprop	EPA 8270C	10185805	NELAP	LA
7610 - Fenuron	EPA 8270C	10185805	NELAP	LA
7640 - Fonophos (Fonofos)	EPA 8270C	10185805	NELAP	LA
7705 - Hexazinone	EPA 8270C	10185805	NELAP	LA
100079 - Isofenphos	EPA 8270C	10185805	NELAP	LA
7765 - Linuron (Lorox)	EPA 8270C	10185805	NELAP	LA
7770 - Malathion	EPA 8270C	10185805	NELAP	LA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270C	10185805	NELAP	LA
7835 - Metolachlor	EPA 8270C	10185805	NELAP	LA
7845 - Metribuzin	EPA 8270C	10185805	NELAP	LA
6440 - Napropamide	EPA 8270C	10185805	NELAP	LA
7930 - Norflurazon	EPA 8270C	10185805	NELAP	LA
7955 - Parathion, ethyl	EPA 8270C	10185805	NELAP	LA
7960 - Pendimethalin(Penoxalin)	EPA 8270C	10185805	NELAP	LA
7985 - Phorate	EPA 8270C	10185805	NELAP	LA
8000 - Phosmet (Imidan)	EPA 8270C	10185805	NELAP	LA
100083 - Prodiamine	EPA 8270C	10185805	NELAP	LA
100080 - Profenofos	EPA 8270C	10185805	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
8025 - Promecarb	EPA 8270C	10185805	NELAP	LA
8035 - Prometon	EPA 8270C	10185805	NELAP	LA
8040 - Prometryn	EPA 8270C	10185805	NELAP	LA
8045 - Propachlor (Ramrod)	EPA 8270C	10185805	NELAP	LA
8050 - Propanil	EPA 8270C	10185805	NELAP	LA
8060 - Propazine	EPA 8270C	10185805	NELAP	LA
8075 - Propham	EPA 8270C	10185805	NELAP	LA
8080 - Propoxur (Baygon)	EPA 8270C	10185805	NELAP	LA
8120 - Siduron	EPA 8270C	10185805	NELAP	LA
8125 - Simazine	EPA 8270C	10185805	NELAP	LA
8130 - Simetryn	EPA 8270C	10185805	NELAP	LA
8175 - Tebuthiuron	EPA 8270C	10185805	NELAP	LA
8180 - Terbacil	EPA 8270C	10185805	NELAP	LA
8185 - Terbufos	EPA 8270C	10185805	NELAP	LA
8190 - Terbuthylazine	EPA 8270C	10185805	NELAP	LA
8195 - Terbutryn (Igran)	EPA 8270C	10185805	NELAP	LA
8260 - Triallate	EPA 8270C	10185805	NELAP	LA
8295 - Trifluralin (Treflan)	EPA 8270C	10185805	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270D	10186002	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D	10186002	NELAP	LA
8655 - 2,4,5-T	EPA 8270D	10186002	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8270D	10186002	NELAP	LA
8545 - 2,4-D	EPA 8270D	10186002	NELAP	LA
8560 - 2,4-DB	EPA 8270D	10186002	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8270D	10186002	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8270D	10186002	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8270D	10186002	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8270D	10186002	NELAP	LA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8270D	10186002	NELAP	LA
4310 - Acetochlor	EPA 8270D	10186002	NELAP	LA
8505 - Acifluorfen	EPA 8270D	10186002	NELAP	LA
7005 - Alachlor	EPA 8270D	10186002	NELAP	LA
7035 - Ametryn	EPA 8270D	10186002	NELAP	LA
7065 - Atrazine	EPA 8270D	10186002	NELAP	LA
8525 - Benfluralin (Benefin)	EPA 8270D	10186002	NELAP	LA
8530 - Bentazon	EPA 8270D	10186002	NELAP	LA
7130 - Bromacil	EPA 8270D	10186002	NELAP	LA
7145 - Bromoxynil octanate	EPA 8270D	10186002	NELAP	LA
7175 - Butylate	EPA 8270D	10186002	NELAP	LA
7190 - Captan	EPA 8270D	10186002	NELAP	LA
7195 - Carbaryl (Sevin)	EPA 8270D	10186002	NELAP	LA
7205 - Carbofuran (Furaden)	EPA 8270D	10186002	NELAP	LA
8540 - Chloramben	EPA 8270D	10186002	NELAP	LA
7310 - Chlorothalonil (Daconil)	EPA 8270D	10186002	NELAP	LA
7300 - Chlorpyrifos	EPA 8270D	10186002	NELAP	LA
7308 - Clopyralid	EPA 8270D	10186002	NELAP	LA
7340 - Cyanazine	EPA 8270D	10186002	NELAP	LA
8550 - Dacthal (DCPA)	EPA 8270D	10186002	NELAP	LA
8555 - Dalapon	EPA 8270D	10186002	NELAP	LA
7377 - Deethyl atrazine (Desethyl atrazine)	EPA 8270D	10186002	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7382 - Deisopropyl atrazine	EPA 8270D	10186002	NELAP	LA
7410 - Diazinon	EPA 8270D	10186002	NELAP	LA
8595 - Dicamba	EPA 8270D	10186002	NELAP	LA
7425 - Dichlobenil (Casoron)	EPA 8270D	10186002	NELAP	LA
8605 - Dichloroprop (Dichlorprop)	EPA 8270D	10186002	NELAP	LA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8270D	10186002	NELAP	LA
8615 - Diclofop-methyl	EPA 8270D	10186002	NELAP	LA
7473 - Dimethazone (Clomazone)	EPA 8270D	10186002	NELAP	LA
7474 - Dimetheneamid	EPA 8270D	10186002	NELAP	LA
7475 - Dimethoate	EPA 8270D	10186002	NELAP	LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270D	10186002	NELAP	LA
8625 - Disulfoton	EPA 8270D	10186002	NELAP	LA
7555 - EPTC (Eptam, s-ethyl-dipropyl thio carbamate)	EPA 8270D	10186002	NELAP	LA
7560 - Ethalfluralin (Sonalan)	EPA 8270D	10186002	NELAP	LA
7565 - Ethion	EPA 8270D	10186002	NELAP	LA
7570 - Ethoprop	EPA 8270D	10186002	NELAP	LA
7610 - Fenuron	EPA 8270D	10186002	NELAP	LA
7640 - Fonophos (Fonofos)	EPA 8270D	10186002	NELAP	LA
7650 - Garlon (Triclopyr)	EPA 8270D	10186002	NELAP	LA
7705 - Hexazinone	EPA 8270D	10186002	NELAP	LA
100079 - Isofenphos	EPA 8270D	10186002	NELAP	LA
7765 - Linuron (Lorox)	EPA 8270D	10186002	NELAP	LA
7775 - MCPA	EPA 8270D	10186002	NELAP	LA
100081 - MCPB	EPA 8270D	10186002	NELAP	LA
7780 - MCPP	EPA 8270D	10186002	NELAP	LA
7770 - Malathion	EPA 8270D	10186002	NELAP	LA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270D	10186002	NELAP	LA
7835 - Metolachlor	EPA 8270D	10186002	NELAP	LA
7845 - Metribuzin	EPA 8270D	10186002	NELAP	LA
6440 - Napropamide	EPA 8270D	10186002	NELAP	LA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP	LA
7930 - Norflurazon	EPA 8270D	10186002	NELAP	LA
7955 - Parathion, ethyl	EPA 8270D	10186002	NELAP	LA
7960 - Pendimethalin(Penoxalin)	EPA 8270D	10186002	NELAP	LA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP	LA
7980 - Perthane	EPA 8270D	10186002	NELAP	LA
7985 - Phorate	EPA 8270D	10186002	NELAP	LA
8000 - Phosmet (Imidan)	EPA 8270D	10186002	NELAP	LA
8645 - Picloram	EPA 8270D	10186002	NELAP	LA
100083 - Prodiamine	EPA 8270D	10186002	NELAP	LA
100080 - Profenofos	EPA 8270D	10186002	NELAP	LA
8025 - Promecarb	EPA 8270D	10186002	NELAP	LA
8035 - Prometon	EPA 8270D	10186002	NELAP	LA
8040 - Prometryn	EPA 8270D	10186002	NELAP	LA
8045 - Propachlor (Ramrod)	EPA 8270D	10186002	NELAP	LA
8050 - Propanil	EPA 8270D	10186002	NELAP	LA
8060 - Propazine	EPA 8270D	10186002	NELAP	LA
8075 - Propham	EPA 8270D	10186002	NELAP	LA
8080 - Propoxur (Baygon)	EPA 8270D	10186002	NELAP	LA
8120 - Siduron	EPA 8270D	10186002	NELAP	LA
8650 - Silvex (2,4,5-TP)	EPA 8270D	10186002	NELAP	LA
8125 - Simazine	EPA 8270D	10186002	NELAP	LA
8130 - Simetryn	EPA 8270D	10186002	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
8160 - Sumithrin (Phenothrin)	EPA 8270D	10186002	NELAP	LA
8175 - Tebuthiuron	EPA 8270D	10186002	NELAP	LA
8180 - Terbacil	EPA 8270D	10186002	NELAP	LA
8185 - Terbufos	EPA 8270D	10186002	NELAP	LA
8190 - Terbuthylazine	EPA 8270D	10186002	NELAP	LA
8195 - Terbutryn (Igran)	EPA 8270D	10186002	NELAP	LA
8260 - Triallate	EPA 8270D	10186002	NELAP	LA
8295 - Trifluralin (Treflan)	EPA 8270D	10186002	NELAP	LA
7710 - 3-Hydroxycarbofuran	EPA 8318A	10188600	NELAP	LA
7010 - Aldicarb (Temik)	EPA 8318A	10188600	NELAP	LA
7015 - Aldicarb sulfone	EPA 8318A	10188600	NELAP	LA
7195 - Carbaryl (Sevin)	EPA 8318A	10188600	NELAP	LA
7205 - Carbofuran (Furaden)	EPA 8318A	10188600	NELAP	LA
7800 - Methiocarb (Mesurol)	EPA 8318A	10188600	NELAP	LA
7805 - Methomyl (Lannate)	EPA 8318A	10188600	NELAP	LA
8080 - Propoxur (Baygon)	EPA 8318A	10188600	NELAP	LA
8655 - 2,4,5-T	EPA 8321B	10189205	NELAP	LA
8545 - 2,4-D	EPA 8321B	10189205	NELAP	LA
8560 - 2,4-DB	EPA 8321B	10189205	NELAP	LA
8600 - 3,5-Dichlorobenzoic acid	EPA 8321B	10189205	NELAP	LA
6500 - 4-Nitrophenol	EPA 8321B	10189205	NELAP	LA
8505 - Acifluorfen	EPA 8321B	10189205	NELAP	LA
8530 - Bentazon	EPA 8321B	10189205	NELAP	LA
7130 - Bromacil	EPA 8321B	10189205	NELAP	LA
7145 - Bromoxynil octanate	EPA 8321B	10189205	NELAP	LA
7275 - Chloropropham	EPA 8321B	10189205	NELAP	LA
7308 - Clopyralid	EPA 8321B	10189205	NELAP	LA
8595 - Dicamba	EPA 8321B	10189205	NELAP	LA
8605 - Dichloroprop (Dichlorprop)	EPA 8321B	10189205	NELAP	LA
8615 - Diclofop-methyl	EPA 8321B	10189205	NELAP	LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8321B	10189205	NELAP	LA
7505 - Diuron	EPA 8321B	10189205	NELAP	LA
7610 - Fenuron	EPA 8321B	10189205	NELAP	LA
7630 - Fluometuron	EPA 8321B	10189205	NELAP	LA
7650 - Garlon (Triclopyr)	EPA 8321B	10189205	NELAP	LA
100091 - Imazethapyr	EPA 8321B	10189205	NELAP	LA
7765 - Linuron (Lorox)	EPA 8321B	10189205	NELAP	LA
7775 - MCPA	EPA 8321B	10189205	NELAP	LA
100081 - MCPB	EPA 8321B	10189205	NELAP	LA
7780 - MCPP	EPA 8321B	10189205	NELAP	LA
7885 - Monuron	EPA 8321B	10189205	NELAP	LA
7915 - Neburon	EPA 8321B	10189205	NELAP	LA
7940 - Oxamyl	EPA 8321B	10189205	NELAP	LA
6605 - Pentachlorophenol	EPA 8321B	10189205	NELAP	LA
8645 - Picloram	EPA 8321B	10189205	NELAP	LA
8075 - Propham	EPA 8321B	10189205	NELAP	LA
8120 - Siduron	EPA 8321B	10189205	NELAP	LA
8650 - Silvex (2,4,5-TP)	EPA 8321B	10189205	NELAP	LA
8175 - Tebuthiuron	EPA 8321B	10189205	NELAP	LA
1810 - Nitrate as N	EPA 353.2 (calc.)	10238809	NELAP	LA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP	LA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP	LA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D SIM	10242509	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5605 - Benzo(e)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D SIM	10242509	NELAP	LA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP	LA
6608 - Perylene	EPA 8270D SIM	10242509	NELAP	LA
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP	LA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP	LA
1745 - Free liquid	EPA 9095B	10245600	NELAP	LA
100260 - Microextraction of Organics in Water	EPA 3511	10279808	NELAP	LA
1960 - Residue-nonfilterable (TSS)	SM 2540 D, 20th ED	20050800	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
1820 - Nitrate-Nitrite	SM 4500-$NO3^-$ G, 17th ED	2347	NELAP	LA
1515 - Ammonia as N	EPA 350.1	10063204	NELAP	LA
1820 - Nitrate-Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
1840 - Nitrite as N	EPA 353.2, Rev.2	10067604	NELAP	LA
1466 - Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311	10118806	NELAP	LA
1460 - Synthetic Precipitation Leaching Procedure	EPA 1312	10119003	NELAP	LA
100007 - Acid Digestion of Sediments, Sludges, and soils	EPA 3050B	10135601	NELAP	LA
100219 - Microscale Solvent Extraction	EPA 3570	10142708	NELAP	LA
1470 - Waste Dilution	EPA 3580A	10143007	NELAP	LA
1456 - Sulfur Clean-Up	EPA 3660	10148002	NELAP	LA
2020 - Sulfuric acid/permanganate clean-up	EPA 3665A	10148808	NELAP	LA
1005 - Antimony	EPA 6020	10156000	NELAP	LA
1010 - Arsenic	EPA 6020	10156000	NELAP	LA
1015 - Barium	EPA 6020	10156000	NELAP	LA
1020 - Beryllium	EPA 6020	10156000	NELAP	LA
1030 - Cadmium	EPA 6020	10156000	NELAP	LA
1040 - Chromium	EPA 6020	10156000	NELAP	LA
1050 - Cobalt	EPA 6020	10156000	NELAP	LA
1055 - Copper	EPA 6020	10156000	NELAP	LA
1075 - Lead	EPA 6020	10156000	NELAP	LA
1090 - Manganese	EPA 6020	10156000	NELAP	LA
1100 - Molybdenum	EPA 6020	10156000	NELAP	LA
1105 - Nickel	EPA 6020	10156000	NELAP	LA
1140 - Selenium	EPA 6020	10156000	NELAP	LA
1150 - Silver	EPA 6020	10156000	NELAP	LA
1165 - Thallium	EPA 6020	10156000	NELAP	LA
1185 - Vanadium	EPA 6020	10156000	NELAP	LA
1190 - Zinc	EPA 6020	10156000	NELAP	LA
1005 - Antimony	EPA 6020A	10156408	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
1010 - Arsenic	EPA 6020A	10156408	NELAP	LA
1015 - Barium	EPA 6020A	10156408	NELAP	LA
1020 - Beryllium	EPA 6020A	10156408	NELAP	LA
1030 - Cadmium	EPA 6020A	10156408	NELAP	LA
1040 - Chromium	EPA 6020A	10156408	NELAP	LA
1050 - Cobalt	EPA 6020A	10156408	NELAP	LA
1055 - Copper	EPA 6020A	10156408	NELAP	LA
1075 - Lead	EPA 6020A	10156408	NELAP	LA
1090 - Manganese	EPA 6020A	10156408	NELAP	LA
1100 - Molybdenum	EPA 6020A	10156408	NELAP	LA
1105 - Nickel	EPA 6020A	10156408	NELAP	LA
1140 - Selenium	EPA 6020A	10156408	NELAP	LA
1150 - Silver	EPA 6020A	10156408	NELAP	LA
1165 - Thallium	EPA 6020A	10156408	NELAP	LA
1185 - Vanadium	EPA 6020A	10156408	NELAP	LA
1190 - Zinc	EPA 6020A	10156408	NELAP	LA
1005 - Antimony	EPA 6200	10156602	NELAP	LA
1010 - Arsenic	EPA 6200	10156602	NELAP	LA
1015 - Barium	EPA 6200	10156602	NELAP	LA
1030 - Cadmium	EPA 6200	10156602	NELAP	LA
1040 - Chromium	EPA 6200	10156602	NELAP	LA
1050 - Cobalt	EPA 6200	10156602	NELAP	LA
1055 - Copper	EPA 6200	10156602	NELAP	LA
1070 - Iron	EPA 6200	10156602	NELAP	LA
1075 - Lead	EPA 6200	10156602	NELAP	LA
1090 - Manganese	EPA 6200	10156602	NELAP	LA
1095 - Mercury	EPA 6200	10156602	NELAP	LA
1100 - Molybdenum	EPA 6200	10156602	NELAP	LA
1105 - Nickel	EPA 6200	10156602	NELAP	LA
1125 - Potassium	EPA 6200	10156602	NELAP	LA
1133 - Rubidium	EPA 6200	10156602	NELAP	LA
1140 - Selenium	EPA 6200	10156602	NELAP	LA
1150 - Silver	EPA 6200	10156602	NELAP	LA
1160 - Strontium	EPA 6200	10156602	NELAP	LA
1165 - Thallium	EPA 6200	10156602	NELAP	LA
1175 - Tin	EPA 6200	10156602	NELAP	LA
1180 - Titanium	EPA 6200	10156602	NELAP	LA
1185 - Vanadium	EPA 6200	10156602	NELAP	LA
1190 - Zinc	EPA 6200	10156602	NELAP	LA
1192 - Zirconium	EPA 6200	10156602	NELAP	LA
9369 - Diesel range organics (DRO)	EPA 8015B	10173601	NELAP	LA
8580 - 2,4'-DDD	EPA 8081B	10178800	NELAP	LA
8585 - 2,4'-DDE	EPA 8081B	10178800	NELAP	LA
8590 - 2,4'-DDT	EPA 8081B	10178800	NELAP	LA
7355 - 4,4'-DDD	EPA 8081B	10178800	NELAP	LA
7360 - 4,4'-DDE	EPA 8081B	10178800	NELAP	LA
7365 - 4,4'-DDT	EPA 8081B	10178800	NELAP	LA
7025 - Aldrin	EPA 8081B	10178800	NELAP	LA
7250 - Chlordane (tech.)	EPA 8081B	10178800	NELAP	LA
7470 - Dieldrin	EPA 8081B	10178800	NELAP	LA
7510 - Endosulfan I	EPA 8081B	10178800	NELAP	LA
7515 - Endosulfan II	EPA 8081B	10178800	NELAP	LA
7520 - Endosulfan sulfate	EPA 8081B	10178800	NELAP	LA
7540 - Endrin	EPA 8081B	10178800	NELAP	LA
7530 - Endrin aldehyde	EPA 8081B	10178800	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
7535 - Endrin ketone	EPA 8081B	10178800	NELAP	LA
7685 - Heptachlor	EPA 8081B	10178800	NELAP	LA
7690 - Heptachlor epoxide	EPA 8081B	10178800	NELAP	LA
6275 - Hexachlorobenzene	EPA 8081B	10178800	NELAP	LA
7810 - Methoxychlor	EPA 8081B	10178800	NELAP	LA
7870 - Mirex	EPA 8081B	10178800	NELAP	LA
6600 - Pentachloronitrobenzene	EPA 8081B	10178800	NELAP	LA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081B	10178800	NELAP	LA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7240 - alpha-Chlordane	EPA 8081B	10178800	NELAP	LA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	LA
7925 - cis-Nonachlor	EPA 8081B	10178800	NELAP	LA
7105 - delta-BHC	EPA 8081B	10178800	NELAP	LA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081B	10178800	NELAP	LA
7245 - gamma-Chlordane	EPA 8081B	10178800	NELAP	LA
7910 - trans-Nonachlor	EPA 8081B	10178800	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	LA
8912 - Aroclor-1262 (PCB-1262)	EPA 8082A	10179201	NELAP	LA
8913 - Aroclor-1268 (PCB-1268)	EPA 8082A	10179201	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8095	10180004	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8095	10180004	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8095	10180004	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8095	10180004	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8095	10180004	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8095	10180004	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8095	10180004	NELAP	LA
100604 - 3,4-Dinitrotoluene (3,4-DNT)	EPA 8095	10180004	NELAP	LA
6150 - 3,5-Dinitroaniline	EPA 8095	10180004	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8095	10180004	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8095	10180004	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8095	10180004	NELAP	LA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8095	10180004	NELAP	LA
5015 - Nitrobenzene	EPA 8095	10180004	NELAP	LA
6485 - Nitroglycerin	EPA 8095	10180004	NELAP	LA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8095	10180004	NELAP	LA
9558 - Pentaerythritoltetranitrate	EPA 8095	10180004	NELAP	LA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8095	10180004	NELAP	LA
8655 - 2,4,5-T	EPA 8151A	10183207	NELAP	LA
8545 - 2,4-D	EPA 8151A	10183207	NELAP	LA
8560 - 2,4-DB	EPA 8151A	10183207	NELAP	LA
6500 - 4-Nitrophenol	EPA 8151A	10183207	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
8505 - Acifluorfen	EPA 8151A	10183207	NELAP	LA
8530 - Bentazon	EPA 8151A	10183207	NELAP	LA
7145 - Bromoxynil octanate	EPA 8151A	10183207	NELAP	LA
8540 - Chloramben	EPA 8151A	10183207	NELAP	LA
7308 - Clopyralid	EPA 8151A	10183207	NELAP	LA
8550 - Dacthal (DCPA)	EPA 8151A	10183207	NELAP	LA
8555 - Dalapon	EPA 8151A	10183207	NELAP	LA
8595 - Dicamba	EPA 8151A	10183207	NELAP	LA
8605 - Dichloroprop (Dichlorprop)	EPA 8151A	10183207	NELAP	LA
8615 - Diclofop-methyl	EPA 8151A	10183207	NELAP	LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151A	10183207	NELAP	LA
7650 - Garlon (Triclopyr)	EPA 8151A	10183207	NELAP	LA
7775 - MCPA	EPA 8151A	10183207	NELAP	LA
100081 - MCPB	EPA 8151A	10183207	NELAP	LA
7780 - MCPP	EPA 8151A	10183207	NELAP	LA
6605 - Pentachlorophenol	EPA 8151A	10183207	NELAP	LA
8645 - Picloram	EPA 8151A	10183207	NELAP	LA
8650 - Silvex (2,4,5-TP)	EPA 8151A	10183207	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 8260B	10184802	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260B	10184802	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 8260B	10184802	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 8260B	10184802	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 8260B	10184802	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 8260B	10184802	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B	10184802	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260B	10184802	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260B	10184802	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4675 - 1,3-Dichloropropene	EPA 8260B	10184802	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260B	10184802	NELAP	LA
4665 - 2,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260B	10184802	NELAP	LA
4535 - 2-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4860 - 2-Hexanone	EPA 8260B	10184802	NELAP	LA
4540 - 4-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260B	10184802	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260B	10184802	NELAP	LA
4315 - Acetone	EPA 8260B	10184802	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
4375 - Benzene	EPA 8260B	10184802	NELAP	LA
4385 - Bromobenzene	EPA 8260B	10184802	NELAP	LA
4390 - Bromochloromethane	EPA 8260B	10184802	NELAP	LA
4395 - Bromodichloromethane	EPA 8260B	10184802	NELAP	LA
4400 - Bromoform	EPA 8260B	10184802	NELAP	LA
4450 - Carbon disulfide	EPA 8260B	10184802	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260B	10184802	NELAP	LA
4475 - Chlorobenzene	EPA 8260B	10184802	NELAP	LA
4575 - Chlorodibromomethane	EPA 8260B	10184802	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260B	10184802	NELAP	LA
4505 - Chloroform	EPA 8260B	10184802	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260B	10184802	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260B	10184802	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260B	10184802	NELAP	LA
4765 - Ethylbenzene	EPA 8260B	10184802	NELAP	LA
9408 - Gasoline range organics (GRO)	EPA 8260B	10184802	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8260B	10184802	NELAP	LA
4900 - Isopropylbenzene	EPA 8260B	10184802	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260B	10184802	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260B	10184802	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260B	10184802	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260B	10184802	NELAP	LA
5005 - Naphthalene	EPA 8260B	10184802	NELAP	LA
5100 - Styrene	EPA 8260B	10184802	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260B	10184802	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA 8260B	10184802	NELAP	LA
5140 - Toluene	EPA 8260B	10184802	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260B	10184802	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260B	10184802	NELAP	LA
5235 - Vinyl chloride	EPA 8260B	10184802	NELAP	LA
5260 - Xylene (total)	EPA 8260B	10184802	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 8260B	10184802	NELAP	LA
5240 - m+p-xylene	EPA 8260B	10184802	NELAP	LA
5245 - m-Xylene	EPA 8260B	10184802	NELAP	LA
4435 - n-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4855 - n-Hexane	EPA 8260B	10184802	NELAP	LA
5090 - n-Propylbenzene	EPA 8260B	10184802	NELAP	LA
5250 - o-Xylene	EPA 8260B	10184802	NELAP	LA
5255 - p-Xylene	EPA 8260B	10184802	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 8260B	10184802	NELAP	LA
4310 - Acetochlor	EPA 8270C	10185805	NELAP	LA
7005 - Alachlor	EPA 8270C	10185805	NELAP	LA
7035 - Ametryn	EPA 8270C	10185805	NELAP	LA
7065 - Atrazine	EPA 8270C	10185805	NELAP	LA
8525 - Benfluralin (Benefin)	EPA 8270C	10185805	NELAP	LA
7130 - Bromacil	EPA 8270C	10185805	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
7175 - Butylate	EPA 8270C	10185805	NELAP	LA
7195 - Carbaryl (Sevin)	EPA 8270C	10185805	NELAP	LA
7205 - Carbofuran (Furaden)	EPA 8270C	10185805	NELAP	LA
7310 - Chlorothalonil (Daconil)	EPA 8270C	10185805	NELAP	LA
7300 - Chlorpyrifos	EPA 8270C	10185805	NELAP	LA
7340 - Cyanazine	EPA 8270C	10185805	NELAP	LA
7377 - Deethyl atrazine (Desethyl atrazine)	EPA 8270C	10185805	NELAP	LA
7382 - Deisopropyl atrazine	EPA 8270C	10185805	NELAP	LA
7410 - Diazinon	EPA 8270C	10185805	NELAP	LA
7425 - Dichlobenil (Casoron)	EPA 8270C	10185805	NELAP	LA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8270C	10185805	NELAP	LA
7473 - Dimethazone (Clomazone)	EPA 8270C	10185805	NELAP	LA
7474 - Dimetheneamid	EPA 8270C	10185805	NELAP	LA
7475 - Dimethoate	EPA 8270C	10185805	NELAP	LA
8625 - Disulfoton	EPA 8270C	10185805	NELAP	LA
7555 - EPTC (Eptam, s-ethyl-dipropyl thio carbamate)	EPA 8270C	10185805	NELAP	LA
7560 - Ethalfluralin (Sonalan)	EPA 8270C	10185805	NELAP	LA
7565 - Ethion	EPA 8270C	10185805	NELAP	LA
7570 - Ethoprop	EPA 8270C	10185805	NELAP	LA
7610 - Fenuron	EPA 8270C	10185805	NELAP	LA
7640 - Fonophos (Fonofos)	EPA 8270C	10185805	NELAP	LA
7705 - Hexazinone	EPA 8270C	10185805	NELAP	LA
100079 - Isofenphos	EPA 8270C	10185805	NELAP	LA
7765 - Linuron (Lorox)	EPA 8270C	10185805	NELAP	LA
7770 - Malathion	EPA 8270C	10185805	NELAP	LA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270C	10185805	NELAP	LA
7835 - Metolachlor	EPA 8270C	10185805	NELAP	LA
7845 - Metribuzin	EPA 8270C	10185805	NELAP	LA
6440 - Napropamide	EPA 8270C	10185805	NELAP	LA
7930 - Norflurazon	EPA 8270C	10185805	NELAP	LA
7955 - Parathion, ethyl	EPA 8270C	10185805	NELAP	LA
7960 - Pendimethalin(Penoxalin)	EPA 8270C	10185805	NELAP	LA
7985 - Phorate	EPA 8270C	10185805	NELAP	LA
8000 - Phosmet (Imidan)	EPA 8270C	10185805	NELAP	LA
100083 - Prodiamine	EPA 8270C	10185805	NELAP	LA
100080 - Profenofos	EPA 8270C	10185805	NELAP	LA
8025 - Promecarb	EPA 8270C	10185805	NELAP	LA
8035 - Prometon	EPA 8270C	10185805	NELAP	LA
8040 - Prometryn	EPA 8270C	10185805	NELAP	LA
8045 - Propachlor (Ramrod)	EPA 8270C	10185805	NELAP	LA
8050 - Propanil	EPA 8270C	10185805	NELAP	LA
8060 - Propazine	EPA 8270C	10185805	NELAP	LA
8075 - Propham	EPA 8270C	10185805	NELAP	LA
8080 - Propoxur (Baygon)	EPA 8270C	10185805	NELAP	LA
8120 - Siduron	EPA 8270C	10185805	NELAP	LA
8125 - Simazine	EPA 8270C	10185805	NELAP	LA
8130 - Simetryn	EPA 8270C	10185805	NELAP	LA
8175 - Tebuthiuron	EPA 8270C	10185805	NELAP	LA
8180 - Terbacil	EPA 8270C	10185805	NELAP	LA
8185 - Terbufos	EPA 8270C	10185805	NELAP	LA
8190 - Terbuthylazine	EPA 8270C	10185805	NELAP	LA
8195 - Terbutryn (Igran)	EPA 8270C	10185805	NELAP	LA
8260 - Triallate	EPA 8270C	10185805	NELAP	LA
8295 - Trifluralin (Treflan)	EPA 8270C	10185805	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270D	10186002	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D	10186002	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	LA
8655 - 2,4,5-T	EPA 8270D	10186002	NELAP	LA
6835 - 2,4,5-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
9643 - 2,4,6-Tribromophenol	EPA 8270D	10186002	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8270D	10186002	NELAP	LA
8545 - 2,4-D	EPA 8270D	10186002	NELAP	LA
8560 - 2,4-DB	EPA 8270D	10186002	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 8270D	10186002	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 8270D	10186002	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	LA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8270D	10186002	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 8270D	10186002	NELAP	LA
5800 - 2-Chlorophenol	EPA 8270D	10186002	NELAP	LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270D	10186002	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270D	10186002	NELAP	LA
6460 - 2-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6490 - 2-Nitrophenol	EPA 8270D	10186002	NELAP	LA
9507 - 2-Nitrotoluene	EPA 8270D	10186002	NELAP	LA
5945 - 3,3'-Dichlorobenzidine	EPA 8270D	10186002	NELAP	LA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270D	10186002	NELAP	LA
6465 - 3-Nitroaniline	EPA 8270D	10186002	NELAP	LA
9510 - 3-Nitrotoluene	EPA 8270D	10186002	NELAP	LA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8270D	10186002	NELAP	LA
5660 - 4-Bromophenyl phenyl ether	EPA 8270D	10186002	NELAP	LA
5700 - 4-Chloro-3-methylphenol	EPA 8270D	10186002	NELAP	LA
5745 - 4-Chloroaniline	EPA 8270D	10186002	NELAP	LA
5825 - 4-Chlorophenyl phenylether	EPA 8270D	10186002	NELAP	LA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270D	10186002	NELAP	LA
6470 - 4-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP	LA
9513 - 4-Nitrotoluene	EPA 8270D	10186002	NELAP	LA
5500 - Acenaphthene	EPA 8270D	10186002	NELAP	LA
5505 - Acenaphthylene	EPA 8270D	10186002	NELAP	LA
4310 - Acetochlor	EPA 8270D	10186002	NELAP	LA
5510 - Acetophenone	EPA 8270D	10186002	NELAP	LA
8505 - Acifluorfen	EPA 8270D	10186002	NELAP	LA
7005 - Alachlor	EPA 8270D	10186002	NELAP	LA
7035 - Ametryn	EPA 8270D	10186002	NELAP	LA
5555 - Anthracene	EPA 8270D	10186002	NELAP	LA
7065 - Atrazine	EPA 8270D	10186002	NELAP	LA
8525 - Benfluralin (Benefin)	EPA 8270D	10186002	NELAP	LA
8530 - Bentazon	EPA 8270D	10186002	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D	10186002	NELAP	LA
5570 - Benzaldehyde	EPA 8270D	10186002	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
5580 - Benzo(a)pyrene	EPA 8270D	10186002	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D	10186002	NELAP	LA
5605 - Benzo(e)pyrene	EPA 8270D	10186002	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D	10186002	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D	10186002	NELAP	LA
5640 - Biphenyl	EPA 8270D	10186002	NELAP	LA
7130 - Bromacil	EPA 8270D	10186002	NELAP	LA
7145 - Bromoxynil octanate	EPA 8270D	10186002	NELAP	LA
5670 - Butyl benzyl phthalate	EPA 8270D	10186002	NELAP	LA
7175 - Butylate	EPA 8270D	10186002	NELAP	LA
7180 - Caprolactam	EPA 8270D	10186002	NELAP	LA
7190 - Captan	EPA 8270D	10186002	NELAP	LA
7195 - Carbaryl (Sevin)	EPA 8270D	10186002	NELAP	LA
5680 - Carbazole	EPA 8270D	10186002	NELAP	LA
7205 - Carbofuran (Furaden)	EPA 8270D	10186002	NELAP	LA
8540 - Chloramben	EPA 8270D	10186002	NELAP	LA
7310 - Chlorothalonil (Daconil)	EPA 8270D	10186002	NELAP	LA
7300 - Chlorpyrifos	EPA 8270D	10186002	NELAP	LA
5855 - Chrysene	EPA 8270D	10186002	NELAP	LA
7308 - Clopyralid	EPA 8270D	10186002	NELAP	LA
7340 - Cyanazine	EPA 8270D	10186002	NELAP	LA
8550 - Dacthal (DCPA)	EPA 8270D	10186002	NELAP	LA
8555 - Dalapon	EPA 8270D	10186002	NELAP	LA
7377 - Deethyl atrazine (Desethyl atrazine)	EPA 8270D	10186002	NELAP	LA
7382 - Deisopropyl atrazine	EPA 8270D	10186002	NELAP	LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270D	10186002	NELAP	LA
5925 - Di-n-butyl phthalate	EPA 8270D	10186002	NELAP	LA
6200 - Di-n-octyl phthalate	EPA 8270D	10186002	NELAP	LA
7410 - Diazinon	EPA 8270D	10186002	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D	10186002	NELAP	LA
5905 - Dibenzofuran	EPA 8270D	10186002	NELAP	LA
8595 - Dicamba	EPA 8270D	10186002	NELAP	LA
7425 - Dichlobenil (Casoron)	EPA 8270D	10186002	NELAP	LA
8605 - Dichloroprop (Dichlorprop)	EPA 8270D	10186002	NELAP	LA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8270D	10186002	NELAP	LA
8615 - Diclofop-methyl	EPA 8270D	10186002	NELAP	LA
9369 - Diesel range organics (DRO)	EPA 8270D	10186002	NELAP	LA
6070 - Diethyl phthalate	EPA 8270D	10186002	NELAP	LA
7473 - Dimethazone (Clomazone)	EPA 8270D	10186002	NELAP	LA
7474 - Dimetheneamid	EPA 8270D	10186002	NELAP	LA
7475 - Dimethoate	EPA 8270D	10186002	NELAP	LA
6135 - Dimethyl phthalate	EPA 8270D	10186002	NELAP	LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270D	10186002	NELAP	LA
6205 - Diphenylamine	EPA 8270D	10186002	NELAP	LA
8625 - Disulfoton	EPA 8270D	10186002	NELAP	LA
7555 - EPTC (Eptam, s-ethyl-dipropyl thio carbamate)	EPA 8270D	10186002	NELAP	LA
7560 - Ethalfluralin (Sonalan)	EPA 8270D	10186002	NELAP	LA
7565 - Ethion	EPA 8270D	10186002	NELAP	LA
7570 - Ethoprop	EPA 8270D	10186002	NELAP	LA
7610 - Fenuron	EPA 8270D	10186002	NELAP	LA
6265 - Fluoranthene	EPA 8270D	10186002	NELAP	LA
6270 - Fluorene	EPA 8270D	10186002	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
7640 - Fonophos (Fonofos)	EPA 8270D	10186002	NELAP	LA
7650 - Garlon (Triclopyr)	EPA 8270D	10186002	NELAP	LA
6275 - Hexachlorobenzene	EPA 8270D	10186002	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8270D	10186002	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 8270D	10186002	NELAP	LA
4840 - Hexachloroethane	EPA 8270D	10186002	NELAP	LA
7705 - Hexazinone	EPA 8270D	10186002	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D	10186002	NELAP	LA
100079 - Isofenphos	EPA 8270D	10186002	NELAP	LA
6320 - Isophorone	EPA 8270D	10186002	NELAP	LA
7765 - Linuron (Lorox)	EPA 8270D	10186002	NELAP	LA
7775 - MCPA	EPA 8270D	10186002	NELAP	LA
100081 - MCPB	EPA 8270D	10186002	NELAP	LA
7780 - MCPP	EPA 8270D	10186002	NELAP	LA
7770 - Malathion	EPA 8270D	10186002	NELAP	LA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270D	10186002	NELAP	LA
7835 - Metolachlor	EPA 8270D	10186002	NELAP	LA
7845 - Metribuzin	EPA 8270D	10186002	NELAP	LA
5005 - Naphthalene	EPA 8270D	10186002	NELAP	LA
6440 - Napropamide	EPA 8270D	10186002	NELAP	LA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP	LA
7930 - Norflurazon	EPA 8270D	10186002	NELAP	LA
7955 - Parathion, ethyl	EPA 8270D	10186002	NELAP	LA
7960 - Pendimethalin(Penoxalin)	EPA 8270D	10186002	NELAP	LA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP	LA
6615 - Phenanthrene	EPA 8270D	10186002	NELAP	LA
6625 - Phenol	EPA 8270D	10186002	NELAP	LA
7985 - Phorate	EPA 8270D	10186002	NELAP	LA
8000 - Phosmet (Imidan)	EPA 8270D	10186002	NELAP	LA
8645 - Picloram	EPA 8270D	10186002	NELAP	LA
100083 - Prodiamine	EPA 8270D	10186002	NELAP	LA
100080 - Profenofos	EPA 8270D	10186002	NELAP	LA
8025 - Promecarb	EPA 8270D	10186002	NELAP	LA
8035 - Prometon	EPA 8270D	10186002	NELAP	LA
8040 - Prometryn	EPA 8270D	10186002	NELAP	LA
8045 - Propachlor (Ramrod)	EPA 8270D	10186002	NELAP	LA
8050 - Propanil	EPA 8270D	10186002	NELAP	LA
8060 - Propazine	EPA 8270D	10186002	NELAP	LA
8075 - Propham	EPA 8270D	10186002	NELAP	LA
8080 - Propoxur (Baygon)	EPA 8270D	10186002	NELAP	LA
6665 - Pyrene	EPA 8270D	10186002	NELAP	LA
8120 - Siduron	EPA 8270D	10186002	NELAP	LA
8650 - Silvex (2,4,5-TP)	EPA 8270D	10186002	NELAP	LA
8125 - Simazine	EPA 8270D	10186002	NELAP	LA
8130 - Simetryn	EPA 8270D	10186002	NELAP	LA
8160 - Sumithrin (Phenothrin)	EPA 8270D	10186002	NELAP	LA
8175 - Tebuthiuron	EPA 8270D	10186002	NELAP	LA
8180 - Terbacil	EPA 8270D	10186002	NELAP	LA
8185 - Terbufos	EPA 8270D	10186002	NELAP	LA
8190 - Terbuthylazine	EPA 8270D	10186002	NELAP	LA
8195 - Terbutryn (Igran)	EPA 8270D	10186002	NELAP	LA
8260 - Triallate	EPA 8270D	10186002	NELAP	LA
8295 - Trifluralin (Treflan)	EPA 8270D	10186002	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 8270D	10186002	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 8270D	10186002	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
5780 - bis(2-Chloroisopropyl) ether	EPA 8270D	10186002	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 8270D	10186002	NELAP	LA
7710 - 3-Hydroxycarbofuran	EPA 8318A	10188600	NELAP	LA
7010 - Aldicarb (Temik)	EPA 8318A	10188600	NELAP	LA
7015 - Aldicarb sulfone	EPA 8318A	10188600	NELAP	LA
7195 - Carbaryl (Sevin)	EPA 8318A	10188600	NELAP	LA
7205 - Carbofuran (Furaden)	EPA 8318A	10188600	NELAP	LA
7800 - Methiocarb (Mesurol)	EPA 8318A	10188600	NELAP	LA
7805 - Methomyl (Lannate)	EPA 8318A	10188600	NELAP	LA
8080 - Propoxur (Baygon)	EPA 8318A	10188600	NELAP	LA
8655 - 2,4,5-T	EPA 8321B	10189205	NELAP	LA
8545 - 2,4-D	EPA 8321B	10189205	NELAP	LA
8560 - 2,4-DB	EPA 8321B	10189205	NELAP	LA
8600 - 3,5-Dichlorobenzoic acid	EPA 8321B	10189205	NELAP	LA
6500 - 4-Nitrophenol	EPA 8321B	10189205	NELAP	LA
8505 - Acifluorfen	EPA 8321B	10189205	NELAP	LA
8530 - Bentazon	EPA 8321B	10189205	NELAP	LA
7130 - Bromacil	EPA 8321B	10189205	NELAP	LA
7145 - Bromoxynil octanate	EPA 8321B	10189205	NELAP	LA
7275 - Chloropropham	EPA 8321B	10189205	NELAP	LA
7308 - Clopyralid	EPA 8321B	10189205	NELAP	LA
8595 - Dicamba	EPA 8321B	10189205	NELAP	LA
8605 - Dichloroprop (Dichlorprop)	EPA 8321B	10189205	NELAP	LA
8615 - Diclofop-methyl	EPA 8321B	10189205	NELAP	LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8321B	10189205	NELAP	LA
7505 - Diuron	EPA 8321B	10189205	NELAP	LA
7610 - Fenuron	EPA 8321B	10189205	NELAP	LA
7630 - Fluometuron	EPA 8321B	10189205	NELAP	LA
7650 - Garlon (Triclopyr)	EPA 8321B	10189205	NELAP	LA
100091 - Imazethapyr	EPA 8321B	10189205	NELAP	LA
7765 - Linuron (Lorox)	EPA 8321B	10189205	NELAP	LA
7775 - MCPA	EPA 8321B	10189205	NELAP	LA
100081 - MCPB	EPA 8321B	10189205	NELAP	LA
7780 - MCPP	EPA 8321B	10189205	NELAP	LA
7885 - Monuron	EPA 8321B	10189205	NELAP	LA
7915 - Neburon	EPA 8321B	10189205	NELAP	LA
7940 - Oxamyl	EPA 8321B	10189205	NELAP	LA
6605 - Pentachlorophenol	EPA 8321B	10189205	NELAP	LA
8645 - Picloram	EPA 8321B	10189205	NELAP	LA
8075 - Propham	EPA 8321B	10189205	NELAP	LA
8120 - Siduron	EPA 8321B	10189205	NELAP	LA
8650 - Silvex (2,4,5-TP)	EPA 8321B	10189205	NELAP	LA
8175 - Tebuthiuron	EPA 8321B	10189205	NELAP	LA
1810 - Nitrate as N	EPA 353.2 (calc.)	10238809	NELAP	LA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP	LA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP	LA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D SIM	10242509	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5605 - Benzo(e)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
5895 - Dibenz(a,h)anthracene	EPA 8270D SIM	10242509	NELAP	LA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP	LA
6608 - Perylene	EPA 8270D SIM	10242509	NELAP	LA
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP	LA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP	LA
1745 - Free liquid	EPA 9095B	10245600	NELAP	LA
1515 - Ammonia as N	SM 4500-NH3 D, 20th ED	20109006	NELAP	LA

Biological Tissue

Analyte	Method Name	Method Code	Type	AB
NONE	NONE	NONE	NONE	NONE

State of New Jersey
Department of Environmental Protection

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

Office of Quality Assurance
401 E. State Street
PO Box 420, Mail Code 401-02D
Trenton, NJ 08625-0420
Tel #: (609) 292-3950
Fax#: (609) 7777-1774

CATHERINE R. McCABE
Commissioner

June 3, 2019

Dear Laboratory Manager:

Your fiscal year 2020 (FY20) laboratory certification renewal application has been processed and a Certificate and Annual Certified Parameter List (ACPL) that reflects the current status of your facility are enclosed. If there are any discrepancies, please contact your Laboratory Certification Officer to verify information and make arrangements for a new ACPL. If the Office of Quality Assurance does not receive documentation of any discrepancies before July 10, 2019 this ACPL will be considered final and any changes received thereafter will be treated as a modification application. Effective with the receipt of this letter, your facility's certification status is valid through June 30, 2020. Both the ACPL and Certificate must be conspicuously displayed at your facility in a location on the premises that is visible to the public.

As always, we are available to discuss any comments or questions. Please do not hesitate to contact your laboratory certification officer or me.

Sincerely,

Michele M. Potter
Manager

Enclosures: ACPL; Certificate

The State of New Jersey is an equal opportunity employer. Printed on recycled and recyclable paper.

New Jersey Department of Environmental Protection
Environmental Laboratory Certification Program

LABORATORY PERSONNEL LIST

Effective as of: 07/01/2019

Laboratory Name: O'BRIEN & GERE OPERATIONS, LLC Laboratory Number: PA024 Activity ID: SLC190001
2588 INDUSTRY LN
NORRISTOWN, PA 19403

Position: Lab Manager

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
FRANK DeORIO		4/1/2008		Complete/Qualified		

Position: QA Officer

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
FRANK DeORIO		4/1/2008		Complete/Qualified		

Position: Supervisor/Tech Dir

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
JOHN BOWERS	ANALYZE IMMEDIATELY & CONTINUOUS MONITOR	4/1/2008	6/30/2019	Complete/Qualified		Documentation not submitted.
FRANK DeORIO	ANALYZE IMMEDIATELY & CONTINUOUS MONITOR	4/1/2008		Complete/Qualified		
ALEX KIDD	ANALYZE IMMEDIATELY & CONTINUOUS MONITOR	1/12/2005		Complete/Qualified		Documentation not submitted.
DAN MAZZA	ANALYZE IMMEDIATELY & CONTINUOUS MONITOR	7/1/2002		Complete/Qualified		
RONALD OVERHOLT	ANALYZE IMMEDIATELY & CONTINUOUS MONITOR	7/1/2006		Complete/Qualified		
FRANK DeORIO	CHEMICAL TESTING - INORGANIC NON-METALS	4/1/2008		Complete/Qualified		
DAN MAZZA	CHEMICAL TESTING - INORGANIC NON-METALS	7/1/2002		Complete/Qualified		

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: O'BRIEN & GERE OPERATIONS, LLC Laboratory Number: PA024 Activity ID: SLC 190001
2588 INDUSTRY LN
NORRISTOWN PA 19403

Category: NPW03--Inorganic Parameters

Status	Code	Parameter	Technique	Approved Methods
Certified	NPW03.04250	Specific conductance	Wheatstone Bridge	SM 2510 B-11
Certified	NPW03.05020	Turbidity	Nephelometric	SM 2130 B-11

Category: NPW04--Analyze-Immed. and Continuous Monitoring

Status	Code	Parameter	Technique	Approved Methods
Certified	NPW04.00230	Oxygen (dissolved)	Membrane Electrode	SM 4500-O G-11
Certified	NPW04.00380	pH	Electrometric	SM 4500-H B-11
Certified	NPW04.00490	Temperature	Thermometric	SM 2550 B-10

Michele M. Potter

Michele M. Potter, Manager

State of New Jersey

Department of Environmental Protection

Certifies That

O'BRIEN & GERE OPERATIONS, LLC

Laboratory Certification ID # PA024

having duly met the requirements of the

Regulations Governing the Certification of
Laboratories and Environmental Measurements N.J.A.C. 7:18 et. seq.

is hereby approved as a

State Certified Environmental Laboratory

to perform the analyses as indicated on the Annual Certified Parameter List which must accompany this certificate to be valid

Expires June 30, 2020

Michele M. Potter
Manager

THIS CERTIFICATE IS TO BE CONSPICUOUSLY DISPLAYED AT THE LABORATORY WITH THE ANNUAL CERTIFIED PARAMETER LIST IN A LOCATION ON THE PREMISES VISIBLE TO THE PUBLIC

APPENDIX B
FIELD PROCEDURES

TO:	Edward Meeks	**cc:**	Michael Kozar
FROM:	John Lucey		Mark Foley
RE:	Phase II Remedial Investigations		
FILE:	2420/46425		
DATE:	October 4, 2013		

INTRODUCTION

This memorandum has been prepared to document planned Phase II Remedial Investigations (RI) at Hercules Incorporated's (Hercules) Former Kenvil Works facility in Kenvil, New Jersey (the Site). These investigations will be conducted to delineate the extent of constituents detected a concentrations exceeding the applicable remediation standards in the various media present at the Site. This memorandum has been prepared in accordance with the scope of work detailed in Hercules's March 26, 2010 Request for bid and subsequent meetings between Hercules and O'Brien & Gere. O'Brien & Gere assumes the scope of work detailed below, the planned investigation methods, and subsequent reports will be reviewed by Hercules' Licensed Site Remediation Professional (LSRP).

The additional RI planned for Site will include the following:

- Groundwater Sampling
- Monitoring Well Installation
- Surface Water Sampling
- Sediment Sampling
- Soil Screening for Dioxins at Former Burning Grounds
- Down-Gradient (off-Site) Delineation of the TNT Area Groundwater Plume Using Waterloo Sampling Techniques
- Soil Sampling to Delineate the Extent of Constituents at Concentrations above applicable Standards

The remedial investigations will be conducted in accordance with the procedures detailed in the following New Jersey Department of Protection (NJDEP) approved documents prepared by MWH Americas, Inc. (MWH) on behalf of Hercules:

- 2005 Revised Field Quality Assurance Project Plan (FQAPP)
- 2006 Revised Site-Wide Remedial Investigation Work Plan (RIWP)

Additionally, laboratory analysis and sample handling will be conducted in accordance with 2013 *Quality Assurance Project Plan* (QAPP) prepared by O'Brien & Gere.

Sample locations were selected based on the data provided in the following reports and correspondence:

- Remedial Investigation Report Volume A - Summary (May 2007) by MWH
- Remedial Investigation Report Volume B - Soil - Text, Figures, Tables and Appendices (April 2007) by MWH
- Remedial Investigation Report Volume C - Groundwater - Text, Figures, Tables and Appendices (February 2007) by MWH
- Remedial Investigation Report Volume D - Sediment - Text, Figures, Tables and Appendices (December 2006) by MWH
- Remedial Investigation Report Volume E - Surfacewater - Text, Figures, Tables and Appendices (March 2007) by MWH
- Additional Groundwater Remedial Investigation Sampling Report (June 2009) by Environmental Alliance (EA)
- November 18, 2010 Letter from the NJDEP

PDF versions of these documents are provided on CD in Attachment 1

The following tables and figures detailing sampling locations and required laboratory analysis are provided:

Tables

Table 1 – Groundwater Screening Plan for E&E Compounds
Table 2 – Proposed Monitoring Well Construction Details
Table 3 - Surfacewater Sampling Plan
Table 4 - Sediment Sampling Plan
Table 5 – Groundwater Sampling Plan
Table 6 - Burning Grounds Soil Screening Plan
Table 7 – Off-Site TNT Groundwater Sampling Plan
Table 8 – Soil Sampling Plan

Figures

Figure 1 - Site Plan Showing Monitoring Well Locations
Figure 2 - Site Plan Showing Surface Water Sample Locations
Figure 3 - Site Plan Showing Sediment Sample Locations
Figure 4 - Site Plan Showing Burning Grounds Soil Boring Locations
Figure 5 - Off-Site TNT Groundwater Sampling Locations

Additional information provided in this memorandum include:

- Project organization/contact
- Procedures for equipment decontamination
- Sample handling and field custody procedures
- Field logbook procedures

PROJECT ORGANIZATION/CONTACT INFORMATION

O'Brien & Gere will be responsible for project management, sample collection, data reduction and reporting. LSRP services will be provided by WSP Environment & Energy. The LSRP will oversee and approve the development of work plan related documents and the Remedial Investigation Report. Responsibilities for key project team members are summarized below.

Regulatory Agency and Client Key Personnel

An independent LSRP, contracted by Hercules, has oversight authority on behalf of Hercules for corresponding with NJDEP.

The LSRP contact information is as follows:

Mark Foley -LSRP
Senior Project Director
WSP Environment & Energy
200 Cottontail Lane, Suite A112W
Somerset, NJ 08873
mark.foley@wspgroup.com
(732) 564-0888 ext. 16 - Office

Hercules Representative

Mr. Edward Meeks is the primary contacts at Hercules and is responsible for the execution of each phase of the project, including any correspondence and coordinating activities with NJDEP.

Hercules's contact information is as follows:

Edward Meeks - Project Manager
Remediation Project Manager
500 Hercules Road
Building 8139/130
Wilmington, DE 19808-1599
edmeeks@ashland.com
(302) 995-3433 – Office

O'Brien & Gere Key Personnel

O'Brien & Gere Project Officer

Mike Kozar, P.G. is the O'Brien & Gere Project Officer and has overall responsibility for meeting the stated project objectives. In addition, he is responsible for providing the O'Brien & Gere Project Manager with access to O'Brien & Gere corporate resources.

The O'Brien & Gere Project Officer contact information is as follows:

Michael Kozar – Vice President
O'Brien & Gere Project Officer
Bentwood Campus

301 East Germantown Pike/3rd floor
East Norriton, PA 19401
Michael.Kozar@obg.com
(484) 804-7212 – Office

O'Brien & Gere Project Manager

John Lucey, P.G. is the O'Brien & Gere Project Manager and is responsible for implementing the project and has the authority to commit the resources necessary to meet project objectives and requirements. His primary function is to meet the technical, financial, and scheduling objectives and will provide direction to O'Brien & Gere Project Team.

The O'Brien & Gere Project Manager contact information is as follows:

John Lucey –Project Associate
O'Brien & Gere Project Manager
200 Biddle Avenue
Suite 203
Newark, DE 19702
John.Lucey@obg.com
(302) 804-7212 – Office

O'Brien & Gere QA Officer

Karen Storne is the O'Brien & Gere QA Officer (QAO) for this project. She will manage and be responsible for QA/QC review of data generated during the sample collection activities. If QA problems or deficiencies requiring special action are identified, the O'Brien & Gere QAO, Project Manager, and Project Officer will determine the appropriate corrective action. The QAO will then be responsible for follow-up and oversight of corrective action implementation, to the satisfaction of Hercules and the NJDEP representative.

The O'Brien & QA Officer contact information is as follows:

Karen Storne–Technical Associate
O'Brien & Gere QA Officer
333 West Washington Street
Syracuse, NY 13202
Karen.Storne@obg.com
(315) 662-3458

O'Brien & Gere Field Investigation Manager

The O'Brien & Gere Field Investigation Manager will be responsible for directing and coordinating the day-to-day activities while field activities are underway.

O'Brien & Gere Field Sampling Personnel

O'Brien & Gere field sampling personnel will be responsible for collection, packaging, preservation, and shipping of environmental samples in accordance with the QAPP and applicable NJDEP requirements. Field sampling personnel will also collect field data and monitor Site health and safety.

Health and Safety Coordinator

Karin Robachefski, CHST, OHST is the O'Brien & Gere Health & Safety Coordinator and will be responsible for monitoring Site health and safety during the sampling events.

The O'Brien & Gere Health and Safety Coordinator contact information is as follows:

Karin Robachefski
Health & Safety Specialist
1090 King Georges Post Road
Suite 904
Edison, NJ 08837
Karin.Robachefski@obg.com
732-638-2943

Laboratory Management

Eurofins Lancaster Laboratories of Lancaster, Pennsylvania will analyze samples collected during the sampling activities. The laboratory contact information is as follows:

Eurofins Lancaster Laboratories
2425 New Holland Pike
Lancaster, Pennsylvania 17601
717-656-2300

Laboratory Project Manager

Wendy Kozma is the Laboratory Project Manager for Eurofins Lancaster Laboratories and will be responsible for:

- Coordinating sample bottle delivery and sample pickups from the Site
- Supervising the in-house chain-of-custodies.
- Scheduling sample analysis.
- Overseeing data review.
- Overseeing preparation of analytical reports.

It will be the responsibility of the Lancaster Laboratory Project Manager to approve final analytical reports prior to submission to O'Brien & Gere.

Monitoring Well Installation

Drilling Services

Drilling services will be provided by Summit Drilling Co., Inc. The drilling services will include monitoring well installation, monitoring well development, soil boring installation, management of investigation derived waste, monitoring well permitting, and preparation of monitoring well Forms A.

Summit Drilling Co., Inc contact information is as follows:

David Adams
Project Manager
81 Chimney Rock Road
Bridgewater, NJ 08807
908-722-4266

Surveying Services

Surveying services will be provided by Vargo Associates. The surveying services will include surveying locations and elevations of newly installed monitoring wells, soil borings, dioxin screening locations, and Waterloo sampling locations. The surveyor will prepare monitoring well Forms B and provide the elevation and location data in electronic format (MS Excel).

Vargo Associates contact information is as follows:

Mike Vargo
Vargo Associates Surveying Manager
2771 Delsea Drive, Franklinville, NJ 08322
Franklinville, NJ 08322
(856) 694-1716

REMEDIAL INVESTIGATION ACTIVITIES

Task 1 - Groundwater E&E Screening

Groundwater sampling results from 2006 and 2008 indicated the cyclotrimethylenetrinitramine (RDX) plume has migrated approximately 500 feet in two years. To accurately locate the leading edge of the RDX plume, 16 monitoring wells (MW-15 through MW-18, MW-23, MW-25, MW-33 through MW-37, MW-41, and MW-J2 through MW-J5) will be sampled for explosive and energetic (E&E) compounds (see Table 1) prior to installing monitoring wells MW-52 and MD-52D, which are intended to monitor the downgradient edge of the RDX plume. The groundwater E&E screening activities will be conducted prior to mobilizing to the Site to for monitoring well installation.

Purging and Sampling Methods

Prior to commencing well purging and groundwater sample collection, the depth to groundwater and depth to bottom of each monitoring well in the vicinity of the RDX plume will be obtained and recorded. These measurements will be used to calculate monitoring well purge volumes and groundwater flow in the vicinity of the RDX plume. The depth to water will be measured in each well by slowly lowering a decontaminated electronic water level meter to the nearest 0.01 foot and will be recorded in the field notebook.

The monitoring wells will be purged and sampled using conventional groundwater sampling techniques. The monitoring well purging activities will be accomplished by removing three casing volumes of water with a submersible electric pump with new dedicated polyethylene discharge tubing. Pumping rates will be kept as low as is reasonably (See well sampling data forms in MHW's *RI Report Volume C*) to avoid pumping the well dry. If the well is pumped at a rate of 0.5 gallons per minute (gpm) or less and purged dry, no additional purging will be considered necessary and the well will be allowed to recover until a sufficient quantity of water is present in the well to collect the groundwater sample. Purge water will be discharged to the ground surface down gradient of the well. The field parameters pH, specific conductance, temperature, dissolved oxygen, oxidation reduction potential, and turbidity will be measured at the start of the purge, after each well volume has been removed and at the time of sampling. After each well is purged a groundwater sample will be collected with a dedicated, disposable Teflon® bailer.

Field procedures, including groundwater depth measurements (for elevation calculations and purge volume calculations), monitoring well purging and field testing of groundwater quality (including pH, specific conductance, temperature, dissolved oxygen, oxidation reduction potential, and turbidity), decontamination of purging and sampling equipment and groundwater sampling, will be conducted in accordance with the procedures detailed in the FQAPP.

Laboratory Analysis

The groundwater and associated quality control samples generated will be submitted to Eurofins Lancaster Laboratories, a New Jersey certified laboratory, for analysis. The samples will be analyzed for E&E compounds, as indicated in Table 1.

Sample bottle requirements and preservation methods are detailed in Table 1 of the QAPP.

QA/QC samples that will be collected as part of the E&E screening program will include the following:

- One duplicate sample per each 10 field samples
- One field blank per each 10 field samples
- One MS/MSD sample per sample delivery group

Task 2 - Monitoring Well Installation

O'Brien & Gere will install ten (10) additional unconsolidated monitoring wells to complete the delineation of constituents of concern (COCs) in groundwater. The monitoring wells will be used to evaluate groundwater quality along the eastern edge of B-Line, delineate the southern extent of the TNT plume at the site boundary, delineate the depth of groundwater impact in the TNT Area groundwater plume, and evaluate groundwater quality downgradient of the RDX plume. Proposed monitoring well locations are indicated on Figure 1.

The rational for the installation of each well, anticipated well depths, and selected drilling methods are provided in Table 2. The locations for monitoring wells MW-52 and MD-52D, which are intended to monitor the downgradient edge of the RDX plume, may change based on the results of the E&E groundwater screening activities described above. Monitoring well installation, development, and surveying activities are summarized below.

Preparatory Activities

A minimum of three weeks prior to the installation of the monitoring wells, the selected driller will submit monitoring permits to the NJDEP. The driller will notify New Jersey One Call of the planned drilling activities, a minimum of 72 hours prior to drilling, to obtain a utility mark out. Monitoring wells locations will be cleared by Hercules, prior to mobilization of the drill rig.

Monitoring Well Installation Activities

The monitoring wells will be installed using either hollow stem auger (shallow wells) or mud rotary (deep wells) drilling techniques. Continuous split spoon samples will be collected during the installation of the pilot boring at each monitoring well location. The split spoon samples will be screened by an O'Brien & Gere geologist using a photo ionization detector (PID). The O'Brien & Gere geologist will also describe the soil cuttings using the *Burmeister Soil Classification* System. Soil cuttings generated during the well installation process will be spread across the ground surface, in proximity to the well. Standard Operating Procedures for monitoring well installation are provided in the February 2006 FQAPP prepared by MWH.

The monitoring wells will be constructed using Schedule 40 PVC casing and 0.010-inch, slotted PVC well screen, in accordance with the specifications provided in Table 2. Screen zone length will not exceed 10 feet. Morie No. 0 gravel pack will be placed from the bottom of the boring to five feet above the top of the screen zone. The remainder of the annular space will be tremie grouted using a cement-bentonite grout. The monitoring well installations will be completed with locking, steel casings. Detailed monitoring well installation procedures are provided in Section 3.3.1 of the RIWP.

After monitoring well activities have been completed, the driller will prepare Monitoring Well Forms A for the newly installed wells.

Monitoring Well Development

The monitoring wells will be developed using pumping and surging techniques until the discharge is clear. Water quality parameters (pH, conductivity, temperature, dissolved oxygen, and turbidity) along with the discharge rate will be measured periodically during the development process and recorded in the field

notebook. Well development water will be discharged to the ground surface down gradient from the well head. Detailed monitoring well development procedures are provided in Section 3.3.2 of the RIWP.

Monitoring Well Surveying

A New Jersey licensed surveyor will establish the horizontal location and elevation of the newly installed wells. Horizontal control will be established to the nearest 0.1 ft and referenced to the New Jersey State Plane Coordinate system (NAD 83). Vertical control will be established to the nearest 0.01 ft and referenced to the NGVD 1929. The surveyor will prepare Monitoring Well Forms B for the newly surveyed wells.

Task 3 - Surface Water Sampling

The surface water sample collection program will include the collection of 25 surface water samples to evaluate surface water outside defined channels, confirm surface water quality exiting site, and to evaluate dissolved constituents present in surface water adjacent to Duck Pond. The surface water sample locations are indicated on Figure 2. Analytical parameters and rationale for the collection of the surface water samples are provided on Table 3. Surface water sampling procedures are summarized below.

Surface water samples will be collected from the Eastern, Central and Western Drainage Areas and Tributaries to Duck Pond by walking into the selected areas (downstream to upstream), as water depths in these areas are typically less than two feet. The collection of surface water samples from Duck Pond may require the use of a boat as water depths can be in excess of four feet.

Surface Water Sampling Access

Access to surface water sampling locations can be achieved by utilizing a small raft or boat (to be provided by Hercules), a temporary bridge placed over narrow stream channels, and hip waders in shallow wetland areas.

Surface Water Sampling Methods

Two types of surface water sampling will be conducted (discrete depth sampling and surface sampling). Discrete depth sampling will be conducted at one location (See Location F on Table 3 and Figure 2). Surface sampling will be conducted in shallower water bodies such as the southern wetlands. The surface water sampling procedures are summarized below.

Discrete Depth Sampling

Discrete depth samples will be collected with a weighted bottle sampler. The weighted bottle sampler consists of a glass bottle equipped with a stopper that can be remotely removed from the surface, and weights to carry the bottle to the desired sampling depth. The discrete depth surface water sampling activities will be conducted in accordance with the procedures summarized below:

- The weighted bottle sampler will be lowered to the desired sampling depth
- The stopper will be removed from the bottle to allow it to fill with water
- The stopper is replaced in the bottle
- The sampler is retrieved and the collected sample is transferred to laboratory provided sample containers

Detailed discrete depth surface water sampling procedures are provided in Section 10.1 of the FQAPP.

Shallow Surface Water Sampling

Shallow surface water samples will be collected using a dip sampler. Deeper, discrete depth, surface water samples (greater than one foot) will be collected using a weighted bottle sampler. Shallow surface water samples will be collected by slowly submerging a laboratory-provided glass sample bottle horizontally into the water at the designated sample collection point. The bottle will be gradually turned upright, keeping the lip just under the surface so that only surface water is collected. Care will be taken to minimize surface disturbance throughout the sampling process. If the water is not deep enough to turn the bottle upright, the bottle will be held at an angle as steep as possible with the lip remaining just under the surface. In the event field personnel cannot easily access the sampling point or disturbance of the sediment is expected, the glass sample collection container will be attached to a pole of sufficient length to reach the sampling point.

Detailed surface water sampling procedures are provided in Section 10.2 of the FQAPP

Co-Located Samples

When surface water and sediment samples are taken at the same locations, the surface water sample will be collected first to minimize turbidity and reduce the potential of contaminating the surface water sample with disturbed sediment. Where samples are collected at multiple depth intervals, the samples will be collected in descending order from shallowest to deepest. In addition, down-stream samples will be collected prior to up-stream samples.

Laboratory Analysis

The surface water and associated quality control samples generated will be submitted to Eurofins Lancaster Laboratories, a New Jersey certified laboratory, for analysis. The samples will be analyzed for the following parameter, as indicated in Table 3:

- Semi-volatile organic compounds (SVOCs)
- E&E Compounds
- Target Analyte List (TAL) Metals
- Hardness
- pH

Sample bottle requirements and preservation methods are detailed in Table 1 of the QAPP.

QA/QC samples that will be collected as part of the surface water sampling program will include the following:

- One duplicate sample per each 20 field samples
- One field blank per each 10 field samples but no more than one per day
- One MS/MSD sample per sample delivery group

Surface Water Sampling Point Documentation

Surface water sampling locations will be documented using GPS methodologies. After each surface water sample has been collected horizontal location will be established and referenced to the New Jersey State Plane Coordinate system (NAD 83). Horizontal coordinates will be recorded in the field book.

Task 4 - Sediment Sampling

The sediment sample collection program will include the collection of 25 sediment samples to confirm depth of constituents at concentrations above applicable standards, confirm sediment quality adjacent to site outfall, and evaluate sediment quality outside defined channels within wetland areas. The sediment samples with be collected from the streams, wetlands and ponds present at the Site. The sediment sample locations are indicated on Figure 4. Analytical parameters and rationale for the collection of the sediment samples are provided on Table 4.

Sediment samples will be collected from the Eastern, Central and Western Drainage Areas and Tributaries to Duck Pond by walking into the selected areas (downstream to upstream) as water depths in these areas are typically less than two feet. The collection of sediment samples from Duck Pond may require the use of a boat as water depths can be in excess of four feet. Sediment sampling procedures are summarized below.

Sediment Sampling Access

Access to sediment sampling locations can be achieved by utilizing a small raft or boat (to be provided by Hercules), a temporary bridge placed over narrow stream channels, and hip waders in shallow wetland areas.

Sediment Sample Collection Methods

Sediment samples will be collected using one of two sampling devices. The two sediment sampling techniques involve the soil coring device/bucket auger (cohesive/compact sediments) and the silver bullet sampler (liquefied sediments). The soil coring device/bucket auger and silver bullet sampling procedures are described below.

Soil Coring Device/Bucket Auger

Shallow sediment samples can be collected with a bucket auger, provided the sediment is sufficiently cohesive or competent to be held within the bucket auger without losing the fine grained components of the sediment. The soil bucket auger will be advanced by hand at each sampling location for classification and sample collection. The bucket auger will be advanced at 6-inch intervals and then removed from the borehole for evaluation. Sediment sample collection procedures using a bucket auger are summarized below:

- Sample intervals will be selected for analyses as specified in Table 4.
- The bucket auger will be advanced to the desired depth and removed for sediment classification and sample collection.
- The sample material collected will be placed into a decontaminated stainless steel bowl and homogenized.
- Sample material will be transferred from the stainless steel bowl to the laboratory-supplied sample containers

Detailed procedures for collecting sediment samples using a bucket auger are provided in Section 8.2.1 of the FQAPP.

Silver Bullet Sampler

The silver bullet sampler is an aluminum alloy cylinder into which a laboratory provided clean glass collection tube is inserted. The silver bullet sampler is generally utilized to collect samples of liquefied sediments. The top of the sampler is equipped with a T-handle which is used to push the sampler to the desired depth within the sediment. Once the desired sampling depth is reached, the sampler is rotated 360° counter clockwise filling the collection jar with sediment. After the silver bullet sampler is retrieved, sediment samples will be collected in the following manner:

- The contents of the silver bullet sampler will then be emptied into a decontaminated stainless steel bowl and homogenized.
- Sample material for non-VOC analysis will transferred from the stainless steel bowl to the laboratory-supplied sample containers

Detailed procedures for collecting sediment samples using a silver bullet sampler are provided in Section 8.2.2 of the FQAPP.

Co-Located Samples

When surface water and sediment samples are taken at the same locations, the surface water sample will be collected first to minimize turbidity and reduce the potential of contaminating the surface water sample with disturbed sediment. Where sediment samples are collected at multiple depth intervals, the sediment samples will be collected in descending order from shallowest to deepest. In addition, sediment samples from down-stream locations will be collected prior to those from up-stream locations.

Laboratory Analysis

The sediment and associated quality control samples generated will be submitted to Eurofins Lancaster Laboratories, a New Jersey certified laboratory, for analysis. The samples will be analyzed for the following parameter, as indicated in Table 4:

- Polynuclear aromatic hydrocarbons (PAHs)
- E&E Compounds
- TAL Metals
- Moisture
- Percent solids
- Total organic carbons (TOC)

Sample bottle requirements and preservation methods are detailed in Table 1 of the QAPP.

QA/QC samples that will be collected as part of the sediment sampling program will include the following:

- One duplicate sample per each 20 field samples
- One field blank per each 10 field samples but no more than one per day
- One MS/MSD sample per sample delivery group

E&E Screening

Prior to shipping sediment samples to the laboratory, the samples will be screened for E&E compounds. If the screening indicates E&E compounds are not present, the sediments will shipped to the laboratory. Field screening for E&E compounds will be conducted in accordance with Section 5.1 of the FQAPP. E&E field screening kits will be provided by Hercules.

Sediment Sampling Point Documentation

Sediment sampling points will be documented using GPS methodologies. After each sediment sample has been collected horizontal location will be established and referenced to the New Jersey State Plane Coordinate system (NAD 83). Horizontal coordinates will be recorded in the field book.

Task 5 - Groundwater Sampling

At least two weeks after the new monitoring wells have been developed; O'Brien & Gere will collect groundwater samples from the 10 newly-installed monitoring wells (MW-43D, MW-49, MW-49D, MW-50, MW-50D, MW-51, MW-52, MW-52D, MW-53, and MW-53D) using low-flow sampling techniques. One groundwater sample will be collected from each wetted 5-foot section of screen length (i.e., two samples per well), consistent with NJDEP policy. The samples will be analyzed for VOCs, SVOCs, TAL metals, and E&E compounds. The groundwater samples will be collected to delineate the extent of COCs in groundwater

The *Additional GW-RI Report* (June 2009) prepared by Environmental Alliance identified 17 monitoring wells with lead present in groundwater samples at concentrations exceeding the NJDEP Class IIA GWQC. The previous groundwater sampling activities at the Site only identified two monitoring wells with lead present in the samples at concentrations exceeding the Class IIA GWQC. To further evaluate lead concentrations at these locations additional groundwater samples will be collected from the following 17 monitoring wells using low-flow sampling techniques: (MW-3A , MW-5, MW-7PD, MW-10, MW-12, MW-12D, MW-16, MW-21, MW-26D, MW-34, MW-37, MW-40, MW-44, MW-44D, MW-47, MW-J1D, and MW-J2).

The analytical parameters for the groundwater samples and pump depth settings are provided on Table 5. Monitoring well locations are indicated on Figure 1. Groundwater sampling procedures are summarized below.

Well Purging Methodology

Groundwater sampling will be conducted in accordance with the low-flow sampling procedures detailed in the February FQAPP prepared by MWH, as modified below. Each well will be purged minimum of two hours to reduce turbidity. A Grundfos® 2-inch diameter adjustable speed submersible pump and new, dedicated tubing Teflon®-lined tubing will be used to purge each monitoring well prior to sampling. The pump will be lowered into the well until the pump intake is at the required sampling interval (see above tables). The wells will be pumped at a rate to prevent drawdown from exceeding 0.3 feet (less than 0.5 L/min). Discharge from the pump will be diverted to a flow-through cell with a multi-meter probe capable of measuring pH, temperature, conductivity, dissolved oxygen (DO), oxidation-reduction potential and (ORP. Turbidity will be measured using a separate meter external to the flow-through cell. Stabilization parameters are as follow:

- ± 0.1 pH units
- ± 3 percent for temperature
- ± 3 percent for conductivity
- ± 10 percent for dissolved oxygen
- ± 10 millivolts (mV) for ORP

- ± 10 percent for turbidity, with the maximum turbidity less than 40 Nephelometric Turbidity Units
- <0.3 feet of water level drawdown

If these parameters have not stabilized after two hours, the LSRP will be notified. Based on information provided by O'Brien & Gere, the LSRP will decide which of the following three options should be considered:

- Continue purging in an attempt to achieve stabilization
- Discontinue purging, do not collect samples, and document attempts to reach stabilization in the log book
- Discontinue purging, collect samples, and document attempts to reach stabilization in the log book

For wells with two sampling intervals, the sample from the upper interval will be collected first. After that sample has been collected, the pump will be lowered to second sample interval and purging will commence. Pumps will be decontaminated between wells in accordance with the procedures detailed in the FQAPP.

Laboratory Analysis

Groundwater samples for newly installed monitoring well will be analyzed for the following parameters:

- VOCs
- SVOCs
- E&E compounds
- TAL Metals

Groundwater samples to be collected from existing monitoring wells will be analyzed for total and dissolved lead. The analytical parameters for the groundwater are summarized in Table 5. Following stabilization of water-quality parameters, as described above, the discharge from the well pump will be removed from the flow-through cell. At this point, the pumping rate and depth to water will be measured to ensure that a rate increase has not occurred due to the drop in hydraulic head associated with the closed flow-through cell. If necessary, the pumping rate will be reduced to match the purge rate.

Groundwater samples will be collected in appropriate sample containers as listed in QAPP. Sample bottles will be filled from each monitoring well in the following order:

- VOCs
- SVOCs
- E&E Compounds
- TAL Metals

Sample bottle requirements and preservation methods are detailed in Table 1 of the QAPP.

QA/QC samples that will be collected as part of the groundwater sampling program will include the following:

- One trip blank sample per sample shipment that require analysis for VOCs
- One duplicate sample per each 20 field samples
- One field blank per each 10 field samples but no more than one per day
- One MS/MSD sample per sample delivery group

Task 6 - Soil Sampling At Open Burning Grounds

O'Brien & Gere will collect 20 soil samples from around four former open burning grounds present at the Site to screen for the presence of dioxins and furans. These samples were requested by the NJDEP to evaluate if dioxin and furan compounds are present around the former burning grounds. The former open burning ground soil sample locations are indicated on Figure 4. Sampling depth and analytical methods are provided on Table 6. Soil sampling procedures are summarized below.

Soil Sampling

An O'Brien & Gere geologist will collect these dioxin/furan screening samples from shallow soil borings installed using direct push techniques. One soil sample will be collected from each soil boring biased to depth based on the presence of visible ash and analyzed for dioxins and furans. If ash is not observed, a soil sample will be collected from 0 to 0.5 foot below ground surface.

Soil borings will be backfilled to grade with original cuttings. After abandonment, a stake will be driven at each soil sample location.

Laboratory Analysis

The soil and associated quality control samples generated will be submitted to Eurofins Lancaster Laboratories, a New Jersey certified laboratory, for analysis. The samples will be analyzed for dioxins and dibenzofurans as indicated in Table 6.

Sample bottle requirements and preservation methods are detailed in Table 1 of the QAPP.

QA/QC samples that will be collected as part of the soil sampling program will include the following:

- One duplicate sample per each 20 field samples
- One field blank per each 10 field samples but no more than one per day
- One MS/MSD sample per sample delivery group

E&E Screening

Prior to shipping of the soil samples to the laboratory, the samples will be screened for E&E compounds. If the screening indicates concentrated E&E compounds (greater than 10%) are not present, the sediments will shipped to the laboratory. Field screening for E&E compounds will be conducted in accordance with Section 5.1 of the FQAPP.

Burning Ground Sampling Point Documentation

The locations of the Burning Ground soil boring locations will be established using a hand held GPS unit with sub-meter accuracy. Horizontal control will be referenced to the New Jersey State Plane Coordinate system (NAD 83). Vertical control will be referenced to the NGVD 1929.

Task 7 - Down-Gradient Delineation of the TNT Area Groundwater Plume

To define the maximum extent of trinitrotoluene (TNT) and its degradation products, 2-amino-4,6-dinitrotoluene (2A-DNT) and 4-amino-2,6-dinitrotoluene (4A-DNT) in groundwater, O'Brien & Gere will supervise the collection of downgradient groundwater samples from six off-Site boring locations. These

samples will be collected from soil borings installed on private (commercial) properties located southwest of the Site. The groundwater samples will be collected using a Waterloo Profiler ™ operated by Stone Environmental. O'Brien & Gere will supervise the drilling and collection of down-gradient groundwater samples. The Waterloo sample locations are indicated on the aerial photograph provided as Figure 5. Sampling depth and analytical methods are provided on Table 7. Waterloo sampling procedures are described below.

Waterloo Sampling Procedures

Groundwater samples will be collected using a modified Waterloo Profiler™ in accordance with procedures detailed in the NJDEP's 1994 *Alternative Ground Water Sampling Techniques Guide and* in the Stone SOP provided in Exhibit 2 of the QAPP. The Waterloo Profiler™ consists of a probe containing integrated sensors and sampling ports that is driven into the subsurface using direct push techniques. The integrated sensors are capable of measuring the hydraulic conductivity of the formation, hydraulic head, and physiochemical properties (pH, specific conductance, DO, and ORP). The Waterloo Profiler™ will be used to collect real time hydrostratigraphic data which will be used to ensure samples are being collected from sandy intervals. After the sampling interval is selected, the interval will be purged using an internal nitrogen gas drive pump. Physiochemical properties will be measured during the purging process to ensure formation stability prior to collecting a groundwater sample. A Geoprobe™ 66235 CPT direct push rig will be used to advance a modified Waterloo Profiler™ with minimal disturbance (i.e. minimal use of the hydraulic hammer imparting energy into the subsurface).

Groundwater samples will be collected by the modified Waterloo Profiler™ from the following discrete intervals at each location:

- 15 ft bgs,
- 30 ft bgs,
- 60 ft bgs,
- 90 ft bgs,
- 120 ft bgs.

Sampling depths may be adjusted based on hydrostratigraphic information obtained during boring installation.

Preparatory Activities

A minimum of three weeks prior to the Waterloo Profiling activities, the selected driller will submit soil boring permits to the NJDEP. The driller will notify New Jersey One Call of the planned drilling activities, a minimum of 72 hours prior to drilling, to obtain a utility mark out. Waterloo Profiling locations will be cleared by Hercules, prior to mobilization of the drill rig, to ensure drill rig access.

Laboratory Analysis

The groundwater and associated quality control samples generated will be submitted to Eurofins Lancaster Laboratories, a New Jersey certified laboratory, for analysis. The samples will be analyzed for E&E compounds as indicated on Table 7.

Sample bottle requirements and preservation methods are detailed in Table 1 of the QAPP.

QA/QC samples that will be collected as part of the off-Site groundwater sampling program will include the following:

- One duplicate sample per each 20 field samples
- One field blank per each 10 field samples but no more than one per day
- One matrix spike (MS) and one matrix spike duplicate (MSD) sample per sample delivery group

Waterloo Sampling Point Documentation

The locations of the Waterloo sample points will be established using a hand held GPS unit with sub-meter accuracy. Horizontal control will be referenced to the New Jersey State Plane Coordinate system (NAD 83). Vertical control will be referenced to the NGVD 1929.

Task 8 - Soil Sampling

Soil sampling will be conducted to delineate the vertical extent of constituents at concentrations above applicable standards, delineate the outbound extent of constituents at concentrations above applicable standards, and refine the extent of constituents at concentrations above applicable standards between individual AOCs. A total of 76 soil samples will be collected from a series of 38 soil borings. The soil borings will be installed by a New Jersey-licensed driller. The soil sample locations are indicated on Figure 4. Analytical parameter, sample depths and the rationale for the collection of the soil samples are provided on Table 8. Soil sampling procedures are summarized below.

Soil Sampling

Soil cores will be collected using a combination of hand auger and direct push (Geoprobe ™) sampling methods. Direct push soil sampling methods utilize a hydraulic hammer mounted on a truck or an all terrain vehicle to advance sampling devices into the subsurface. Soil samples collected using direct push methods will be obtained using the Macro Core (MC) sampling system. The MC sampling system consists of an open, steel tube that houses an acetate liner. The liner is held in place with a drive cap at the top and a cutting shoe at the bottom and is designed for continuous soil sample collection. If probe hole "cave-in" is significant, it may be necessary to use a closed piston assembly that fits into the MC. The closed piston assembly MC sampler remains completely closed when driven to depth and are opened by releasing a stop pin from the surface. Releasing the stop pin allows a piston to retract inside of the sample tube as it is being displaced by the sample core. The anticipated maximum depth of the soil borings is 10 feet. Direct push sampling procedures are detailed in Section 7.3.2 of the FQAPP.

After the MC sampler is retrieved, the liner will be removed and cut open to allow access to the soil core for field screening and sample collection. The soil core will be screened with a photoionization detector and logged by a geologist using the using the *Burmeister Soil Classification System*. Field screening procedures are detailed in Section 5.2 of the FQAPP.

Two soil samples will be collected from each soil boring. One soil sample will be collected from the 0 to 0.5 foot interval below the ground surface or the concrete, asphalt, or crushed stone, if the area is paved. The second sample will be taken from one of the following intervals:

- Sample depths will be biased based on visual observations and field screening with a PID
- The six-inch interval above the water table if no anthropogenic feature warranting biasing (e.g. stained soil, ash, etc.) is observed
- The base (9.5 to 10 ft bg interval) of the boring if no anthropogenic feature warranting biasing is observed and the water table is not encountered

Soil samples that will be analyzed for VOCs will be collected directly from the soil core using an Encore sampler. After the VOC sample is collected, the remaining portion of the selected sampling interval will be placed into a

decontaminated stainless steel bowl and homogenized. The soils will then be transferred from the bowl to the appropriate sample containers.

Soil borings will be backfilled to grade with original cuttings. If the soil boring extends below the water table, the portion of the soil boring below the water table will be sealed with a bentonite slurry. After abandonment, a stake will be driven at each soil sample location for later use by a New Jersey-licensed surveyor.

Laboratory Analysis

The soil and associated quality control samples generated will be submitted to Eurofins Lancaster Laboratories, a New Jersey certified laboratory, for analysis. The samples will be analyzed for VOCs, SVOCs, E&E Compounds, TAL Metals as indicated on Table 8.

Sample bottle requirements and preservation methods are detailed in Table 1 of the QAPP.

QA/QC samples that will be collected as part of the soil sampling program will include the following:

- One trip blank sample per sample shipment that requires analysis for VOCs
- One duplicate sample per each 20 field samples
- One field blank per each 10 field samples but no more than one per day
- One MS/MSD sample per sample delivery group

E&E Screening

Prior to shipping soil samples to the laboratory, the soil samples will be screened for E&E compounds. If the screening indicates significant E&E compounds are not present (greater than 10%), the sediments will shipped to the laboratory. Field screening for E&E compounds will be conducted in accordance with Section 5.1 of the FQAPP.

Soil Sampling Point Documentation

The locations of the soil borings points will be established using a hand held GPS unit with sub-meter accuracy. Horizontal control will be referenced to the New Jersey State Plane Coordinate system (NAD 83). Vertical control will be referenced to the NGVD 1929.

EQUIPMENT DECONTAMINATION PROCEDURES

All non-disposable equipment used in field sampling activities will be decontaminated before and after use. Dedicated, disposable equipment used for aqueous sampling will be decontaminated by the manufacturer. The Field Investigation Manager will ensure that appropriate decontamination procedures are followed.

Drill Rig

The drill rig and associated sampling equipment (i.e., augers, drill rods, etc.) will be decontaminated prior to arrival at the site and between at each monitoring well location prior to mobilization to the next monitoring drilling site. Decontamination of this equipment will be performed at a centralized decontamination pad. The following procedures will be used to decontaminate the drill rig and associated sampling equipment:

- The drill rig will be driven on to the decontamination pad and parked
- The associated drilling equipment (i.e. drill rods, augers, split spoons) will be staged on metal stands off the ground
- The drill rig and associated equipment will be thoroughly cleaned on the decontamination pad using a high-pressure steam cleaner and potable water
- Decontaminated equipment will be staged in a clean location prior to use

Direct Push Sampling Equipment

All direct push sampling equipment used to advance soil sampling equipment (i.e., The direct push rig, drill rods, MC etc.) will be decontaminated prior to arrival at and upon leaving the Site. Between each subsurface sampling location the drill rods and MC will be decontaminated. Decontamination of the drill rods and MC equipment can be done at the boring location.

Prior to leaving the site, the direct push rig will be thoroughly cleaned at the last boring location using a high-pressure steam cleaner and potable water. Since acetate liners are being used, the MC system and drill rods will be decontaminated by washing with a non phosphate detergent and rinsing with potable water. The drill rods and MC system will then be rinsed with distilled water. The decontaminated equipment will be placed in a clean location protected from fugitive dust prior to field use

Non-Disposable Sampling Equipment

All non-disposable sampling equipment (i.e. soil coring devices, sediment samplers, spoons, bowls, surface water samplers etc.) will be decontaminated prior to mobilization to each sampling location. The following procedures will be used to decontaminate the aqueous and manual sampling equipment:

- Equipment will be washed with potable water and non-phosphate detergent.
- Equipment will be thoroughly rinsed with potable water
- Equipment will be rinsed with distilled water
- Equipment used to collect samples for metals analysis will be rinsed with a 10 percent solution of laboratory grade nitric acid followed by another rinse with distilled water
- Equipment used to collect samples for organic analysis will be rinsed with pesticide-grade acetone rinse and air dried followed by another rinse with distilled water.
- Equipment will be wrapped in aluminum foil, shiny side out
- Information concerning decontamination methodology, date, time, and personnel will be recorded in the field logbook.

Field Measurement and Standard Purging Equipment

All field measurement equipment (i.e., static water level indicator, pH meter, conductivity meter or submersible pump) will be decontaminated prior to each use. Decontamination of this equipment will be conducted as described below:

- Equipment will be washed with potable water and non-phosphate detergent and a potable water rinse
- Submersible pumps will be cleaned with a non-phosphate detergent and a potable water rinse followed by a 10 gallon flush of potable water through the pump.
- Equipment will be rinsed with distilled water and allowed to air dry
- The decontaminated equipment will be placed in a clean location protected from fugitive dust prior to field use

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Low Flow Groundwater Sampling Equipment Decontamination

New tubing will be dedicated for use in each well and will not require decontamination. The pumps, however, will require decontamination prior to and following use. If existing tubing is present in the well, O'Brien & Gere will remove and dispose of the tubing prior to installing the new tubing. Non-disposable sampling equipment, including the pump and support cable and electrical wires which contact the sample, must be decontaminated thoroughly each day before use ("daily decon") and after each well is sampled ("between-well decon"). Decon procedures are summarized below.

Daily decontamination of pumps will be conducted in the following manner:

- Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes.
- Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes. Use the detergent sparingly.
- Rinse: Operate pump in a deep basin of potable water for 5 minutes.
- Disassemble pump.
- Wash pump parts: Place the disassembled parts of the pump into a deep basin containing 8 to 10 gallons of non-phosphate detergent solution. Scrub all pump parts with a brush.
- Rinse pump parts with potable water.
- Rinse the following pump parts with distilled/ deionized water: inlet screen, the shaft, the suction interconnector, the motor lead assembly, and the stator housing.
- Place impeller assembly in a large glass beaker and rinse with 1% nitric acid (HNO_3).
- Rinse impeller assembly with potable water.
- Rinse impeller assembly with distilled/deionized water.

Between-well decontamination of pumps will be conducted in the following manner:

- Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes.
- Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes. Use the detergent sparingly.
- Rinse: Operate pump in a deep basin of potable water for 5 minutes.
- Final Rinse: Operate pump in a deep basin of distilled/deionized water to pump out 1 to 2 gallons of this final rinse water.

SAMPLE HANDLING, FIELD CUSTODY AND SAMPLE DOCUMENTATION PROCEDURES

Sample Handling Procedures

The following sample handling procedures will be utilized for all sampling events conducted at the facility:

- New disposable nitrile gloves will be used when collecting samples for chemical analysis
- As applicable, sample containers will be filled in the following order: VOCs, SVOCs, pesticides/PCBs, dioxins, metals, and water quality parameters (e.g. hardness).
- All aqueous VOC containers will be filled to zero headspace

After collection, the will be immediately placed in appropriate laboratory-supplied containers, labeled, maintained in coolers at 4°C, and will be maintained under a chain-of-custody (see below) at all times.

Environmental samples will be packed prior to shipment using the following procedures:

- Use only clean, sturdy coolers in good repair.
- Secure and tape the drain plug
- Be sure the lids on all bottles are tight (will not leak), place the bottles inside Ziploc plastic baggies and seal the baggies
- Put ice that has been placed in heavy-duty polyethylene Ziploc plastic baggies sealed on top of and between the samples to maintain the inside temperature at approximately 4 °C ±2 °C
- Pack samples securely to eliminate breakage during shipment
- When possible, sample container preparation and packing for shipment will be completed in a well-organized and clean area. Sample containers will be prepared for shipment by wiping containers clean of debris/water using paper towels. Paper towels will be disposed with the personal protective equipment (PPE).
- Place chain-of-custody record into a Ziploc plastic bag, tape the bag to the inner side of the cooler lid, and close the cooler and securely tape the top of the cooler shut.
- Two custody seals will be affixed to the latch and lid of the cooler. The number of the security seal will be recorded on the chain-of-custody form. The custody seals will consist of adhesive-backed tape that easily rips if it is disturbed. The field sampler will initial and date the seal. The seals must be broken to open the cooler and will indicate tampering if the seal is broken before receipt at the laboratory.
- A label containing the name and address of the shipper will be placed on the outside of the container.

The coolers will be delivered to the laboratory via a courier service. Prior to shipment of sample coolers, the field sampling team will contact the laboratory to notify the laboratory of the shipment.

Samples will remain in the custody of the sampler until transfer of custody is completed. Transfer consists of:

- Delivery of samples to courier and
- Signature of the courier on the chain-of-custody form as receiving the samples and signature of sampler as relinquishing the samples.

Sample Labeling

A completed sample identification label or tag will be attached to each investigative or QC sample. The identification on the label must be sufficient to enable cross-reference with the logbook. The sample label will be

filled out using waterproof, non-erasable ink and will be attached to the sample container using adhesive. The sample labels/tags will contain the following information:

- Sample location/number identification
- Site/Project name
- Date and time of sample collection
- Designation of the sample as a grab or composite
- Type of sample matrix
- Name/initials of the sampler
- Whether the sample is preserved or unpreserved
- Aanlyses to be performed

Unique sample identifications (IDs) will be provided for each sample. The sample IDs will include the matrix type, an indication they were collected during the second phase of the remedial investigation (R2), a grid square location and serial sample ID for surface water, sediment and soil samples, and monitoring well location for groundwater samples. Matrix types will be abbreviated as described below:

- GW for groundwater
- SW for surface water
- SO for soil
- SD for sediment

A typical sample ID would be SW-R2-E-16-3. This ID indicates the following:

- The sample is a surface water sample
- The sample was collected during the second phase of the remedial investigation
- the sample was collected from grid square E-16
- the sample is the third surface water sample collected from grid square E-16 during the second phase of the remedial investigation

Chain-of-Custody Procedures

Chain-of-custody procedures will be instituted and followed throughout the sampling collection process. Samples are physical evidence and will be handled according to strict chain-of-custody protocols. The O'Brien & Gere QAO must be prepared to produce documentation that traces the samples from the field to the laboratory and through analysis. USEPA has defined custody of evidence as follows:

- In actual possession
- In view after being in physical possession
- In a locked laboratory or in a secure, restricted area.

The field sampler is personally responsible for the care and custody of the sample until transferred.

Chain-of-custody records will be kept starting at the time that sample containers are placed in the coolers for transportation to the laboratory. One completed chain-of-custody record must be kept with each sample cooler at all times.

Example chain-of-custody forms are provided in the laboratory's Quality Assurance Manual (Exhibit 1 of the QAPP). The following measures will be taken when completing a chain-of-custody record:

- Chain-of-custody forms will be completed in waterproof, non-erasable ink.
- Chain-of-custody forms will be completed neatly using printed text.
- If a simple mistake is made, the error will be lined out with a single line and initialed and dated.
- Each separate sample entry will be sequentially numbered.
- The use of "Ditto" or quotation marks to indicate repetitive information in columnar entries should be avoided. If numerous repetitive entries must be made in the same column, a continuous vertical arrow will be used between the first entry and the next different entry.
- When more than one chain-of-custody form is used for a single shipment, each form will be consecutively numbered using the "Page ___ of ___" format.
- If necessary, additional instructions will be placed directly onto the chain-of-custody form.
- Acronyms used on a chain-of-custody form will be defined.

The chain-of-custody form will contain the following information:

- Project identification and number;
- Sample description/location;
- Required analysis;
- Date and time of sample collection;
- Type and matrix of sample;
- Number of sample containers;
- Analysis requested/comments;
- Sampler signature/date/time;
- Date and signature of the field representative;
- Date and signature of the laboratory representative;
- Carrier used to ship coolers; and
- Air bill number (if shipped by a commercial carrier).

In the case that high concentrations are suspected to be present in the samples, a note to that effect will be included on the chain-of-custody form.

Field Logbook Procedures

The field logbook will be used to note information regarding collection of samples and any observations. All entries will be signed and dated. Field logbooks will be waterproof and bound. The logbook will be dedicated to the project and pages will not be removed. Corrections will be made by drawing a single line through the incorrect data and initialing and dating the correction that was made to the side of the error. An initialed diagonal line will be used to indicate the end of an entry or the end of the day's activities.

The following information will be recorded in the field logbook by the field sampling team:

- Name and title of author, date, and time of site entry, physical/environmental conditions during the field activity and meteorological data;
- Project number, client name, Site name, names of field crew members, and names of visitors
- Sample media, sample collection method, including equipment utilized
- Date and time of sample collection, number and volume of samples collected, sample and QA/QC identification numbers, and required analyses
- Description of sample locations and the sampling process
- Field observations including field measurements made, equipment used, and soil logs
- Calculations, results, and calibration data for field sampling and measurements

- References for maps and photographs of the sample location
- Dates and method of sample shipments

After a field activity has been completed, copies of the field notes will be made and stored in the project file.

Table 1 - E. Groundwater Screening Plan for E Compounds
Former Kenvil Works
Kenvil, New Jersey

Monitor Well Designation	Depth[1]	Screen Interval[1]	Pump Intake Depth[2]	Well Diameter[2]	Sampling Method	Analytes
MW-15	23.1	8.1-23.1	17 to 19	4	Conventional	E&E Compounds
MW-16	18.02	13.42 - 18.02	28 to 30	4	Conventional	E&E Compounds
MW-17	20.2	5.2-20.2	12.7	4	Conventional	E&E Compounds
MW-18	63	53-63	58	4	Conventional	E&E Compounds
MW-23	15.3	5.3-15.3	10.3	4	Conventional	E&E Compounds
MW-25	20.67	10.67-20.67	15.7	4	Conventional	E&E Compounds
MW-33	23.3	8.3-23.3	15.8	2	Conventional	E&E Compounds
MW-34	28	13-28	20.5	2	Conventional	E&E Compounds
MW-35	27	7-27	17	2	Conventional	E&E Compounds
MW-36	22	7-22	14.5	2	Conventional	E&E Compounds
MW-37	20	5-20	12.5	2	Conventional	E&E Compounds
MW-41	16	6-16	11	2	Conventional	E&E Compounds
MW-J2	16.79	6.79-16.79	11.8	4	Conventional	E&E Compounds
MW-J3	21.7	8.7-21.7	15.2	4	Conventional	E&E Compounds
MW-J4	16.29	7.79-16.29	12.1	4	Conventional	E&E Compounds
MW-J5	13.44	4.44-13.44	9.5	4	Conventional	E&E Compounds

Notes:
[1] Feet below ground surface
[2] casing diameter reported in inches

Table 2 - Proposed Monitoring Well Construction Details
Former Kenvil Works
Kenvil, New Jersey

Monitor Well Designation	Well Location	Casing Diameter[1]	Screen Length[2]	Total Depth[3]	Well Screen Interval[2]	Rational of Installation
MW-43D	TNT Area	2	10	60.0	50 to 60	Delinate depth of groundwater impact in the TNT Ground Water plume
MW-49	TNT Area	2	10	30.0	20 to 30	Evaluate groundwater quality along the southern edge of the TNT Plume
MW-49D	TNT Area	2	10	60.0	50 to 60	Evaluate groundwater quality along the southern edge of the TNT Plume
MW-50	Miscellaneous Offsite Area	2	10	30.0	20 to 30	Delineate the southern extent of the TNT plume as it exits the site
MW-50D	North Side - Delaware	2	10	60.0	50 to 60	Delineate the southern extent of the TNT plume as it exits the site
MW-51	TNT Area	2	10	30.0	20 to 30	Delineate the northern extent of the TNT plume
MW-52	Maintenance Area	2	10	30.0	20 to 30	Evaluate groundwater quality downgradient of the RDX Plume
MW-52D	Maintenance Area	2	10	60.0	50 to 60	Evaluate groundwater quality downgradient of the RDX Plume
MW-53	B-Line	2	10	30.0	20 to 30	Evaluate groundwater quality along the eastern edge of B-Line
MW-53D	B-Line	2	10	60.0	50 to 60	Evaluate groundwater quality along the eastern edge of B-Line

Notes:
[1] casing diameter reported in inches
[2] Feet below ground surface

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Table 3 - Surfacewater Sampling Plan
Former Kenvil Works
Kenvil, New Jersey

MAP ID	Surface Water Sample ID	Location	Sample Depth1	Analytes	Rationale
A	SW-R2-G-12-1	G-12	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-G-12-1
B	SW-R2-G-12-1	G-12	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-G-5-1
C	SW-R2-G-12-2	G-12	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-G-12-3
F	SW-R2-E-16-1	E-16	Surface	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Confirm surfacewater quality adjacent to to the outfall, co-located with SD-R2-E-16-1
F	SW-R2-E-16-1D	E-16	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Confirm surfacewater quality adjacent to to the outfall, co-located with SD-R2-E-16-1
G	SW-R2-F-14-1	F-14	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-F-14-1
H	SW-R2-F-14-2	F-14	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-F-14-2
I	SW-R2-E-13-1	E-13	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-E-13-1
J	SW-R2-D-14-1	D-14	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-D-14-1
K	SW-R2-C-12-1	C-12	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-C-12-6
L	SW-R2-C-11-1	C-11	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-C-11-1
M	SW-R2-B-15-1	B-15	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-B-15-1
N	SW-R2-B-15-2	B-15	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel, co-located with SD-R2-B-15-2
S	SW-R2-E-16-3	E-16	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Confirm surfacewater quality adjacent to to the outfall, co-located with SD-R2-E-16-1
AA	SW-R2-E-11-1	E-11	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel
BB	SW-R2-F-11-1	F-11	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel
CC	SW-R2-L-5-1	L-5	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality at the northwest inlet to Duck Pond
DD	SW-R2-M-5-1	M-5	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality at the northeast inlet to Duck Pond
EE	SW-R2-M-5-2	M-5	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate groundwater discharge to Duck Pond
FF	SW-R2-L-5-2	L-5	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate groundwater discharge to Duck Pond
GG	SW-R2-M-6-1	M-6	2.5 to 3	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate groundwater discharge to Duck Pond
HH	SW-R2-D-12-1	D-12	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel
II	SD-R2-D-12-3	D-12	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel
JJ	SW-R2-N-5-1	N-5	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel
KK	SW-R2-N-5-2	N-5	0 to 0.5	SVOCs, E&E Compounds, TAL Metals, Hardness, pH	Evaluate surfacewater quality outside the defined stream channel

Notes:
[1] Feet below water surface
Shading indiactes surface water sample is co-colated with a sediment sample

Table 4- Sediment Sampleing Plan
Former Kenvil Works
Kenvil, New Jersey

Map ID	Sediment Sample ID	Location	Sample Depth1	Analytes	Rationale
A	SD-R2-G-12-1	G-12	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel adjacent to SD-R-G12-11 (NJDEP Comment 14). Co-located with surface water sample SW-R2-G-12-1
B	SD-R2-G-12-2	G-12	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel adjacent to SD-R-G12-11 (NJDEP Comment 14). Co-located with surface water sample SW-R2-G-12-2
C	SD-R2-G-12-3	G-12	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel adjacent to SD-R-G12-11 (NJDEP Comment 14). Co-located with surface water sample SW-R2-G-12-2
D	SD-R2-G-12-4	G-12	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel adjacent to SD-R-G12-01 (NJDEP Comment 15)
E	SD-R2-G-12-5	G-12	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel adjacent to SD-R-G12-01 (NJDEP Comment 15)
F	SD-R2-E-16-1	E-16	0 to 0.5	VOCs, SVOCs, E&E Compounds, TAL Metals, moisture, solids, TOC	Confirm sediment quality adjacent to to the outfall. Co-located with surface water sample SW-R2-E-16-1
F	SD-R2-E-16-1D	E-16	2 to 2.5	VOCs, SVOCs, E&E Compounds, TAL Metals, moisture, solids, TOC	Confirm sediment quality adjacent to to the outfall. Co-located with surface water sample SW-R2-E-163-1
G	SD-R2-F-14-1	F-14	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
H	SD-R2-F-14-2	F-14	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
I	SD-R2-E-13-1	E-13	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel. Co-located with surface water sample SW-R2-E-13-1
J	SD-R2-D-14-1	D-14	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel. Co-located with surface water sample SW-R2-D-14-1.
K	SD-R2-C-12-6	C-12	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel. Co-located with surface water sample SW-R2-C-12-1.
L	SD-R2-C-11-1	C-11	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel. Co-located with surface water sample SW-R2-C-11-1.
M	SD-R2-C-15-1	C-15	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel. Co-located with surface water sample SW-R2-B-15-1.
N	SD-R2-C-15-2	C-15	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel. Co-located with surface water sample SW-R2-B-15-2.
O	SD-R2-K-5-1	K-5	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
P	SD-R2-K-5-2	K-5	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
Q	SD-R2-O-4-1	O-4	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
R	SD-R2-O-4-2	O-4	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
S	SD-R2-E16-3	E-16	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel. Co-located with surface water sample SW-R2-E-16-3.
T	SD-R2-E-10-1	E-10	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
U	SD-R2-E-10-2	E-10	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel
V	SD-R2-M-7-01D	M-7	2.5 to 3	SVOCs, TAL Metals, moisture, solids, TOC	Vertical delination at SD-R-M-7-01 (NJDEP Comment 17)
W	SD-R2-L-5-01D	L-5	2.5 to 3	SVOCs, E&E Compounds, TAL Metals, moisture, solids, TOC	Vertical delination at SD-R-L-5-01 (NJDEP Comment 17)
X	SD-R2-L-5-02 D	L-5	2.5 to 3	SVOCs, E&E Compounds, TAL Metals, moisture, solids, TOC	Vertical delination at SD-R-L-5-02 (NJDEP Comment 17)
Y	SD-R2-O-4-3	O-4	0 to 0.5	PAHs, E&E Compounds, TAL Metals, moisture, solids, TOC	Evaluate sediment quality outside the defined stream channel

Notes:
[1] Feet below sediment surface
Shading indiactes sediment sample is co-colated with a surface water sample

Table 5 - Groundwater Sampling Plan
Former Kenvil Works
Kenvil, New Jersey

Monitor Well Designation	Well Location	Pump Intake Depth[2]	Sampling Method	Analytes
MW-3A	Development Area	18	Low-Flow	Total Lead/Dissolved Lead
MW-5	Development Area	29	Low-Flow	Total Lead/Dissolved Lead
MW-7PD	Development Area	55	Low-Flow	Total Lead/Dissolved Lead
MW-10	Storage Area	16	Low-Flow	Total Lead/Dissolved Lead
MW-12	Duck Pond	11.5	Low-Flow	Total Lead/Dissolved Lead
MW-12D	Duck Pond	39	Low-Flow	Total Lead/Dissolved Lead
MW-16	A-Line	11	Low-Flow	Total Lead/Dissolved Lead
MW-21	Dynamite Area	14	Low-Flow	Total Lead/Dissolved Lead
MW-26D	B-Line	57	Low-Flow	Total Lead/Dissolved Lead
MW-34	A-Line	19.5	Low-Flow	Total Lead/Dissolved Lead
MW-37	NG Area	14.5	Low-Flow	Total Lead/Dissolved Lead
MW-40	Dynamite Area	9	Low-Flow	Total Lead/Dissolved Lead
MW-44	Dynamite Area	17	Low-Flow	Total Lead/Dissolved Lead
MW-44D	Dynamite Area	54	Low-Flow	Total Lead/Dissolved Lead
MW-47	TNT Area	24.6	Low-Flow	Total Lead/Dissolved Lead
MW-J1D	Maintenance Area	55	Low-Flow	Total Lead/Dissolved Lead
MW-J2	Maintenance Area	11	Low-Flow	Total Lead/Dissolved Lead
MW-43D	TNT Area	52.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		57.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-49	TNT Area	22.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		27.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-49D	TNT Area	52.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		57.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-50	Miscellaneous Offsite Area	22.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		27.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-50D	North Side - Delaware	52.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		57.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-51	TNT Area	22.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		27.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-52	Maintenance Area	22.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		27.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-52D	Maintenance Area	52.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		57.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-53	B-Line	22.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		27.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
MW-53D	B-Line	52.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals
		57.5	Low-Flow	VOCs, SVOCs, E&E Comouunds, TAL Metals

Notes:
[1] casing diameter reported in inches
[2] Feet below ground surface

Table 6 - Burning Grounds Soil Screening Plan
Former Kenvil Works
Kenvil, New Jersey

Burning Ground	Map Label	Soil Sample ID	Location	Sample Depth1	Analytes	Rationale
Development Area Old Burning Ground	D1	SO-R2-M-5-1	M-5	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the northern edge of the Development Area Old Burning Ground
	D2	SO-R2-M-5-2	M-5	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the eastern edge of the Development Area Old Burning Ground
	D3	SO-R2-L-5-1	L-5	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the western edge of the Development Area Old Burning Ground
	D4	SO-R2-M-5-3	M-5	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the southern edge of the Development Area Old Burning Ground
	D5	SO-R2-M-5-4	M-5	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans in the center of the Development Area Old Burning Ground
New Burning Ground	D6	SO-R2-Q-6-1	Q-6	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the northern edge of the New Burning Grounds
	D7	SO-R2-Q-6--2	Q-6	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the eastern edge of the New Burning Grounds
	D8	SO-R2-Q-6--3	Q-6	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the western edge of the New Burning Grounds
	D9	SO-R2-Q-6--4	Q-6	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the southern edge of the New Burning Grounds
	D10	SO-R2-Q-6--5	Q-6	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans in the center of the New Burning Grounds
Maintainence Area Former Burning	D11	SO-R2-G-11-1	G-11	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the northern edge of the Maintainence Area Former Burning Ground
	D12	SO-R2-H-11-2	H-11	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the eastern edge of the Maintainence Area Former Burning Ground
	D13	SO-R2-G-11-2	G-11	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the western edge of the Maintainence Area Former Burning Ground
	D14	SO-R2-H-11-3	H-11	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the southern edge of the Maintainence Area Former Burning Ground
	D15	SO-R2-H-11-4	H-11	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans in the center of the Maintainence Area Former Burning Ground
Ammonium Nitrate Area FormerBurning	D16	SO-R2-H-12-1	H-12	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the northern edge of the Maintainence Area Former Burning Ground
	D17	SO-R2-I-13-1	I-13	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the eastern edge of the Maintainence Area Former Burning Ground
	D18	SO-R2-H-13-1	H-13	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the western edge of the Maintainence Area Former Burning Ground
	D19	SO-R2-H-13-2	H-13	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans on the southernedge of the Maintainence Area Former Burning Ground
	D20	SO-R2-H-13-3	H-13	0 to 2	Dioxins/Furans	Screen for the presence of dioxins/furans in the center of the Maintainence Area Former Burning Ground

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Notes:
[1] Feet below ground surface

Table 7 - Off-Site TNT Groundwater Sampling Plan
Former Kenvil Works
Kenvil, New Jersey

Sample Designation	Sample Location	Sample Depth1	Sampling Method	Analytes
GW-R2-CPT-33	Offfsite	15	Waterloo	E&E Compounds
		30	Waterloo	E&E Compounds
		60	Waterloo	E&E Compounds
		90	Waterloo	E&E Compounds
		120	Waterloo	E&E Compounds
GW-R2-CPT-34	Offfsite	15	Waterloo	E&E Compounds
		30	Waterloo	E&E Compounds
		60	Waterloo	E&E Compounds
		90	Waterloo	E&E Compounds
		120	Waterloo	E&E Compounds
GW-R2-CPT-35	Offfsite	15	Waterloo	E&E Compounds
		30	Waterloo	E&E Compounds
		60	Waterloo	E&E Compounds
		90	Waterloo	E&E Compounds
		120	Waterloo	E&E Compounds
GW-R2-CPT-36	Offfsite	15	Waterloo	E&E Compounds
		30	Waterloo	E&E Compounds
		60	Waterloo	E&E Compounds
		90	Waterloo	E&E Compounds
		120	Waterloo	E&E Compounds
GW-R2-CPT-37	Offfsite	15	Waterloo	E&E Compounds
		30	Waterloo	E&E Compounds
		60	Waterloo	E&E Compounds
		90	Waterloo	E&E Compounds
		120	Waterloo	E&E Compounds
GW-R2-CPT-38	Offfsite	15	Waterloo	E&E Compounds
		30	Waterloo	E&E Compounds
		60	Waterloo	E&E Compounds
		90	Waterloo	E&E Compounds
		120	Waterloo	E&E Compounds

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Notes:

[1] Feet below ground surface

Table 8- Soil Sampling Plan
Former Kenvil Works
Kenvil, New Jersey

Map ID	Soil Sample ID	Location	Sample Depth1	Analytes	Rationale
A	SO-R2-I-13-2	I13	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-I-13-2D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
B	SO-R2-M-11-1	M11	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-M-11-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
C	SO-R2-0-8-1	O8	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-0-8-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
D	SO-R2-R-7-1	R7	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-R-7-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
E	SO-R2-R-7-2	R7	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-R-7-2D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
F	SO-R2--R-4-1	R4	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-R-4-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
G	SO-R2-N-4-1	N4	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-N-4-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
H	SO-R2-L-4-1	L4	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-L-4-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
I	SO-R2-K-5-1	K5	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-K-5-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
J	SO-R2-G-5-1	G5	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-G-5-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
K	SO-R2-F-7-1	F-7	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-F-7-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
L	SO-R2-F-8-1	F8	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-F-8-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
M	SO-R2-E-9-1	E9	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-E-9-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
N	SO-R2-C-8-1	C8	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-C-8-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
O	SO-R2-C-8-2	C8	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-C-8-2D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
P	SO-R2-B-8-1	B9	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-B-9-1		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
Q	SO-R2-B-9-2	B9	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-B-9-2D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
R	SO-R2-B-9-3	B9	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-B-9-3D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
S	SO-R2-A-11-1	A11	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-A-11-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
T	SO-R2-B-14-1	B14	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-B-14-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
U	SO-R2-A-14-1	A14	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-A-14-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances

Table 8- Soil Sampling Plan
Former Kenvil Works
Kenvil, New Jersey

Map ID	Soil Sample ID	Location	Sample Depth1	Analytes	Rationale
V	SO-R2-E-16-1	E16	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-E-16-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
W	SO-R2-G-14-1	G14	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-G-14-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
X	SO-R2-H-14-1	H14	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-H-14-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
Y	SO-R2-P-4-1	P4	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
	SO-R2-P-4-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Outbound delination of soil exceedances
Z	SO-R2-Q-5-1	Q5	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-Q-5-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
AA	SO-R2-J-5-1	J5	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-J-5-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
BB	SO-R2-J-5-2	J5	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-J-5-2D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
CC	SO-R2-G-6-1	G6	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-G-6-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
DD	SO-R2-G-7-1	G7	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-G-7-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
EE	SO-R2-H-9-1	H9	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-H-9-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
FF	SO-R2-F-12-1	F-12	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-F-12-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
GG	SO-R2-C-14-1	C14	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-C-14-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
HH	SO-R2-B-12-1	B12	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-B-12-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
II	SO-R2-C-12-1	C12	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-C-12-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
JJ	SO-R2-H-11-4	H11	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-AH11-4D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
KK	SO-R2-H-10-1	H10	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-AH10-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
LL	SO-R2-K-9-1	K9	0 to 0.5	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs
	SO-R2-K-9-1D		TBD	SVOCs, VOCs, E&E Compounds, TAL Metals	Refine the extent soil exceedances between individual AOCs

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Notes:
[1] Feet below ground surface
TBD = To be determined based on field screening
AOCs = Areas of Concern

May 09, 2013 - 12:19pm

LEGEND:

- PROPOSED SHALLOW MONITORING WELL LOCATION (APPROX)
- PROPOSED DEEP MONITORING WELL LOCATION (APPROX)
- SURFACE WATER SAMPLE LOCATION
- SHALLOW MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION
- PROPOSED RI GROUNDWATER SAMPLE THAT WAS NOT COLLECTED
- E&E SCREENING CONE PENETROMETER (CPT) SAMPLE LOCATION
- CONE PENETROMETER (CPT) SAMPLE LOCATION
- TRENCH SAMPLE LOCATION
- EASTERN DRAINAGE AREA
- CENTRAL DRAINAGE AREA
- WESTERN DRAINAGE AREA
- DUCK POND AND TRIBUTARIES DRAINAGE AREA
- MISCELLANEOUS PONDS
- SURFACE WATER FLOW DIRECTIONS
- GROUNDWATER FLOW DIRECTION
- DRY STREAM SEGMENT, AREA , OR FORMER DITCH (REFER TO NOTE 5)
- STREAM SEGMENT OR AREA WITHOUT SUFFICIENT WATER PRESENT (REFER TO NOTE 6)
- TRENCH FOR HYDRAULIC OIL INVESTIGATION
- WEIR
- PROPERTY LINE
- WATER FEATURE
- REMEDIAL AREA
- FORMER OPERATIONAL AREA
- UTILITY POLE
- LIGHT POLE
- WET AREA
- FENCE
- PROPERTY LINE
- GUIDE RAIL
- RAILROAD
- SMALL GAUGE RAIL
- PERIMETER OF WET AREA
- CULVERT
- STREAMS
- TRAIL/DIRT ROAD
- ELECTRIC SUBSTATION
- BUILDING

NOTES:

1. THESE FILES ARE IN THE NORTH AMERICAN DATUM 1983 NEW JERSEY STATE PLANE COORDINATE SYSTEM. THE TOPOGRAPHIC FILE REFERENCES THE NORTH AMERICAN VERTICAL DATUM 1988.
2. THE BOUNDARY LINE AS DELINEATED IS APPROXIMATE AND HAS BEEN DIGITIZED FROM A MAP ENTITLED "HERCULES INCORPORATED, KENVIL PLANT PROPERTY MAP, PLANT 080, ACCOUNT 9500, CLASSIFICATION 21045, FILE CODE 5WE REVISION 1" REVISED TO JUNE 11, 1970 PROVIDED BY REPRESENTATIVES OF HERCULES, INC., AND THE TAX MAP OF THE TOWNSHIP OF ROXBURY AND NOT FROM AN ACTUAL FIELD SURVEY OR WITH THE BENEFIT OF A TITLE SEARCH.
3. GROUNDWATER REMEDIAL INVESTIGATION SAMPLE LOCATIONS WERE SELECTED BASED ON ANALYTICAL RESULTS PRESENTED IN THE GROUNDWATER SITE INCESTIGATION(GW–SI) REPORT (MWH, 2004). SURFACE WATER REMEDIAL INVESTIGATION SAMPLE LOCATIONS WERE SELECTED BASED ON ANALYTICAL RESULTS PRESENTED IN THE SURFACE WATER/SEDIMENT SITE INVESTIGATION (SW/SD–SI) REPORT (MWH, 2004).
4. SAMPLE LOCATIONS PRESENTED IN THIS FIGURE WERE COLLECTED DURING THE REMEDIAL INVESTIGATION.
5. SOLID BROWN LINES REPRESENT DRY STREAM SEDIMENTS OR FORMER DITCHES THAT NO LONGER CONVEY WATER SINCE MANUFACTURING OPERATIONS HAVE CEASED. THESE AREAS ARE NO LONGER CONSIDERED SURFACE WATER OR SEDIMENT BODIES AND ARE CONSIDERED SOIL IN THE REMEDIAL INVESTIGATION REPORT.
6. DASHED BROWN LINES REPRESENT STREAM SEDIMENTS OR AREAS WITHOUT SUFFICIENT WATER PRESENT FOR SURFACE WATER SAMPLE COLLECTION, HOWEVER SATURATED SEDIMENTS ARE PRESENT.
7. MW–5P AND MW–22 COULD NOT BE SAMPLED DUE TO DAMAGE INCURRED DURING DEMOLITION EFFORTS.
8. PLAN ADAPTED FROM DRAWING TITLED "GROUNDWATER – SAMPLE LOCATION MAP" AS PRESENTED IN THE REMEDIAL INVESTIGATION REPORT, VOLUME C – GROUNDWATER FIGURE C–1 PRODUCED BY MWH AMERICAS, INC..

NO.	DATE	REVISION	INIT.

1"=250' 250 0 250 500

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PHASE II REMEDIAL INVESTIGATION WORK PLAN
HERCULES INCORPORATED
KENVIL WORKS FACILITY

SITE PLAN WITH PROPOSED MONITORING WELL LOCATIONS

IN CHARGE OF MSK
DESIGNED BY JAL CHECKED BY JAL
DRAWN BY RJD

FILE NO. 2420.46424–01
DATE MAY 2013

FIGURE 1

DRAFT

I:\Ashland.2420\46424-KENVIL-WORKS--PH\DOCS\DWG\SHEETS\46424G1-Figure 1.dwg

May 09, 2013 - 9:00am

i:\ashland.2420\46424.KENVIL--WORKS--PH\DOCS\DWG\SHEETS\46424d02--Figure 2.dwg

MISCELLANEOUS/OFFSITE AREA

NEW JERSEY TRANSIT

DUCK POND AND TRIBUTARIES DRAINAGE AREA

MISC. PONDS

STORAGE AREA

MISCELLANEOUS/ OFFSITE AREA

CONSTRUCTION & DEMOLITION LANDFILL

DUCK POND

AREA I

DEVELOPMENT AREA

HOWARD BOULEVARD

MISCELLANEOUS/ OFFSITE AREA

DIAZO AREA

FINISHING AREA

B-LINE AREA

A-LINE AREA

AREA III

MAINTENANCE AREA

PETRO-NG AREA

DYNAMITE AREA

CENTRAL DRAINAGE AREA

EASTERN DRAINAGE AREA

TNT AREA

WESTERN DRAINAGE AREA

MISCELLANEOUS/ OFFSITE AREA

MISCELLANEOUS/ OFFSITE AREA

WASTEWATER TREATMENT PLANT

HERCULES ROAD

KENVIL - BERKSHIRE VALLEY ROAD

TOWANDA CREEK & DRIVE-IN THEATER

U.S. HIGHWAY ROUTE 46

LEGEND:

- PROPOSED PHASE II RI SURFACE WATER SAMPLE (APPROX)
- SURFACE WATER SAMPLE LOCATION
- SHALLOW MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION
- PROPOSED SURFACE WATER SAMPLE THAT WAS NOT COLLECTED
- E&E SCREENING CONE PENETROMETER (CPT) SAMPLE LOCATION
- CONE PENETROMETER (CPT) SAMPLE LOCATION
- TRENCH SAMPLE LOCATION
- EASTERN DRAINAGE AREA
- CENTRAL DRAINAGE AREA
- WESTERN DRAINAGE AREA
- DUCK POND AND TRIBUTARIES DRAINAGE AREA
- MISCELLANEOUS PONDS
- SURFACE WATER FLOW DIRECTION
- GROUNDWATER FLOW DIRECTION
- DRY STREAM SEGMENT, AREA , OR FORMER DITCH (REFER TO NOTE 5)
- STREAM SEGMENT OR AREA WITHOUT SUFFICIENT WATER PRESENT (REFER TO NOTE 6)
- TRENCH FOR HYDRAULIC OIL INVESTIGATION
- WEIR
- PROPERTY LINE
- WATER FEATURE
- REMEDIAL AREA
- FORMER OPERATIONAL AREA
- UTILITY POLE
- LIGHT POLE
- WET AREA
- FENCE
- PROPERTY LINE
- GUIDE RAIL
- RAILROAD
- SMALL GAUGE RAIL
- PERIMETER OF WET AREA
- CULVERT
- STREAMS
- TRAIL/DIRT ROAD
- ELECTRIC SUBSTATION
- BUILDING

NOTES:

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3. GROUNDWATER REMEDIAL INVESTIGATION SAMPLE LOCATIONS WERE SELECTED BASED ON ANALYTICAL RESULTS PRESENTED IN THE GROUNDWATER SITE INCESTIGATION(GW-SI) REPORT (MWH, 2004). SURFACE WATER REMEDIAL INVESTIGATION SAMPLE LOCATIONS WERE SELECTED BASED ON ANALYTICAL RESULTS PRESENTED IN THE SURFACE WATER/SEDIMENT SITE INVESTIGATION (SW/SD-SI) REPORT (MWH, 2004).
4. SAMPLE LOCATIONS PRESENTED IN THIS FIGURE WERE COLLECTED DURING THE REMEDIAL INVESTIGATION.
5. SOLID BROWN LINES REPRESENT DRY STREAM SEDIMENTS OR FORMER DITCHES THAT NO LONGER CONVEY WATER SINCE MANUFACTURING OPERATIONS HAVE CEASED. THESE AREAS ARE NO LONGER CONSIDERED SURFACE WATER OR SEDIMENT BODIES AND ARE CONSIDERED SOIL IN THE REMEDIAL INVESTIGATION REPORT.
6. DASHED BROWN LINES REPRESENT STREAM SEDIMENTS OR AREAS WITHOUT SUFFICIENT WATER PRESENT FOR SURFACE WATER SAMPLE COLLECTION. HOWEVER SATURATED SEDIMENTS ARE PRESENT.
7. PLAN ADAPTED FROM DRAWING TITLED "SURFACE WATER - SAMPLE LOCATION MAP" AS PRESENTED IN THE REMEDIAL INVESTIGATION REPORT, VOLUME E - SURFACE WATER FIGURE E-1 PRODUCED BY MWH AMERICAS, INC..

NO.	DATE	REVISION	INIT.

1"=250' 250 0 250 500

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PHASE II REMEDIAL INVESTIGATION WORK PLAN
HERCULES INCORPORATED
KENVIL WORKS FACILITY

SITE PLAN WITH PROPOSED SURFACE WATER SAMPLING LOCATIONS

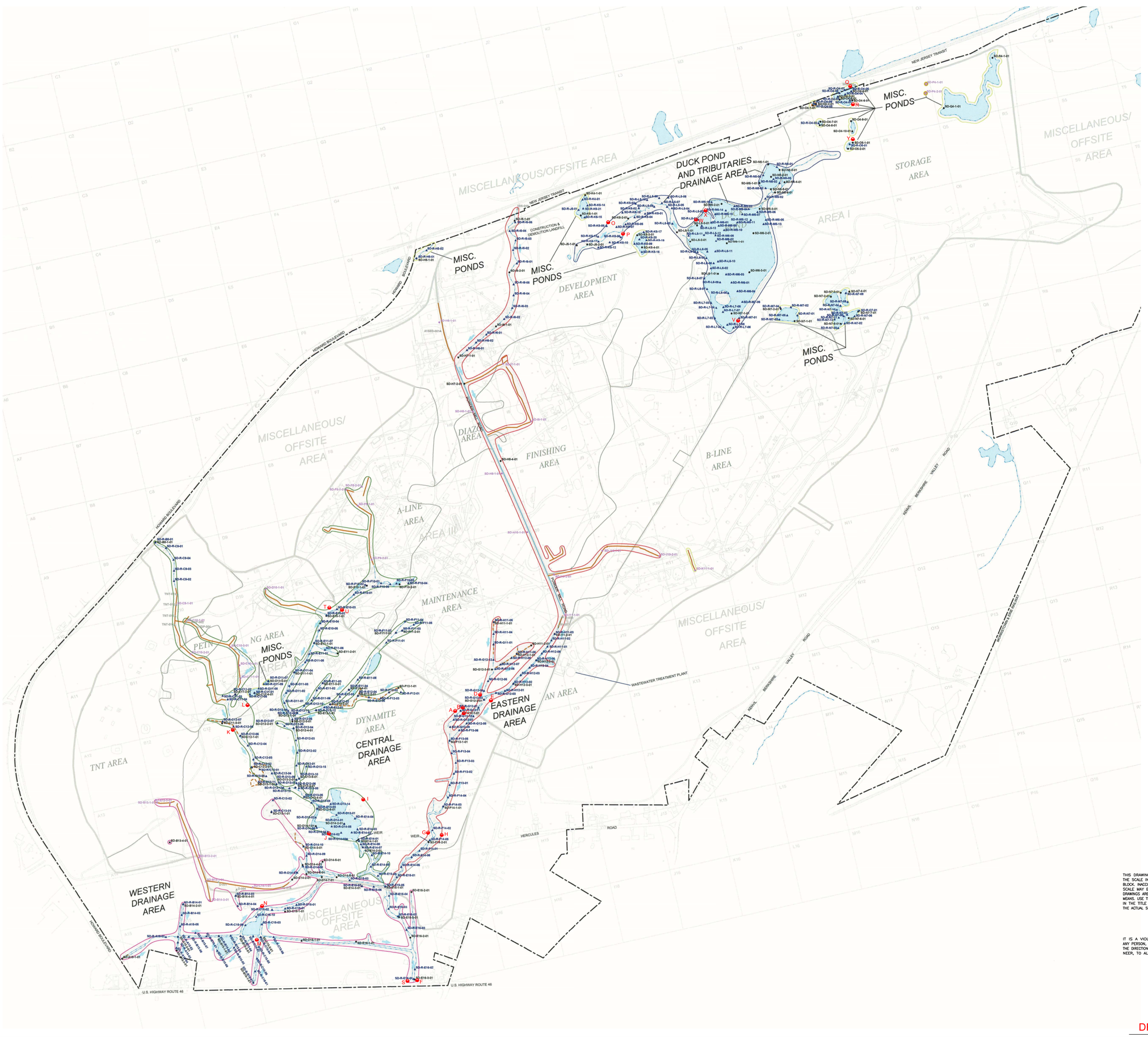
IN CHARGE OF MSK
DESIGNED BY JAL CHECKED BY JAL
DRAWN BY RJD

FILE NO. 2420.46424-02
DATE MAY 2013
FIGURE 2

DRAFT

May 09, 2013 - 8:19am

I:\Vanland.2420\V46424-KENVIL-WORKS-PHI\DOCS\DWG\SHEETS\46424G3-Figure 3.dwg



LEGEND:

- PROPOSED PHASE II RI SEDIMENT SAMPLE LOCATION (APPROX)
- RI SEDIMENT SAMPLE LOCATION
- SI SEDIMENT SAMPLE LOCATION
- FORMER SI SEDIMENT SAMPLE LOCATION THAT IS CURRENTLY CONSIDERED A SOIL SAMPLE LOCATION (REFER TO NOTE 8)
- PROPOSED RI SEDIMENT SAMPLE THAT WAS NOT COLLECTED
- EASTERN DRAINAGE AREA
- CENTRAL DRAINAGE AREA
- WESTERN DRAINAGE AREA
- DUCK POND AND TRIBUTARIES DRAINAGE AREA
- MISCELLANEOUS PONDS
- SURFACE WATER FLOW DIRECTIONS
- DRY STREAM SEGMENT, AREA, OR FORMER DITCH (REFER TO NOTE 6)
- STREAM SEGMENT OR AREA WITHOUT SUFFICIENT WATER PRESENT (REFER TO NOTE 7)
- WEIR
- PROPERTY LINE
- WATER FEATURE
- REMEDIAL AREA
- FORMER OPERATIONAL AREA
- UTILITY POLE
- LIGHT POLE
- WET AREA
- FENCE
- PROPERTY LINE
- GUIDE RAIL
- RAILROAD
- SMALL GAUGE RAIL
- PERIMETER OF WET AREA
- CULVERT
- STREAMS
- TRAIL/DIRT ROAD
- ELECTRIC SUBSTATION
- BUILDING

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3. DASHED TOPOGRAPHIC CONTOURS INDICATE AREAS WHERE THE GROUND IS OBSCURED BY DENSE TREES OR SHADOWS. THESE AREAS MAY NOT CONFORM TO ACCURACY STANDARDS.
4. SEDIMENT REMEDIAL INVESTIGATION SAMPLE LOCATIONS WERE SELECTED BASED ON ANALYTICAL RESULTS PRESENTED IN THE SURFACE WATER/SEDIMENT SITE INVESTIGATION (SW/SD-SI) REPORT (MWH, 2004).
5. FOURTEEN SEDIMENT SAMPLES WERE PROPOSED IN THE REMEDIAL ACTION WORK PLAN THAT WERE NOT COLLECTED BECAUSE THESE SAMPLES WERE LOCATED IN AREAS WHICH WERE BACKFILLED DURING SITE IMPROVEMENT ACTIVITIES OR WERE LOCATED OFF-SITE. THESE SAMPLES ARE: A1SED-001, D-001, D-004, D-016, M-037, M-038, NGP-002, NGP-004, TNT-010, TNT-011, TNT-012, TNT-013, MIS-049, MIS-058.
6. SOLID BROWN LINES REPRESENT DRY STREAM SEDIMENTS OR FORMER DITCHES THAT NO LONGER CONVEY WATER SINCE MANUFACTURING OPERATIONS HAVE CEASED. THESE AREAS ARE NO LONGER CONSIDERED SURFACE WATER OR SEDIMENT BODIES AND ARE CONSIDERED SOIL IN THE REMEDIAL INVESTIGATION REPORT.
7. DASHED BROWN LINES REPRESENT STREAM SEDIMENTS OR AREAS WITHOUT SUFFICIENT WATER PRESENT FOR SURFACE WATER SAMPLE COLLECTION, HOWEVER SATURATED SEDIMENTS ARE PRESENT.
8. SITE INVESTIGATION SEDIMENT SAMPLE LOCATIONS DENOTED IN PURPLE ARE INCLUDED IN VOLUME B - SOIL REMEDIAL INVESTIGATION. THESE SAMPLES ARE NO LONGER CONSIDERED AS SEDIMENTS AND ARE MORE PROPERLY DEFINED AS SOILS.
9. PLAN ADAPTED FROM DRAWING TITLED "SEDIMENT - SITE WIDE AREAL EXTENT OF EXCEEDANCES" AS PRESENTED IN THE REMEDIAL INVESTIGATION REPORT, VOLUME D - SEDIMENT FIGURE D-1 PRODUCED BY MWH AMERICAS, INC..

NO.	DATE	REVISION	INIT.

1"=250' (250 0 250 500)

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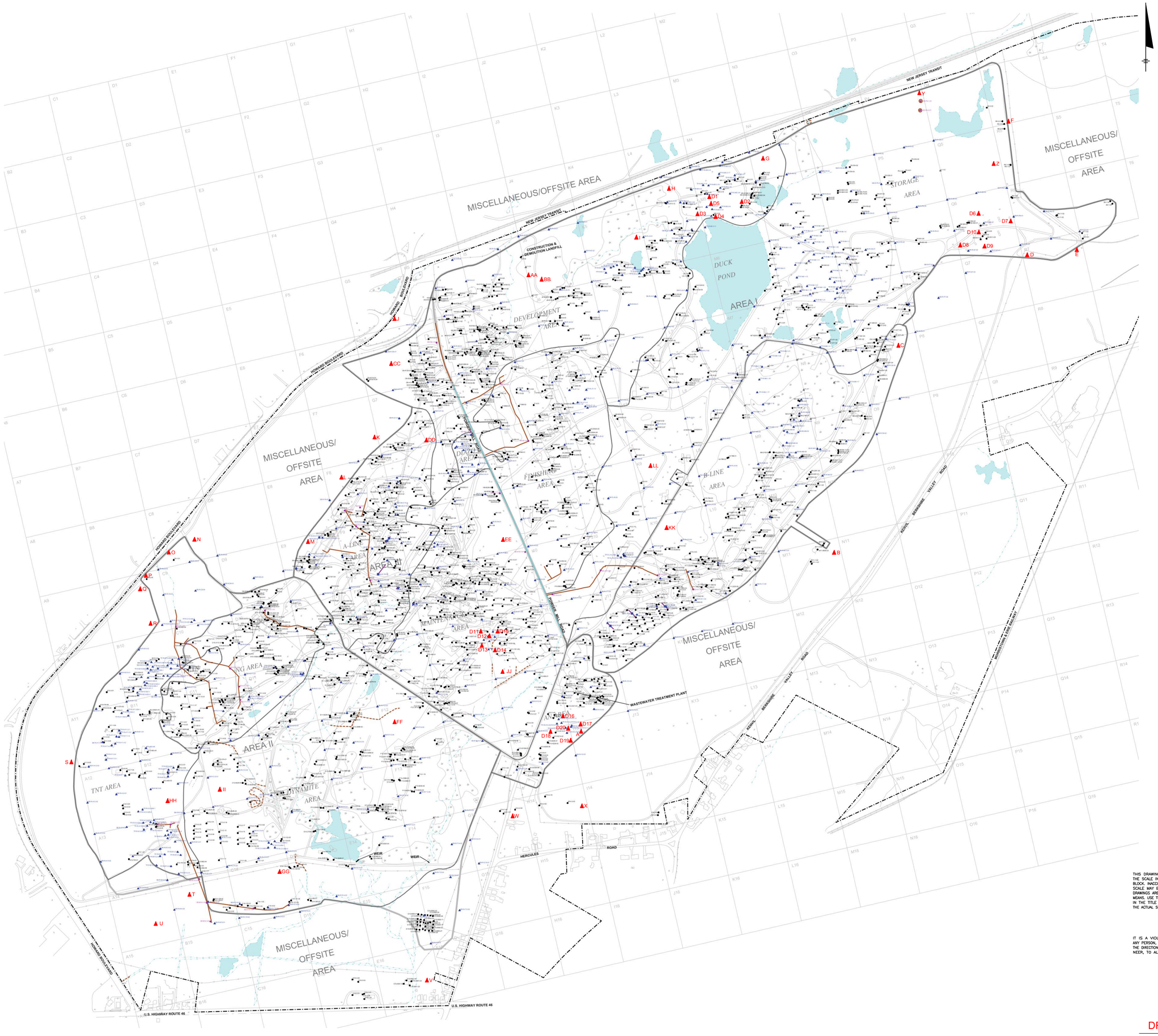
PHASE II REMEDIAL INVESTIGATION WORK PLAN
HERCULES INCORPORATED
KENVIL WORKS FACILITY

SITE PLAN WITH PROPOSED SEDIMENT SAMPLE LOCATIONS

DRAFT

IN CHARGE OF MSK	FILE NO. 2420.46424-03	FIGURE 3
DESIGNED BY JAL CHECKED BY JAL	DATE MAY 2013	
DRAWN BY RJD		

May 09, 2013 - 1:38pm



LEGEND:

- PROPOSED PHASE II RI SOIL BORING LOCATION (APPROX)
- RI SOIL SAMPLE LOCATION
- TRENCH SAMPLE LOCATION
- SI SOIL SAMPLE LOCATION
- FORMER SI SEDIMENT SAMPLE LOCATION THAT IS CURRENTLY CONSIDERED A SOIL SAMPLE LOCATON (REFER TO NOTE 7)
- PROPOSED RI SOIL SAMPLE THAT WAS NOT COLLECTED
- DRY STREAM SEGMENT, AREA , OR FORMER DITCH (REFER TO NOTE 5)
- STREAM SEGMENT OR AREA WITHOUT SUFFICIENT WATER PRESENT (REFER TO NOTE 6)
- TRENCH FOR HYDRAULIC OIL INVESTIGATION
- WEIR
- PROPERTY LINE
- WATER FEATURE
- REMEDIAL AREA
- FORMER OPERATIONAL AREA
- UTILITY POLE
- LIGHT POLE
- WET AREA
- FENCE
- PROPERTY LINE
- GUIDE RAIL
- RAILROAD
- SMALL GAUGE RAIL
- PERIMETER OF WET AREA
- CULVERT
- STREAMS
- TRAIL/DIRT ROAD
- ELECTRIC SUBSTATION
- BUILDING

NOTES:

1. THESE FILES ARE IN THE NORTH AMERICAN DATUM 1983 NEW JERSEY STATE PLANE COORDINATE SYSTEM. THE TOPOGRAPHIC FILE REFERENCES THE NORTH AMERICAN VERTICAL DATUM 1988.
2. THE BOUNDARY LINE AS DELINEATED IS APPROXIMATE AND HAS BEEN DIGITIZED FROM A MAP ENTITLED "HERCULES INCORPORATED, KENVIL PLANT PROPERTY MAP, PLANT 080, ACCOUNT 9600, CLASSIFICATION 21046, FILE CODE 5WE, REVISION 1" REVISED TO JUNE 11, 1970 PROVIDED BY REPRESENTATIVES OF HERCULES, INC., AND THE TAX MAP OF THE TOWNSHIP OF ROXBURY AND NOT FROM AN ACTUAL FIELD SURVEY OR WITH THE BENEFIT OF A TITLE SEARCH.
3. SOIL REMEDIAL INVESTIGATION SAMPLE LOCATIONS WERE SELECTED BASED ON ANALYTICAL RESULTS PRESENTED IN THE SOILS SITE INCESTIGATION(SOILS-SI) REPORT (MWH, 2004) AND A UNIFORM GRID SYSTEM
4. SEDIMENT SAMPLES COLLECTED FROM FORMER DRAINAGE AREAS ARE NO LONGER CONSIDERED AS SEDIMENTS AND ARE NOW DEFINED AS SOILS. TWENTY-NINE SI SEDIMENT SAMPLES WERE RE-DEFINED AS SOIL SAMPLES IN THE REMEDIAL INVESTIGATION REPORT (RIR). REFER TO TEXT (VOLUME B) FOR MORE DETAILED DEFINITION.
5. SOLID BROWN LINES REPRESENT DRY STREAM SEDIMENTS OR FORMER DITCHES THAT NO LONGER CONVEY WATER SINCE MANUFACTURING OPERATIONS HAVE CEASED. THESE AREAS ARE NO LONGER CONSIDERED SURFACE WATER OR SEDIMENT BODIES AND ARE CONSIDERED SOIL IN THE REMEDIAL INVESTIGATION REPORT.
6. DASHED BROWN LINES REPRESENT STREAM SEDIMENTS OR AREAS WITHOUT SUFFICIENT WATER PRESENT FOR SURFACE WATER SAMPLE COLLECTION, HOWEVER SATURATED SEDIMENTS ARE PRESENT.
7. SITE INVESTIGATION SEDIMENT SAMPLE LOCATIONS DENOTED IN PURPLE ARE INCLUDED IN VOLUME B AND HAVE BEEN EXCLUDED FROM VOLUME D - SEDIMENT REMEDIAL INVESTIGATION. THESE SAMPLES ARE NO LONGER CONSIDERED AS SEDIMENTS AND ARE MORE PROPERLY DEFINED AS SOILS.
8. PLAN ADAPTED FROM DRAWING TITLED "SOIL - SAMPLE LOCATION MAP" AS PRESENTED IN THE REMEDIAL INVESTIGATION REPORT, VOLUME B - SOILS FIGURE B-1 PRODUCED BY MWH AMERICAS, INC.

NO.	DATE	REVISION	INIT.

1"=250' 250 0 250 500

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PHASE II REMEDIAL INVESTIGATION WORK PLAN HERCULES INCORPORATED KENVIL WORKS FACILITY

SITE PLAN WITH PROPOSED SOIL BORING LOCATIONS

IN CHARGE OF MSK
DESIGNED BY JAL CHECKED BY JAL
DRAWN BY RJD

FILE NO. 2420.46424-04
DATE MAY 2013
FIGURE 4

DRAFT

C:\Users\vetlin\appdata\local\temp\AcPublish_4684\4642404-Figure 4.dwg

Figure 5
Proposed Off-Site Groundwater Sample Locations

HERCULES

Kenvil Works Facility
Kenvil, New Jersey

Facility-wide Investigation

Final Field Quality Assurance Project Plan

February 2006

MWH

FIELD QUALITY ASSURANCE PROJECT PLAN

HERCULES INCORPORATED KENVIL WORKS
KENVIL, NEW JERSEY

Prepared For:

HERCULES INCORPORATED
Wilmington, Delaware

Prepared By:

MWH
335 Phoenixville Pike
Malvern, Pennsylvania 19355

February 2006

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D SEMI-VOLATILE ORGANIC COMPOUND IMMUNOASSAY TEST KIT STANDARD OPERATION PROCEDURES
E MWH STANDARD OPERATING PROCEDURE X-RAY FLUORESCENCE
F ASTM D 2488 STANDARD METHOD FOR CLASSIFICATION OF SOILS IN THE FIELD
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LIST OF ACRONYMS AND ABBREVIATIONS

Alliant	Alliant Techsystems, Inc.
ANFO	ammonium nitrate/fuel oil
AQAPP	Analytical Quality Assurance Project Plan
ARAR	applicable or relevant and appropriate requirements
ASTM	American Society for Testing and Materials
CPT	Cone Penetrometer Technology
DDNP	diazodinitrophenol
DOD	Department of Defense
E&E	explosive and energetic
EDM	Electronic distance measurement
EM	Electromagnetic
facility	Kenvil Works facility
FID	Flame Ionization Detector
FQAPP	Field Quality Assurance Project Plan
GPR	Ground penetrating radar
GPS	Global Positioning System
Hercules	Hercules, Incorporated
HFA	Human Factors Application
HMX	cyclotetramethylenetetranitramine
ISRA	Industrial Site Recovery Act
LB	Large Bore
MC	Macro Core
NG	nitroglycerin
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
PCB	polychlorinated biphenyls
PETN	pentaerythritol tetranitrate
PID	Photoionization detector
ppb	Parts per billion

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

ppm	Parts per million
ppt	Parts per trillion
PSO	project safety officer
QA	quality assurance
QA/QC	quality assurance/quality control
QC	quality control
RA	Remediation Agreement
RDX	cyclotrimethylenetrinitramine
SONAR	Sound navigation ranging
SSO	Site Safety Officer
SVOC	Semivolatile Organic Compounds
TNT	trinitrotoluene
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
WWTP	Waste water treatment plant
XRF	X-Ray Fluorescence

CHANGE SUMMARY PAGE

Reasons for revision: Update of the NJDEP Field Sampling Procedures Manual (August 2005)

Change No.	Date	Affected Section(s)
	June 1999	**ALL**
REV [1]	Feb. 2006	Sections 1, 3, 9, 15, 18; Figures 1-1, 3-1;
		Appendices D, E, G-1

1.0 INTRODUCTION

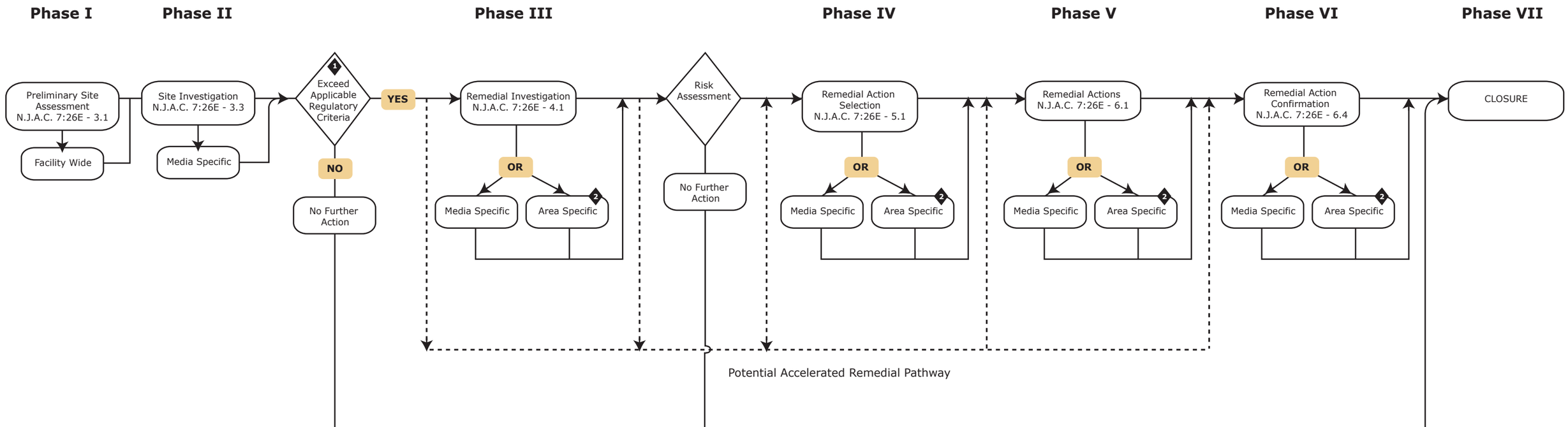
Hercules Incorporated (Hercules) proposes to conduct a facility-wide site investigation of the Kenvil Works facility to fulfill obligations of a Remedial Agreement (RA) with the New Jersey Department of Environmental Protection (NJDEP). The RA was signed on March 10, 1995. The facility-wide investigation is designed to comply with New Jersey Administrative Code (N.J.A.C.) 7.26E-3.3 through 3.12 and will include a series of phases addressing each media. Sampling and analysis requirements for each investigation phase will be described in a Phase-specific Sampling and Analysis Plan (SAP). Figure 1-1 illustrates the relationship of the FQAAP to all other project workplan documents.

The objective of the facility-wide investigation is to systematically assess the site to identify evidence of facility-related contamination. The investigation will include the following phases:

- Phase I - Site Screening
- Phase II - Confirmation/Delineation
- Phase III - Groundwater Assessment/Monitoring
- Phase IV - Remedial Investigation and Related Studies

This Field *Quality Assurance Project Plan* (FQAPP) describes the field procedures and protocols to be followed during the implementation of all Industrial Site Recovery Act (ISRA) related site investigation activities conducted at the Kenvil Works Facility (facility) located in Kenvil, New Jersey. This document is intended to solely address field sampling and screening methodologies in support of the facility-wide investigation described in the Technical Memorandum submitted to the NJDEP in July, 1998. The *Analytical Quality Assurance Project Plan* (AQAPP), companion document to the FQAPP and previously submitted under separate cover, describes the quality assurance/quality control (QA/QC) procedures for all analytical activities conducted for the facility-wide investigation.

This document has been prepared following requirements set forth in the *NJDEP Technical Requirements for Site Remediation* (N.J.A.C. 7:26*E,* 1997) and *the NJDEP Field Sampling Procedures Manual,* (NJDEP, 1992). Significant future modifications to the procedures



NOTES:

1. REGULATORY CRITERIA

Soil
NJDEP Residential Direct Contact Soil Cleanup Criteria (NJDEP RDCSCC)
NJDEP Non-Residential Direct Contact Soil Cleanup Criteria (NJDEP NRDCSCC)
NJDEP Impact to Groundwater Criteria (NJDEP IGWSCC)

Groundwater
NJDEP Class II-A Criteria

Surface Water
NJDEP Surface Water Quality Standards

Sediment
NJDEP Guidance for Sediment Quality

2. AREAS

1. Trinitrotoluene (TNT) Area
2. Dynamite Area
3. Nitroglycerin (NG) Area
4. Pentaethritol (PETN) Area
5. Development Area
6. Diazodinitrophenol (DIAZO) Area
7. Maintenance Area
8. B-Line Area
9. A-Line Area
10. Finishing Area
11. Ammonia Nitrate Area
12. Storage Area
13. Miscellaneous/Off-Site Area

HERCULES INCORPORATED
KENVIL WORKS FACILITY

FACILITY-WIDE RESTORATION STRATEGY

MWH

FIGURE 1-1

S:\IND PROJECTS\Hercules-126701S\Kenvil\18-SW-Sed Report\Final SW-Sed Report\Figures\Fig 1-1.ai

outlined in this FQAPP will be promptly reported to the Project Manager and Investigation Manager. As necessary, the Project Manager/Investigation Manager will submit significant modifications for final approval to Hercules. Upon approval, Hercules will submit these modifications to NJDEP for review and approval.

2.0 KENVIL WORKS FACILITY BACKGROUND

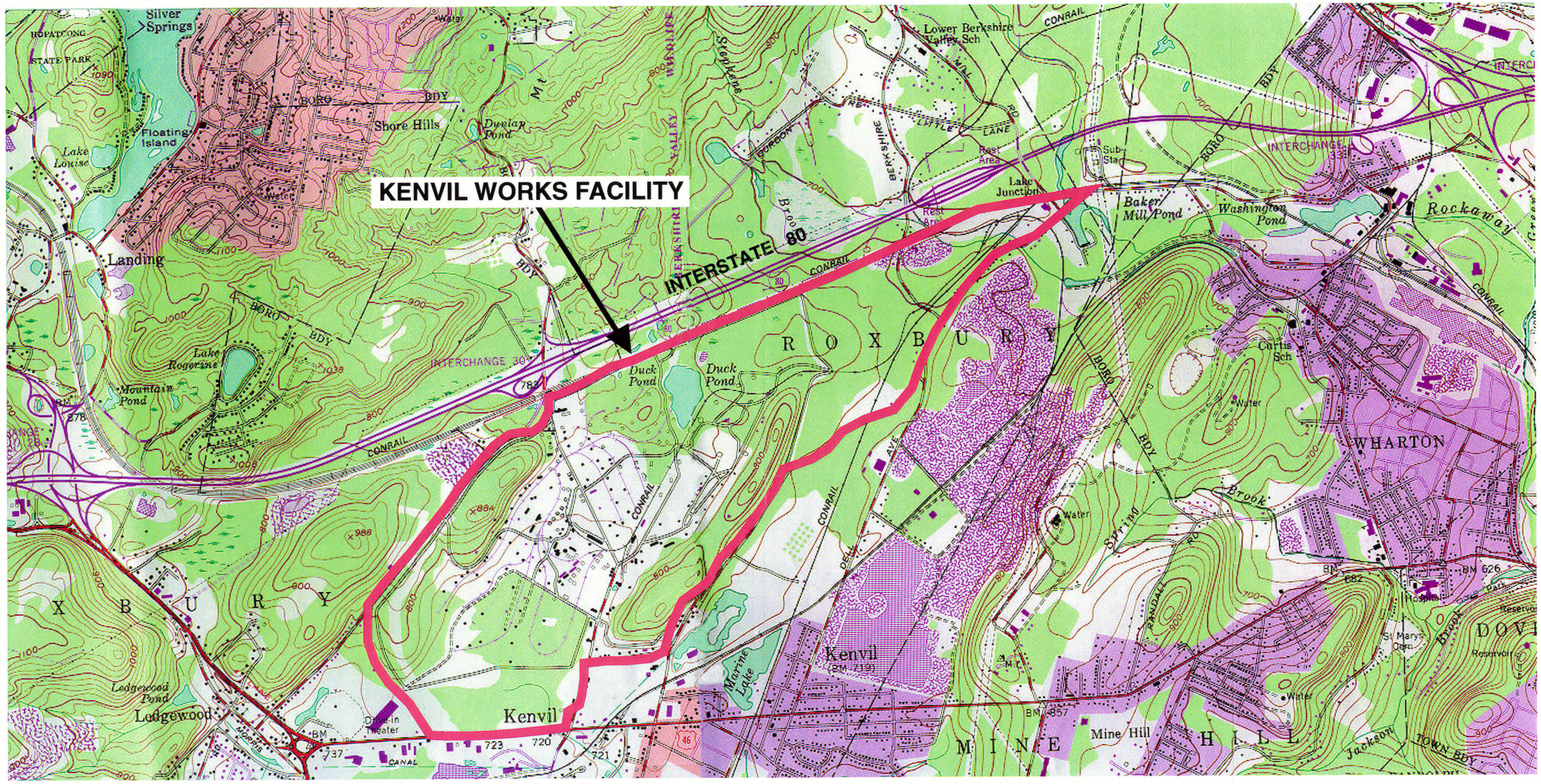
The facility dates back to the 1870's when it was opened for the manufacture of dynamite primarily to support the iron ore mining operations in the surrounding area. The facility was operated by various companies until 1912 when Hercules became the sole owner.

The facility is located on Howard Boulevard approximately 0.5 miles northwest of the center of Kenvil in Morris County, New Jersey. Figure 2-1 illustrates the location of the site with respect to Roxbury Township. Figure 2-2 provides a general layout of the plant Areas of Investigation (AOI). The plant is located approximately 40 miles west of New York City and 30 miles east of the Delaware Water Gap.

The plant's production areas are centrally located in a relatively flat area with a slope extending to Howard Boulevard on the north side and a ridge on the south side that separates the production area from the Berkshire Valley area. The property contains wet areas and has a lake known as "Duck Pond" which is approximately 7 acres in size.

The facility has produced a variety of explosive and propellant (energetic) related products for both military and commercial applications. In the early 1900's, the plant produced trinitrotoluene (TNT) in support of World War I activities along with other ordnance-related materials. The production of materials for military applications was expanded during World War II to include smokeless powder for both the United States and Great Britain. During the 1980's, the explosive industry began using Ammonium Nitrate/Fuel Oil (ANFO) in many explosive applications. Ammonium Nitrate manufacturing operations were installed and slurry explosive trucks operated out of the facility. The facility has also maintained a research and development area and has produced special products such as initiating materials, ingredients for medical applications, and materials for actuating devices.

The principal product over the last 20 years, smokeless powder, was most recently produced by Alliant Techsystems (Alliant) under a facility lease agreement. The principal processing areas for this activity include the Nitroglycerin (NG) Area, the A-Line production area, the B-Line production area, and the Finishing Area. Material handling areas at the facility include both loading and unloading areas which were used to unload incoming raw



NEW JERSEY

Source: Base map developed from the Stanhope, New Jersey 7.5 minute U.S.G.S. Topographic Quadrangle Map, dated 1954, photorevised 1981.

SCALE IN FEET

0 2000 4000

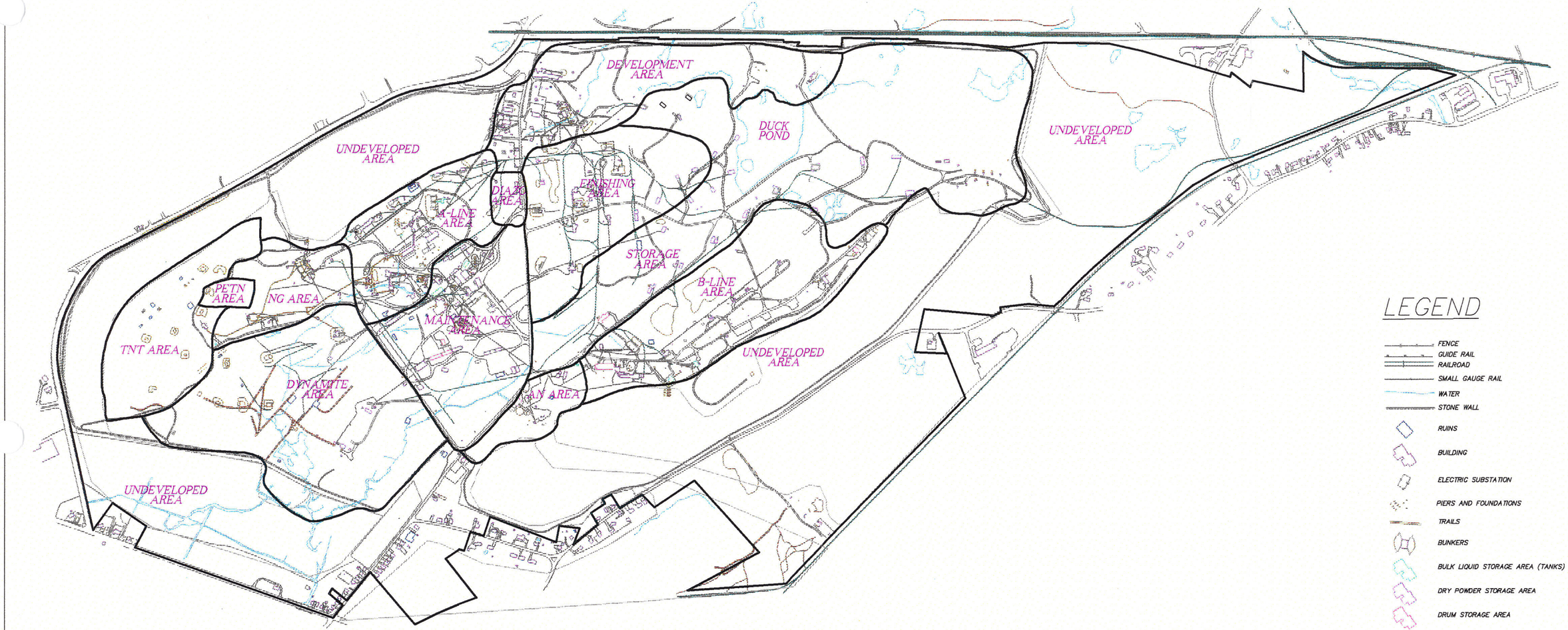
north

HERCULES INCORPORATED
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

SITE LOCATION MAP

MONTGOMERY WATSON

FIGURE 2-1



SOURCE:

HERCULES, INC.– KENVIL, NEW JERSEY FACILITY
PLANIMETRIC MAP PREPARED BY:
ATLANTIS AERIAL SURVEY CO., INC.
FROM PHOTOGRAPHY DATED 03/18/95
GROUND CONTROL BY EDWARD SECCO, P.L.S.
N.J. LICENSE NO. 18607
KENVIL, NEW JERSEY 07847

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

SITE MAP

MONTGOMERY WATSON

FIGURE 2-2

materials and load finished product for shipment by truck. Support areas at the facility included office space, plant laboratories, maintenance areas, a power house, mixed acid areas, drum storage areas, a wastewater treatment plant (WWTP) and warehouses.

In 1995, Hercules sold the smokeless powder business to Alliant, who operated the facility until December 31, 1996. Hercules re-acquired control of the facility on January 1, 1997 and as the property owner is responsible for the remediation and closure of the facility for sale or reuse.

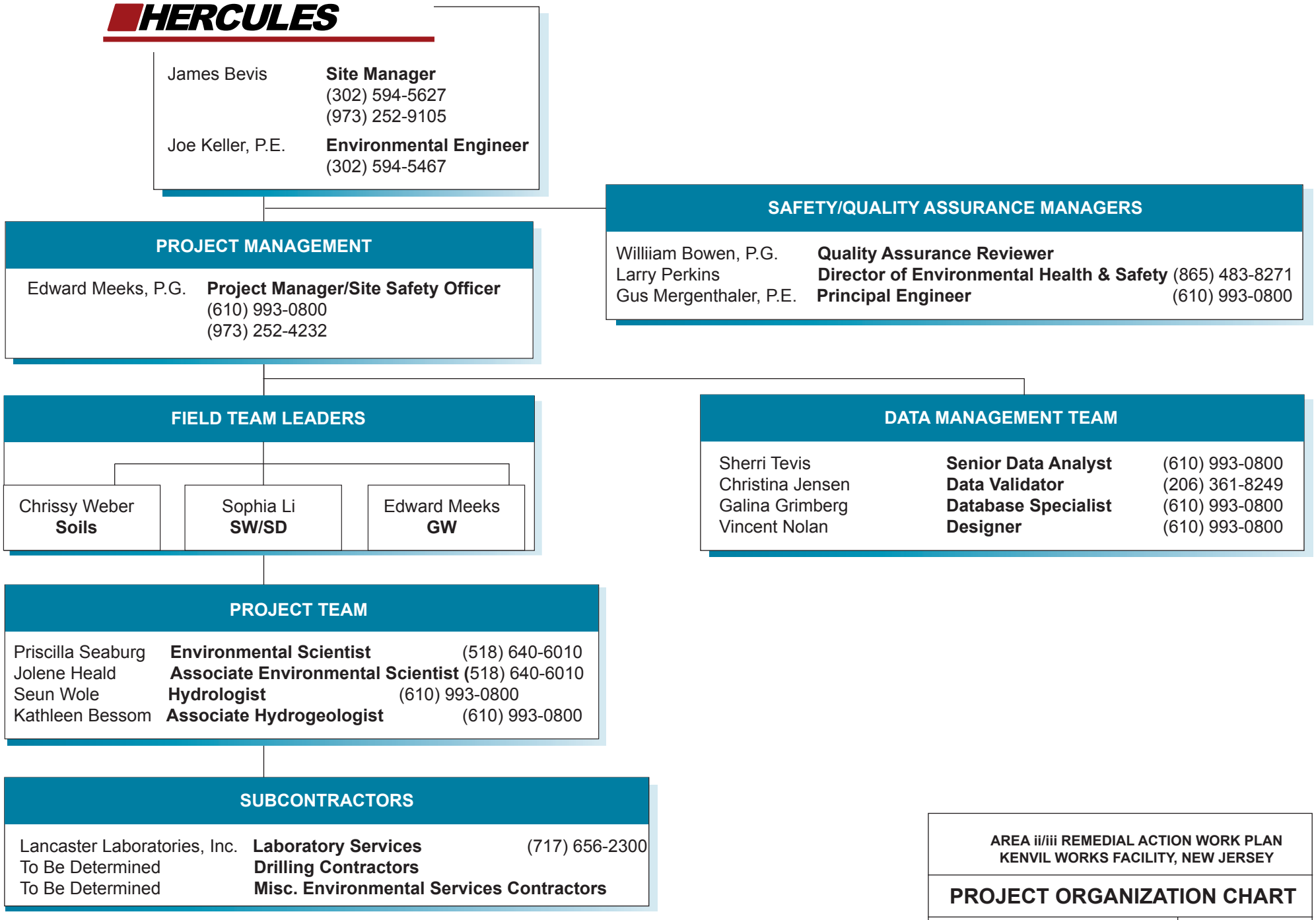
During the time Alliant operated the facility, Hercules entered into a voluntary agreement with the State of New Jersey to investigate the contamination level at the TNT area. The ISRA requirements were triggered when Alliant terminated the lease for the facility.

3.0 KEY PERSONNEL AND RESPONSIBILITIES

The project team consists of personnel from Hercules, MWH and various subcontractors. The work outlined in this FQAPP will be managed and primarily conducted by MWH, Hercules' environmental consultant for the project. Figure 3-1 presents the project organization, outlining key assignments that have been designated for this project, and the individual responsible for each assignment. A summary of the assignment responsibilities is provided below:

Project Manager: The Project Manager is responsible for the overall direction, coordination, technical consistency, and review of the entire program. The Project Manager will monitor the performance of project staff with the assistance of the Investigation Manager and Safety/Quality Assurance Managers. The Project Manager will serve as the primary point of contact for Hercules, and be responsible for contractual obligations, management oversight and problem resolution, monitoring schedule and cost, and progress reporting. The Project Manager will also serve as the primary MWH representative for critical regulatory interactions.

Investigation Manager: The Investigation Manager reports directly to the Project Manager and acts as the day-to-day point of contact for the investigation development and implementation activities. The Investigation Manager will be fully responsible and accountable for implementation of technical and scheduling activities. In coordination with the Field Team Leader, the Investigation Manager will oversee project tasks, coordinate subcontractors, and monitor the schedule and costs of major investigation-related project elements. The Investigation Manager will also ensure that necessary resources are made available (including personnel, materials, and equipment), and potential problems or conflicts are identified and resolved in a timely manner. The Investigation Manager will be responsible for technical implementation of the project and application of project quality control (QC) procedures.



AREA ii/iii REMEDIAL ACTION WORK PLAN
KENVIL WORKS FACILITY, NEW JERSEY

PROJECT ORGANIZATION CHART

MWH

FIGURE 3-1

Field Team Leader: The Field Team Leader reports to the Investigation Manager and is responsible for project set-up of field support services. The Field Team Leader will provide oversight of field investigation tasks.

Technical Reviewers: The Technical Reviewers will, as necessary, provide technical assistance and review and other functions as necessary to ensure compliance with the QAPP. The technical reviewers will be responsible for the overall quality of deliverables.

Data Validator: The Data Validator will review all analytical data reported by the laboratory to identify errors and to flag or qualify suspect data prior to its use in making decisions about the site. Specifics concerning the data validation process are presented in Section 4.2 of the AQAPP.

Project Safety Officer (PSO): The PSO has been responsible for the preparation of the Site Specific Health and Safety Plan (SSHSP), and will be responsible for the implementation of the SSHSP. The PSO will provide the overall direction regarding matters of environmental protection, fire protection, occupational safety and health, industrial hygiene, personal protection from hazardous chemical exposure, and health and safety monitoring for this project. The PSO has the organizational authority to require changes to work practices, identify problems and propose solutions and, if necessary, stop work activities that could pose a threat to personnel or the environment. The PSO will coordinate activities with the Project Manager or Investigation Manager, as appropriate.

Site Safety Officer (SSO): The SSO is responsible for field implementation of the SSHSP and enforcement of safety rules and regulations. The SSO activities may be performed by the PSO. The SSO will handle liaison with subcontractors on matters relating to health and safety. Other site-specific SSO functions include:

- Verify that utility clearance has been performed.
- Oversee day-to-day implementation of the FQAPP by subcontractor employees.
- Interact with subcontractor project personnel on health and safety matters.
- Determine levels of protection.

- Verify that MWH and subcontractor site personnel have received proper training and participate in a medical surveillance program.
- Provide on-site training to MWH and subcontractor site personnel on health and safety matters that develop during the project.
- Modify the FQAPP as needed and notify appropriate persons of changes.
- Inspect and maintain (daily) safety equipment including calibration of air monitoring instrumentation.
- Perform or direct ambient air quality monitoring as warranted.
- Investigate and report on-site accidents/incidents.
- If MWH employees enter excavations, act as the competent person and ensure OSHA excavation requirements are enacted.
- Verify that MWH and subcontractor site personnel are familiar with the hospital route, and that the route map is posted in the work trailer or site vehicles.
- Establish detailed procedures and routes for evacuation from the site.
- Establish the Exclusion, Decontamination and Support Zones at the site, as necessary, and provide means of securing the work area.
- Implement and direct confined space entry procedures, as necessary.

The SSO will report accidents such as injury, overexposure, or property damage to the PSO, and will consult with the PSO on specific health and safety issues arising over the course of the project.

4.0 FIELD DATA QUALITY OBJECTIVES

The success of sampling activities performed during the field investigation program will be evaluated based on specific data quality objectives (DQOs). These DQOs are quantitative and qualitative statements that stipulate the level of data quality required of the project and each component of the project. Quantitatively, DQOs are expressed in terms of precision, accuracy, representativeness, completeness and comparability (PARCC). In general, DQOs measure the performance of the sampling and analytical procedures.

For example, the data quality associated with environmental measurements can be considered a function of sampling variability. This includes the sampling plan rationale, sample collection procedures and analytical variability, the latter which may be attributed to analytical performance and the instrumentation used in making the measurements. The sampling and analytical activities may introduce potential sources of uncertainty or biases that may affect the overall confidence in the analytical measurement.

When reviewing field sampling DQOs, the evaluation is partially qualitative and its primary purpose is to address the impact of field method nonconformances on the associated data. This section addresses PARCC criteria specifically associated with field sampling activities. The PARCC criteria as they relate to the field investigation are described in the following sections and summarized in Table 4-1.

4.1 PRECISION

The evaluation of sampling precision is based on sample collection, handling and transportation procedures. During the field sampling program, changes or nonconformances in the planned collection, handling and transportation procedures may cause variability in the resulting analytical data. To reduce sampling-derived variability, detailed planning and field protocols will be developed in the phase-specific SAPs. For example, field duplicate samples do not specifically address field variability, such as sample heterogeneity, but do provide general information on the overall precision of sampling and analytical measurements. In this regard, the evaluation of sampling precision for the field investigation program is qualitative and identifies possible sampling problems that may induce variability

Table 4-1

Data Quality Objectives (DQO) Summary
Field Quality Assurance Project Plan
Kenvil Works Facility
Kenvil, New Jersey

Parameter	DQO Goal	Actual	DQO met?	Comments
Field Measurments (Non Water Level) To Within 0.1 Foot.	100%	*TBD	*TBD	*TBD
Water Level Measurements To Within 0.01 foot.	100%	*TBD	*TBD	*TBD
Water Level Measurements Collected From Consistent Reference Point.	100%	*TBD	*TBD	*TBD
Perform All Aspects Of Well Design And Development.	100%	*TBD	*TBD	*TBD
Consistent Soil Logging Procedures.	100%	*TBD	*TBD	*TBD
Measuring All Specified Parameters During Sampling.	100%	*TBD	*TBD	*TBD
Consistent Criteria Used For Selecting Samples For Chemical Analysis.	100%	*TBD	*TBD	*TBD
Completely Filling Out Field Documentation.	100%	*TBD	*TBD	*TBD
Entering Precise Measurements Into Field Documentation.	100%	*TBD	*TBD	*TBD
Calibrate Field Measurement Equipment To Manufactures Specifications.	100%	*TBD	*TBD	*TBD
Consistent Utilization Of Field Measurement Instruments.	100%	*TBD	*TBD	*TBD

in the analytical data. This precision evaluation includes assessing whether the correct number of field duplicate and field QA/QC samples required by the AQAPP were collected during the field investigation program. All of these aspects will allow the overall precision of the data to be evaluated after the analytical program is completed and laboratory data results are compared to the laboratory DQOs established in the AQAPP.

Specifically, however, precision of field data can be ensured by adhering to standards of precision established for each field measurement procedure. Examples of this include:

- measuring water levels to a certain level of precision;
- calibrating field measurement instruments to manufacturer's standards;
- making measurements from consistent measuring points; and
- entering precise measurements on all field documentation forms, including the use of consistent descriptive terminology.

4.2 ACCURACY

Sampling program accuracy, or the bias in the measurement systems inherent to the program, will be evaluated through the collection and analysis of matrix spike (MS) and matrix spike duplicate (MSD) samples during the field investigation program at the frequency identified in the AQAPP. The results from MS and MSD samples, Laboratory Control Samples (LCS) and surrogate spike samples, that are prepared in the laboratory, will be used to assist in the assessment of the accuracy of the field program.

Although the evaluation of field investigation program sampling accuracy is partially limited to a qualitative evaluation of field performance, satisfactory field performance will also be evaluated based on the quantitative standards of accuracy adhered to in conducting specific field measurements. Accuracy of field measurements will be ensured by:

- Maintaining accurate drilling logs, Chain of Custody Records (COCs), monitoring well diagrams and other field data forms;
- Properly calibrating and maintaining field measurement instruments to ensure accurate measurements are taken; and
- Properly implementing field measurement instruments in a consistent manner to ensure accurate measurement.

4.3 REPRESENTATIVENESS

The representativeness of the sampling program will be based on whether or not the resulting analytical data are characteristic of conditions and compound concentrations present at the site. In order to obtain data representative of the site, field samples will be collected from potentially contaminated environmental media. Samples will be collected using procedures and methods that attempt to maintain the integrity and consistency of the sampling process. The evaluation of representativeness will be qualitative with respect to the design of the sampling program and will serve to provide confidence that contaminant concentrations detected in field samples represent actual concentrations present in each respective media.

Representativeness will be evaluated quantitatively through the use of trip blanks. Trip blanks, as specified in the AQAPP, will be prepared in the laboratory and kept with other sample containers for the duration of their shipment, or "trip" from the laboratory to the field and back to the laboratory. The trip blank samples will provide an indication of contamination that may have been introduced during the collection, handling and transportation of the sample. In addition, lithologic descriptions will be made of each soil sampling interval to ensure that analytical data can be associated with stratigraphic information. The lithologic characteristics of the samples will be important for resolving analytical anomalies and for evaluating the representativeness of the data in terms of site conditions and contamination distribution.

4.4 COMPLETENESS

The completeness of the sampling activities is a quantitative measure which will be measured as a percentage of the total samples, including QA/QC samples, collected versus the total samples planned for collection in the SSSAP. Missing data can result from many unforeseen circumstances, including sample collection problems, sampling location accessibility problems and sample breakage. Incomplete sample sets (i.e., field and QC samples) may affect sample completeness and the degree of confidence that contamination may or may not exist within a given medium in a specific location.

Field data completeness will be evaluated to ensure that an appropriate quantity of field measurements are taken and recorded. Field data will be used to develop a conceptual understanding of the site and to provide supporting information for resolving any sampling-related concerns generated by laboratory analytical results. Completeness will be ensured in the field by thoroughly conducting sampling and measuring activities in accordance with established procedures. This will include activities such as:

- Consistently logging soil samples at predesignated intervals;
- Selecting soils for chemical analysis using the same criteria for selection;
- Performing all aspects of well design construction and development;
- Measuring all specified parameters during sampling; and
- Filling out all field data forms fully and correctly.

4.5 COMPARABILITY

The comparability of field investigation program data will be evaluated qualitatively and will consider the confidence with which one data set can be compared with another. Comparability is an evaluation of whether field data, as a function of the field sampling techniques and measurement units of the field equipment, can be directly compared with data collected during previous or future sampling events at the same site. Comparability will be ideally achieved by developing and consistently using approved sample collection, handling and analytical procedures. Sample collection and handling procedures, and the consistent use of these procedures, are discussed in the following sections.

5.0 FIELD SCREENING METHODS

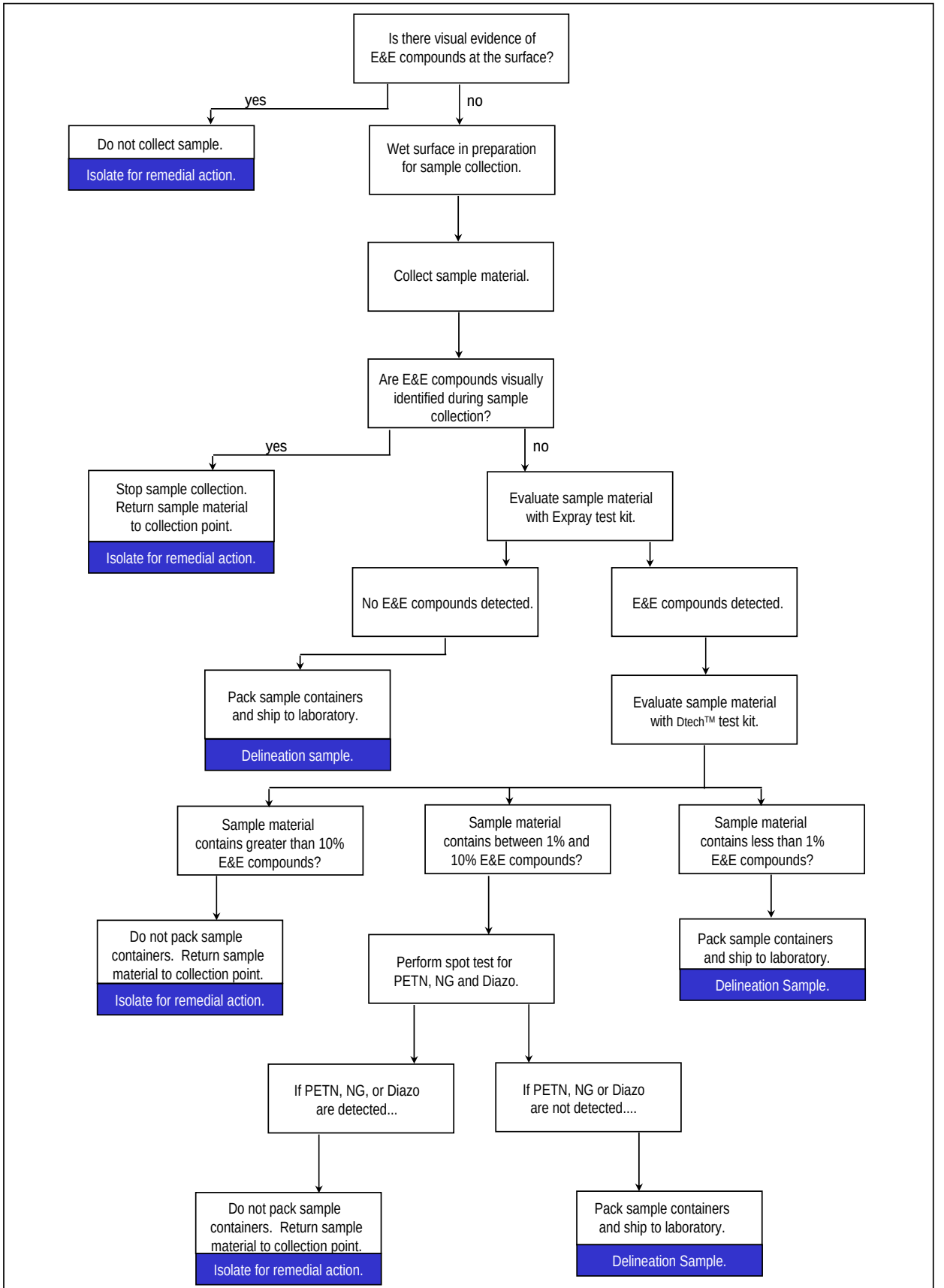
Field screening methods will be used throughout the facility-wide investigation to evaluate the major site media for explosive and energetic (E&E) safety and the presence of specific non-E&E contaminants. Screening data will be generated by rapid, lower precision methods of analysis than the definitive data produced by fixed based laboratory analysis and will be documented within the field notebooks. Screening data will be utilized to bias analytical samples to locations of highest potential contamination and determine the vertical and horizontal limits of areas for which remediation and analysis by a certified laboratory is necessary. At least 10 percent of the screening data will be confirmed by a certified fixed based laboratory. The specific use of the screening methods will be identified in the phase-specific SAPs that will be prepared for each phase of investigation. Table 5-1 presents the field screening methods and identifies the uses of each method. The following subsections describe the field screening methods that may be utilized during the facility-wide investigation.

5.1 EXPLOSIVE AND ENERGETIC COMPOUNDS

To ensure the safety of field and laboratory personnel field screening for the presence of E&E compounds will be conducted prior to the collection of any soil, sediment, waste, or unknown material sample. Field screening will be required since the facility has manufactured, or otherwise managed, E&E compounds at various locations for more than 100 years. Figure 5-1 depicts the E&E compound screening process.

Field screening for E&E compounds will be conducted as follows:

- Upon arriving at the selected sample location, the field team will visually inspect the ground surface for the presence of E&E compounds. If E&E compounds are visually identified, the area will be isolated for future remedial efforts and no sample will be collected. If no E&E compounds are visually identified, then the proposed sampling can be initiated. Isolation will consist of placing temporary barriers fixed with red danger barricade tape around the impacted area to alert personnel of the potential danger associated with the E&E compounds.
- Once the surface soils are visually determined to be free of E&E compounds, the area to be sampled will be wetted with distilled water. The distilled water will



LEGEND

Expray = Aerosol-based field test kit
Dtech™ = TNT/RDX Soil Extraction Pac
PETN = Pentaerythritol tetranitrate
NG = Nitroglycerin
Diazo = Diazodinitrophenol

= E&E Investigation Action

HERCULES INCORPORATED
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

EXPLOSIVE/ENERGETIC FIELD SCREENING FLOW CHART

FIGURE 5-1

Table 5-1

Summary of Field Screening Methods
Field Quality Assurance Project Plan
Facility-wide Investigation
Kenvil Works Facility, New Jersey

Screening Method	Constituents Detected				Matrix	
	VOCs	SVOCs	Metals	E&E Compounds	Soil/Sediment	Water
Colorimetric (EX-PRAY™)				√	√	
Immunoassay (Dtech ™)		√		√	√	√
Photoionization Detector	√				√	√
X-Ray Fluorescence			√		√	

VOCs - Volatile Organic Compounds
SVOCs - Semi-Volatile Organic Compounds
E&E - Explosives and Energetics

help desensitize potential E&E compounds not identified below the ground surface, allowing safe sample collection to begin. Sample collection methods are described in Section 6.0.

- Visual observation for the presence of E&E compounds must be conducted throughout the entire sample collection activity. If E&E compounds are visually identified at any time during the sampling event, the sampling activity will be discontinued immediately and the area will be isolated with red barricade tape for future remedial efforts and no sample will be collected. If no explosives are visually identified during the sampling event, the sample material will be evaluated for the presence of E&E compounds using the EX-PRAY® E&E compounds detection test kit.

- The EX-PRAY® E&E compound detection test kit is an aerosol based technique that utilizes a patented paper and colorimetric reaction to identify E&E compounds at residual levels. This kit can differentiate between polynitro-aromatics (TNT, picric acid, etc.), nitrate esters (nitroglycerin (NG), nitrocellulose (NC), etc.), and Nitramines {cyclotrimethylenetrinitramine (RDX), cyclotetramethylenetetranitramine (HMX), etc.}. The EX-PRAY® kit, however, does not provide contaminant concentration data, it is designed only to determine if E&E compounds are present in ranges from residual levels to near percentage concentrations. The manufacturers' information and instructions for performing the EX-PRAY® tests is included as Appendix A. If no E&E compounds are detected, it will be considered safe to fill the appropriate sample containers and ship the samples to the laboratory. If E&E compounds are detected, the collected sample will then be screened with the Dtech® E&E compounds test kit.

- The Dtech® E&E compounds test kit is an immunoassay technology that utilizes an antibody specific to TNT and related compounds to determine the relative concentration of E&E compounds. While the Dtech® test kit was first developed to identify TNT in soil and water, it has been successfully utilized to determine the relative concentration of other E&E compounds in relation to a TNT equivalent. The Dtech® test kit utilizes a color developing solution that is inversely proportional to the concentration of TNT equivalents. The concentration of the TNT or equivalent is determined by comparing the color of the test kit to a standardized color chart. The Dtech® manufactures' information and instructions for performing the Dtech® tests is included as Appendix B. If the sample material contains less than 1% E&E compounds it will be considered safe to fill the appropriate sample containers and ship the samples to the laboratory. If greater than 10% E&E compounds are present, the material will be considered unsafe to ship to the laboratory for analysis and the area will be isolated for future remedial efforts. If the sample material contains between 1% and 10% E&E compounds, spot tests for NG, pentaerythritol tetranitrate (PETN), and Diazodinitrophenol (Diazo) must be performed. Spot tests for NG, PETN, and Diazo are required because these compounds are more sensitive than most E&E compounds and for safety reasons will not be shipped for analysis if they are present above a concentration of 1%.

- Spot tests are a variety of specific reagent-based colorimetric analyses developed by the U.S. Department of Defense (DOD) to facilitate a quick and effective procedure to identify unknown E&E compounds. Since NG, PETN, and Diazo are the only explosive compounds that represent a safety concern between 1% and 10%, the spot tests will be limited to these compounds. The procedures for spot testing for NG, PETN, and Diazo are described in Chapter 12 of the Military Explosives Manual, which is included as Appendix C. If NG, PETN, or Diazo are detected the sample material will be considered unsafe to ship to the laboratory for analysis and the area will be isolated for future remedial efforts. If NG, PETN, or Diazo are not detected, the sample material will be considered to be comprised of secondary explosives and, therefore, safe to ship to the laboratory for analysis since the total concentration of E&E compounds will be below the established safe limit of 10%.

If a sample is determined to be unsafe for shipment to or analysis by a laboratory the sample will be immediately returned to the collection point. The area will be marked by fencing or suitable flagging to identify the area as containing explosive hazards and will be restricted to authorized personnel only. The area containing the explosives will be immediately evaluated to determine if an interim remedial measure (IRM) is warranted or if the area poses minimal potential for imminent physical hazard, contaminant migration, and impact to groundwater. If it is determined that the explosive constituents do not pose an imminent physical hazard, are not mobile, and will not impact site groundwater the remedial efforts will be deferred until a Site-Wide Phase II Confirmation/Delineation effort is conducted.

Personnel involved in site activities conducted at the facility will receive initial or refresher E&E compound safety education prior to commencement of any work. The site E&E compound safety education will be directed by the MWH PSO and the Hercules PSO. This education will be designed to provide employees with a thorough knowledge and the ability to identify E&E compounds that may potentially be encountered on-site. All personnel new to the site will be required to receive this training before they are permitted to undertake field activities.

5.2 VOLATILE ORGANIC COMPOUNDS

Field screening for the presence of volatile organic compounds (VOCs) will be conducted continuously during the collection of soil, sediment, waste or unknown material samples. The field screening will be accomplished with a flameionization (FID)/photoionization detector (PID) utilizing a standard 10.6 electron volt lamp. In the event VOC constituents with a greater than 10.6 electron volt ionization potential, such as methane, are anticipated a suitable lamp will be exchanged or an alternate screening device will be utilized. The results of the field screening will be documented in the field logbook.

The primary advantage to screening soil samples with the FID/PID is rapid determination of the presence of VOC constituents so that appropriate field decisions can conducted.

5.3 SEMI-VOLATILE ORGANIC COMPOUNDS

Immunoassay tests may be utilized during the field investigation to screen for the presence of semivolatile organic compounds (SVOCs). The test involves utilizing laboratory provided antibody-coated test tubes specifically designed for a particular class of SVOC compounds. An aliquot of sample material is placed into the test tubes and reacts with the antibody coating on the test tube inducing a color change within the test tube. The concentration of the targeted analyte is determined by comparing the color of the material within the test tube to a color standard calibrated to various concentrations of the targeted analyte.

The advantage of using immunoassay tests is the high sensitivity and specificity bias filters compounds not being tested for and produces detection results at the ppm, ppb, and ppt levels so that appropriate field decisions can be made. Appendix D contains the manufacturers' information on SVOC immunoassay test kits.

5.4 INORGANIC COMPOUNDS (METALS)

X-Ray Fluorescence (XRF) spectrophotometry has been identified as the most applicable screening methodology for identification of metals that may be employed during the proposed facility-wide investigations.

Field XRF analysis is used to produce real time data (i.e., provide analytical data within minutes to tens of minutes) to assess subsequent courses of action during the delineation of the vertical and lateral extent of contamination. Developed in the early 1970's, XRF is a flexible elemental analysis method used for qualitative and quantitative composition determinations of solid, liquid, thin film and powder samples. XRF spectrophotometry is capable of analyzing elements with atomic number 11 (sodium) and higher in the periodic table in concentrations ranging from a few ppm to 100 percent by weight.

Several advantages of the XRF method compared to other elemental analysis techniques are non-destructiveness, little or no sample preparation, rapid analysis turnaround time, and straightforward interpretation of X-Ray emission spectra acquired from a sample. Appendix E contains the MWH standard operating procedure (SOP) for performing XRF analysis.

5.5 PESTICIDE AND POLYCHLORINATED BIPHENYL (PCB) COMPOUNDS

Immunoassay tests may be utilized during the field investigation to screen for the presence of pesticides and PCBs. The tests are similar to the SVOC screening test kits and involve utilizing laboratory provided antibody-coated test tubes specifically designed for a particular class of pesticide and PCB compounds. An aliquot of sample material is placed into the test tubes and reacts with the antibody coating on the test tube inducing a color change within the test tube. The concentration of the targeted analyte is determined by comparing the color of the material within the test tube to a color standard calibrated to various concentrations of the targeted analyte.

The advantage of using immunoassay tests is the high sensitivity and specificity bias filters compounds not being tested for and produces detection results at the ppm, ppb, and ppt levels so that appropriate field decisions can be made. Appendix D contains the manufacturers' information concerning SVOC immunoassay test kits.

6.0 REMOTE SENSING TECHNIQUES

Remote sensing techniques may be used during the facility-wide investigation to help define subsurface conditions utilizing terrestrial, borehole and aqueous geophysical techniques. The objective of the remote sensing techniques is to safely define subsurface geology, locate buried objects, define remnant subsurface features such as former ditches, and potentially locate groundwater contaminant plumes. Table 6-1 presents the remote sensing techniques and their various uses. This section describes the major remote sensing geophysical techniques that may be utilized during site investigation activities at the facility.

6.1 TERRESTRIAL TECHNIQUES

The terrestrial techniques consist of remote sensing methods that are conducted at the ground surface with the purpose of broadly evaluating subsurface conditions. The following is a description of the terrestrial techniques that may be employed during the facility-wide investigation.

6.1.1 Ground Penetrating Radar Method

The Ground Penetrating Radar (GPR) method utilizes high frequency radio waves to obtain subsurface information to identify buried objects or define shallow subsurface stratigraphy. The process involves slowly pulling across the ground surface a small antenna (generally mounted on a sled) that emits high frequency radio waves. The radio waves penetrate the subsurface and are reflected back to the surface and collected by a receiving antenna, also located on the sled. The variations within the return radio wave signal are continuously recorded and provide a cross-sectional view of the shallow subsurface.

The depth of penetration for the high frequency radio waves are highly site-specific and are primarily affected by moisture, density and conductivity of the soils encountered. Generally, GPR has a functional depth from 1 to 10 meters below grade.

Table 6-1

Summary of Terrestrial Geophysical Techniques
Field Quality Assurance Project Plan
Facility-wide Investigation
Kenvil Works Facility, New Jersey

Geophysical Method	Locate Buried Objects	Define Subsurface Geology/Stratigraphy	Identify Contaminant Plumes
Ground Penetrating Radar	□√	□√	
Electromagnetics	□√	□√ [1]	√
Resistivity	□√	√	□√
Seismic Refraction	□√ [2]	√	
Seismic Reflection	□√ [2]	√	
Magnetometer	□√		

(1) Method mainly used to differentiate overburden from bedrock.
(2) Method can locate large buried objects.

6.1.2 Electromagnetic Method

The electromagnetic (EM) method measures differences within the electrical conductivity of subsurface soils to locate buried objects, former ditches, and potential groundwater contaminant plumes. This method utilizes a transmitter coil emitting an electromagnetic field into the subsurface that induces currents of electromagnetic energy within the subsurface. Each of these currents generates a secondary electromagnetic field proportional to the magnitude of the primary current. A portion of the secondary electromagnetic field generated is measured by a second receiver coil located at the ground surface. The measurement collected by the receiver coil is a bulk conductivity measurement of the total sampling depth.

The sampling depth of the electromagnetic method is controlled by the spacing of the instrument's coil. The common sampling depths are 1, 4, 10, 20, and 40 meters below the instrument.

6.1.3 Resistivity Method

The resistivity method measures the electrical resistivity of the subsurface to differentiate geologic media, locate buried wastes, and locate groundwater contaminant plumes. Application of this method requires that an electrical current be introduced into the subsurface from a pair of surface electrodes. A second pair of surface electrodes measures the voltage of the electrical field introduced by the first pair of electrodes. The resistivity is then calculated by using the electrode separation, geometry of electrodes, applied current, and measured voltage.

The sampling depth of the resistivity method is controlled by the porosity and permeability of the subsurface, amount of pore water, concentration of constituents within the pore water and the geometry of the electrodes. Sampling depths are possible to 100 meters below the instrument, if conditions are favorable.

6.1.4 Seismic Refraction Method

The seismic refraction method measures the length of time required for seismic waves to leave the energy source, travel to and refract off subsurface interfaces, and return to the ground surface. This method is used to define subsurface horizons such as the water table, stratigraphic boundaries, or top of bedrock. In addition to natural properties, seismic refraction methods have historically been used to detect the existence of large anomalies within discrete layers, such as drum disposal areas.

Utilization of this method requires an energy source to initiate a seismic impulse directed downward into the subsurface. Once transmitted, the wave travels to subsurface interfaces and is refracted back to the surface. Geophones (seismic recorders) are arranged on the surface to receive and translate the wave energy into an electric signal. Signals are then enhanced and recorded by a seismograph. Analysis of seismic wave travel time as a function of distance from the seismic source is used to define the subsurface conditions. The limiting factor of the seismic refraction method is that overall geophone line-length must be three to five times the maximum depth of interest and seismic velocity must increase with depth. Seismic refraction can be useful from less than 10 meters to several hundred meters below the instrument.

6.1.5 Seismic Reflection Method

The seismic reflection method is similar to the seismic refraction method, with the exception that seismic waves reflected from subsurface interfaces are targeted and the geophone line length is not nearly as long. This method is also used to define subsurface horizons such as the water table, stratigraphic boundaries, or top of bedrock. The seismic impulse directed downward is reflected from subsurface horizons such as lithological boundaries or erosional surfaces. Generally reflected seismic waves are lower in energy than refracted seismic waves and require a significant amount of computer amplification and filtering to be useful. Cross sections constructed from the seismic reflection data can yield subsurface information from the near surface to several hundred meters below surface.

6.1.6 Magnetometer Method

The magnetometer method measures the intensity of the earth's magnetic field to locate the presence of ferrous metal objects such as buried drums, pipes, or other metal debris. This method is based on the principle that ferrous metals create localized variations in the earth's magnetic field measurable by the magnetometer.

The effectiveness of the magnetometer can be reduced by natural changes in the earth's magnetic field, magnetic minerals in the subsurface, and nearby ferrous objects such as buildings or pipes. Typically, the magnetometer can be used define ferrous objects the size of a typical 55-gallon drum to a depth of 6 meters. If a large mass of ferrous material is present, such as a multiple drum disposal area or a large tank, detection depths to 20 meters are possible.

6.2 BOREHOLE LOGGING TECHNIQUES

The borehole logging techniques consist of remote sensing instruments lowered down a well casing or open borehole primarily to determine the geologic and hydrogeologic properties of the subsurface. Borehole logging techniques are also employed to evaluate the condition of monitoring and pumping wells. Table 6-2 presents the borehole logging tools and their respective uses. The following is a description of the borehole logging techniques that may be utilized during the facility-wide investigation.

6.2.1 Caliper Tool

The caliper tool consists of a minimum of three arms that continuously measures the diameter of the borehole or well casing. The primary use of this tool is to verify casing integrity, locate voids in boreholes, and ensure there is sufficient clearance within the borehole or casing for larger geophysical tools to be utilized.

6.2.2 Natural Gamma Tool

The natural gamma tool records natural gamma radiation emitted from the formation adjacent to the borehole. The source of the gamma radiation is the decay of naturally occurring

Table 6-2

Summary of Borehole Geophysical Techniques
Field Quality Assurance Project Plan
Facility-wide Investigation
Kenvil Works Facility, New Jersey

Geophysical Logging Method Tool	Method Objective				Method Requirements		
	Determine Well Casing Integrity	Locate Borehole Voids	Determine Stratigraphy	Determine Formation Porosity	Cased Borehole Operation	Open Borehole Operation	Fluid Filled Borehole Required
Caliper	√	√			√	√	
Natural Gamma			√		√	√	
Neutron				√	√	√	√
Single Point Resistivity		√	√			√	√
Spontaneous Potential			√			√	√
Down Hole Video	√	√	√		√	√	

radioactive elements within the formation. This tool can be used in both an open borehole and cased wells. The primary use of this tool is correlation of hydrostratigraphic units.

6.2.3 Neutron Tool

The neutron tool directly measures hydrogen saturation within the formation pore spaces by emitting high energy neutrons. This tool can be used in both open boreholes or cased wells. The primary use of this tool is to determine the porosity of the adjacent formation.

6.2.4 Single-Point Resistivity Tool

The single point resistivity tool induces an electric current that directly measures point contact resistance of the formation in Ohms. This tool can only be used in uncased boreholes with minimal cavities or washouts. The primary use of this tool is to precisely locate formation contacts.

6.2.5 Spontaneous Potential Tool

The spontaneous potential tool is similar to the single point resistivity tool with the exception that the tool measures the natural electrochemical potential between the borehole fluid and pore fluid. This tool can only be used in fluid filled uncased boreholes. The primary use of this tool, similar to single point resistivity, is to locate formation contacts.

6.2.6 Downhole Video Survey Tool

The downhole video survey tool consists of a video camera and light source to videotape borehole conditions. This tool can be used in cased and uncased boreholes, provided the drilling fluid or formation water has sufficient visibility to observe the sidewall of the formation or casing. The primary uses of this tool are to verify well integrity, identify formation horizons, and locate voids and fractures.

6.3 AQUEOUS TECHNIQUES

The primary remote sensing techniques used for aqueous scenarios include sound navigation ranging (SONAR), shallow aqueous seismic reflection, under water video and staff gauges.

SONAR is similar to seismic reflection in that energy is directed downward through the water column and is reflected back to the surface by bottom sediments or objects located on or beneath the sediment. The various SONAR methods primarily differ in the number of receivers (sonobuoys), the configuration of sonobuoys, sensitivity of sonobuoys, and number of energy sources utilized. The primary uses of SONAR will be to determine bathymetry and to locate potential explosives or explosive devices on or beneath the sediment within the major surface water bodies and to define, as best possible, the stratigraphy of the sediment.

Shallow aqueous seismic reflection provides bathymetric information as well as subsurface stratigraphic information. The typical aqueous shallow seismic reflection systems are pontoon-based rafts which are towed behind a water craft in concert with an array of linear sonobuoys.

Underwater video will provide visual confirmation of bottom surface characteristics and debris identification.

Staff gauges will be permanently installed and surveyed to North American Vertical Datum (NAVD 1988) to provide surface water elevation data.

7.0 SOIL SAMPLING METHODS

Multiple soil sampling methods may be required during the facility-wide investigation, primarily due to the large and diverse nature of the facility. Soil sampling methods consist of either mechanical (Section 7.1) or manual (Section 7.2) sampling methods. Section 7.3 describes the method-specific soil sampling procedures.

7.1 MECHANICAL SAMPLING METHODS

The following sections describe each mechanical soil sampling method. Section 7.3 describes the method-specific soil sampling procedures. Table 7-1 lists the various mechanical soil sampling methods and their respective uses.

7.1.1 Continuous Flight Hollow Stem Auger Drilling Method

The continuous flight hollow stem auger (HSA) drilling method generally utilizes a truck or all terrain vehicle to mount the drilling rig. The HSA method will be used for collecting soil samples, installing monitoring wells, and advancing Hydropunch^{TM} sampling equipment. The augers are rotated by the drilling rig, which advances the boring into the subsurface. The continuous flights of the augers extract the subsurface sediment and carry it to the surface. Center plugs are placed within the HSA to prevent the formation material from entering the hollow stem of the augers. Soil sampling is performed by removing the center plug and utilizing split spoon samplers. This method is used in unconsolidated formations and is not effective if heaving sands are encountered.

7.1.2 Tripod Drilling Method

The tripod drilling rig is a highly mobile drilling method which will be used in difficult access areas for collecting soil samples and installing monitoring wells to a maximum depth of approximately 30 feet below grade. This method utilizes an approximately 10 ft tall tripod with a pulley system centered in the middle of the three legs. A small gas powered cat-head is attached to one of the legs and is utilized to hoist equipment and a 140-pound free-fall drive hammer. Soil sampling is accomplished with split spoon samplers. In the event the borehole is expected to slough or cave-in, a 3 to 4-inch drive casing is advanced utilizing the

Table 7-1

Summary of Mechanical Sampling Methods
Field Quality Assurance Project Plan
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Method Attributes	Mechanical Sampling Method							
	Continuous Flight Hollow Stem Auger	**Tripod**	**Direct Fluid Rotary**	**Air Rotary/Air Hammer**	**Odex (1)**	**Direct Push**	**Cone Penetrometer Technology**	**Test Pit (Backhoe/Trackhoe)**
Utilized in Unconsolidated Sediments	YES	YES	YES	POSSIBLE (2)	YES	YES	YES	YES
Utilized in Bedrock Formations	YES (3)	NO	POSSIBLE (4)	YES	NO	NO	NO	NO
Practical in Running Sands	NO	NO	YES	YES	YES	YES	YES	NO
Mobility	MODERATE/HIGH (5)	EXTREMELY HIGH	MODERATE/HIGH (5)	MODERATE/HIGH (5)	MODERATE/HIGH (5)	HIGH/VERY HIGH	MODERATE	HIGH
Maximum Practical Depth (feet)	<45	<20	>250	>250	100	<40	50-100	10
Volume of Drilling Fluids/Cuttings Generating	MODERATE	LOW	VERY HIGH	MODERATE/VERY HIGH (6)	MODERATE	VERY LOW	VERY LOW	VERY HIGH
Remote Operation Possible	YES	NO	YES	YES	YES	YES	YES	YES

Footnotes:

(1) Odex is used primarily for well installation.
(2) Can be utilized in unconsolidated sediments but generally requires driving temporary casing.
(3) When used in conjuction with rock corer.
(4) Can be used in weathered formations.
(5) When mounted on an all terrain vehicle.
(6) Highly fractured zones will produce large volumes of groundwater during drilling activities.

drive hammer behind the split spoon sampler to stabilize the boring. This method is used in unconsolidated formations and is not effective if heaving sands are encountered.

7.1.3 Direct Fluid Rotary Drilling Method

The direct fluid rotary drilling method (mud rotary) also utilizes trucks and all terrain vehicles to mount the drilling rig. Mud rotary methods will be used to collect soil samples and install monitoring wells where running sands are anticipated.

The mud rotary method utilizes a bit attached to drilling rods that are rotated to cut into the formation. Drilling fluid is pumped by the rig down through the drilling rods and out through ports or jets in the bit. The drilling fluid then flows upward through the annular space carrying the drill cutting to the surface. At the surface, the drilling fluid is channeled into a basin where the cuttings settle out. Clean drilling fluid is then collected at the far end of the basin and recirculated down the borehole. The drilling fluid is generally composed of water and bentonite to increase the specific gravity of the fluid. The increased specific gravity of the drilling fluid enables large volumes of formation to be lifted to the surface and prevents the borehole from caving and sloughing. The drilling fluid will also help cool the drilling bit and help prevent inadvertent ignition/detonation of potential explosive or energetic materials. In the event E&E materials are ignited/detonated, the drilling fluid will significantly reduce the force of the ignition/detonation at the surface where field personnel are located. Soil sampling is accomplished with split spoon samplers.

7.1.4 Air Rotary/Air Hammer Drilling Method

The direct air rotary drilling (air rotary) method is similar in concept to mud rotary drilling and also utilizes trucks and all terrain vehicles to mount the drilling rig. Air rotary methods will be used to collect soil samples and install monitoring wells in consolidated formations.

The air rotary drilling method utilizes a bit attached to drilling rods that are rotated to cut into the formation. High pressure air is forced down through the drilling rods and out through ports or jets in the bit by a large surface-mounted air compressor. The high pressure air then

flows upward through the annular space carrying the drill cuttings to the surface. At the surface, the drill cuttings are collected adjacent to the borehole as the air pressure drops.

The air hammer drilling method utilizes the same drilling rig as, and is often used in conjunction, with air rotary. The air hammer method uses a pneumatic hammer drill bit that rapidly strikes the bedrock while rotating. The air hammer crushes the bedrock into very fine dust that is carried to the surface by high pressure air as in the air rotary method. This method is generally slower than air rotary and primarily is utilized to drill through very resistant formations that are difficult to drill with conventional drilling bits.

The air rotary/air hammer drilling methods are generally reserved for drilling in bedrock. The high pressure air utilized to lift the drill cuttings is often insufficient to stabilize boreholes advanced through saturated unconsolidated sediments. Soil sampling is accomplished utilizing split spoon samplers.

7.1.5 Odex Drilling Method

The Odex drilling method utilizes the same drilling rig and equipment as air rotary. Odex drilling involves advancing temporary casing as the borehole penetrates the subsurface. The air rotary drilling equipment advances the borehole and carries the sediment to the surface while the temporary casing prevents the borehole from collapsing. This method is utilized in loose unconsolidated glacial till that consists of sediment too coarse for the effective use of HSA or mud rotary equipment.

The Odex drilling method will be used exclusively to install monitoring wells where the effective use of HSA or mud rotary equipment is not applicable due to loose unconsolidated glacial till. Soil sampling will not be conducted utilizing the Odex drilling method due to the equipment necessary to advance the temporary casing.

7.1.6 Direct Push Sampling Method

Geoprobe™/Earth Probe™ type direct push soil sampling methods utilize a hydraulic hammer mounted on a truck or all terrain vehicle to advance sampling devices into the subsurface. This method eliminates the need for a drilled borehole, and minimizes the

exposure to, storage and disposal of, potentially hazardous drill cuttings. This method is most appropriate for loosely compacted fine to coarse unconsolidated sediments less than 40 feet below grade. Depths greater than 40 feet and the presence of greater than sand-sized sediments and tight clays severely impact the performance of this method. Soil sampling is accomplished using large bore or macro core samplers.

7.1.7 Cone Penetrometer Technology (CPT) Method

Cone Penetrometer Technology (CPT) procedures involve directly pushing various measuring and sampling devices into the subsurface to measure lithologic and aquifer properties, and to collect soil and groundwater samples. CPT measuring and sampling devices are advanced using a hydraulic press or ram mounted on a large truck, eliminating the need for a drilled borehole, and minimizing the exposure to, and storage and disposal of, potentially hazardous drill cuttings.

The lithologic measuring device for soil and aquifer characterization is the piezocone. The piezocone is an instrument consisting of a cylindrical dutch cone penetrometer, which conforms to American Society for Testing and Materials (ASTM) D3441 standard and also has pore pressure measuring capability. The piezocone measures resistance at the cone tip concurrently with the side friction on the sleeve as the unit is advanced through the soil. The ratio of the tip resistance and side friction is displayed graphically, computed, and, based on the soil behavior, a soil classification is made (Robertson and Campanella, 1989). For example, clays typically exhibit high friction ratios, while sands generally exhibit low friction ratios. During periods when penetration is halted, a measurement of both the time for the disturbed groundwater pressure to stabilize along with the final equilibrium pressure is made. These measurements are then correlated to provide an estimate of soil permeability as well as hydrostatic pressure at measurement depth. Soil sampling is accomplished by utilizing either a Geocone™ discrete interval or split spoon sampler.

A computer on the CPT rig is used to display real-time data and to store the data on disk for further on-site use. Real-time data display facilitates operator control of the sampling. Soil

classification data, soil permeability data, aquifer characteristic data, as well as known chemical and physical properties of the contaminant, are used to determine sampling depth.

7.1.8 Test Pit Excavation Method

Test pit excavations (test pits) are generally conducted utilizing excavators such as a backhoe or track-hoe. The benefits of test pits include:

- Visual profile of the subsurface soils so that soil horizons and contamination can be better determined.
- Field sampling personnel are somewhat removed from the sampling site as intrusive activities are conducted, increasing safety in the event a detonation/ignition of E&E materials occurs.

Test pits may be chosen as an option for selected sites primarily as a safety measure during sub-surface investigations. Personnel operating the excavator will be positioned behind Lexam™ shielding to protect the operator from debris in the event an explosion occurs in the test pit. Sampling personnel will be positioned in a safe location until the test pit has been completed and it is determined that the excavation is safe to approach.

7.1.9 Remote Operation

Remote operation of the mechanical sampling devices may be required as part of facility-wide investigation due to the potential for extreme physical hazards from explosions/detonations to exist within some areas of the facility. The primary areas of the facility that may require remote operation of the sampling equipment are the NG Area, Diazo Area, PETN Area, and portions of the Development Area. The determination to employ remote operation techniques in these and other areas of the facility will be made on a case-by-case basis and will be identified in the phase-specific SAPs.

With the exception of tripod drilling, each mechanical sampling device is capable of being retrofitted to allow remote operation. The retrofitting generally involves attaching a second control panel to the primary control panel through hydraulic lines. The second control panel will have the ability to completely control the equipment. The hydraulic lines will be long enough to allow control of the sampling activity from a safe location in the event an

explosion occurs during intrusive activities. The operators will be protected by an earthen berm or sandbag bunker placed between them and the sampling activity.

In the event remote operation of equipment is required, an operation-specific health and safety addendum will be written to address each sampling location. This addendum will include a detailed description of operating procedures for equipment requiring remote operation. The addendum will be co-authored by the MWH PSO, the Hercules PSO, and the Human Factors Application (HFA) PSO. Due to the potentially extreme danger of sampling in these unique situations, no sampling will be conducted without the full understanding, planning and approval of the three PSOs.

7.2 MANUAL SAMPLING METHODS

Shallow soil samples will be manually collected with a combination of a soil coring device and bucket auger. The soil coring device will be used to collect VOC samples and the bucket auger will be used to advance the borehole and collect sample material for any additional analytical parameters. The soil coring device is a hand held tool that extracts intact soil cores from the subsurface. The bucket auger is also a hand held tool, but it does not collect intact soil cores and, therefore, is not suitable for VOC sampling. The major use of the bucket auger will be to collect the additional sample material needed for non-VOC analyses. Section 7.3 describes the specific sample handling procedures.

Note: In areas where E&E compounds are likely to be encountered, the bucket auger and soil coring device will be constructed of non-sparking, and as needed non-conductive materials, such as brass, bronze, or polyvinyl chloride (PVC).

7.3 SOIL SAMPLING PROCEDURES

The soil sampling procedures will comply with the sample selection criteria stipulated in N.J.A.C. 7:26E-3.6(a) and N.J.A.C. 7:26E-3.6(a)4. When possible soil samples will be collected in discrete 6-inch increments in compliance with N.J.A.C. 7:26E-3.6(a)5. However, in the event of poor sample recovery or a large volume of soil is required to meet analytical needs a 2-foot sample interval may be required. All exceptions to N.J.A.C 7:26E-

3.6(a), N.J.A.C. 7:26E-3.6(a)4, and N.J.A.C. 7:26E-3.6(a)5 will be noted in the field notebook and reported to the NJDEP.

The following sections describe the method-specific soil sampling procedures utilized by both the mechanical and manual sampling methods.

7.3.1 Split Spoon Sample Collection Procedures

Soil samples collected using the various drilling rigs will be collected in accordance with ASTM D1586, Standard Method for Penetration and Split-Barrel Sampling of Soils (ASTM, 1990). Samples will be collected by driving a 2-inch interior diameter split spoon sampler through unconsolidated soils ahead of the lead auger or drilling bit with a 140-pound hammer falling 30 inches until 2 feet has been penetrated or refusal is encountered. The number of hammer blows required for each 6-inch interval will be recorded by the field geologist.

7.3.2 Geoprobe™/Earth Probe™ Soil Sample Collection Procedures

Soil samples collected using the Geoprobe™/Earth Probe™ will be obtained using either a hydraulically advanced Macro Core (MC) sampler or a Large Bore (LB) sampler. The MC samplers are open tube design and measure approximately 2 inches in diameter by 44 inches long and are designed for continuous soil sample collection. If probe hole "cave-in" is significant, it may be necessary to use a closed piston assembly that fits into the MC or to switch to the LB drive point sampler. Both the closed piston assembly MC sampler and the LB sampler remain completely closed when driven to depth and are opened by releasing a stop pin from the surface. Releasing the stop pin allows a piston to retract inside of the sample tube as it is being displaced by the sample core. The LB sampler will be used when subsurface conditions prevent the use of the MC sampler or when continuous sampling is not required. The MC sampler will be advanced in 4 ft. intervals and the LB sampler will be advanced in 2 ft. intervals. To assist in the removal of the soil sample and to protect sample integrity, each of the samplers will be decontaminated and fitted with a new acetate liner prior to each use.

7.3.3 CPT Soil Sample Collection Procedures

Continuous soil samples can be collected while utilizing the CPT method by pushing a split-spoon sampler directly into the subsurface. Discrete depth sampling can also be achieved by using a Geocone™, a device that uses retractable "push plug" to allow for discrete depth sampling without requiring continuous boring or sampling. The push plug is retracted at the desired sampling depth and the sample is forced into the spoon.

The procedures for collecting soil samples for chemical analysis using these various methods are outlined below:

- Sample intervals will be selected for analyses as specified in the phase-specific SAPs.
- The sampler will be removed from the borehole, the sampler carefully opened, the sample core extruded from the sampler, and the soil visually classified. This will be accomplished by sliding the core out of the sampling device and, if necessary, cutting the acetate liner with a decontaminated stainless steel knife.
- The soil sample will then be scanned with a portable FID/PID and the results will be recorded. If a sample is collected for chemical analysis, the sample interval will be screened for E&E compounds as described in Section 5.1.
- If the sample is to be collected for chemical analysis, the soil will be placed in sample containers. Sample aliquots for VOC analysis will be collected as a grab sample following the methanol preservation procedures discussed in Section 16. Sample aliquots for all analyses except VOCs will be removed from the sampling device and placed in a decontaminated stainless steel mixing bowl or tray and thoroughly homogenized prior to transferring the sample aliquot to appropriate sample containers.
- The field geologist will prepare a boring log for each borehole. Information recorded on the boring log will include soil descriptions and classifications, as well as other pertinent data regarding the sampling event and subsurface conditions (i.e., color, apparent staining or discoloration, moisture content, presence of fill material or organic matter, etc.). Section 17 provides a detailed description of the field documentation requirements and process.

7.3.4 Soil Coring Device/Bucket Auger Soil Sample Collection Procedures

The soil coring device will be advanced by hand at each sampling prior to utilizing the bucket auger to ensure an undisturbed soil core is extracted to support VOC sample collection. The coring device and bucket auger will be advanced at 6-inch intervals and then

removed from the borehole for evaluation. The following paragraphs describe the specific soil sample collection procedures:

- Sample intervals will be selected for analyses as specified in the phase-specific SAPs.
- The soil coring device will be removed from the borehole, the sample core extruded from the sampler, the sampler carefully opened, and the soil will be visually classified.
- The sample will then be scanned with a portable FID/PID and the results will be recorded. If a sample is collected for chemical analysis, the sample interval will be screened for E&E compounds as described in Section 5.1.
- If the sample is to be collected for chemical analysis, the soil will be placed in sample containers. Sample aliquots for VOC analysis will be collected as a grab sample following the methanol preservation procedures discussed in Section 16. Sample aliquots for all analyses except VOCs will be removed from the sampling device and placed in a decontaminated stainless steel mixing bowl or tray prior to transferring the sample aliquot to appropriate sample containers.
- The bucket auger will then be used to ream the borehole and collect additional sample material for non-VOC analysis. The additional sample material collected will be placed into a decontaminated stainless steel bowl. Each 2 foot interval will be considered one sample interval and sample material from different intervals will not be mixed. Once an interval has been chosen for analysis based on VOC screening, as discussed in the previous paragraph, the sample material within the bowl will be transferred to the appropriate sample containers.
- The field geologist will prepare a boring log for each borehole. Information recorded on the boring log will include soil descriptions and classifications, as well as other pertinent data regarding the sampling event and subsurface conditions (i.e., color, apparent staining or discoloration, moisture content, presence of fill material or organic matter, etc.). Section 17 provides a detailed description of the field documentation requirements and process.

7.3.5 Test Pit Excavation Soil Sample Collection Procedures

The test pit excavations will be conducted slowly and carefully to reduce the likelihood that any drums, tanks or vessels encountered, if any, are not punctured. Geophysical techniques may be employed to locate potential drums, tanks, or vessels prior to initiating the test pit excavation. The soils and anthropogenic debris encountered during test pit excavations will be described. Photographs will be taken at each pit location and documented in the field

notebook. Additionally, readings using a FID/PID will be taken throughout the test pit operation and recorded in the field notebook.

The following paragraphs describe specific excavation, documentation, and sampling procedures:

- Sample intervals will be selected for analyses as specified in the phase-specific SAPs.
- The material removed from the test pit will be scanned with a portable FID/PID and the result recorded. If a sample is collected for chemical analysis, the sample interval will be screened for E&E compounds as described in Section 5.1.
- If the sample is to be collected for chemical analysis, the soil will be placed in sample containers. Sample aliquots for VOC analysis will be collected as a grab sample directly from the excavator bucket following the methanol preservation procedures discussed in Section 16. Sample aliquots for all analyses except VOCs will be removed from the excavator bucket and placed in a decontaminated stainless steel mixing bowl or tray and thoroughly homogenized prior to transferring the sample aliquot to appropriate sample containers.
- After the test pit excavation and sampling are completed, the excavated material will be used to backfill the test pit.
- The soils encountered within the test pit will be visually classified and photographs will be taken during and at the completion of each test pit. A log of the visual descriptions and photographs will be maintained in the field notebook. Section 17 provides a detailed description of the field documentation requirements and process.

8.0 SEDIMENT SAMPLING

Sediments will be sampled during the facility-wide investigation using mechanical and manual sediment sampling methods. This section describes the sediment sampling methods that may be utilized during facility-wide investigation.

8.1 MECHANICAL SAMPLING METHODS

Sediment samples will be collected by utilizing split spoon samplers or Vibracore™ sediment samplers. The following paragraphs describe each of these sampling methods.

8.1.1 Split Spoon

Split spoons can be utilized to collect cohesive or compact sediment that will remain within the split spoon upon retrieval from the subsurface. Split spoons are not appropriate for liquefied sediments since much of the sample will not be retained within the split spoon during retrieval from the subsurface. The split spoons will be advanced into the sediment using tripod drill rig methods described in section 7.1.2. The samples will be collected in accordance with ASTM D1586 Standard Method for Penetration and Split-Barrel Sampling of Soils (ASTM, 1990) as presented in Section 7.3.

8.1.2 Vibracore™

The Vibracore™ sediment sampling technique is the preferred mechanical sediment sampling method, where it can be safely employed, and will be used when conditions require sampling sediment at depths greater than manual sampling techniques can attain. The Vibracore™ can be mounted on a tripod or to a boat. Vibracore™ sampling will be performed by driving a 2-inch diameter aluminum sampling tube into unconsolidated sediments. Equipment designed to impart a vibrating motion to the sampling tube will be used to drive the tube into the sediment. The following procedures will be utilized for collecting soil samples for chemical analysis:

- Sample intervals will be selected for analyses as specified in the phase-specific SAPs.

- The Vibracore™ sampling tube will be removed from the borehole and carefully opened exposing the sediment core. Vibracore™ sampling tubes are generally opened with a metal saw or metal shears.
- The sample will then be scanned with a portable FID/PID and the results will be recorded. If a sample is collected for chemical analysis, the sample interval will be screened for E&E compounds as described in Section 5.1.
- If the sample is to be collected for chemical analysis, the soil will be placed in sample containers. Sample aliquots for VOC analysis will be collected as a grab sample following the methanol preservation procedures discussed in Section 16. Sample aliquots for all analyses except VOCs will be removed from the sampling device and placed in a decontaminated stainless steel mixing bowl or tray and thoroughly homogenized prior to transferring the sample aliquot to appropriate sample containers.
- The field geologist will prepare a boring log for each borehole. Information recorded on the boring log will include soil descriptions and classifications, as well as other pertinent data regarding the sampling event and subsurface conditions (i.e., color, apparent staining or discoloration, moisture content, presence of fill material or organic matter, etc.). Section 17 provides a detailed description of the documentation requirements and process.

8.1.3 Remote Sampling

Remote operation of the Vibracore™ may be required as part of the facility-wide investigations due to the potential for extreme physical hazards to exist within some areas of the facility. Section 7.1.9 describes the general procedures for remote operation of mechanical sampling equipment.

8.2 MANUAL SAMPLING METHODS

Manual sampling methods are the preferred method for collecting sediment samples and will be employed when feasible. The two primary sediment sampling techniques involve the soil coring device/bucket auger (cohesive/compact sediments) and the silver bullet sampler (liquefied sediments). The soil coring device/bucket auger and silver bullet samplers are described in Section 8.2.2.

8.2.1 Soil Coring Device/Bucket Auger

Shallow sediment samples can be collected with a soil coring device and bucket auger provided the sediment is sufficiently cohesive or competent to be held within the soil coring device and bucket auger without losing the fine grained components of the sediment. The soil coring device and bucket auger are described in Section 7.2. The sample collection and sample handling procedures are described in Section 7.3.

8.2.2 Silver Bullet

The silver bullet sampler is an aluminum alloy cylinder into which a laboratory provided clean glass collection tube is inserted. The silver bullet sampler is generally utilized to collect samples of very liquefied sediments. The top of the sampler is equipped with a T-handle which is used to push the sampler to the desired depth within the sediment. Once the desired sampling depth is reached, the sampler is rotated 360° counter clockwise filling the collection jar with sediment. The sample collection and sample handling procedures are the same as the soil coring device described in Section 7.3.

8.3 SEDIMENT SAMPLING ACCESS

Access to sediment sampling locations for both mechanical and manual sampling methods can be achieved by utilizing a small raft for large bodies of water (i.e. Duck Pond) or a temporary bridge placed over narrow stream channels. The phase-specific SAPs will identify the appropriate means of access to each sampling point.

9.0 GROUNDWATER ASSESSMENT AND MONITORING METHODS

Additional monitoring wells or non-permanent groundwater sampling points may need to be installed and sampled to complete the groundwater assessment/monitoring objectives of the facility-wide investigation. This section describes the procedures for installing, developing, measuring groundwater elevations, and purging and sampling monitoring wells, and installing and sampling non-permanent sampling points. Monitoring well certification forms will be submitted to the NJDEP for each new monitoring well installed.

9.1 MONITORING WELL INSTALLATION

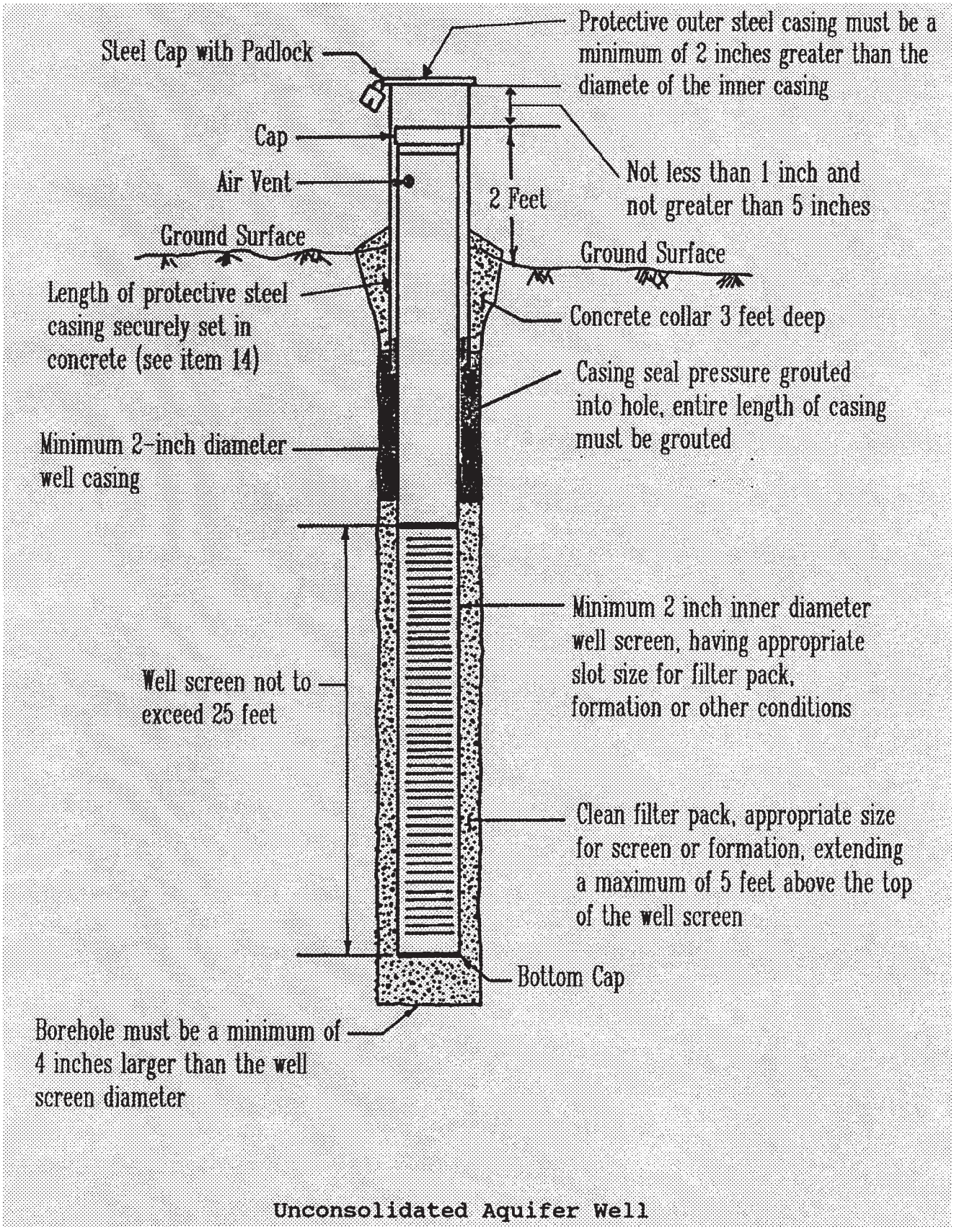
Each borehole advanced for the installation of a monitoring well will be drilled using a truck-mounted or ATV-mounted drilling rig with HSA or mud rotary capabilities. The HSA drilling method will be the preferred drilling method for installing wells less than 45 feet below grade where running sands are not expected. Mud rotary drilling will likely be employed for wells anticipated to be installed to depths greater than 45 feet, or where running sands are expected. Section 7.1 describes HSA and mud rotary drilling techniques. The following subsections describe well installation procedures for unconfined and confined wells installed in unconsolidated aquifer materials.

Note: If loose glacial till is encountered during well installation activities and the borehole cannot be kept open with the conventional drilling methods discussed in Section 7, the Odex drilling technique may be employed. The Odex drilling method is described in Section 7.1.5.

9.1.1 Unconfined Unconsolidated Aquifer Monitoring Well Installation

This section describes the specific procedures to be used for installing a monitoring well in an unconfined unconsolidated aquifer. Figure 9-1 graphically depicts an unconfined unconsolidated aquifer monitoring well. The requirements for installing a monitoring well in an unconfined unconsolidated aquifer include:

- The monitoring well will be completed according to the specifications defined in the *NJDEP Field Sampling Procedures Manual (NJDEP 1992)*. The borehole will be advanced with a minimum 6 inch outer diameter HSA or mud rotary bit.



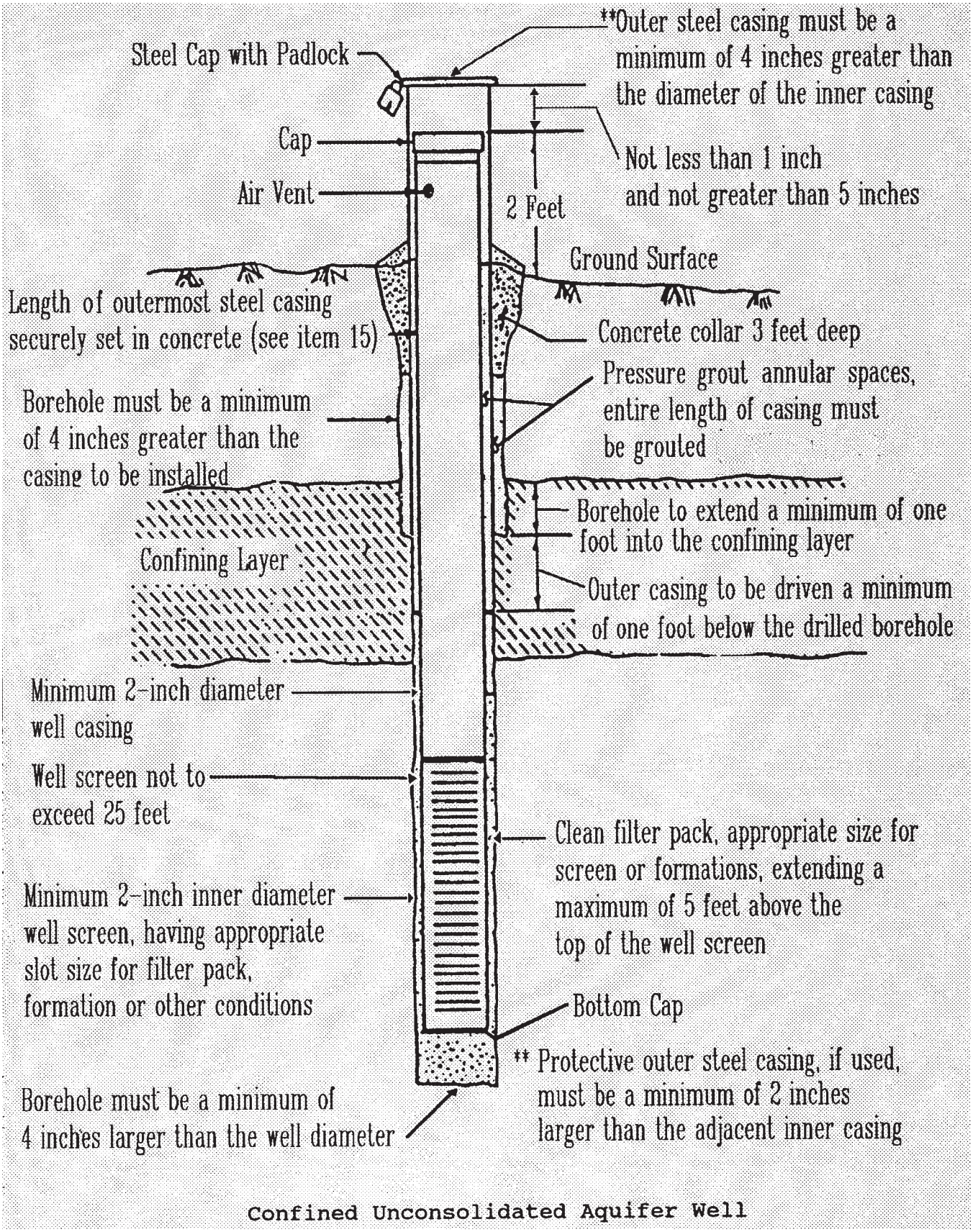
Unconsolidated Aquifer Well

HERCULES INCORPORATED FACILITY-WIDE INVESTIGATION KENVIL WORKS FACILITY, NEW JERSEY
UNCONFINED UNCONSOLIDATED AQUIFER WELL DIAGRAM
FIGURE 9-1

- Wells will be constructed of commercially fabricated, machine-slotted, threaded-flush-joint 2-inch diameter (Schedule 40) PVC well screen with an appropriate length of riser casing to extend to the ground surface. Screen slot size is anticipated to be 0.010 inch, and will not exceed 20 feet in length. However, if 0.010 inch is not appropriate for the formation a screen slot size appropriate for the formation will be selected. Screens will be fitted with a PVC bottom plug of appropriate size.
- A filter pack of clean sand of appropriate size will be placed around the screened interval. The filter pack will not extend more than 3 feet below the base of the screen or 5 feet above the top of the screen.
- A fine sand pack will be installed above the filter pack to prevent grout from infiltrating into the filter pack. The fine sand pack will extend 1 to 2 feet above the filter pack.
- The remainder of the annular space will be filled with tremie-grouted or pressure-installed cement-bentonite grout mixture to the ground surface. The blend will be proportional to mixing 94 pounds of Portland cement with 5 pounds of bentonite and 8.3 gallons of water. The cement and water will be mixed first, and then the bentonite will be added. No additives or borehole cuttings will be mixed with the seal.
- Wells will be completed with a standard 2 foot stick-up protective surface casing. A site monitoring well identification number will be affixed to each well.
- All monitoring well installation data will be recorded on a monitoring well construction summary sheet by the field geologist. The monitoring well/piezometer construction summary, presented in Section 17 will show relative depths and intervals of screen, casing, filter pack, and seals.

9.1.2 Confined Unconsolidated Aquifer Monitoring Well Installation

In the event a confining unit(s) greater than 4-feet thick is identified during the installation of an unconsolidated aquifer well, the following modifications will be made to the installation procedures. The 4-foot minimum was chosen to ensure a correct seal could be placed for the outer casing isolating the potential hydraulic connection between the two water bearing zones. It is believed that a confining unit of less than 4-feet could not be adequately sealed to prevent hydraulic connection between the two potential water bearing zones. These procedures are outlined in the *NJDEP Field Sampling Procedures Manual (NJDEP, 1992).* Figure 9-2 graphically depicts a monitoring well installed in a confined unconsolidated aquifer.



Confined Unconsolidated Aquifer Well

HERCULES INCORPORATED
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

CONFINED UNCONSOLIDATED AQUIFER WELL DIAGRAM

FIGURE 9-2

- The borehole will be reamed to a minimum diameter of 10 inches extending at least 1 foot into the confining unit.
- A 6-inch diameter outer casing will be placed into the borehole and driven an additional 1 foot into the confining unit to isolate the upper unconfined aquifer from the lower confined aquifer.
- The outer casing will be grouted in place, and the grout will be allowed to cure for a minimum of 12 hours before additional drilling takes place.
- The well bore advancement and the monitoring well installation will continue through the outer casing according to the unconfined monitoring well installation procedures described in Section 9.1.1.

9.1.3 Monitoring Well Development

Following sufficient time for grout to cure (48 hours), each monitoring well will be developed by pumping and surging. Development will be accomplished by surging the well with a surge block and removing standing water from the well using a submersible or centrifugal pump. All equipment lowered into the monitoring well will be decontaminated as described in the Section 13 prior to mobilization to the next well.

During development, pH, specific conductance, temperature, turbidity, dissolved oxygen, and oxidation-reduction potential will be measured. Measurements will be recorded in the field notebook. Development will be continued until pH, conductivity, turbidity and temperature readings stabilized to within 10% variation and turbidity in each well stabilizes below 50 nephlometric units (NTU). Development will be limited to a maximum of 2 hours continuous pumping or 10 well volumes for a low yielding well in the event measured readings do not stabilize within 10% or turbidity remains above 50 NTUs.

9.2 WATER LEVEL MEASUREMENT

Prior to commencing well purging and groundwater sample collection, the depth to static water and depth to bottom of each monitoring well will be obtained and recorded. The depth to water measurements will be converted into a groundwater elevation and plotted on a facility map so that the groundwater flow direction can be determined.

The depth to water will be measured in each well by slowly lowering a decontaminated water level sounder accurate to the nearest 0.01 foot into the monitoring well until the sounder is activated (usually indicated by an audible tone). The water level will be determined as a depth below a marked reference point (top of well casing for stick-up wells, ground surface for flush mounted wells). Measurements will be collected at least two times at each location, or until the measurements are within +/-0.01 ft, and will be recorded in the field notebook. During gauging, MWH will also check for the presence of light and dense non-aqueous phase liquid (NAPL) using a probe specifically designed to measure NAPL/water interfaces.

9.3 MONITORING WELL SAMPLING

This section describes the specific procedures to be used to when purging and collecting groundwater samples from monitoring wells.

9.3.1 Purging

Each monitoring well will be purged prior to the collection of groundwater samples. Two methods of well purging, standard and low flow, may be utilized during well sampling activities at the facility. The standard purging method is the primary anticipated well purging method for the unconsolidated monitoring wells located on the facility. The low flow purging method may be used to reduce well purging volumes for the deeper unconsolidated water supply wells located adjacent to the facility. The following paragraph describes standard and low flow purging methods.

9.3.1.1 Standard Purging. Standard purging will be accomplished by removing a predetermined volume of standing water using either a submersible pump with new dedicated polyethylene discharge tubing, or a bailer. The volume of water removed from each well during purging will be the equivalent of three to five well casing volumes. Pumping rates will be kept as low as is reasonably possible in order to avoid pumping the well dry. If the well is pumped at a rate of 0.5 gpm or less and purged dry, no additional purging will be considered necessary and the well will be allowed to recover until a sufficient quantity of water is present in the well to collect the groundwater sample.

During purging, pH, specific conductance, temperature, dissolved oxygen, oxidation reduction potential, and turbidity will be measured by an in-line monitoring device or with external meters. These parameters will be measured at least once after each well volume has been removed. Purging will continue until the variation in each parameter is less than 10 percent over three conservative readings. If parameters do not stabilize by the time five well volumes have been removed, this will be noted and purging will be discontinued.

9.3.1.2 Low Flow Purging. Low flow purging will be performed using portable submersible or bladder pumps with dedicated Teflon^{TM}-lined polyethylene tubing. The pumps will be set at the most contaminated interval, the most permeable interval, or slightly above the midpoint of the well screen. The wells will be purged at low flow rates approximating the natural rate of inflow to the well. Depth to water measurements will be collected at least every minute after commencing purging, until the water level stabilized to less than 0.01 feet of fluctuation.

Once the water level stabilizes, pH, specific conductance, temperature, turbidity, dissolved oxygen, and oxidation-reduction potential will be measured. Purging will continue until the variation in each parameter was less than 10 percent fluctuation over three consecutive readings spaced one minute apart or until two continuous hours of purging have been completed.

Appendix G contains USEPA and NJDEP guidance documents concerning low flow groundwater sampling procedures.

9.3.2 Groundwater Sample Collection

After purging has been completed and the monitoring well has recovered to a volume sufficient for sampling, a groundwater sample will be collected for chemical analysis. The following paragraphs describe the groundwater sample collection procedures for standard and low flow purging methods.

9.3.2.1 Standard Purging Groundwater Sample Collection Methods. Groundwater samples will be collected no later than 2 hours after each monitoring well has recovered to a

volume sufficient for sampling. The 2 hour sampling limit may be exceeded if sufficient recovery volume in the well is not achieved after 2 hours of recovery; however, the sampling time should always be within 24 hours of purging.

Each groundwater sample will be collected with a new, manufacturer-decontaminated, bottom-filling, disposable bailer from the mid-water column inside the screened interval. New disposable nitrile gloves will be used when collecting groundwater samples for chemical analysis. As applicable, sample containers will be filled in the following order: VOCs, SVOCs, pesticides/PCBs, metals, and water quality parameters (e.g. hardness). All VOC containers will be filled to zero headspace.

Groundwater samples submitted for chemical analysis will be immediately placed in appropriate laboratory-supplied containers, labeled, maintained in coolers at 4°C, and delivered to an off-site laboratory for analysis using EPA-approved chain-of-custody protocols. The specific procedures for these activities are described in the AQAPP.

9.3.2.2 Low Flow Purging Groundwater Sample Collection Methods. Samples will be collected directly from the dedicated discharge tubing attached to the submersible or bladder pump. The flow rate during sampling will be the same as that used during purging. New disposable nitrile gloves will be used when collecting groundwater samples for chemical analysis. As applicable, sample containers will be filled in the following order: VOCs, SVOCs, pesticides/PCBs, metals, and water quality parameters (e.g. hardness). All VOC containers will be filled to zero headspace.

Groundwater samples submitted for chemical analysis will be immediately placed in appropriate laboratory-supplied containers, labeled, maintained in coolers at 4°C, and delivered to an off-site laboratory for analysis using EPA-approved chain-of-custody protocols. The specific procedures for these activities are described in the AQAPP.

Appendix G contains USEPA and NJDEP guidance documents concerning low flow groundwater sampling procedures.

9.4 NON-PERMANENT GROUNDWATER SAMPLING POINTS

Non-permanent groundwater sampling points are expected to be utilized during site investigation activities. The primary purpose of the non-permanent groundwater sampling points will be to quickly determine the groundwater chemistry in areas where monitoring wells are not located. Additionally, non-permanent groundwater sampling points may be employed to strategically locate new monitoring wells, in the event additional monitoring wells are necessary. Table 9-1 lists the characteristics of the non-permanent groundwater sampling points. The following sections describe installation and sample collection techniques for non-permanent groundwater sampling points.

9.4.1 Hydropunch™

The Hydropunch™ groundwater sampling system will be used in conjunction with a HSA drill rig to sample groundwater. The drill rig will advance a borehole using 4.25 inch HSA to an elevation just above the water table. The Hydropunch™ will then be advanced through and beyond the bottom of the lead auger to the desired sampling depth in the formation. Upon reaching the desired sampling depth, the outer casing of the Hydropunch™ will be retracted, exposing a polypropylene inner screen to the formation. The procedure for collecting and handling groundwater samples using Hydropunch™ sampling equipment for chemical analysis is outlined in Section 9.4.4.

9.4.2 Geoprobe ™

The Geoprobe™ groundwater sampling system may also be utilized to collect groundwater samples. The Geoprobe ™ system utilizes a screen point sampler approximately 41 inches long with a standard slot size of 0.004 inches. The sampler has O-ring seals at the drive head and an expendable drive point to provide a watertight system. A clean screen point sampler will be threaded onto the leading end of a probe rod and driven to the desired sampling interval. Once at the desired sampling interval, chase rods will be sent downhole until the leading rod contacts the bottom of the sampling screen. The Geoprobe™ tooling will then be retracted while the screen is held in place by the chase rods. As the tooling is retracted, the expendable point will be released from the sampler sheath. An O-ring at the screen head will

Table 9-1

Summary of Non-Permanent Groundwater Sampling Point Characteristics
Field Quality Assurance Project Plan
Facility-wide Investigation
Kenvil Works Facility, New Jersey

Method Characteristics	Non-Permanent Groundwater Sampling Method		
	Hydropunch™	**Geoprobe™**	**CPT**
Relative Cost	Moderate	Low	High
Performance in Glacial Till	Moderate/Good	Poor (1)	Poor (1)
Relative Time to Install Sampling Point	Moderate	Fast	Fast
Sample Extraction Rate Liters/Minute	.2/2 (2)	.2/2 (2)	.2/2 (2)
Mobility	Moderate/High (3)	Moderate/High (3)	Moderate
Maximum Practical Depth (feet)	<40	<40	50-100
Volume of Drilling Fluids/Cuttings Generating	Very Low	Very Low	Very Low
Remote Operation Possible	Yes	Yes	Yes

(1) Performance decreases with increase in gravel/cobble sized sediments.
(2) Two liters per minute can be achieved with a peristaltic pump for non-VOC analysis.
(3) When an all terrain vehicle (ATV) is utilized.
CPT = Cone Penetrometer Technology

maintain the seal at the top of the screen and the sampling screen will be exposed to groundwater. The procedure for collecting and handling groundwater samples for chemical analysis using Geoprobe™ sampling equipment is outlined in Section 9.4.4.

9.4.3 Cone Penetrometer Technology (CPT)

Cone Penetrometer Technology may also be utilized to collect groundwater samples. The groundwater samples are collected by advancing a CPT rod equipped with a PVC well screen to the desired sampling depth. The CPT rod is then partially withdrawn exposing the well screen to the aquifer. Groundwater samples are then collected through the CPT rod with a small Teflon ™ bailer. Additionally, the CPT can use a Hydrocone™ to collect groundwater samples. The Hydrocone™ collects samples under an inert gas (i.e. argon) back pressure to reduce turbulence through the screen and minimize volatilization of potential contaminants. The sealed Hydrocone™ is pushed to the sampling depth and opened by gas pressure. The time required to fill the sampling container is measured and soil permeability at the sampling depth can be calculated. The Hydrocone™ is resealed and raised to the surface for sample analysis preparation. The Hydrocone™ is used primarily for the collection of samples for VOC analysis.

9.4.4 Groundwater Sample Collection

The following procedures will be utilized for the collection of groundwater samples from non-permanent groundwater sampling points:

- New disposable nitrile gloves will be used when collecting groundwater samples for chemical analysis.
- An effort will be made to reduce the fines in the sample by purging the sample point for a 1-2 minutes prior to sample collection, if applicable.
- Groundwater samples will be removed from the sample probe via a small diameter Teflon™ or stainless steel bailer and new clean dedicated polyethylene rope. Non filtered samples will be transferred directly to the sample containers.
- As applicable, sample containers will be filled in the following order: VOCs, SVOCs, pesticides/PCBs, metals, and water quality parameters (e.g. hardness). All VOC containers will be filled to zero headspace.

Groundwater samples submitted for chemical analysis will be immediately placed in appropriate laboratory-supplied containers, labeled, maintained in coolers at 4°C, and delivered to an off-site laboratory for analysis using EPA-approved chain-of-custody protocols. The specific procedures for these activities are described in the AQAPP.

10.0 SURFACE WATER SAMPLING

This section describes the procedures to be utilized for surface water sampling conducted during the facility-wide investigation activities at the facility.

10.1 DISCRETE DEPTH INTERVAL SAMPLING

Discrete depth interval sampling of larger water bodies, such as Duck Pond, may be performed as part of the facility-wide investigation. Discrete depth interval samples will be collected with a weighted bottle sampler. The weighted bottle sampler consists of a glass bottle equipped with a stopper that can be remotely removed from the surface, and weights to carry the bottle to the desired sampling depth. The following is a description of the discrete depth interval sampling procedure:

- The weighted bottle sampler will be lowered to the desired sampling depth.
- The stopper will be removed from the bottle to allow it to fill with water.
- The stopper is replaced in the bottle.
- The sampler is retrieved and the collected sample is transferred to laboratory-provided sample containers.

When surface water and sediment samples are taken at the same locations, the surface water sample will be collected first to minimize turbidity and reduce the potential of contaminating the surface water sample with disturbed sediment. Where samples are collected at multiple depth intervals, the samples will be collected in descending order from shallowest to deepest. In addition, down-stream samples will be collected prior to up-stream samples.

10.2 SURFACE SAMPLING

Surface samples will be collected by slowly submerging a laboratory-provided glass sample bottle horizontally into the water at the designated sample collection point. The bottle will be gradually turned upright, keeping the lip just under the surface so that only surface water is collected. Care will be taken to minimize surface disturbance throughout the sampling process. If the water is not deep enough to turn the bottle upright, the bottle will be held at an angle as steep as possible with the lip remaining just under the surface. In the event field

personnel cannot easily access the sampling point or disturbance of the sediment is expected, the glass sample collection container will be attached to a pole of sufficient length to reach the sampling point.

10.3 SAMPLE HANDLING PROCEDURES

The following sample handling procedures will be utilized for all surface water sampling events conducted at the facility:

- New disposable nitrile gloves will be used when collecting surface water samples for chemical analysis.
- As applicable, sample containers will be filled in the following order: VOCs, SVOCs, pesticides/PCBs, metals, and water quality parameters (e.g. hardness). All VOC containers will be filled to zero headspace.

Surface water samples submitted for chemical analysis will be immediately placed in appropriate laboratory-supplied containers, labeled, maintained in coolers at 4°C, and delivered to an off-site laboratory for analysis using EPA-approved chain-of-custody protocols. The specific procedures for these activities are described in the AQAPP.

11.0 SAMPLE IDENTIFICATION

All samples collected will be designated with an alpha-numeric code that will identify each sample by the matrix sampled, site location number, sequential sample number and depth interval, as appropriate. Sampled matrices will be identified by a two-letter code, (e.g., MW for monitoring well groundwater samples). Site location number will correspond to the facility grid location and feature number (i.e. A13-2205). Sequential sample numbers at each new sampling location for each sample type will begin with 01 and will increase accordingly. Sample designations for soil and sediment samples collected will include the depth to the top of sample interval.

The following is a guide for sample identification:

Matrix	Site Location Number		Sequential Sample	Top of Sample Interval Depth in feet (if applicable)
AA	ANN-NNNN	–	NN	(NN)

where:

A = alphabetic
N = numeric

Matrix codes for this project will be as follows:

SB = Soil boring samples
SD = Sediment samples
MW = Monitoring well groundwater
GW = Groundwater samples from non-permanent sampling point
SW = Surface Water
EQ = Equipment blank
TB = Trip blank

Example sample designations are shown below:

- Soil samples collected from site I6-8125 (Development Area Research Lab) will be labeled as SB-I6-8125-01(0-2), SB-I6-8125-02(0-2), SB-I6-8125-03(0-2), etc.
- Sediment samples collected from site M6-2 (Duck Pond) will be labeled as SD-M6-2-01(0), SD-M6-2-02(0), SD-M6-2-03(0), etc.
- Surface water samples collected from site M6-2 (Duck Pond) will be labeled as SW-M6-2-01(0), SW-M6-2-02(0), SW-M6-2-03(0), etc.
- Groundwater samples collected from monitoring well MW-21 will be labeled as MW-MW-21-01.

The information contained within the sample identification will be included in the Hazsite electronic data submission.

12.0 SURVEY METHODS

Surveying is expected to be conducted using a combination of global positioning system (GPS) and traditional electronic distance measurement (EDM) equipment. Combined survey methods are necessary because communication with GPS satellites will be blocked at various locations by existing structures and physiographic features, thus requiring conventional survey methods to obtain survey data. The horizontal survey control will reference New Jersey State Plane coordinate system and the vertical survey control will reference the North American Vertical Datum (NAVD 1988).

13.0 EQUIPMENT DECONTAMINATION PROCEDURES

This section describes the equipment decontamination procedures to be used during the facility-wide investigation. All equipment used in field sampling activities will be decontaminated before and after use. Equipment used for aqueous sampling will be dedicated single use devices decontaminated by the manufacturer. If laboratory decontamination of aqueous field sampling equipment is not feasible, field decontamination will be performed at the site as outlined in this section. The Field Team Leader will ensure that appropriate decontamination procedures are followed.

13.1 HEAVY EQUIPMENT AND MOBILE SAMPLING EQUIPMENT

All heavy equipment and mobile sampling equipment used in sampling activities (i.e., excavators, drill rigs, augers, drill rods, etc.) will be decontaminated upon arrival at the site, between each subsurface sampling location, and upon leaving the site. Decontamination of this equipment will be performed at a centralized soil and debris management area (SDMA) or potentially at satellite decontamination locations. Satellite decontamination locations, if utilized, will primarily be located in isolated sections of the facility near investigation activities so that significant time is not spent mobilizing to and from a centralized SDMA.

The following procedures will be used to decontaminate heavy equipment and mobile sampling equipment:

- A decontamination pad will be constructed on-site to collect the decontamination water.
- Non-vehicular equipment (i.e. drill rods) will be staged on metal stands (off the ground).
- Equipment will be thoroughly cleaned on the decontamination pad using a high-pressure steam cleaner and potable water from an approved source.
- Decontaminated equipment will be staged in a clean location prior to use.

13.2 DIRECT PUSH SAMPLING EQUIPMENT

All direct push sampling equipment used to advance sampling equipment will be decontaminated upon arrival at the site, between each subsurface sampling location, and

upon leaving the site. Decontamination of this equipment will be performed at a centralized SDMA or potentially at satellite decontamination locations.

The following procedures will be used to decontaminate direct-push equipment:

- Equipment will be thoroughly cleaned on the decontamination pad using a high-pressure steam cleaner and potable water from an approved source. If acetate sleeves are used during sample collection, the probes may be washed with a laboratory detergent instead of steam cleaning.
- Equipment will be thoroughly rinsed with potable water.
- Equipment will be rinsed with distilled and/or deionized water.
- Decontaminated equipment will be placed in a clean location protected from fugitive dust prior to field use.

13.3 AQUEOUS AND MANUAL SAMPLING EQUIPMENT

All non-disposable manual sampling equipment (i.e. soil coring devices, sediment samplers, spoons, bowls, etc.) will be decontaminated prior to mobilization to each site and use. Decontamination of this equipment will be performed at a centralized SDMA or potentially at satellite decontamination locations.

The following procedures will be used to decontaminate the aqueous and manual sampling equipment:

- Equipment will be washed with potable water and laboratory-grade detergent.
- Equipment will be thoroughly rinsed with potable tap water.
- Equipment will be rinsed with distilled and/or deionized water from an approved potable water source.
- Equipment used to collect samples for metals analysis will be rinsed with a 10 percent solution of laboratory grade nitric acid followed by another rinse with distilled and/or deionized water.
- Equipment used to collect samples for organic analysis will be rinsed with pesticide-grade acetone rinse, air dried or pure nitrogen blow out, followed by another rinse with distilled and/or deionized water.
- Equipment will be wrapped in aluminum foil, shiny side out.
- Information concerning decontamination methodology, date, time, and personnel will be recorded in the field logbook.

13.4 FIELD MEASUREMENT AND STANDARD PURGING EQUIPMENT

All field measurement equipment (i.e., static water level indicator, pH meter, conductivity meter or submersible pump) will be decontaminated prior to each use. Decontamination of this equipment will be performed at a centralized SDMA or potentially at satellite decontamination locations.

The following procedures will be used to decontaminate the field measurement and standard purging equipment:

- Equipment will be washed with potable water and laboratory grade Alconox™ detergent.
- Submersible pumps will be cleaned with laboratory-grade detergent and tap water rinse followed by a 10 gallon flush of potable water through the pump. The pump will be placed in a decontaminated plastic drum or plastic garbage bag filled with potable water.
- Equipment will be rinsed with distilled and deionized water and allowed to air dry.

13.5 LOW FLOW PURGING EQUIPMENT

All low flow purging equipment will be decontaminated prior to each use according to the manufactures recommended procedures. Decontamination of this equipment will be performed at a centralized SDMA or potentially at satellite decontamination locations.

The following procedures will be used to decontaminate the low flow purging equipment:

- Pre-rinse. Operate pump in a deep basin containing approximately 5 to 8 gallons of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.
- Wash: Operate pump in a deep basin containing approximately 5 to 8 gallons of a non-phosphate detergent solution for 5 minutes and flush other equipment with fresh detergent solution for 5 minutes. Use detergent sparingly.
- Rinse: Operate pump in a deep basin of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

- Final Rinse: Operate pump in a deep basin of distilled/deionized water to pump out 1 to 2 gallons of this final rinse water.

14.0 INVESTIGATION-DERIVED WASTE MATERIALS MANAGEMENT

This section describes handling and disposal practices for investigation-derived waste materials to be utilized during facility-wide investigation activities at the facility.

14.1 DISPOSABLE CLOTHING/EQUIPMENT

Disposable equipment and clothing with gross chemical or E&E contamination will be drummed. Drums will be labeled to identify contents and source locations. Grossly contaminated disposable equipment and clothing will be disposed of in accordance with state and federal regulations. All other disposable equipment will be disposed of as solid waste.

14.2 DRILL/SOIL CUTTINGS

Drill/soil cuttings are expected to be dispersed adjacent to the drill site. If the cuttings cannot be returned to the ground, they will be placed into 55-gallon drums. Cuttings will not be returned to the ground if they are generated in areas covered in asphalt or if the presence of contamination within the cuttings would cause a safety/health or subsequent investigation concern if returned to the ground surface. Drums, if utilized, will be labeled to identify contents and source locations. Cuttings will be disposed of in accordance with state and federal regulations.

14.3 DECONTAMINATION AND PURGE WATER

Purge water generated during well development and sampling activities will be returned to the ground surface adjacent to the well. If the purge water cannot be returned to the ground surface because of the potential for surface water runoff to surface water bodies or storm sewers, it will be contained and disposed of at the on-site Waste Water Treatment Plant (WWTP).

15.0 DUPLICATE SAMPLING PROCEDURES

This section describes the procedures to be followed when obtaining duplicate samples. Duplicate samples are to be collected for each matrix at a minimum rate of one per 20 investigative samples (5 percent of total) and will be submitted to the laboratory as "blind" samples as defined in the AQAPP.

15.1 GROUNDWATER AND SURFACE WATER DUPLICATE SAMPLE COLLECTION

Duplicate groundwater and surface water samples will be obtained by alternately filling sample containers from the same sampling device for each parameter. Samples for VOC analysis will be the first set of containers filled.

15.2 SOIL AND SEDIMENT DUPLICATE SAMPLE COLLECTION

Soil and sediment samples will be collected in 2-foot intervals. Duplicate samples for VOC analysis will be collected from the 0.5-foot interval of the core with the highest FID/PID reading. Homogenization of the remaining 1.5-foot interval of the sample for remaining parameters is necessary to generate two equally representative samples. Homogenization will be accomplished by filling a properly decontaminated stainless steel bowl with the sample and mixing it with a decontaminated stainless steel instrument. It is intended that adequate sample material be collected at one time in order to fill all the necessary sample containers. If sample material volume is not sufficient to fill all sampling containers, additional soil will be collected from within the 3-foot interval. Mixing will be continued until a consistent physical appearance is achieved. Once mixing is achieved, the sample will be divided in half and the sampling containers filled by spooning soil alternately from each half.

16.0 METHANOL-PRESERVATION SOIL SAMPLING PROCEDURES

This section describes the methanol-preservation procedures to be followed when collecting soil and sediment samples for VOC+15 analysis. Soil and sediment samples collected for VOC+15 analysis will be preserved in accordance with NJDEP's *Methodology for the Field Extraction/Preservation of Soil Samples With Methanol For Volatile Organic Compounds* (February, 1997). Samples will be collected as follows:

- A small diameter, disposable plastic syringe will be tare-weighed to 0.1 grams (g) using an electronic balance or manual scale;
- Surface soil will be trimmed from the selected sampling interval, exposing a fresh soil surface;
- A soil sample weighing between 10 g and 12 g will be collected with the syringe;
- The sample will be slowly extruded from the syringe into the laboratory-prepared sample container;
- A clean brush or towel will be used to remove any soil particles adhering to the threads on the sample container;
- The lid will be secured on the sample container, and the sample will be gently swirled to mix the soil aggregate with methanol;
- An unweighed duplicate sample, not preserved with methanol, will be collected for percent moisture determination;
- Sample containers will be placed in ziplock bags and placed in an iced cooler for delivery to the laboratory.

17.0 FIELD DOCUMENTATION

This section describes the specific field documentation procedures to be followed during facility-wide investigation activities conducted at the facility. To ensure all field documentation is permanently recorded in a legal document, any data recorded on media other than the field log book will be transposed into the field log book at the end of the days' activities.

17.1 FIELD LOG BOOK DOCUMENTATION

Field log books will provide the primary means of recording the data collection activities conducted for the facility-wide investigation. Field log books will be assigned to field personnel but will be stored in the project file when not in use. The following entries will be contained in the field log books:

Name and title of author, date and time of entry, and physical/environmental conditions encountered during field activity.

- Location of sampling or measurement activity.
- Name(s) and title(s) of field crew.
- Name(s) and title(s) of site visitors, and purpose of visit.
- Type of sampled or measured media.
- Sample collection or measurement method(s).
- Number and volume of sample(s) collected and sample containers.
- Description of sample point(s).
- Description of measuring reference points.
- Date and time of sample collection or field measurement.
- Description of sample collection equipment.
- Description of deviations from the sampling plan, if any, and reasons for the deviation.
- Sample identification number(s).
- Sample preservative, if necessary.
- Sample destination (laboratory).
- Field observation and comments.

- Description of field measurement instruments.
- Field measurement/screening data including calibration data.
- Well purge methods.
- Flow rates and duration of well purging.
- Water levels.
- Reference for maps and photographs of sampling site(s).
- Sample documentation including dates and methods of sample shipment and bottle lot numbers.
- Level of personal protection equipment being used.
- Signature of the person making the entry.

At the end of each incomplete page, a line will be drawn across the remainder of the page and initialized to indicate the end of an entry.

17.2 FIELD SAMPLING AND INVESTIGATION ACTIVITY DOCUMENTATION

Figure 17-1 presents the standard form for completion of soil boring logs in the field. A classification of each collected soil sample will be included on each boring log, as well as other descriptive data that will provide information pertinent to subsurface conditions. Each soil sample will be visually classified using American Society for Testing and Materials (ASTM) D 2488 Standard Method for Classification of Soils in the Field (ASTM, 1984) a copy of which is provided in Appendix F.

All monitoring well installation data will be recorded on a monitoring well construction summary sheet (Figure 17-2) by the field geologist. This summary sheet shows the relative depths and intervals of screen, casing, filter pack, and seals.

Groundwater purging and sampling activities will be recorded on a groundwater purging and sampling data sheet (Figure 17-3). Field sampling will be conducted in accordance with approved standard operating procedures which have been designed to preserve the in situ characteristics of the media being sampled to the extent practicable.

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211_____/3.2.2

Geologic Log

Boring or Well No.	Project: **Kenvil RI**
Log Recorded By:	Date:
Ground Surface Elevation (ft MSL):	Drilling Co/Rig Type:
Sampling Interval (Est.):	Rig Operator:
Location:	Water Elevation:

	Sampling					
Depth (feet)	Sample Interval	Sample Number	Recovery	PID	Stratigraphy	Remarks
0						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

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SOIL BORING LOG

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FIGURE 17-1

To document that the samples are representative of the environment from which they are collected, chain-of-custody records will be used as control documents to demonstrate that sample maintenance and custody are maintained. An example chain of custody record is presented in Figure 17-4. The chain-of-custody record will be initiated by the field sampling personnel upon collection of a sample, and will accompany each sample cooler. The chain-of-custody will be signed by each individual who has the samples in his/her possession.

Figure 17-5 presents daily field report form that will be completed to document personnel and equipment onsite and to detail daily field activities, progress and events of significance.

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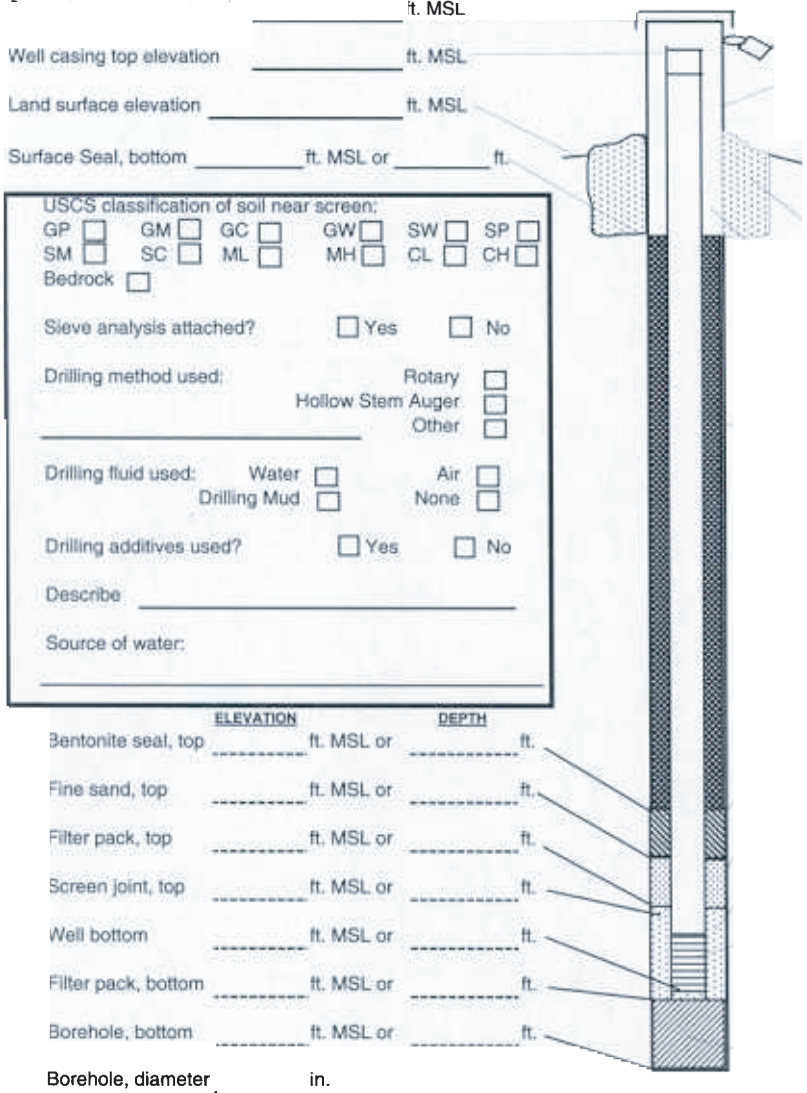
File 211_____/3.2.2

ABOVE GRADE MONITORING WELL CONSTRUCTION SUMMARY

JOB NO.

Facility/Project Name	Local Grid Location of Well ☐ N. ☐ S. ft. ☐ E. ☐ W. ft.	Well Name
Type of Well Water Table Observation Well ☐ Piezometer ☐	Grid Origin Location Lat. _____ Long. _____ or St. Plane _____ ft. N,	Date Well Installed
	Section Location of Waste/Source ☐ E. ☐ W.	Well Installed By: (Person's Name and Firm)
Distance Well Is From Waste/Source Boundary Potential Source Area ft.	Location of Well Relative to Waste/Source ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	



_____ ft. MSL

Well casing top elevation _____ ft. MSL

Land surface elevation _____ ft. MSL

Surface Seal, bottom _____ ft. MSL or _____ ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ☐ No

Drilling method used: Rotary ☐ Hollow Stem Auger ☐ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ☐ No

Describe _____

Source of water: _____

	ELEVATION		DEPTH	
Bentonite seal, top	_____	ft. MSL or	_____	ft.
Fine sand, top	_____	ft. MSL or	_____	ft.
Filter pack, top	_____	ft. MSL or	_____	ft.
Screen joint, top	_____	ft. MSL or	_____	ft.
Well bottom	_____	ft. MSL or	_____	ft.
Filter pack, bottom	_____	ft. MSL or	_____	ft.
Borehole, bottom	_____	ft. MSL or	_____	ft.

Borehole, diameter _____ in.

O.D. well casing in.

I.D. well casing _____ in.

Cap and lock? ☐ Yes ☐ No

Protective cover pipe:
Inside diameter: ____ in.
Length: ____ ft.
Material: Steel ☐ Other ☐

Additional protection? ☐ Yes ☐ No
If yes, describe: _____

Surface seal: Bentonite ☐ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ☐
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ Other ☐

Fine sand material: Manufacturer, product name & mesh size
_____
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
_____
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: _____

Screen type: Factory cut ☐ Continuous slot ☐ Other ☐

Manufacturer _____
Slot size: ____ in.
Slotted length: ____ ft.

Backfill material (below filter pack): None ☐ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowlege.

Signature	Firm
	Montgomery Watson Americas, Inc.

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MONITORING WELL CONSTRUCTION SUMMARY

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FIGURE 17-2

GROUNDWATER SAMPLING LOG

Client/Site:	**Total Well Depth (ft. below TOC):**	**Sampler(s):**
Well Number:	**Static Water Level (ft below TOC):**	**Sampling Date:**
Permit Number:	**Standing Water Column (ft):**	**Samples Collected:**
Well Diameter (in.):	**Using Pump Static Water Level (ft below TOC):**	**Sampling Time:**
Screened Interval (ft. below TOC):	**Pump Intake Depth (ft below TOC):**	**Time Purge Started:**

All Measurements taken from: TOC

Total Volume Purged (gal):

Purge and Sampling Method: Low Flow

Job Number: /3.2.8

BLADDER PUMP SETTINGS	
Refill (sec.)	
Discharge (sec.)	
Pressure (psi)	

Stabilization Parameters (over 3 consecutive readings):

+/- 0.1 pH	**+/- 3% EC**
+/- 10% DO	**+/- 3% Temperature**
+/- 10% Turbidity	**+/- 10 mv ORP**

Time	EC (mS/cm)	pH	Temp (°C)	Turbidity (NTU)	DO (mg/L)	ORP	Depth to Water (ft)	Flow Rate (ml/min)	Comments

HERCULES INCORPORATE
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

GROUNDWATER PURGING & SAMPLING DATA SHEET

MWH

FIGURE 17-3

Fed Ex # _____

Cooler # _____

MONTGOMERY WATSON

CHAIN OF CUSTODY RECORD

DESTINATION MONTGOMERY LABORATORIES ☐

OTHER _____ ☐

PROJECT NAME	PROJECT JOB #
SAMPLER(S): PRINTED NAME AND SIGNATURE	

TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	ANALYSES REQUIRED	REMARKS

SPECIAL INSTRUCTIONS/COMMENTS

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C No. ORIGINAL COPY: SEND WITH SAMPLE YELLOW COPY: RETAINED BY SAMPLER PINK: OFFICE COPY PAGE _____ OF _____

HERCULES INCORPORATE
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

CHAIN OF CUSTODY RECORD

MWH

FIGURE 17-4

DAILY REPORT

DATE: _____

REPORT: _____

DAY: _____

WEATHER: _____

TEMP: _____

WIND: _____

HUMIDITY: _____

PROJECT MANAGER: _____

PROJECT: _____

JOB NO.: _____

CONTRACT NO.: _____

MW PERSONNEL ON SITE: _____

_____

_____

_____

_____

_____

_____

_____

_____

SUBCONTRACTORS ON SITE: _____

_____

_____

_____

_____

_____

_____

_____

_____

FIGURE 17-5

DAILY REPORT LOG

EQUIPMENT ON SITE: _____

WORK PERFORMED (Including Sampling): _____

HEALTH AND SAFETY ACTIVITIES: _____

FIELD PROBLEMS ENCOUNTERED/CORRECTIVE ACTION TAKEN: _____

TOMORROW'S PLANS: _____

REPORT PREPARED BY: _____

TITLE: _____

FIGURE 17-5

DAILY REPORT LOG

18.0 REFERENCES

ASTM, 1990. *D 1586-90 Standard Method for Penetration and Split-Barrel Sampling of Soils.*

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NJDEP, 1992. *Field Sampling Procedures Manual.* N.J.A.C. 7:26E

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USEPA, 1982. *Geophysical Techniques for Sensing Buried Wastes and Waste Migration.*

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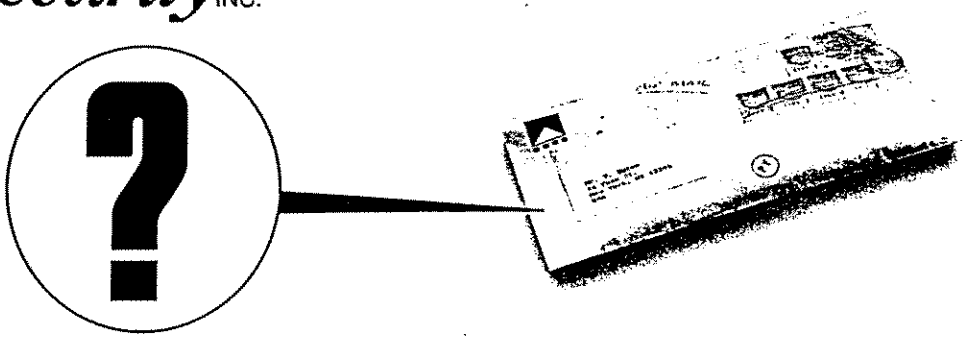
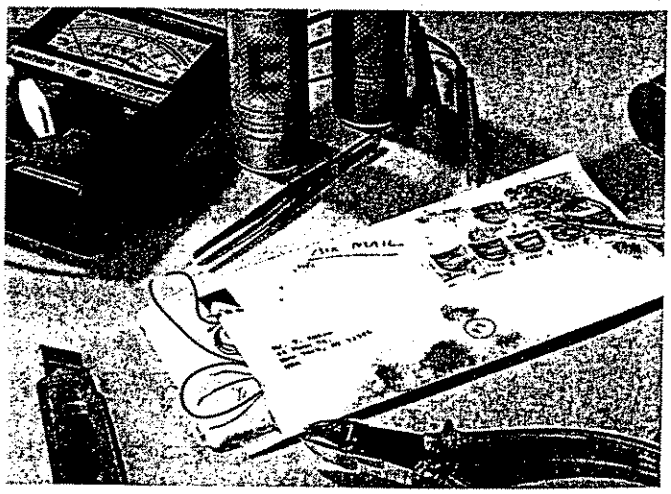
APPENDIX A
EXPRAY MANUFACTURER'S DOCUMENTATION

Mistral Security INC.



EXPRAY



Detect explosives before or after an explosion.

New: Field test kit contains three sprays, collection papers, and verification papers.

Fast and Easy: Wipe. Spray with EXPRAY. An instant color reaction indicates the presence and type of explosive, even Semtex H.

Accurate: Detects 20 nanograms of explosives.

Inexpensive: Low cost per test

Safe: No risk to you or the environment.

Spray an Answer... "On The Spot"

TECHNICAL BACKGROUND

Expray is a unique, aerosol-based field test kit for the detection and identification of Group A explosives (e.g. TNT, TNB, etc.), Group B explosives (e.g. Semtex H, RDX, C4, etc.) and compounds containing inorganic nitrates that are used in improvised explosives (e.g. ANFO). **Expray** is commonly used as a pre-blast analytical tool, post-blast investigative tool, screen against potential terrorist elements, and as a technical evaluation test in soil remediation on hazardous material "clean-up" sites. When used as a post-blast investigative tool, the product is field proven to speed up crucial investigations.

The **Expray** testing process consists of three separate test reagents;
Expray #1 (Model #1510) for Group A explosives
Expray #2 (Model #1520) for Group B explosives
Expray #3 (Model #1530) for improvised explosives containing nitrates.

Expray is a chemically cumulative testing process. First wipe the suspected surface with the collection paper (Model #530). Spray the collection paper with **Expray #1** and observe for a dark violet to brown color reaction indicating the presence of Group A explosives. Next, spray the same collection paper with **Expray #2** and observe for a pink color reaction indicating the presence of Group B explosives. Finally, spray the same collection paper with **Expray #3** and observe for a crimson pink color reaction indicating the presence of nitrate compounds. It is recommended that all three **Expray** cans be sprayed during a testing process even if a positive reaction is observed in either step #1 or #2. If the environmental surface or package being tested is light in color, the collection paper may be omitted.

The level of sensitivity (20 nanograms) surpasses that of other currently available products. The testing process is fast and efficient. No glass ampules, spatulas or waiting required. Results appear in seconds. No additional tools or equipment required. The identification/detection process requires no special training and testing can be performed "on the spot."

For both law enforcement and investigative personnel, **Expray** is a proven tool for increasing the accuracy, efficiency and number of interdictions. For forensic and environmental laboratories, it has proven to reduce the number of samples submitted for testing, saving both time and money.

Product Options:

Master kit Model #1553

Other Detection and Identification Products:

Coca-Test .....Cocaine and related narcotics
Cannabispray .....Marijuana and related narcotics
Meth-Test.....Methamphetamine and related secondary amines
Herosol.....Heroin and related narcotics
SPR Black & White.....Fingerprint detection on wet, non-porous surfaces
Nin Plus Ultra .....Fingerprint detection on porous surfaces
U.V. Trap .....Oil-based ultraviolet marking spray
Ferrotrace.....Detection of iron residues

For additional information on these as well as our full line of forensic products, including technical data, pricing information and the name of your local distributor, please contact;

Distributed by:

Mistral Security, Inc.
7910 Woodmont Avenue
Suite #1070
Bethesda, MD 20814
1-800-9MISTRAL (964-7872)
301-913-9369

APPENDIX B
DTECH MANUFACTURER'S DOCUMENTATION

IMPORTANT

Read all instructions and handling procedures before using this kit. For assistance call the TECHNICAL SERVICE HOT LINE 1-800-222-0342.

INTENDED USE

The D TECH™ TNT/RDX Soil Extraction Pac is designed to extract TNT and RDX from soil samples. This extract is analyzed using the D TECH TNT Explosives Test Kit (Item #TK-1004-1), the D TECH TNT/ RDX Screening Kit (Item #TK1001-1), or the D TECH RDX Explosives Test Kit (Item #TK-1005-1).

PRINCIPLE

Trinitrotoluene (TNT) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) are explosives commonly found in munitions. The presence of these compounds in soil is an indication of contamination from explosive waste residue. TNT and RDX physically bind to soil particles and must be extracted to be analyzed.

The D TECH TNT/RDX Soil Extraction Pac uses an organic solvent to extract these compounds for analysis. Following this step, the extracted compounds in the solvent are further prepared for analysis by an aqueous dilution. This enables the sample to be tested with the D TECH™ TNT Explosives Test Kit, (Item #TK-1004-1), the D TECH TNT/RDX Screening Kit (Item #TK1001-1), or the D TECH RDX Explosives Test Kit (Item #TK-1005-1).

KIT DESCRIPTION

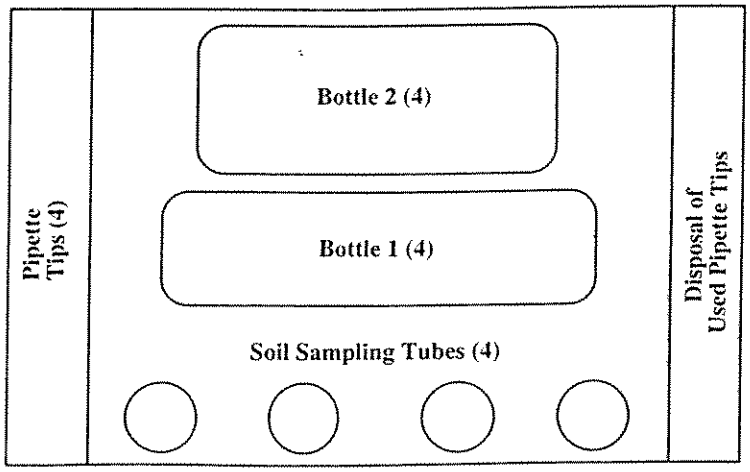
The D TECH TNT/RDX Soil Extraction Pac contains sufficient materials to perform four (4) sample extractions.

STORAGE AND STABILITY

This kit has excellent stability at room temperature and under refrigeration. For expiration dating under these conditions, see the package label.

MATERIALS PROVIDED

See tray diagram below. This diagram includes the D TECH TNT/RDX Soil Extraction Pac component names and quantity of each item.



Not shown in diagram

Used Kit Label (1)

Instruction Guide (1)

Red dot labels (4) for used Bottle 2 components.

HEALTH/SAFETY

Material Safety Data Sheets (MSDS) have been supplied with the purchase of this product. The MSDS should be read before using this test.
Included in this section. we have emphasized health and safety precautions that should be followed when handling these solutions.

PROTECT EYES WITH SAFETY GLASSES
PROTECT SKIN WITH PROTECTIVE GLOVES

Bottle 1 (50664) 100% ACETONE

Associated Hazards
Extremely Flammable Liquid and Vapor (NO SMOKING OR OPEN FLAME)
Harmful if Inhaled or Swallowed
Causes Eye Irritation

May cause damage to the central nervous system, liver, and kidneys. Chronic exposure during pregnancy may be harmful.

Symptoms of Exposure
High concentrations or prolonged exposure causes headache, dizziness, nausea, irritation of eyes and respiratory tract, narcosis and eventually unconsciousness.
Prolonged or repeated skin contact may cause irritation.

First Aid Measures
GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE

Skin:	Wash thoroughly with soap and water.
Eyes:	Immediately flush with water for at least 15 minutes.
Inhalation:	Remove to fresh air; give artificial respiration if breathing has stopped.
Ingestion:	If conscious, drink water and induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Bottle 2 (50663) Buffer Solution

Associated Hazards
May be irritating to skin, eyes and mucous membranes.

Symptoms of Exposure
May be irritating on contact with skin, eyes or mucous membranes.

First Aid Measures
GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE

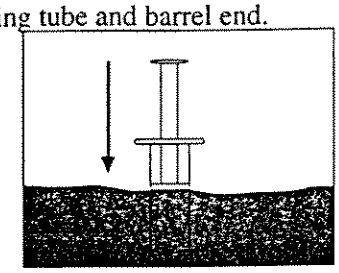
Skin:	Wash thoroughly with soap and water.
Eyes:	Immediately flush with water for at least 15 minutes.
Inhalation:	Remove to fresh air; give artificial respiration if breathing has stopped.
Ingestion:	Get immediate medical attention; if conscious, give water freely.

This package is designed to serve as a WORK STATION. At the conclusion of the test, the components can be left in the package for proper disposal.

TEST PROCEDURE

Sampling

Step 1: Break up the soil so that it is a **uniform** sample. See Sample Preparation Information (page 4) for further instructions. Draw back the **Soil Sampling Tube** plunger until it stops. Push the **Soil Sampling Tube** into the soil several times with a twisting action to firmly pack and fill the tube. Remove excess soil from external surface of the sampling tube and barrel end.



Step 2: Dispense the soil into **Bottle 1** by positioning the barrel into the neck of the bottle and firmly pushing the plunger. If soil lodges in the neck of the bottle, use the sampling tube to push it into the bottle. If soil adheres to the threads of the bottle neck and cap, wipe clean before placing cap on bottle. Cap bottle tightly.

Extraction From Soil

Step 3: Mix the soil and liquid in **Bottle 1** by **shaking** continuously over a **3 minute period**.

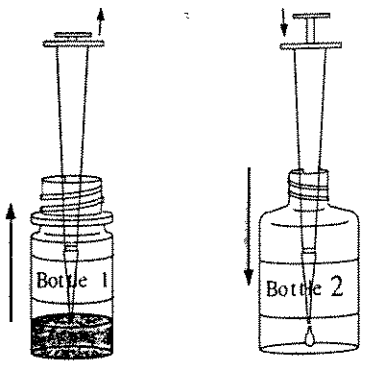
Step 4: Allow the soil to settle until a clear, liquid layer forms. Some soils will settle more slowly than others.

Diluting the Extraction Solution

Step 5: Remove cap from **Bottle 2**.

Step 6: Place an unused tip on the pipetter.

Step 7: Fully depress the plunger of the pipetter. With the plunger fully depressed, place the pipette tip into the clear, liquid layer and slowly release the plunger. Take care not to aspirate any soil.



Step 8: Dispense the contents of the pipette tip into **Bottle 2** by placing the pipette tip into the liquid and depressing the plunger. Mix **Bottle 2** thoroughly. Replace the cap tightly on **Bottle 1** and return it to the tray. Place the used pipette tip in the right side tray compartment.

Step 9: Use **Bottle 2** as a sample in Step 1 under **Test Procedure** for analysis in the D TECH TNT Explosives Test Kit (Item # TK-1004-1), the D TECH TNT/RDX Screening Kit (Item # TK1001-1), or the D TECH RDX Explosives Test Kit (Item # TK-1005-1). If the last extraction has been performed, place the "Used Kit" label on Soil Extraction Pac box to seal it shut.

Helpful Hint: Cap **Bottle 2** tightly and return it to the tray. Red dot labels have been provided to indicate used Bottle 2 components.

SAMPLE PREPARATION INFORMATION

To achieve a more homogeneous distribution and to insure reproducible test results, the soil sample should be mixed thoroughly. Remove all debris, such as sticks, stones and leaves, prior to using the D TECH **Soil Sampling Tube**. Sandy soil may require a scooping action to fill the tube. Squeezing the barrel of the Soil Sampling Tube will help to expel a tightly packed sample. Extraction of TNT and RDX is more effective if the soil plug is broken into sections during the addition to Bottle 1.

Acetone has been proven to be an efficient TNT and RDX extractant. Due to the volatile nature of acetone, bottles should be kept capped to minimize evaporation.

VOLUME SAMPLING TECHNIQUE

The D TECH TNT/RDX Soil Extraction Pac measures sample size using an efficient and economical volumetric technique. As with weight-based measurements, volumetric measurements of soils in field testing applications are not absolute and are subject to the influence of moisture content, organic matter content, soil type, etc. Variation in sample size can be minimized by insuring the **Soil Sampling Tube** is evenly filled. The sample size of the D TECH **Soil Sampling Tube** is 3 cubic centimeters, which is equivalent to an average of 4.5 grams of dry soil.

QUALITY CONTROL

All D TECH Test Kits are thoroughly quality controlled and manufactured at Strategic Diagnostics Incorporated's GMP facility. All products undergo extensive validation and field testing to assure accuracy and reliability. All products are thoroughly quality controlled to meet the published specification.

GENERAL LIMITED WARRANTY All EM SCIENCE products are warranted to meet the specifications set forth on their label only. All other warranties, expressed or implied, including the warranties of MERCHANTABILITY AND FITNESS OF USE, are excluded. Any change or modification of an EM SCIENCE product or of its prescribed procedure for use may adversely affect its stated specification.

EM SCIENCE shall not be liable in the event of any such change or modification or for any indirect or consequential damages. All EM SCIENCE products are sold on the condition that they be used and disposed of only within the scope of currently recognized critical standards related to human health and the physical environment.

Prices and specifications are subject to change without notice. We reserve the right to discontinue items without prior notice.

EM SCIENCE/Strategic Diagnostics Inc.
480 Democrat Road
P.O. Box 70
Gibbstown, N.J. 08027
(800) 222-0342

D TECH™ is a registered trademark of EM Industries. EM Science is a Division of EM Industries Inc. and an Associate of E. Merck, Darmstadt, Germany

RDX EXPLOSIVES TEST KIT INSTRUCTION GUIDE

TK-1005-1

Phone: (800) 544-8881

IMPORTANT

Read all instructions and handling procedures before using this kit. For assistance call the TECHNICAL SERVICE HOT LINE Phone: (800) 544-8881

INTENDED USE

The D TECH™ RDX on-site and laboratory test kit is designed to provide quick, semiquantitative, and reliable test results for making environmental decisions.

The D TECH RDX Explosives Test Kit can be used on-site for identifying "hot spots", site mapping, monitoring of remediation processes and selecting site samples for laboratory analysis.

In the laboratory, the D TECH RDX Explosives Test can screen highly contaminated samples that require pre-dilution prior to instrumental analysis.

PRINCIPLE

The D TECH system for analyzing trace amounts of explosives is based on immunoassay technology.

An antibody specific for RDX compounds has been linked to solid particles which are collected on the membrane of the cup assembly.

A color developing solution added to the surface of the cup assembly develops a color inversely proportional to the concentration of RDX Equivalents in the sample (less color indicates more RDX present in sample).

RDX Equivalents are measured at parts per million (ppm) in soil and parts per billion (ppb) in water samples.

TEST KIT DESCRIPTION

The D TECH RDX Explosives Test Kit, Item #TK-1005-1, contains sufficient materials to perform four tests.

This kit can test water samples or be used with the D TECH TNT/RDX Soil Extraction Pac, Item #TK-1001S-1, to test soil samples.

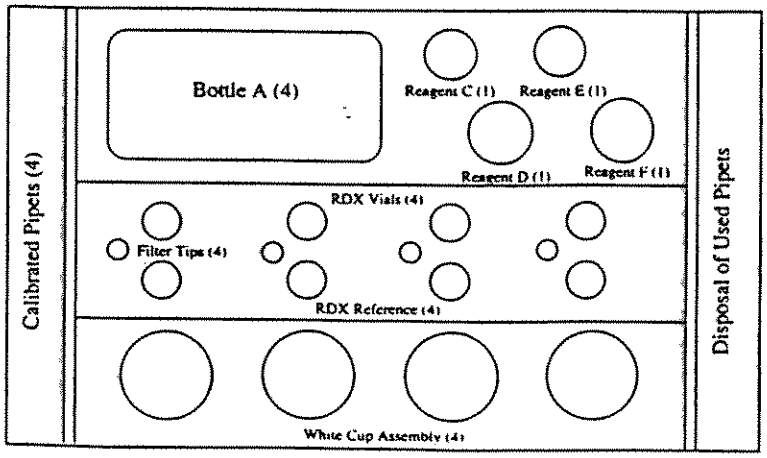
The TNT/RDX Soil Extraction Pac contains only the materials needed to extract RDX from soil for semiquantitation with this D TECH RDX Explosives Test Kit. The results can be obtained by using the enclosed Color Card or the DTECHTOR Meter, Item #TK-1001M-1.

STORAGE AND STABILITY

This kit has excellent stability at room temperature and under refrigeration. For expiration dating under these conditions, see the package label.

MATERIALS PROVIDED

See tray diagram below. This diagram includes the kit component names and quantity of each item.



Not shown in diagram

Used Kit Label (1)

Instruction Guide (1)

Color Card (1)

Data Labels (4)
for Cup Assembly

Red Dot Labels (4)
for identifying used
Bottle A components

ACCESSORIES SUPPLIED BY USER

Timing Device (minutes)

D TECH TNT/RDX Soil Extraction Pac, Item #TK-1001S-1 (if testing soil samples)

the DTECHTOR Meter, Item #TK-1001M-1 (optional)

RDX EXPLOSIVES TEST KIT INSTRUCTION GUIDE

TK-1005-1

Phone: (800) 544-8881

PERFORMANCE CHARACTERISTICS

INTERPRETATION OF THE TEST The results from the D TECH RDX Explosives Test Kit can be interpreted using either the **Color Card** supplied with the kit or *the* DTECHTOR and the table provided below. If the color of the test does not exactly match a panel of the color card, user interpretation is required.

the DTECHTOR Table

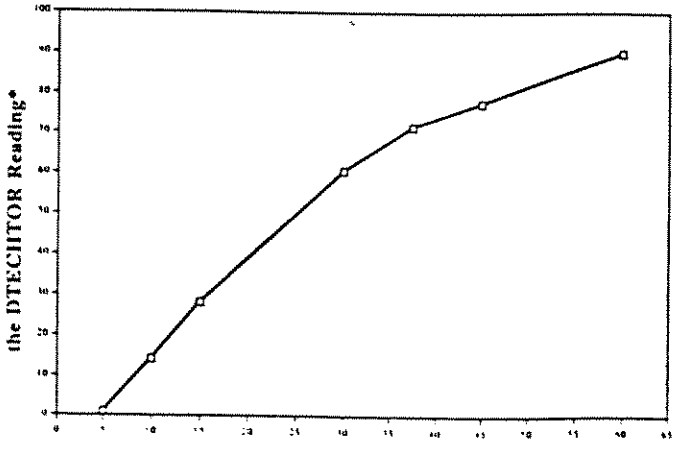
Sample	*the* DTECHTOR Reading	RDX Equivalents (ppb)
Water	LO	< 5
	1 - 30	5 - 15
	30 - 50	15 - 25
	50 - 80	25 - 45
	HI	> 45
		(ppm)
Soil	LO	< 0.5
	1 - 20	0.5 - 1.5
	20 - 45	1.5 - 2.5
	45 - 60	2.5 - 4.5
	60 - 80	4.6 - 6.0
	HI	> 6.0

SENSITIVITY The D TECH RDX Explosives Test Kit can be used to reliably measure RDX in the following ranges:

Sample	*the* DTECHTOR	Color Card
Water (ppb)	5 - 45	5 - 60
Soil (ppm)	0.5 - 6.0	0.5 - 6.0

The Minimum Detection Limit (MDL) of the test for RDX in a water sample is 5 ppb and in soil is 0.5 ppm. The graph below is a typical standard curve for the D TECH RDX Explosives Test Kit.

D TECH RDX Explosives Text Kit Standard Curve



*Percent Reflectance Relative to Reference

SPECIFICITY The D TECH RDX Explosives Test Kit has been tested for cross-reactivity with various explosives, including those found in EPA SW-846 Method 8330. The table below summarizes the cross-reactivity of these compounds in water samples using *the* DTECHTOR. A positive test result may be due to the presence of RDX, HMX or a mixture of these compounds (RDX Equivalents). Samples testing positive for RDX should be confirmed by standard methods. The D TECH RDX Explosives Test Kit has been designed to minimize the effect of environmental interferences. Sample pH, nitrate, nitrite and ammonium do not effect test results.

Compound	IC_{50}[a] (ppb)	MDL[b] (ppb)	Cross-reactivity[c]
RDX[d]	21	5	+
HMX[d]	>500	150	+
TNT[d]	>500	>500	-
Tetryl[d]	>500	>500	-
1,3,5-Trinitrobenzene	>500	>500	-
2-amino-4,6-dinitrotoluene	>500	>500	-
4-amino-2,6-dinitrotoluene	>500	>500	-
2,4-dinitrotoluene	>500	>500	-
2,6-diaminonitrotoluene	>500	>500	-
1,3-dinitrobenzene	>500	>500	-
Nitrobenzene	>500	>500	-
2-nitrotoluene	>500	>500	-
3-nitrotoluene	>500	>500	-
4-nitrotoluene	>500	>500	-
Nitroglycerin	>500	>500	-
PETN[d]	>500	>500	-

a The IC_{50} is defined as the concentration of compound required to produce a test response equivalent to 50% of the maximum response.

b The Minimum Detection Limit (MDL) is defined as the lowest concentration of compound that yields a positive test result.

c A compound is considered cross-reactive when a concentration 100 times the MDL of RDX (5 ppb) yields a positive test result.

d Chemical Names: RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine), HMX(octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine), TNT (trinitrotoluene) Tetryl (methyl-2,4,6-trinitrophenylnitramine), PETN (pentaerythritol tetranitrate).

TESTING HIGHER RDX CONCENTRATIONS

RDX concentrations greater than the upper limit of the test may be determined by diluting the extract with acetone. For example, an extract from a 100 ppm soil sample, processed using the D TECH TNT/RDX Soil Extraction Pac, may be diluted 1:25 in acetone and run in the D TECH RDX Explosives Test Kit. The concentration of the undiluted sample (100 ppm) is determined by multiplying the RDX concentration of the diluted sample (4.0 ppm) by the dilution factor (25). For further information, please call our technical service hot line 1-800-222-0342.

HEALTH/SAFETY

Material Safety Data Sheets (MSDS) have been supplied with the purchase of this product. The MSDS should be read before using this test. During the execution of the test, any excess RDX is absorbed into the **Cup Assembly** absorbant plug. It is not retained on the surface of the **Cup Assembly**.
When all kit components have been used, apply the warning label to seal the box and set it aside for proper disposal. In this section, we have emphasized health and safety precautions that should be followed when handling these solutions.

PROTECT EYES WITH SAFETY GLASSES
PROTECT SKIN WITH PROTECTIVE GLOVES

Associated Hazards
May be irritating to skin, eyes, and mucous membranes.

Symptoms of Exposure
May be irritating on contact with skin, eyes, and mucous membranes.

First Aid Measures
GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE

Skin:	Wash thoroughly with soap and water.
Eyes:	Immediately flush with water for at least 15 minutes.
Inhalation:	Remove to fresh air; give artificial respiration if breathing has stopped.
Ingestion:	Get immediate medical attention; if conscious, give water freely.

QUALITY CONTROL

All D TECH Test Kits are thoroughly quality controlled and manufactured at Strategic Diagnostics Incorporated's GMP facility. All products undergo extensive validation and field testing to assure accuracy and reliability. All lots of product are thoroughly quality controlled to consistently meet the published specification.

SDI
STRATEGIC DIAGNOSTICS INC.
111 Pencader Drive, Newark, DE 19702
Phone: (800) 544-8881 - (302) 456-6789 Fax: (302) 456-6782
www.sdix.com

APPENDIX C

DEPARTMENT OF DEFENSE PROCEDURES FOR IDENTIFYING NITROGLYCERINE, DIAZODINITROPHENOL, AND PETN

CHAPTER 12

IDENTIFICATION

12-1. General

a. Because of the use of inorganic as well as organic compounds as explosives and the presence of nitrate, nitro, nitramino, azide, diazo, and fulminic groups in these compounds, a systematic qualitative analysis of an unknown explosive is not practicable. The modern use of mixtures of explosives would render such an approach even more difficult. The identification procedures in *b* and *c* below and paragraphs 12-2 through 12-5, therefore, are based on the limited number of standard explosives and known characteristics that may be used to differentiate between these.

b. Before making any specific tests for identity, the unknown material should be examined for color, density, and particularly for sensitivity to flame, impact, and friction. The sensitivity tests may be made by subjecting a few grains of the material to the flame of a match and to impact and rubbing with a steel hammer, the material being placed on a steel block or hammer. Black powder flashes when exposed to a flame, but does not explode when struck lightly or rubbed with a hammer. Initiating explosives explode or flash when in contact with a flame and explode when struck or rubbed with a hammer. Solid noninitiating high explosives burn without explosion and are much less sensitive than the initiators to impact and friction.

c. Visual comparison of the color and crystal structure of the unknown material with the characteristics of standard explosives shown in parapraphs 7-1 through 7-29 will be of assistance in tentative identification. Should an unknown explosive be indicated to be of the sensitive type, special care should be taken in the removal of test samples, handling, and heating. Dense pressed pellets of explosive found to be, or suspected of being, of the sensitive type should be softened by soaking with water or alcohol prior to the removal of test samples.

12-2. Initiating Explosives

a. Lead Azide.

(1) Test the explosive for solubility in water. Lead azide is insoluble in water.

(2) Transfer 5 milligrams of the sample explosive to a 10-milliliter beaker and add 10 drops of a 10-percent ceric ammonium nitrate solution. A reaction accompanied with evolution of nitrogen gas is indicative of the presence of azide.

(3) Treat the solution of the sample obtained in (2) above with a few drops of a 10-percent solution of potassium dichromate. A yellow to reddish-yellow precipitate is indicative of the presence of lead.

(4) Transfer 2 milligrams of the sample to a 5-milliliter beaker. Add 5 ml of a 10-percent solution of ferric chloride solution. A red color is formed, which disappears slowly when a few milliliters of dilute mercuric chloride solution are added. This confirms that the explosive is lead azide.

b. Mercury Fulminate.

(1) Test the explosive for solubility in water. Mercury fulminate is insoluble in water.

(2) Transfer 10 milligrams of the sample explosive to a fritted glass crucible of medium porosity. Extract the sample with a 20-percent solution of

sodium thiosulfate, catching the washings in a 50-milliliter beaker containing 10 drops of a 1-percent phenolphthalein indicator solution. When the mercury fulminate is treated with sodium thiosulfate, it hydrolyzes with formation of alkali (NaOH), which changes the color of the indicator solution from colorless to red.

$$Hg(CNO)_2 + 2Na_2S_2O_3 + 2H_2O \rightarrow HgS_2O_3 + C_2N_2 + 4NaOH$$

(3) Transfer 10 milligrams of the sample to a 10-milliliter beaker and add 3 drops of concentrated hydrochloric acid solution and 2 milliliters of water. Transfer the solution to another beaker containing 1 drop of a 5-percent solution of potassium iodide. The formation of a bright red precipitate indicates the presence of the mercuric ion.

c. Diazodinitrophenol (DDNP). Dissolve 0.05 gram of the low-density greenish-yellow to brown explosive in acetone. Upon adding a larger volume of ice water, the explosive should appear as a bright yellow precipitate. Prepare a saturated solution of the explosive in 200 milliliters of water. Add to this 5 milliliters of a 20-percent solution of sodium hydroxide and mix. The evolution of a colorless gas and the appearance of a reddish-brown color in the solution indicate the explosive to be diazodinitrophenol.

d. Lead Styphnate. Wet 0.1 gram of the heavy light orange to reddish-brown material with 10 milliliters of water and then add slowly 10 milliliters of a 20-percent solution of ammonium acetate. Agitate the mixture until solution is complete. Add 10 milliliters of a 10-percent solution of potassium dichromate. The appearance of a bright yellow precipitate indicates the presence of lead. To 0.1 gram of the explosive in a beaker add 10 milliliters of a 10-percent solution of hydrochloric acid. Heat the mixture in a steambath and evaporate to dryness. Cool the beaker and contents and add 10 milliliters of ether. Mix the contents and allow to settle. Decant or filter off the ether solution and evaporate this to dryness at ordinary temperature. Dissolve the residue in 25 milliliters of water and add 0.1 gram of solid potassium cyanide. The absence of color indicates the explosive to be lead styphnate. Other tests will be included in revised specification JAN-L-757.

e. Tetracene. Wet 0.25 gram of the fluffy pale yellow explosive with 5 milliliters of a 10-percent solution of sodium hydroxide and warm the mixture in a steambath until solution is complete. Note if there is an odor of ammonia. Cool the solution and add 1 milliliter of a 5-percent solution of copper acetate. The appearance of a bright blue precipitate indicates the explosive to be tetracene. If 0.25 gram of the unknown explosive is not available, the identification could be carried out microscopically. See CWS Field Tab Manual 1-3-14 and MDRC Report on Microscopic Identification of Primers.

12-3. Noninitiating High Explosives

a. Many noninitiating high explosives can be identified by making a series of tests and comparing the results with those given in table 12-1. The tests are as indicated in (1) through (4) below.

(1) *Test 1.* Place 0.05 gram of the explosive in a 5-milliliter beaker, add 2 to 3 milliliters of distilled water and stir for 5 minutes.

(*a*) Observe color of liquid.

(*b*) Wet one end of a strip of Universal pH indicator paper and note any change in color.

(*c*) Add a drop of Nessler's reagent and note the color of any precipitate formed. Prepare the reagent by dissolving 5 grams of potassium iodide in a minimum quantity of cold distilled water and adding a saturated aqueous solution of mercuric iodide until a faint precipitate is formed. Add 40 milliliters of 50-percent potassium hydroxide solution. After the solution has

clarified by settling, dilute to 100 milliliters with distilled water, allow to settle and decant.

(2) *Test 2.* Place 0.05 gram of the unknown material in an indenture of a white porcelain spot-test plate. Add two or three drops of a 65- to 68-percent aqueous solution of ethylenediamine and stir. Note the color of the solution (not the solid).

(3) *Test 3.* Place 0.05 gram of the unknown material in an indenture of a white porcelain spot-test plate and add three or four drops of a diphenylamine solution. Stir the mixture and, after 1 minute, note the color of the solution. Prepare the diphenylamine solution by dissolving 1 gram of diphenylamine in 100 milliliters of concentrated CP sulfuric acid.

Table 12-1. Tests of Noninitiating Explosives

	Water solution or extract			Color effect of test with—		
	Color	Color of universal pH test	Color of PPT with Nessler's	Ethylenediamine	Diphenylamine	Thymol
TNT	(Insoluble)			Maroon	Colorless	
Tetryl	(Insoluble)			Red	Blue	Green.
Picric acid	Yellow	Red	(No ppt)	Orange		
Explosive "D"	Yellow		Brown	Orange		
Haleite	None		(No ppt)	None	Blue [1]	Orange.
Nitroguanidine	None		White		Blue	Green.
Ammonium nitrate	None		Brown	None	Dirty green	Green.[1]
PETN	(Insoluble)			None	Dirty green	Green.
Nitroglycerin	None		(No ppt)		Deep blue	Green.
DEGN	None		(No ppt)		Deep blue	Brown.[1]
Nitrocellulose	None				Blue	Green.
Tritonal	(Insoluble)			Maroon	Colorless	
Tetrytol	(Insoluble)		(No ppt)	Maroon	Intense blue	Green.
Picratol	Yellow		Brown	Maroon		
Ednatol	None	Orange	(No ppt)	Maroon	Intense blue	Orange.
Amatol	None		Brown	Maroon	Dirty green	Green.
Ammonal	None		Brown	Maroon	Dirty green	Green.
Pentolite	None		(No ppt)	Maroon	Dirty green	Green.
Trimonite	Yellow	Red	(No ppt)	Orange	Red	
Tridite	Yellow	Red	(No ppt)	Orange		
Black powder [2]	None	No change			Blue	Green.

[1] Color appears immediately.
[2] Sometimes explodes mildly (puffs) upon addition of sulfuric acid.
[3] Tests of dried water extract.

(4) *Test 4.* Place 0.05 gram of the unknown material in an indenture of a white porcelain spot test plate. Add an equal amount of crystalline thymol and three drops of concentrated sulfuric acid. Stir the mixture and note its color after 5 minutes or more.

b. If the unknown material is not identified completely by the tests and data in paragraphs 12-1 and 12-2 and *a* above, tests should be made to determine whether it is one of those indicated in (1) through (8) below.

(1) *RDX.* Place 1 milligram of the white, unknown material in an indenture of a white porcelain spot-test plate and add not more than 1 milligram of thymol. Grind and mix the two intimately with the end of a glass stirring rod. Add three drops of concentrated sulfuric acid and stir. After 1 minute, add two drops of CP 95 percent ethanol, and stir the mixture. The appearance of a pink or rose color indicates the presence of RDX. If a blank test is made, a faint pink color is developed, but the effect of the presence of RDX is unmistakable.

(2) *Composition* A-3. Place 0.1 gram of the material in a 10-milliliter beaker and add two or three drops of acetone. Warm the mixture and allow to stand for 5 minutes. Evaporate the acetone by gently warming on a steambath, cool and add 2 milliliter of carbon tetrachloride. Cover the beaker and warm the contents, occasionally swirling the mixture. Cool the mixture and allow the undissolved material to settle. Decant the supernatant liquid into a 5-milliliter beaker, evaporate to dryness, note if a waxy (not tarry) residue is obtained. Dry the undissolved material in the 10-milliliter beaker and test for RDX as described in (1) above.

(3) *Composition B.* Place 0.2 gram of the pale yellow to medium brown material in a 10-milliliter beaker and add 2 to 3 milliliters of chloroform. Cover the beaker. Warm and digest the mixture for 10 minutes with occasional swirling. Decant the supernatant liquid through a paper filter and evaporate the filtrate to dryness. Digest the insoluble residue in the beaker with three more portions of chloroform, discarding the decanted liquid in each case. Dry the insoluble residue by evaporating any adherent chloroform. If the original material was composition B, the residue from the chloroform solution consists of TNT and wax. Test the TNT and wax mixture with ethylenediamine and diphenylamine as described in *a*(2) and (3) above. The insoluble residue obtained by extraction with chloroform consists of RDX. Test it as described in (1) above.

(4) *Composition C-3.* Place 0.2 gram of the putty-like explosive in a 10-milliliter beaker and add 5 milliliters of benzene. Mix and digest for 10 minutes, crushing any lumps present. Decant the supernatant liquid the benzene with gentle heating. Note through a paper filter and evaporate whether a dark, tarry residue remains. Wash the insoluble residue left by benzene extraction with two or three 3-milliliter portions of a 2:1 ether-ethanol mixture and dry the washed residue. Test this as described under RDX ((1) above). To the decanted ether-ethanol washings, add 15 milliliters of distilled water and heat the mixture until all ether and alcohol are removed. Note if there is separated a white precipitate, which is nitrocellulose. Catch the precipitate on a filter, wash with ethanol, dry by evaporation of the ethanol, and test for nitrocellulose as described in *a* above.

(5) *Torpex.* Place 0.2 gram of the explosive in a 5-milliliter beaker and extract with three 3-milliliter portions of acetone. Dry the insoluble residue and examine this under a microscope. Note if it has the characteristic appearance of metallic aluminum. Place 0.2 gram of the explosive in a 5-milliliter beaker and digest with two 3-milliliter portions of benzene, decanting the benzene into a small evaporating dish. Evaporate the benzene solution to dryness and test for TNT as described in *a* above. Dry the insoluble residue from the benzene extraction and test for RDX as described in (1) above.

(6) *Tritonal.* Place 0.2 gram of the explosive in a 10-milliliter beaker and add 5 milliliters of acetone. Stir, allow any undissolved material to settle, and decant the liquid. Wash the insoluble matter with two 5-milliliter portions of acetone, dry and examine under a microscope. Note if it has the characteristic appearance of metallic aluminum. Subject the explosive to the tests prescribed for TNT in *a* above.

(7) *Amatol.* Place 0.2 gram of the yellow

material in a 5-milliliter beaker, add 3 milliliters of distilled water, and stir for 5 minutes. Decant the liquid through a filter and evaporate to dryness. Test the dried solid as prescribed for ammonium nitrate. Dry the water-insoluble residue and test as prescribed for TNT in *a* above.

(5) *Aluminum.* Place 0.2 gram of the explosive in a 5-milliliter beaker and digest with 3 milliliters of distilled water. Decant the liquid through a filter and evaporate to dryness. Test the dried solid as prescribed for ammonium nitrate in *a* above. Digest the insoluble residue in the beaker with three 3-milliliter portions of acetone, decanting these through a filter. Dry the insoluble residue and examine under a microscope. Note if it has the characteristic appearance of metallic aluminum. Evaporate the filtrate to dryness by warming gently. Test the dried solid as prescribed for TNT in *a* above.

12–4. Black Powder

Place 0.2 gram of the black material in a 5-milliliter beaker, add 2 to 3 milliliters of distilled water, and stir for 5 minutes. Decant the liquid through a filter and catch the filtrate in a beaker. Evaporate this to dryness and subject the dried white solid to the tests shown in table 12–1. Dry the water-insoluble residue in the beaker, cool, and digest with two 5-milliliter portions of carbon disulfide, decanting these into an evaporating dish. Evaporate the carbon disulfide solution to dryness at room temperature. By means of a [illegible] examine the yellow residue [illegible] the insoluble black residue for metallic [illegible] carbon disulfide extraction. Note if they have the characteristic appearances of sulfur crystals and charcoal, respectively.

12–5. Propellents

Since the standard propellents are complex mixtures of nonexplosive as well as explosive compounds, and the separation of these compounds is rendered difficult by their dispersal in colloided nitrocellulose, simple identification tests for the various compositions are not practicable. Qualitative analysis of an unidentified propellent composition requires numerous solvent extractions, fractionation of the extracts, and tedious identification of the individual ingredients so isolated. The security classification of many of the standard compositions puts their identification outside the scope of this manual. The reader is referred to the applicable specifications for descriptions of the procedures involved in the analysis of such compositions.

APPENDIX D

SEMI-VOLATILE ORGANIC COMPOUND IMMUNOASSAY TEST KIT INFORMATION

Strategic Diagnostics Inc.
111 Pencader Drive
Newark, DE 19702
Phone: (800) 544-8881
Fax: (302) 456-6782

Product Profile

PCB RaPID Assay®

General Description

Polychlorinated biphenyls (PCBs) were marketed under the trade name Aroclor® from 1930 to 1977 for use in transformers, capacitors, printing inks, paints, pesticides and many other applications. The Toxic Substances Control Act (TOSCA, 1976), declared PCBs to be toxic and carcinogenic and banned manufacture.

PCBs are classified by the US EPA as Group B2 contaminants, a probable human carcinogen based on sufficient evidence in animals and inadequate data in human studies (US EPA, 1991). PCBs do not readily degrade in the environment and tend to bioaccumulate. The EPA has set a Maximum Contaminant Level for PCB in drinking water of 0.5 ppb and various levels in soil.

Current EPA-approved methods for the detection of PCBs are costly and require lengthy sample preparation, large volume extraction and solvent exchange. The PCB RaPID Assay® eliminates the need for clean-up steps and GC/ECD instrumentation.

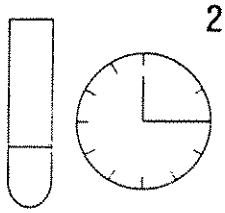
The PCB RaPID Assay applies the principles of enzyme linked immunosorbent assay (ELISA) to the determination of PCBs. ELISAs use selective antibodies which are attached to solid supports, in combination with sensitive enzyme reactions. The immunochemical reaction provides high selectivity due to the extraordinary discriminatory capabilities of antibodies. The powerful catalytic ability of the enzyme provides highly sensitive detection. These features produce an analytical system capable of detecting very low levels of chemicals.

Features

Rapid	–	60 results in less than 45 minutes.
Precise	–	within and between assay %CV <5% at 4.4 ppb.
Accurate	–	highly selective immunochemical method.
Efficient	–	rapid results can cut costs by allowing better personnel and equipment utilization.
Sensitive	–	least detectable dose in water of 0.2 ppb as Aroclor 1254 (90% B/Bo).
Test Range	–	water: 0.5 to 10.0 ppb as Aroclor 1254. soil: 0.5 to 10.00 ppm.

PCB RaPID Assay® — Assay Protocol

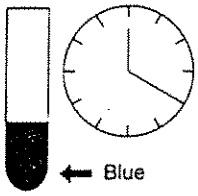
1. Add 200 µL of prepared sample, 250 µL enzyme conjugate, and 500 µL antibody coupled magnetic particles.



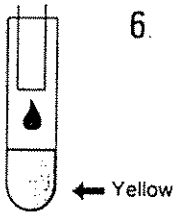
2. Incubate for 15 minutes.

3. Using the RaPID magnetic separator, decant, wash and vortex (2x).

4. Add 500 µL color reagent.



5. Incubate 20 minutes. Blue color develops.



6. Stop the reaction an read color at 450 nm Solution turns yellow

Performance

Specificity

The proprietary antibody used in this assay was developed to detect PCBs. The cross-reactivity with different Aroclors can be expressed as the least detectable dose (LDD) which is estimated at 90% B/B0.

Compound	LDD Water (ppb)	LDD Soil (ppm)	50% B/Bo Water (ppb)	50% B/Bo Soil (ppm)
Aroclor 1254	0.20	0.50	3.60	3.60
Aroclor 1260	0.20	0.30	2.30	2.30
Aroclor 1248	0.22	0.42	4.22	4.22
Aroclor 1242	0.34	0.80	8.80	8.80
Aroclor 1262	0.36	0.64	4.74	4.74
Aroclor 1232	0.84	2.24	18.76	18.76
Aroclor 1268	0.92	2.30	21.80	21.80
Aroclor 1016	0.94	2.70	25.60	25.60
Aroclor 1221	13.54	26.60	162.60	162.60

Precision

Water samples were fortified with Aroclor 1254 at different levels and assayed in singlicate five times over five days. The following results were obtained (n=25):

Sample #	1	2	3	4
Mean	0.86	3.10	4.36	8.04
% CV [a]	8.5	6.2	4.6	4.9
% CV [b]	15.7	6.1	0.6	2.5

[a] within assay [b] between assay

Recovery

Four water samples, taken from a small creek, local pond, well and municipal water source were fortified with various levels of Aroclor 1254 and assayed with this system. The following results were obtained (n=12):

Spike (ppb)	Recovery Mean ± S.D.	%
1.0	0.86 ± 0.08	86
3.0	3.18 ± 0.28	106
4.0	4.32 ± 0.36	108
8.0	7.68 ± 0.66	96
Average		99

Solvent Tolerances

The following solvents do not interfere with this assay when their concentration in the sample is at, or lower, than those listed.

Solvent	Maximum Conc. Tolerated
Acetone	5%
Acetonitrile	2%
DMF	5%
Methanol	10%
Methylene Chloride	0.2%

Results

When using the RPA-I RaPID Analyzer™, results are reported in ppb PCB. If read in a standard spectrophotometer, results from the calibrators are plotted on graph pape and used to determine final results. It is recommended that a control be included in each run. A positive control (3.0 ppb) is supplied with the PCB RaPID® Assay kit.

As with any analytical technique (GC, HPLC, etc.), positive results requiring some action should be confirmed by an alternate technology.

Ordering Information

PCB Products

RaPID Assay kit, 30 and 100 tests
Sample Diluent, 100 mL
Proficiency Samples
Sample Extraction kit, 20 tests

For ordering or technical assistance contact:

Sales Department

Strategic Diagnostics Inc.
111 Pencader Drive
Newark, DE 19702
Phone: (800) 544-8881
Fax: (302) 456-6782

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6-9

Strategic Diagnostics Inc.
111 Pencader Drive
Newark, DE 19702
Phone: (800) 544-8881
Fax: (302) 456-6782

Product Profile

Carcinogenic PAHs RaPID Assay®

General Description

Polynuclear or polycyclic aromatic hydrocarbons (PAHs) are a group of compounds composed of two or more fused rings. The U.S. EPA has identified 16 unsubstituted PAHs as priority pollutants. Some of the four, five and six- ring PAHs are considered to be probable or possible human carcinogens. The seven (7) PAHs that are typically considered to be probable or possible human carcinogens are benzo[a]anthracene, chrysene, benzo[b]-fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzo[a,h]anthracene. Benzo[a]pyrene is the most potent carcinogen among PAHs. PAHs are introduced into the environment as a product of natural and fossil fuel combustion.

As a source of environmental contamination, PAHs are a serious problem at manufactured gas plants (MGP), coking operations, wood preserving sites that use creosote as a preservative and petrochemical waste disposal sites. The large number of these sites which are contaminated by PAHs in soil and groundwater has led to federal and state agencies to mandate their clean-up. Under certain circumstances site remediation can be based on carcinogenic PAH levels and site risk assessment is usually based on the carcinogenic PAH contamination. The federal and state agencies have set various regulatory levels for PAHs in soil, however the usual concentrations of interest are below 1 ppm for individual carcinogenic PAHs.

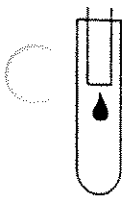
The current EPA-approved methods for the detection of PAHs are costly and require lengthy sample preparation, and large volume extraction. The Carcinogenic PAHs RaPID Assay® eliminates the need for clean-up steps and GC/MS or HPLC instrumentation.

The Carcinogenic PAHs Assay applies the principles of enzyme linked immunosorbent assay (ELISA) to the determination of Carcinogenic PAHs. ELISAs use selective antibodies attached to solid supports in combination with sensitive enzyme reactions. The immunochemical reaction provides high selectivity due to the extraordinary discriminatory capabilities of antibodies. The powerful catalytic ability of the enzyme provides highly sensitive detection. These features produce an analytical system capable of detecting very low levels of chemicals.

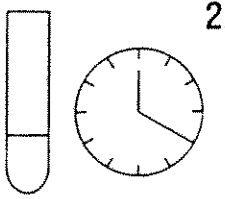
Features

Rapid	–	50 results in 60 minutes after sample preparation.
Precise	–	within and between assay %CV <10% at 1, 5 and 10 ppb in water.
Accurate	–	highly selective immunochemical method.
Efficient	–	rapid results can cut costs by allowing better personnel and equipment utilization.
Sensitive	–	least detectable dose in soil of 10 ppb as Benzo[a]pyrene.
Test Range	–	Water: 0.2 ppb to 10 ppb as Benzo[a]pyrene. soil: 10 ppb to 500 ppb as Benzo[a]pyrene.

Carcinogenic PAHs RaPID Assay® — Assay Protocol



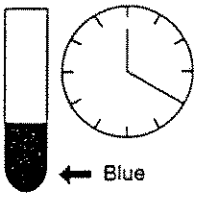
1. Add 200 µL of prepared sample, 250 µL enzyme conjugate, and 500 µL antibody coupled magnetic particles. Vortex.



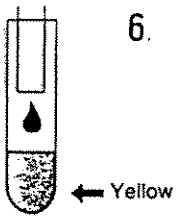
2. Incubate for 20 minutes.

3. Using the RaPID Magnetic Separator, decant and wash.

4. Add 500 µL color solution.



5. Incubate 20 minutes.



6. Stop the reaction and read color at 450 nm.

Performance Carcinogenic PAHs

Specificity

The cross-reactivity of the Carcinogenic PAHs RaPID Assay for various polynuclear aromatic hydrocarbons and petroleum products can be expressed as the least detectable dose (LDD) which is estimated at 90% B/B_0, or as the dose required to displace 50% (50% B/B_0).

Compound	LDD Water (ppb)	LDD Soil (ppb)	50% B/B_0 Water (ppb)	50% B/B_0 Soil (ppb)
Benzo[a]pyrene	0.08	10.0	3.2	160
Benzo[a]anthracene	0.02	2.0	0.96	48.0
Benzo[k]fluoranthene	0.02	3.0	1.26	63.0
Chysene	0.04	5.0	1.38	69.0
Benzo[b]fluoranthene	0.04	5.0	2.6	130
Indeno[1,2,3-c,d]pyrene	0.02	8.0	4.06	203
Dibenzo[a,h]anthracene	0.14	15	4.82	241
Anthracene	0.44	579	41.0	2050
Phenanthrene	2.7	403	134.4	6720
Fluoranthene	2.0	222	137.0	6850
Benzo[g,h,i]perylene	0.30	125	>200	>10,000
Pyrene	2.0	92	466	23,300
Fluorene	37	3520	684	34,200
Naphthalene	376	35,900	10,000	500,000
Acenaphtylene	148	21,700	11,540	577,000
Acenapthene	1078	100,000	>20,000	>1,000,000
Creosote	1.24	123	16.76	838
Fuel Oil #4	22.6	2080	556	27,800
Fuel Oil #5	13	1,260	378	18,900
Fuel Oil #6	11.4	1,120	314	15,700
Heating Fuel	20	3,200	1,306	65,300
[illegible] Fuel	240	17,900	3560	17,800
[illegible]ine	200	155,000	>10,000	>1,000,000
Kerosene	2,800	826,000	>10,000	>1,000,000
Jet A Fuel	>10,000	>1,000,000	>10,000	>1,000,000

Recovery

Four (4) samples, including a municipal water source, drinking water from a local well, a sample from a local pond and a sample from a small creek were spiked with various levels of Carcinogenic PAHs (benzo[a]pyrene), diluted 1:1 with methanol, and then assayed using the Carcinogenic PAHs RaPID Assay. The following results were obtained:

Amount of cPAHs Added (ppb)	Recovery Mean (ppb)	Recovery S.D. (ppb)	Recovery %
0.50	0.44	0.04	88
1.00	0.98	0.08	98
4.00	4.52	0.46	113
8.00	9.20	0.66	115
Average			104

Precision

The following results were obtained:

Control	1	2	3	4
Replicates	5	5	5	5
Days	5	5	5	5
n	25	25	25	25
Mean (ppb)	0.38	0.98	4.84	9.58
% CV [a]	12.7	7.4	6.5	5.7
% CV [b]	3.5	3.0	6.1	1.4

[a] (within assay in water)

[b] (between assay in water)

Results

When using the RPA-I RaPID Analyzer™, results are reported in ppb Carcinogenic PAHs. If read in a standard spectrophotometer, results from the calibrators are plotted on graph paper and used to determine final results. It is recommended that a control be included in each run. A positive control (2.0 ppb) is supplied with the RaPID Assay kit. If soil samples are run, results should be multiplied by the appropriate factor.

As with any analytical technique (GC, HPLC, etc.) results requiring some action should be confirmed by an alternative technology.

Ordering Information

Products

Carcinogenic PAHs RaPID Assay Kit, 30 Tubes
Carcinogenic PAHs RaPID Assay Kit, 100 Tubes
Sample Diluent, 100 mL
Proficiency Samples
Sample Extraction kit, 20 Tests
Carcinogenic PAHs Soil System, 20 Tests
Carcinogenic PAHs Soil System, 80 Tests

For ordering or technical assistance call:

Strategic Diagnostics Inc.
111 Pencader Drive
Newark, DE 19702
Phone: (800) 544-8881
Fax: (302) 456-6782

7-95
L00030

Strategic Diagnostics Inc.
111 Pencader Drive
Newark, DE 19702
Phone: (800) 544-8881
Fax: (302) 456-6782

Product Profile

PAHs RaPID Assay®

General Description

Polynuclear or polycyclic aromatic hydrocarbons (PAHs) are a group of compounds composed of two or more fused rings. The U.S. EPA has identified 16 unsubstituted PAHs as priority pollutants.

Some of the four, five and six-ring PAHs such as chrysene, benzo[a]pryene and indeno[1,2,3-c,d]pryene are considered to be probable or possible human carcinogens. Benzo[a]pyrene is the most potent carcinogen among PAHs. The two and three-ring PAHs, such as naphthalene, anthracene and phenanthrene, are noncarcinogenic and are found as a component of certain grades of fossil fuels. They are referred to as the fuel PAHs. PAHs are introduced into the environment as a product of natural and fossil fuel combustion.

As a source of environmental contamination, PAHs are a serious problem at manufactured gas plants (MGP), coking operations, wood preserving sites that use creosote and petrochemical waste disposal sites. They are also commonly found in fuel products such as heating oil, diesel fuel and No. 6 fuel oil. The large number of these sites contaminated by PAHs in soil and groundwater has led federal and state agencies to mandate their clean-up. These agencies have set various regulatory levels for PAHs in soil, however, the usual concentrations of interest are 1 ppm to 10 ppm.

The current EPA-approved methods for the detection of PAHs are costly and require lengthy sample preparation, and large volume extraction. The PAHs RaPID Assay® eliminates the need for clean-up steps and GC/MS or HPLC instrumentation.

The PAHs RaPID Assay applies the principles of enzyme linked immunosorbent assay (ELISA) to the determination of PAHs. ELISAs use selective antibodies attached to solid supports in combination with sensitive enzyme reactions. The immunochemical reaction provides high selectivity due to the extraordinary discriminatory capabilities of antibodies. The powerful catalytic ability of the enzyme provides highly sensitive detection. These features produce an analytical system capable of detecting very low levels of chemicals.

Features

Rapid – 50 results in 60 minutes after sample preparation.

Precise – within and between assay %CV <15% at 5.10, 20 and 40 ppb.

Accurate – highly selective immunochemical method.

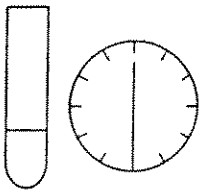
Efficient – rapid results can cut costs by allowing better personnel and equipment utilization.

Sensitive – least detectable dose in soil of 70 ppb as Phenanthrene (90% B/Bo).

Test Range – assay: 0.7 to 50.0 ppb as Phenanthrene; soil: 70 ppb to 5.0 ppm as Phenanthrene.

PAHs RaPID Assay® — Assay Protocol

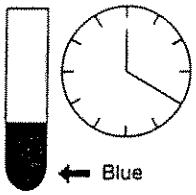
1. Add 250 µL of prepared sample, 250 µL enzyme conjugate, and 500 µL antibody coupled magnetic particles. Vortex.



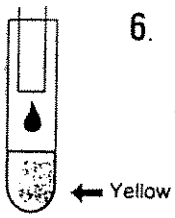
2. Incubate for 30 minutes.

3. Using the RaPID Magnetic Separator, decant, wash and vortex (2x).

4. Add 500 µL color solution.



5. Incubate 20 minutes. Blue color develops.



6. Stop the reaction and read color at 450 nm. Solution turns yellow.

Performance PAHs

Specificity

The cross reactivity of the PAHs RaPID Assay for various polynuclear aromatic hydrocarbons and petroleum products can be expressed as the least detectable dose (LDD) which is estimated at 90% B/Bo, or as the dose required to displace 50% (50% B/Bo).

Compound	LDD Water (ppb)	LDD Soil (ppm)	50% B/Bo Water (ppb)	50% B/Bo Soil (ppm)
Phenanthrene	0.93	.07	21.9	1.65
Fluoranthene	0.42	.032	6.3	.47
Benzo[a]pyrene	0.66	.050	9.2	.69
	0.26	.020	10.2	.77
Chrysene	0.53	.040	10.4	.78
Anthracene	0.71	.054	14.6	1.1
Indeno[1,2,3-c,d]pyrene	1.03	.078	36.2	2.72
1,2 Benzanthracene	1.02	.077	37.8	2.84
Fluorene	2.19	.165	46.8	3.52
Benzo[b]fluoranthene	1.21	.091	72.1	5.42
Acenaphthylene	13.3	1.0	594	44.7
Benzo[k]fluoranthene	1.02	.077	697	52.4
Acenaphthalene	1.71	1.29	915	68.8
1,12-Benzoperylene	19.5	1.47	>1,333	>100
Naphthalene	86.4	6.50	>1,333	>100
1,2:5,6-Dibenzanthracene	34.1	2.57	>1,333	>100
Creosote	1.46	.11	21.9	1.65
Fuel Oil #6	6.65	.50	71.4	5.37
Heating Oil	17.08	1.28	388	29.2
Diesel Fuel	26.06	1.96	661	49.7
Gasoline	13.30	100	>13.333	>1000
Kerosene	1662.5	125	>13.333	>1000
Jet A Fuel		>1000	>13.333	>1000

100ppm Diesel =1ppm Rapid
(Soil values are 100 times higher)

Recovery

Diluted soil extracts were spiked with various levels of PAHs (as Phenanthrene) and then assayed using the PAHs RaPID Assay. The following results were obtained:

Amount of PAHs Added (ppb)	Recovery Mean (ppb)	Recovery S.D. (ppb)	Recovery %
5.0	5.48	0.80	110
7.5	8.67	1.31	116
20.0	21.98	3.01	110
40.0	42.08	4.80	105
Average			110

Precision

The following results were obtained:

Control	1	2	3	4
Replicates	5	5	5	5
Days	5	5	5	5
n	25	25	25	25
Mean (ppb)	5.48	8.67	21.98	42.08
% CV[a]	9.2	7.2	5.6	5.5
% CV[b]	12.5	14.5	13.7	10.9

[a] (within assay)
[b] (between assay)

Results

When using the RPA-I RaPID Analyzer™, results are reported in ppb PAHs. If read in a standard spectrophotometer, results from the calibrators are plotted on graph paper and used to determine final results. It is recommended that a control be included in each run. A positive control (25.0 ppb) is supplied with the PAHs RaPID Assay kit. If soil samples are run, results should be multiplied by the appropriate factor.

As with any analytical technique (GC, HPLC, etc.) results requiring some action should be confirmed by an alternative technology.

Ordering Information

PAHs Products

RaPID Assay kit, 30 and 100 tubes
Sample Diluent, 100 mL
Proficiency Samples
Sample Extraction kit, 20 tests
PAHs Soil System, 20 tests
PAHs Soil System, 80 Tests

For ordering or technical assistance contact:

Sales Department

Strategic Diagnostics Inc.
111 Pencader Drive
Newark, DE 19702
Phone: (800) 544-8881
Fax: (302) 456-6782

7-95
L00041

APPENDIX E

MONTGOMERY WATSON STANDARD OPERATING PROCEDURE
X-RAY FLUORESCENCE

HERCULES

Hercules - Kenvil Works Facility
Kenvil, New Jersey

XRF SOP

May 2005

MWH

XRF SOP

HERCULES INC.
KENVIL WORKS FACILITY
KENVIL, NJ

Prepared for:

HERCULES INC.
500 HERCULES ROAD
WILMINGTON, DE

Prepared by:

MWH Americas, Inc.
335 Phoenixville Pike
Malvern, PA 19355

May 2005

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1 Sample Preparation Procedure

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1 Method Detection Limits

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Appendix

A Innov-X Systems X-Ray Fluorescence Spectrometers Instruction Manual

ACRONYMS AND ABBREVIATIONS

iPAQ	Compaq Pocket PC®
LEAP	Light Element Analysis Program
mm	millimiter
N.J.A.C.	New Jersey Administrative Code
ppm	parts per million
QA/QC	Quality Assurance and Quality Control
RSD	Relative Standard Deviation
SOP	Standard Operating Procedure
uM	micrometer
XRF	X-Ray Fluroescence

1.0 SCOPE AND APPLICATION

The following Standard Operating Procedure (SOP) describes the procedures that will be utilized to operate the Innov-X Systems X-Ray Fluorescence (XRF Analyzer) Spectrometer for field analysis of metals in soils and sediments. This SOP complies with the requirements of New Jersey Administrative Code (N.J.A.C.) 7:18 "Regulations Governing the Certification of Laboratories and Environmental Measurements".

- This method describes the field procedures to be utilized to perform in-situ soil/sediment analysis, bagged soil/sediment sample analysis, and prepared soil/sediment sample analysis.
- This SOP is in accordance with EPA Method 6200: Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment.
- This SOP will be used in conjunction with the Innov-X XRF Instruction Manual, included in Appendix A.
- Individuals who have been trained to operate a XRF Analyzer or who are under the direction of a trained individual will only use this method.

1.1 CONSTITUENTS OF INTEREST

Constituents of interest identified in this SOP were determined based on the results of laboratory analysis performed during site investigation activities conducted at the Hercules Kenvil Works Facility. Each of the following constituents were detected at a concentration greater than or equal to the corresponding applicable soil and/or sediment criteria/standard. These include the following:

- Antimony,
- Arsenic,
- Cadmium,
- Chromium,
- Copper,
- Lead,
- Mercury,

- Nickel,
- Selenium,
- Silver,
- Thallium, and
- Zinc

Table 1 presents soil/sediment detection limits (in ppm) and concentration ranges that are applicable, utilizing the XRF Analyzer, for each constituent of interest and other various elements utilizing a testing time of 2 minutes (Refer to Section 5.0).

2.0 SUMMARY OF METHOD

The following is a brief summary of the XRF method.

- XRF is used to identify metal constituents in the subsurface and quantify the amount of those metal constituents present.

- An element is identified by its characteristic X-ray emission wavelength or energy. High-energy X-ray photons are emitted from a source (X-ray tube) and strike the sample, knocking electrons out of the innermost orbitals. When this occurs, the atoms become ions and are unstable. The electrons will move from the outer orbit to the inner orbital space, emitting energy referred to as a secondary X-ray photon (fluorescence). This secondary X-ray produced is characteristic of a specific element. The energy of the emitted fluorescence X-ray photon is determined by the difference in energies between the initial and final orbits of the individual transitions. Wavelengths are inversely proportional to the energies and are specific for each element. The intensity (number of element-specific characteristics produced in a sample over a time frame) is measured to provide quantitative results (i.e. parts per million (ppm)) of a given element in a sample.

- The XRF Analyzer is equipped with Light Element Analysis Program (LEAP) capabilities. LEAP provides the lowest possible detection limits for elements lighter than iron. Elements such as Chromium produce lower energy x-rays than other elements. These lower energy x-rays are not as effectively excited by standard conditions. LEAP modifies the x-ray tube beam conditions to settings with are optimized for the detection of elements lighter than iron.

- XRF Analyzer does not destroy the sample aliquot.

3.0 SUPPLIES AND EQUIPMENT

The following is a list of supplies and equipment necessary to operate and run the XRF Analyzer.

- XRF Analyzer with attached Compaq iPAQ (iPAQ) Pocket PC® handheld computer (data logger).
- Lithium ion batteries
- Battery Charger and AC Adapter
- Standardization Cap – used to standardize XRF Analyzer
- IPAQ cradle and AC adapter
- Testing stand – benchtop-docking station for the analyzer.
- Stainless steel bowls and spoons – to homogenize samples
- Soil moisture probe – to determine moisture content in samples
- Mortar and pestle: glass, agate, or aluminum oxide – to grind samples
- 0.25 mm sieve: stainless steel, nylon, or equivalent – to prepare samples
- 250 um mesh sieve: stainless steel, nylon, or equivalent – to prepare samples
- Drying oven: convection or toaster oven - to minimize moisture content in samples
- Polyethylene sample cups: 31 to 40 mm in diameter with collar or equivalent
- Polyethylene film: 2.5 to 6.0 um thick – to cover sample cups and prepare samples
- Containers: glass or plastic – to store samples
- Plastic bags – collection and homogenization of samples

4.0 POSSIBLE INTERFERENCES

The following potential interferences can exist when utilizing XRF technology. All attempts will be made to reduce potential interferences as much as possible.

4.1 ELEMENTAL OVERLAP

- Interference may occur when the spectral peak from one element overlaps either partially or completely with the spectral peak of another element. If the XRF Analyzer is calibrated for both elements the extent of the interference can be handled. The element being interfered with may be measured with a poorer detection limit or poorer precision. If the XRF Analyzer is not calibrated for the interfering element, then the XRF may report the presence of elements not in the sample or greatly elevated concentrations of elements in or not in the sample. Calibration Verification (discussed in detail in Section 6.0) utilizes reference standards which are generally applicable for Antimony, Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Tin, and Zinc to reduce the likelihood of elemental overlap. In the event of elemental overlap, the XRF Analyzer has a built-in program which mathematically separates the overlapping peaks. The intensities of each element are corrected by using Compton Normalization (Refer to Section 6.0)

4.2 SAMPLE REPRESENTATIVENESS

- Non-representative (inorganic (rocks) and organic (root material)) sample matter may decrease sample representativeness. All non-representative matter will be removed from the sample to ensure sample representativeness.

- Moisture content in the sample aliquot may decrease sample representativeness. Samples will be dried and homogenized to ensure sample representativeness for samples selected for definitive data (prepared samples).

- Inconsistent positioning of samples if front of the probe window may decrease the X-ray signal as the distance from the radioactive source increases. The window of the probe will be in direct contact with the sample.

4.3 MATRIX EFFECTS

- Physical matrix effects may result from variations in the physical character of the sample. These variations may include particle size, uniformity, and homogeneity. Samples will be homogenized to decrease potential matrix effects for samples selected for definitive data (prepared samples).

- Moisture content in the sample aliquot may increase potential matrix effects. Soil moisture will be determined by utilizing a soil moisture probe. If moisture content is greater than 20%, samples will be dried prior to being homogenized to reduce potential matrix effects for samples selected for definitive data (prepared samples).

4.4 MOISTURE EFFECTS

- Moisture content greater than 20% may alter the soil/sediment chemistry. Soil moisture will be determined by utilizing a soil moisture probe. If moisture content is greater than 20%, samples will be dried prior to being homogenized to reduce potential matrix effects for samples selected for definitive data (prepared samples).

- Moisture content may impede the ability to properly prepare a sample. It is difficult to grind and sieve a sample with high moisture content. Soil moisture will be determined by utilizing a soil moisture probe. If moisture content is greater than 20%, samples will be dried prior to being homogenized to reduce potential matrix effects for samples selected for definitive data (prepared samples).

4.5 AMBIENT TEMPERATURE CHANGES

- Ambient temperature changes can affect the gain of the amplifiers producing instrument drift. The XRF Analyzer has a built-in automatic gain control, which makes periodic adjustments to compensate for the influence of temperature changes on its energy scale. If extreme temperature changes occur, the XRF Analyzer will prompt the user to re-standardize (Refer to Section 5.0) the instrument in order to make the necessary adjustments.

- Samples collected for definitive data (prepared samples) will be analyzed indoors under controlled temperatures.

5.0 OPERATION OF XRF

The following is the start up and analysis procedures for the Innov-X Systems Model X XRF Analyzer. The manufacture's instruction manual is included as Appendix A.

5.1 START UP PROCEDURE

- Connect the battery charger to an 110V-240V AC power source. Place one of the Lithium ion batteries on the charge and charge for at least 2 hours. Charge the second battery.

- Charge the iPAQ using the attached AC adapter for at least 30 minutes.

- Install the fully charged battery into the XRF Analyzer.

- Press the On/Off button on the base of the pistol grip of the analyzer and the power button on the iPAQ.

- The **Main Menu** will appear upon start up.

- Select the **SOIL** analysis mode. The Analysis Screen will appear. The instrument will undergo a one-minute hardware initialization period.

- Standardize the instrument by placing the standardization piece (316 Stainless Steel mask) on the front of the instrument. Select the gray box in the center of the screen or select **File-Standardize** to begin from the window. During standardization, a red light will blink on the top of the instrument indicating the X-ray tube is energized and the shutter is open. An amber light on the back of the instrument will illuminate and a status bar will appear, tracking the progress of the measurement. When standardization is complete, a message stating "**Successful Standardization**" will appear and display the resolution of the instrument.

  - Standardization should be performed any time the analyzer hardware is initiated or restarted and should be repeated approximately every 4 hours or as directed by the display. The spectrum collected from the 316 Stainless Steel Mask is compared to values stored from when the instrument was calibrated at the factory. If there are any problems with the instrument, they will be indicated by an error message.

- Select **OPTIONS** mode to activate LEAP, select **LEAP Settings** from the **SOIL** analysis screen. Select **Sequential Testing. Standard followed by Light Element**.

- Select **OPTIONS** mode, **Set Testing Times**. A screen will appear prompting the user to enter a Minimum and Maximum Testing Time. Enter 2 minutes. Depending on desired accuracy of results, sample time may be increased. If this

option is chosen, live update results will not be displayed during analysis. If a test is stopped before the minimum testing time has elapsed, the test will be aborted and no results will be calculated.

5.2 ANALYSIS PROCEDURE

- Place sample over display window of XRF Analyzer.

- Pull trigger or press **START** on the iPAQ screen to begin the test. A red light will blink on the top of the instrument indicating X-rays are being emitted. The screen will display the words "**Test in Progress**", the time elapsed, and the words "**Waiting for Data**". The word "**Testing**" will blink on and off in the low right hand corner of the screen.

- After 2 minutes have elapsed, as indicated by the user by the set test time option, the **RESULTS** screen will open and final results will be displayed on the screen. Each line of the results display will show the name of the element, its calculated concentration (in ppm), and the error on the measurement (error will decrease with increased testing time). Non-detected elements are also shown as less than the calculated limit of detection for each element for that test.

- All result concentrations will be calculated on a dry weight basis utilizing the following equation:

  – Dry Weight = Result concentration / (1-% moisture)

- All results will be recorded and archived electronically.

6.0 CALIBRATION

The following presents calibration procedures.

- The XRF Analyzer is calibrated at the factory, generally based on the Compton Normalization method. The XRF Analyzer uses the measured intensity of each element's fluorescence from each sample and the calibration data to produce elemental concentrations. Additional on-site calibration is not necessary because the user checks the calibration as part of quality control efforts.

- The XRF Analyzer is calibrated at the factory with LEAP beam conditions. Additional on-site calibration is not necessary because the user checks the calibration as part of quality control efforts.

- Calibration verification will be performed any time the analyzer hardware is initiated or restarted and will be repeated approximately every 4 hours or as directed by the display. The spectrum collected from the 316 Stainless Steel Mask is compared to values stored from when the instrument was calibrated at the factory. If there are any problems with the instrument, they will be indicated by an error message. Calibration Verification utilizes reference standards which are generally applicable for Antimony, Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Tin, and Zinc.

- An energy calibration check is performed automatically during the standardization check. If there are any problems with the instrument, they will be indicated by an error message.

- All relevant calibration information will be recorded and archived electronically.

7.0 QUALITY ASSURANCE AND QUALITY CONTROL

All relevant quality assurance and quality control information will be recorded and archived electronically. All quality assurance and quality control (QA/QC) samples will be prepared following the procedures described in Section 8.0.

7.1 INSTRUMENT BLANK

- A SiO_2 blank (provided by manufacturer) will be utilized to perform instrument blank analysis for insitu, bagged, and prepared samples (Refer to Section 8.0). The instrument blank will be analyzed once per every 20 samples. The SiO_2 blank will be tested to ensure that there are no reported contaminant metals on the XRF Analyzer window. If testing does not identify metals at detectable concentrations, no contaminant metals are present on the XRF Analyzer window. If testing identifies metals at detectable concentrations, the user will thoroughly clean the XRF Analyzer window and retest the instrument blank. The user will repeat the above steps as necessary until no metals are identified at detectable concentrations.

7.2 METHOD BLANK

- A SiO_2 blank (provided by manufacturer) will be utilized to perform method blank analysis for prepared samples only (Refer to Section 8.0). A method blank will be collected for every 20 prepared samples. Method blanks are tested to verify that cross contamination has not occurred. If testing of the blank identifies metals at detectable concentrations, cross contamination may occur. All equipment will be cleaned thoroughly to remove any possible contamination. The user will repeat the above steps as necessary until no metals are identified at detectable concentrations.

7.3 CALIBRATION VERIFICATION

- The manufacturer provided NIST standard reference samples for calibration checks by the user. The NIST standard will be analyzed for approximately 2 minutes. This test will be performed upon instrument start up and one per every 20 samples. The difference between the XRF result for an element and the value of the standard should be 20% or less.

MWH

211_____/3.2.2

Geologic Log

Boring or Well No.	Project: **Kenvil RI**
Log Recorded By:	Date:
Ground Surface Elevation (ft MSL):	Drilling Co/Rig Type:
Sampling Interval (Est.):	Rig Operator:
Location:	Water Elevation:

	Sampling					
Depth (feet)	Sample Interval	Sample Number	Recovery	PID	Stratigraphy	Remarks
0						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

HERCULES INCORPORATE
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

SOIL BORING LOG

MWH

FIGURE 17-1

7.4 PRECISION VERIFICATION

- One precision sample will be analyzed per day by conducting 7 to 10 replicate measurements of the sample. Precision is assessed by calculating a relative standard deviation (RSD) of the replicate measurements for the analyte. The RSD values should be less than 20% for most analytes, except chromium, for which the value should be less than 30 percent.

7.5 CONFIRMATORY SAMPLES & ACCURACY VERIFICATION

- A confirmatory sample will be analyzed once per every 10 prepared samples. The confirmatory sample will be collected from the same sample material that is analyzed on–site.

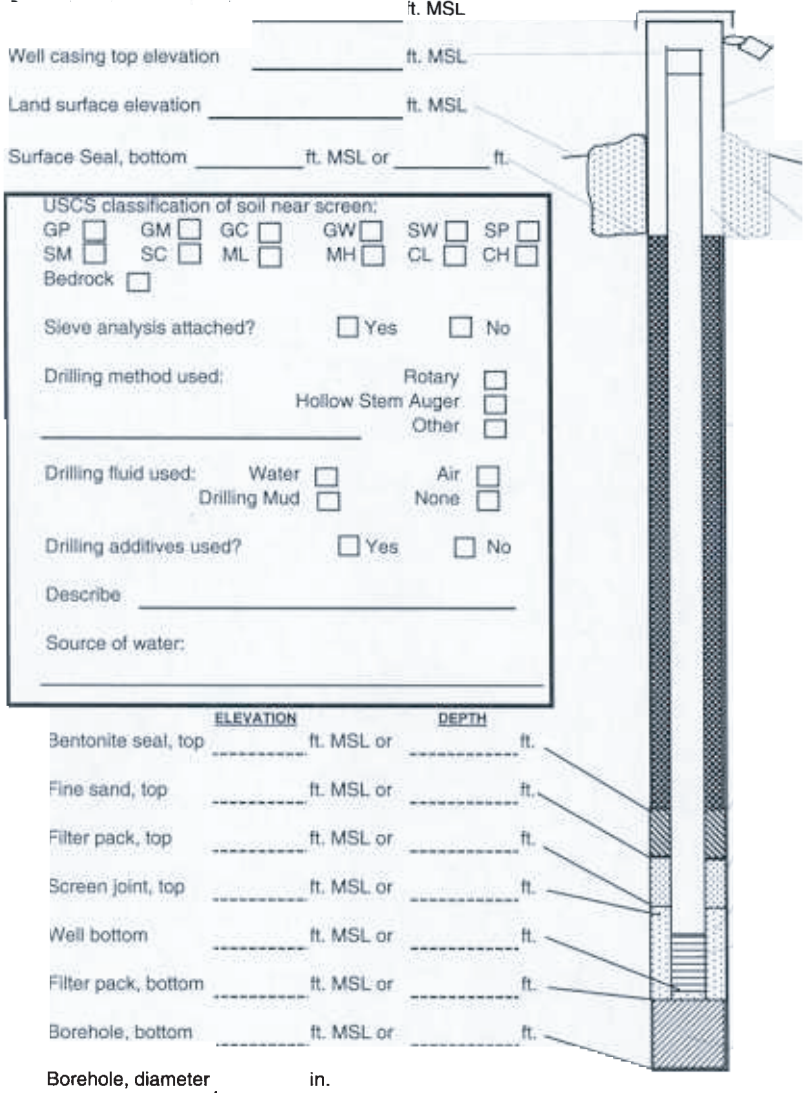
MWH

File 211_____/3.2.2

ABOVE GRADE MONITORING WELL CONSTRUCTION SUMMARY

JOB NO.

Facility/Project Name	Local Grid Location of Well ☐ N. ☐ S. ft. ☐ E. ☐ W. ft.	Well Name
Type of Well Water Table Observation Well ☐ Piezometer ☐	Grid Origin Location Lat. _____ Long. _____ or St. Plane _____ ft. N,	Date Well Installed
	Section Location of Waste/Source ☐ E. ☐ W.	Well Installed By: (Person's Name and Firm)
Distance Well Is From Waste/Source Boundary Potential Source Area ft.	Location of Well Relative to Waste/Source ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	



_____ ft. MSL

Well casing top elevation _____ ft. MSL

Land surface elevation _____ ft. MSL

Surface Seal, bottom _____ ft. MSL or _____ ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ☐ No

Drilling method used: Rotary ☐ Hollow Stem Auger ☐ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ☐ No

Describe _____

Source of water: _____

	ELEVATION		DEPTH	
Bentonite seal, top	_____	ft. MSL or	_____	ft.
Fine sand, top	_____	ft. MSL or	_____	ft.
Filter pack, top	_____	ft. MSL or	_____	ft.
Screen joint, top	_____	ft. MSL or	_____	ft.
Well bottom	_____	ft. MSL or	_____	ft.
Filter pack, bottom	_____	ft. MSL or	_____	ft.
Borehole, bottom	_____	ft. MSL or	_____	ft.

Borehole, diameter _____ in.

O.D. well casing in.

I.D. well casing _____ in.

Cap and lock? ☐ Yes ☐ No

Protective cover pipe:
Inside diameter: ____ in.
Length: ____ ft.
Material: Steel ☐ Other ☐

Additional protection? ☐ Yes ☐ No
If yes, describe: _____

Surface seal: Bentonite ☐ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ☐
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ Other ☐

Fine sand material: Manufacturer, product name & mesh size
_____
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
_____
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: _____

Screen type: Factory cut ☐ Continuous slot ☐ Other ☐

Manufacturer _____
Slot size: ____ in.
Slotted length: ____ ft.

Backfill material (below filter pack): None ☐ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowlege.

Signature	Firm
	Montgomery Watson Americas, Inc.

HERCULES INCORPORATE
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

MONITORING WELL CONSTRUCTION SUMMARY

MWH

FIGURE 17-2

GROUNDWATER SAMPLING LOG

Client/Site:	**Total Well Depth (ft. below TOC):**	**Sampler(s):**
Well Number:	**Static Water Level (ft below TOC):**	**Sampling Date:**
Permit Number:	**Standing Water Column (ft):**	**Samples Collected:**
Well Diameter (in.):	**Using Pump Static Water Level (ft below TOC):**	**Sampling Time:**
Screened Interval (ft. below TOC):	**Pump Intake Depth (ft below TOC):**	**Time Purge Started:**

All Measurements taken from: TOC

Total Volume Purged (gal):

Purge and Sampling Method: Low Flow

Job Number: /3.2.8

BLADDER PUMP SETTINGS	
Refill (sec.)	
Discharge (sec.)	
Pressure (psi)	

Stabilization Parameters (over 3 consecutive readings):

+/- 0.1 pH	**+/- 3% EC**
+/- 10% DO	**+/- 3% Temperature**
+/- 10% Turbidity	**+/- 10 mv ORP**

Time	EC (mS/cm)	pH	Temp (°C)	Turbidity (NTU)	DO (mg/L)	ORP	Depth to Water (ft)	Flow Rate (ml/min)	Comments

HERCULES INCORPORATE
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

GROUNDWATER PURGING & SAMPLING DATA SHEET

MWH

FIGURE 17-3

Fed Ex # _____

Cooler # _____

MONTGOMERY WATSON

CHAIN OF CUSTODY RECORD

DESTINATION MONTGOMERY LABORATORIES ☐

OTHER _____ ☐

PROJECT NAME	PROJECT JOB #
SAMPLER(S): PRINTED NAME AND SIGNATURE	

TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	ANALYSES REQUIRED	REMARKS

SPECIAL INSTRUCTIONS/COMMENTS

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C No. ORIGINAL COPY: SEND WITH SAMPLE YELLOW COPY: RETAINED BY SAMPLER PINK: OFFICE COPY PAGE _____ OF _____

HERCULES INCORPORATE
FACILITY-WIDE INVESTIGATION
KENVIL WORKS FACILITY, NEW JERSEY

CHAIN OF CUSTODY RECORD

MWH

FIGURE 17-4

DAILY REPORT

DATE: _____

REPORT: _____

DAY: _____

WEATHER: _____

TEMP: _____

WIND: _____

HUMIDITY: _____

PROJECT MANAGER: _____

PROJECT: _____

JOB NO.: _____

CONTRACT NO.: _____

MW PERSONNEL ON SITE: _____

_____

_____

_____

_____

_____

_____

_____

_____

SUBCONTRACTORS ON SITE: _____

_____

_____

_____

_____

_____

_____

_____

_____

FIGURE 17-5

DAILY REPORT LOG

EQUIPMENT ON SITE: _____

WORK PERFORMED (Including Sampling): _____

HEALTH AND SAFETY ACTIVITIES: _____

FIELD PROBLEMS ENCOUNTERED/CORRECTIVE ACTION TAKEN: _____

TOMORROW'S PLANS: _____

REPORT PREPARED BY: _____

TITLE: _____

FIGURE 17-5

DAILY REPORT LOG

8.0 SAMPLE COLLECTION

The following procedures will be utilized for sample collection.

8.1 PREPARED SAMPLE COLLECTION

Prepared samples will be collected in the field and analyzed at the XRF field laboratory. Prepared samples will be utilized to provide definitive data for site investigation/remediation activities. Figure X visually presents the procedures that will be utilized to prepare a sample. All sample equipment will be thoroughly decontaminated prior to and in between sample collection.

- A sample aliquot of 50-100 grams will be collected.
- Sample will be homogenized in stainless steel bowls.
- Moisture content in each sample will be determined with a soil moisture probe.
- If soil moisture is greater than 20%, the sample will be dried in a convection oven to reduce moisture content.
- Sample will be placed in a 60 mesh sieve to homogenize the sample.
- The remaining sample will be ground in a mortar in pestle to homogenize the sample.
- If necessary, sample will be placed in a 250 um mesh sieve to completely homogenize the sample.
- Sample will be placed in 5-10 gram polyethylene sample cups and covered with 2.5-6.0 um thick polyethylene film. Sample cups will contain at least 0.5 inches of sample aliquot.
- Sample will be placed on the testing stand, completely covering the window.
- Sample will be tested using the XRF Analyzer.
- If confirmatory sample is collected, a sub sample will be submitted for laboratory analysis.

8.2 BAGGED SAMPLE ANALYSIS

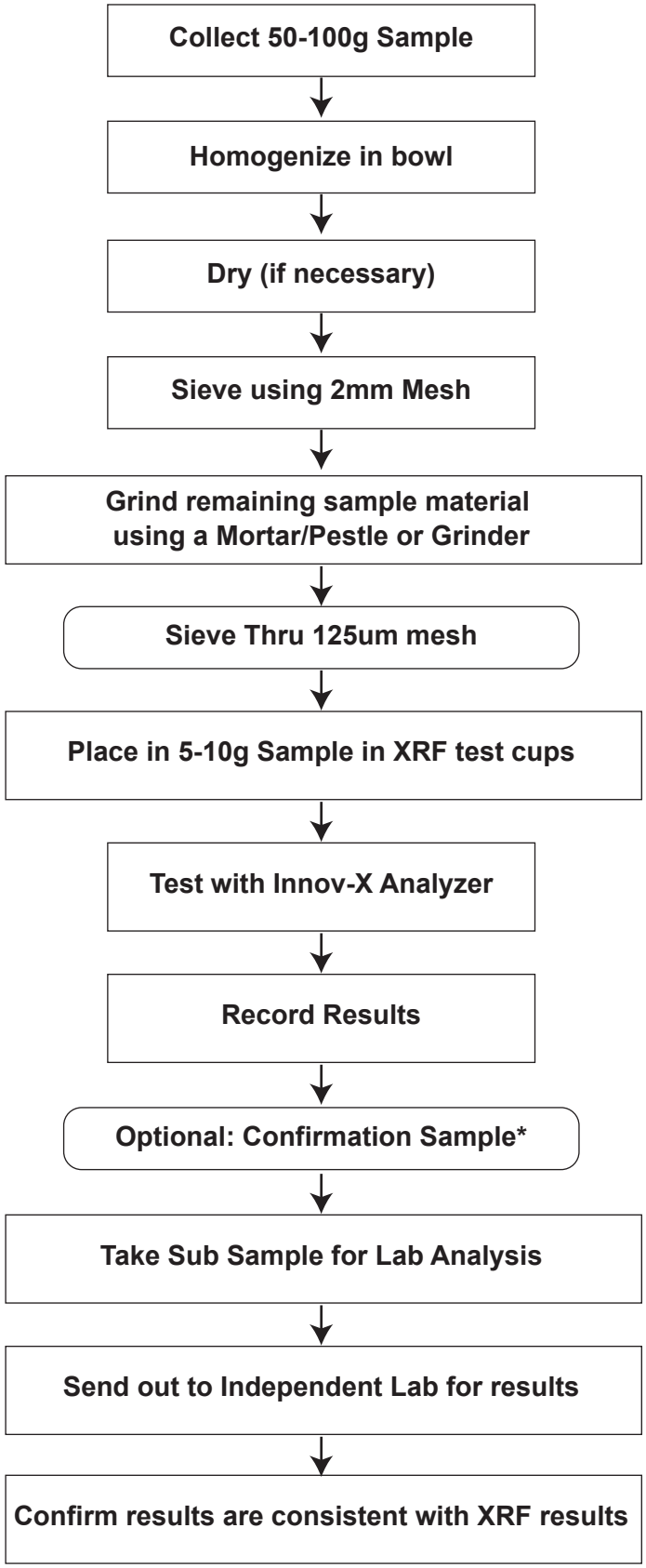
- Non-representative matter (inorganic (rocks) and organic (root material)) will be removed from the sample and the sample will be homogenized. The sample aliquot will be placed in a new plastic bag and placed on top of the testing stand, completely covering the window. Sample bags will contain at least 0.5 inches of sample aliquot. Sample will be tested using the XRF Analyzer.

- This analysis is not intended to produce definitive results. This analysis will be used to support definitive results, provide screening results, and determine if additional actions are warranted.

8.3 INSITU ANALYSIS

- Performed by pointing the analyzer at the ground with the front of the probe head flush with ground surface. Sample will be tested using the XRF Analyzer. The XRF Analyzer window will be cleaned after each analysis. Possible interferences will be eliminated as much as possible prior to analysis.

- This analysis is not intended to produce definitive results. This analysis will be used to support definitive results, provide screening results, and determine if additional actions are warranted.



* *A confirmatory sample will be analyzed once per every 10 prepared samples.*

XRF STANDARD OPERATING PROCEDURE (SOP)
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

PREPARED SAMPLE COLLECTION PROCEDURE

MWH

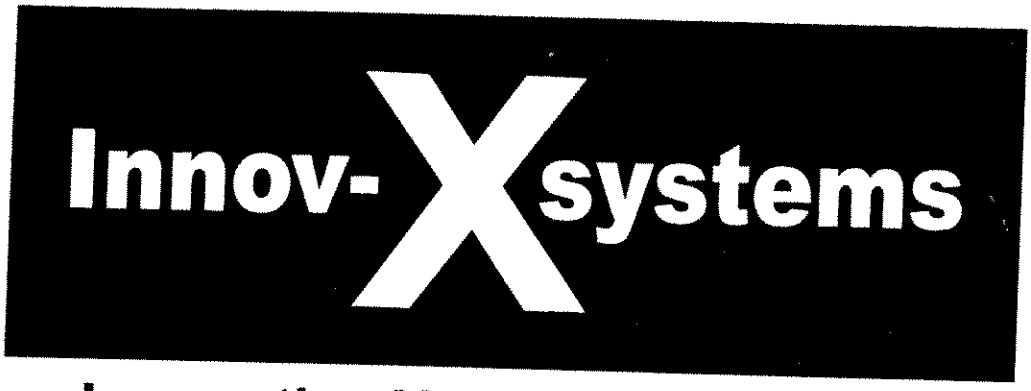
FIGURE 1

Table 1

Method Detection Limits
XRF SOP
Kenvil Works Facility
Kenvil, New Jersey

Element	Symbol	Detection Limit (ppm)	Comment
Antimony	Sb	120	Constituent of interest
Arsenic	As	10	Constituent of interest
Barium	Ba	100	
Cadmium	Cd	50	Constituent of interest
Calcium	Ca	1,000	
Chlrorine	Cl	2,000	
Chromium	Cr	40	Constituent of interest
Cobalt	Co	200	
Copper	Cu	30	Constituent of interest
Lead	Pb	16	Constituent of interest
Manganese	Mn	89	
Mercury	Hg	14	Constituent of interest
Molybdenum	Mo	10	
Nickel	Ni	40	Constituent of interest
Phosphorus	P	2,500	
Potassium	K	1,500	
Rubidium	Rb	11	
Selenium	Se	9	Constituent of interest
Silver	Ag	120	Constituent of interest
Strontium	Sr	13	
Sulphur	Symbol	2,500	
Thallium	Tl	16	Constituent of interest
Tin	Sn	100	
Titanium	Ti	150	
Uranium	U	20	
Vanadium	V	50	
Zinc	Zn	30	Constituent of interest
Zirconium	Zr	10	

Maximum Concentration Range = 20,000 to 30,000 ppm
XRF Analyzer can measure higher concentrations but with poorer accuracy
as its outside the linear response range of the Compton Normalization method
Detection Limts are valid with 2 minute tests.



Innovative X-ray Technologies

Innov-X Systems User Manual

INSTRUCTION MANUAL

INNOV-X SYSTEMS
X-RAY FLUORESCENCE
SPECTROMETERS

April 2004
Version 1.3

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Appendix 3S: X-ray Registration Information

Chapter 1 Introduction

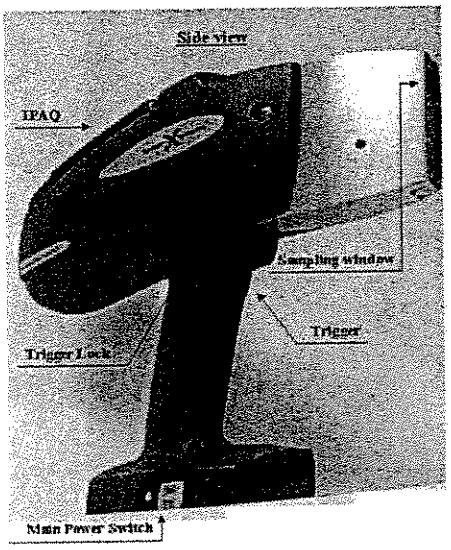
1.0 INSPECTING YOUR INNOV-X ANALYZER

Upon receipt:

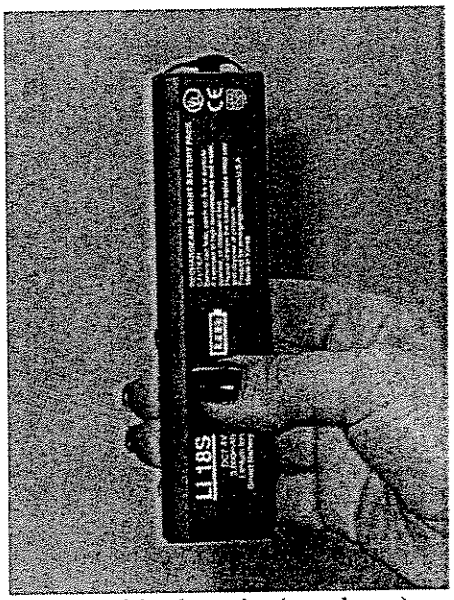
1. Locate and remove the shipping papers and documentation from under the lid's foam padding.
2. Remove the Innov-X Analyzer and all of the components from the protective carrying case and identify each on the enclosed shipping list.
3. Connect the battery charger to an 110V-240V AC power source. Place one Li-ion battery on the charger and charge it for at least 2 hours. Charge the second battery.
4. Charge the HP iPAQ using the attached AC adaptor for at least ½ hour.
5. Read and review the "Quick Start" section of the User's Manual. Innov-X recommends that you read the entire manual.
6. Install the fully charged battery into the analyzer.
7. Press the ON/OFF button on the base of the pistol grip on the analyzer and the power button on the iPAQ.
8. Select the desired analysis mode (i.e., Analytical, FastID, Pass/Fail or Soil). The instrument will undergo a one minute hardware initialization period.
9. Standardize the instrument with the 316 Stainless Steel mask. Standardize the instrument every 4 hours or as directed by the display.
10. If possible, release the software trigger lock and analyze a sample of known composition, in order to verify the correct operation of the analyzer.
11. Analyze samples of unknown composition.

1.1 COMPONENTS INCLUDED WITH THE ANALYZER

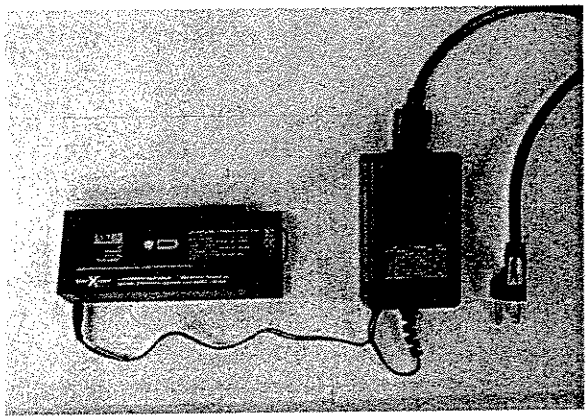
Shown here are the various items which are included with the Innov-X portable XRF analyzer. Unless otherwise noted, all items are standard accessories.



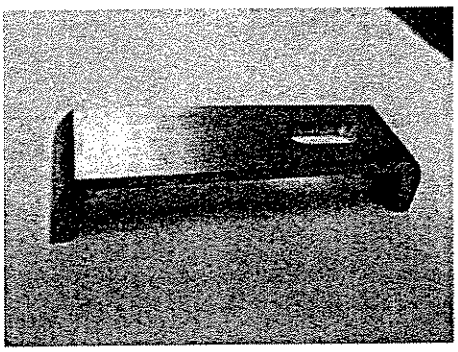
Analyzer, with iPAQ attached.



Two, Li-ion batteries (one shown).

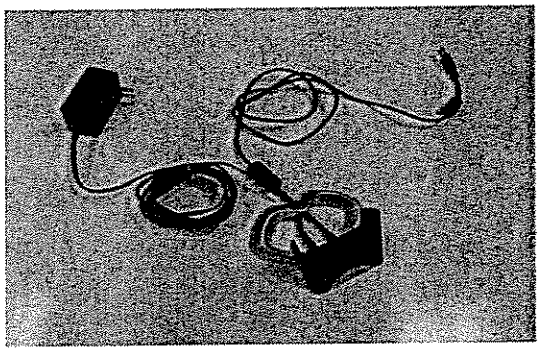


Battery charger and an AC adaptor. Battery shown mounted in charging system.

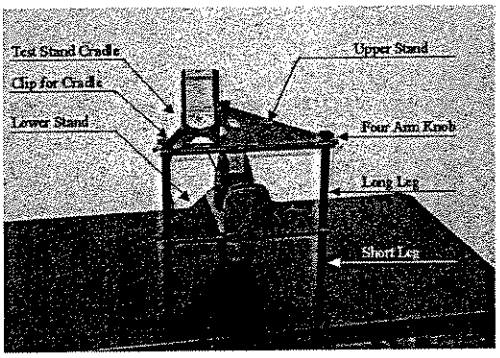


Standardization cap and weld mask (optional)

The standard standardization cap has no weld slit.



iPAQ cradle and AC adaptor. The cradle is used to connect the iPAQ to a PC for downloading data and reports.



Testing stand. This is the benchtop docking station for the analyzer. This accessory is standard with the XT-440 (environmental analyzer) and optional with other models.

1.2 QUICK START INSTRUCTIONS

The following section provides a quick overview to using the Innov-X portable XRF analyzer. This is intended to provide the basic startup and operational instruction needed to perform simple analyses. It is highly recommended that the user read the sections on Radiation Safety (Chapter 3) and the detailed description on operation (Chapter 4). The following Quick Start information is also provided as a separate, bound, laminated publication for quick reference.

1. Place a battery in the analyzer.
2. Power on the Analyzer (On/Off switch located on base of handle)
3. Power on the iPAQ (Button located in upper right hand corner of iPAQ)
4. Select Innov-X from the start menu located in the upper left hand corner of iPAQ screen.
5. Read the radiation safety notice and acknowledge that you are a certified user by pressing Start.
6. Select Desired Mode.
7. The analyzer will undergo a 60 second hardware initialization.

8. Place a standardization clip on the nose of the analyzer. Tap the button on the screen to standardize. *(Manual section 4.4 Standardization)*
9. When standardization is complete, remove the standardization clip.
10. Release manual trigger lock. (locked position is to the user's right if snout is facing away from user)
11. Release the software trigger lock by tapping the locked icon on the iPAQ screen and tapping yes in response to the software prompt.
12. Test standard to verify instrument performance.
13. Results will display on screen. Subsequent tests may be started from either the Results or Analysis screens.

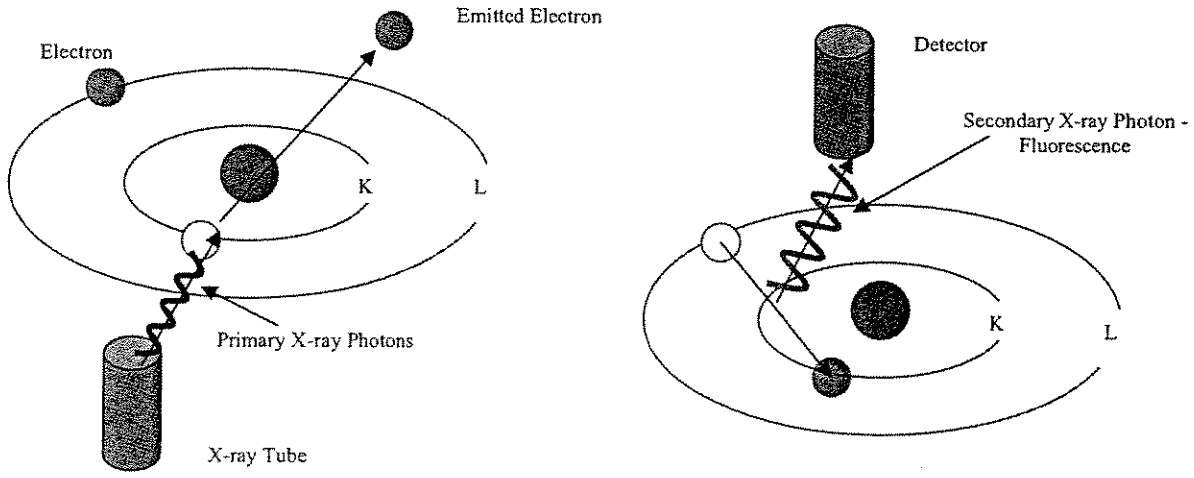
1.3 INTRODUCTION TO XRF: X-RAY FLUORESCENCE SPECTROMETRY OVERVIEW

Basic Theory

Although most commonly known for diagnostic use in the medical field, the use of x-rays forms the basis of many powerful analytical measurement techniques, including X-ray Fluorescence (XRF) Spectrometry.

XRF Spectrometry is used to identify elements in a substance and quantify the amount of those elements present. An element is identified by its characteristic X-ray emission wavelength (λ) or energy (E). The amount of an element present is quantified by measuring the intensity of its characteristic line. XRF Spectrometry ultimately determines the elemental composition of a material.

All atoms have a fixed number of electrons (negatively charged particles) arranged in orbitals around the nucleus. The number of electrons in a given atom is equal to the number of protons (positively charged particles) in the nucleus; and, the number of protons is indicated by the Atomic Number in the Periodic Table of Elements. Each Atomic Number is assigned an elemental name, such as Iron (Fe), with Atomic Number 26. Energy Dispersive (ED) XRF and Wavelength Dispersive (WD) XRF Spectrometry typically utilize activity in the first three electron orbitals, the K, L, and M lines, where K is closest to the nucleus. Each electron orbital corresponds to a specific and different energy level for a given element.



In XRF Spectrometry, high-energy primary X-ray photons are emitted from a source (X-ray tube) and strike the sample. The primary photons from the X-ray tube have enough energy to knock electrons out of

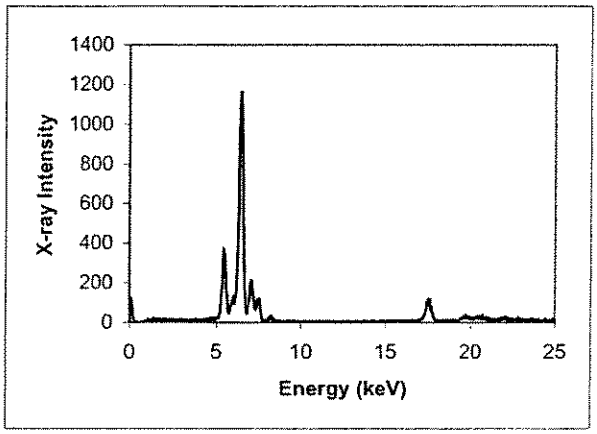
the innermost, K or L, orbitals. When this occurs, the atoms become ions, which are unstable. Electrons seek stability; therefore, an electron from an outer orbital, L or M, will move into the newly vacant space at the inner orbital. As the electron from the outer orbital moves into the inner orbital space, it emits an energy known as a secondary X-ray photon. This phenomenon is called fluorescence. The secondary X-ray produced is characteristic of a specific element. The energy (E) of the emitted fluorescent X-ray photon is determined by the difference in energies between the initial and final orbitals of the individual transitions.

This is described by the formula

$$E=hc/\lambda$$

where h is Planck's constant; c is the velocity of light; and λ is the characteristic wavelength of the photon.

Wavelengths are inversely proportional to the energies; they are characteristic for each element. For example the Kα energy for Iron (Fe) is about 6.4keV. The number of element-specific characteristic X-rays produced in a sample over a given period of time, or the intensity, can be measured to determine the quantity of a given element in a sample. Typical spectra for EDXRF Spectrometry appear as a plot of Energy (E) versus the Intensity (I).



History

Wilhelm Roentgen discovered X-rays in 1895. Methods for identifying and quantifying elements using XRF were first published by Henry Moseley in 1913. Much research and development of XRF continued after Moseley's pioneering work, especially during WWII when rapid developments in the aircraft, automotive, steel and other metals industries heightened the need to identify alloys quickly and reliably. However, the first commercial XRF Spectrometers weren't available until the early 1950's. Those systems were based on WDXRF technology and measured the characteristic wavelength of an element, one element at a time. Although the use of these systems was critical for elemental analyses, they were large, expensive, and required highly skilled operators to use and maintain them.

In the late 1960's, EDXRF technology, which measures the characteristic energy of an element, began to rival the use of WDXRF due to the development of Si (Li) solid state detectors, which offered better energy resolution of the signal. EDXRF systems offered the potential of collecting and displaying information on all of the elements in a sample at the same time, as opposed to one at a time with typical WDXRF systems. Many of the early EDXRF systems used radioisotopes for excitation instead of X-ray tubes, which could require changing sources to determine all the elements of interest. Some of those early EDXRF systems did not easily resolve multiple elements in a single analytical run.

As can be imagined, the equipment and applications of XRF Spectrometers have developed tremendously since the 1960's. Advancements in technology, electronics, computers, software and the use and

modification of them for XRF Spectrometers by instrument manufacturers, research scientists & engineers, and industrial users alike have led to the current state of the art in XRF Spectrometers. Now a mature technology, XRF Spectrometry is routinely used for R&D, QC and analytical services in support of production.

Elemental Analysis

XRF Spectrometry is the choice of many analysts for elemental analysis when compared to the other techniques available. Wet chemistry instrument techniques for elemental analysis require destructive and time-consuming specimen preparation, often using concentrated acids or other hazardous materials. Not only is the sample destroyed, waste streams are generated during the analytical process that need to be disposed of, many of which are hazardous. These wet chemistry elemental analysis techniques often take twenty minutes to several hours for specimen preparation and analysis time. All of these factors lead to a relatively high cost per sample. However, if PPB and lower elemental concentrations are the primary measurement need, wet chemistry instrument elemental analysis techniques are necessary.

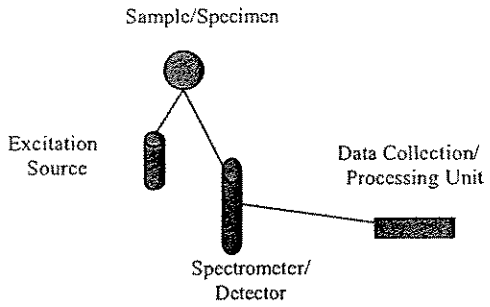
XRF Spectrometry easily and quickly identifies and quantifies elements over a wide dynamic concentration range, from PPM levels up to virtually 100% by weight. XRF Spectrometry does not destroy the sample and requires little, if any, specimen preparation. It has a very fast overall sample turnaround time. These factors lead to a significant reduction in the per sample analytical cost when compared to other elemental analysis techniques.

All elemental analysis techniques experience interferences, both chemical and physical in nature, and must be corrected or compensated for in order to achieve adequate analytical results. Most wet chemistry instrument techniques for elemental analysis suffer from interferences that are corrected for by both extensive and complex specimen preparation techniques, instrumentation advancements, and by mathematical corrections in the system's software. In XRF Spectrometry, the primary interference is from other specific elements in a substance that can influence (matrix effects) the analysis of the element(s) of interest. However, these interferences are well known and documented; and, instrumentation advancements and mathematical corrections in the system's software easily and quickly correct for them. In certain cases, the geometry of the sample can effect XRF analysis, but this is easily compensated for by grinding or polishing the sample, or by pressing a pellet or making glass beads.

Quantitative analysis for XRF Spectrometry is typically performed using Empirical Methods (calibration curves using standards similar in property to the unknown) or Fundamental Parameters (FP). FP is frequently preferred because it allows elemental analysis to be performed with no standards or calibration curves. This enables the analyst to use the system immediately, without having to spend additional time setting up individual calibration curves for the various elements and materials of interest. The capabilities of modern computers allow the use of this no-standard mathematical analysis, FP, accompanied by stored libraries of known materials, to determine not only the elemental composition of an unknown material quickly and easily, but even to identify the unknown material itself.

EDXRF Spectrometers

EDXRF Spectrometer systems are mechanically very simple; essentially there are no moving parts. An EDXRF system typically has three major components: an excitation source, a spectrometer/detector, and a data collection/processing unit. The ease of use, rapid analysis time, lower initial purchase price and substantially lower long-term maintenance costs of EDXRF Spectrometers have led to having more systems in use today worldwide than WDXRF Spectrometer systems.



EDXRF has been found most useful for scrap alloy sorting, forensic science, environmental analysis, archaeometry and a myriad of other elemental field-oriented analyses.

Handheld EDXRF Spectrometers for Field Analyses

It is clear that a future trend for elemental analysis is in rapid site investigation using techniques that are fast, inexpensive, reliable, and long-term cost effective. There is a need for immediate decisions to be made during the delivery of materials, industrial processing, and in the field for positive materials identification or environmental site assessment and remediation. It is also clear that EDXRF Spectrometry is the most suitable elemental analysis technique available for field analysis due to its simplicity, speed, precision, accuracy, reliability, and overall cost effectiveness.

Recent technological developments in cell phones, pocket PC's and other portable consumer electronics have led to the advancement of many high-performance, miniature components. X-ray equipment manufacturers began to take advantage of these developments in the late 1990's and developed Handheld EDXRF systems. An obvious advantage of Handheld EDXRF systems is that the analyzer is taken to the sample as opposed to bringing the sample to the analyzer and configuring it to fit in an analysis chamber. In addition to the per sample analytical cost savings, a key factor in using non-destructive EDXRF analysis, especially in the field, is the overall project cost savings due to improved and more timely decision making. The use of EDXRF for immediate positive materials identification or to guide an environmental site characterization will generally reduce the overall time required in the field due to the quick turnaround for the sample analysis; this invariably reduces the overall costs of analytical field work.

Of course, Handheld EDXRF technology has continued to evolve in concert with portable consumer electronic developments. Just like the early Benchtop EDXRF systems, early Handheld EDXRF systems used radioisotopes for excitation. There are several practical problems with the use of radioactive isotopes for handheld systems. The source decays and loses its testing speed over time. In addition to the loss in analytical capabilities, the sources have to be replaced incurring a cost. The use of radioactive isotopes also requires licensing (state-to-state in the US) and a radioactive materials control program; they are difficult to ship and transport, as they require hazardous materials declarations and/or permits. Consequently, the newest and most exciting development in Handheld EDXRF technology is the use of battery operated, miniature X-ray tubes, which was pioneered by the staff at Innov-X Systems.

Innov-X Systems Handheld EDXRF Spectrometers

Innov-X Systems specializes in Handheld EDXRF technology with the most advanced miniature components available for X-ray Tube sources, detectors, and PC 's. Innov-X Systems Handheld EDXRF Spectrometers are ideally suited for field analysis of alloys, lead-based paint, environmental soils, filters, dust wipes, forensics, archaeometry, and a variety of other elemental analyses in the field or around the plant. Innov-X Systems EDXRF Spectrometers are affordable, easy to use, reliable, and overall cost effective. The Innov-X Systems Handheld EDXRF units incorporate state-of the art components including a battery operated miniature X-ray tube, a high-resolution silicon pin detector, high speed data acquisition

circuitry, and a Compaq IPAQ Pocket PC® handheld computer for calculations, results and operator interface.

Innov-X Systems EDXRF Spectrometers offer the following invaluable features:

- Portable
- Battery operated, rechargeable
- X-ray Tube-based (Ag anode, 10-35kV, 10-100uA)
- Si PiN diode detector.
- Integrated pocket PC
- Pistol-shaped design for difficult testing locations and welds
- Auto-compensation for irregular or small samples
- Fundamental Parameters for no-standard analyses
- Stored Grade Libraries for rapid Grade ID's
- Stored Fingerprint Libraries for rapid material ID's
- Docking station available for use as standard benchtop unit
- Results shown after a few seconds of testing time.

For more information on how to utilize your Innov-X Systems Handheld EDXRF Spectrometer optimally, please review this Instruction Manual or contact us directly.

Chapter 2. Usage and Assembly of Accessories

2.0 ACCESSORIES

This chapter describes the various accessories that are provided with an Innov-X XRF analysis system. Included are:

- Batteries
- Battery Charger
- iPAQ cradle and charger
- Testing Stand Assembly (not standard with all units)
- Standardization Clip or Standardization Clip/Welding mask.

2.1 ANALYZER BATTERY

The Innov-X Systems XRF Analyzer is powered by a replaceable, rechargeable Lithium ion battery. In addition, the iPAQ has its own internal battery.

Innov-X Systems Main Battery

The Innov-X Analyzer uses a rechargeable Lithium Ion Battery. A picture of the battery is shown in Fig. 2.1. Two batteries are included with each analyzer. The batteries are charged an external battery charger. Batteries typically function for 3 to 6 hours, depending on usage patterns. Heavier duty cycles deplete the battery more quickly. Therefore, users who do longer and more frequent tests will need to replace their batteries more often than users who take shorter or fewer tests.

Figure 2.1. Li-ion Battery for analyzer

Battery power indicators:

There are two ways of determining the charge remaining on a battery: the LED indicator on the battery and the battery status icon on the analyzer screen. The battery icon, when tapped, will indicate the percent charge remaining on a battery inside the analyzer. Additionally, the battery icon will change from green to yellow when the battery gets low, indicating it has about 15 minutes left of charge.

To use the battery LED, push the button below the indicator. The lighting will indicate the % of charge. If possible, try to use batteries with at least 50% of their full charge, according to the indicator.

2.2 CHANGING A BATTERY

To change a battery, perform the following steps:

1. Hold the instrument by the handle, upside down, so the bottom of the instrument base is pointing upward. Please refer to Fig. 2.2.
2. Hold the instrument so that the nose is pointing away from the operator.
3. Remove the battery door from the bottom of the instrument base. The batteries have a small cord attached for ease of removal.
4. Pull out the existing battery, and replace with a new battery.
5. Insert the charged battery into the analyzer such that the connectors on the top of the battery are facing to the right (towards the On/Off switch). Note that the battery slot is keyed so that the battery can only be inserted one way.

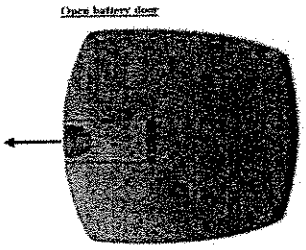


Figure 2.2a. Base of the instrument. Slide the door in direction indicated, reach into opening and remove battery.

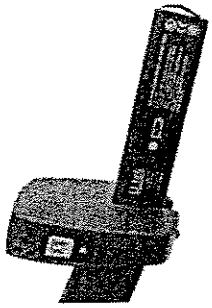


Figure 2.2b Insert new battery into opening. Note that labeling on the battery should be facing the ON/OFF switch.

2.3 BATTERY CHARGER

The battery charger is shown in Fig. 2.3. It takes about 2 hours to completely charge a battery. The status of the charger is shown by two lights on the power adaptor. Table 2.1 lists the information conveyed by the lights.

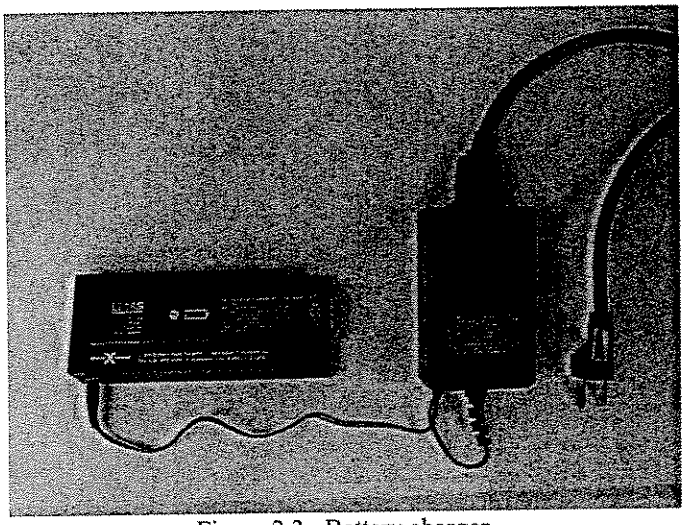


Figure 2.3. Battery charger.

Left Light	Right light	Status
On	Off	Battery is charging
On	On	Battery is 80% charged
Off	On	Battery is completely charged
Blink	Blink	Error. Remove battery and replace on charger. If error persists, call Innov-X Systems Technical support.
Off	Off	No battery is on charger

Table 2.1 Battery charger status lights

2.4 HP IPAQ POCKET PC BATTERY

The iPAQ has an internal rechargeable battery, which can be recharged by using the power adaptor that is included with the unit. This adaptor can be connected either to the iPAQ itself, or to the cradle. If it is connected to the cradle, and plugged in, the iPAQ will recharge whenever it is placed in the cradle. In addition, the iPAQ Battery will recharge whenever the iPAQ is mounted in an Innov-X analyzer which is powered, but not actively taking a test. The amber light on the top of the iPAQ will blink whenever the battery is charging. It will remain solid when the battery is completely charged.

Since the iPAQ will be recharged whenever the Innov-X Systems Analyzer is in use, it may never be necessary to use the iPAQ power adaptor. However, care should be taken when the analyzer is not used for a period of several days, as the iPAQ uses some power even when it is powered off. It is therefore possible to completely discharge the battery simply by not using the iPAQ for several days, or by using it for several hours without recharging it.

If you do not use your Innov-X Analyzer on a daily basis, or if you will have a down period of more than several days, it is recommended that you remove the iPAQ from the Analyzer when it is not in use and plug in the iPAQ to a power outlet to recharge it. This will ensure that your iPAQ is always charged and ready for use. You should also always plug in the power cord whenever the iPAQ is removed from the analyzer for data transfer.

If you do allow the iPAQ battery to discharge significantly, either by allowing it to sit too long unused, or by using it for a period of time without it being connected to a power source, it may not be possible to operate your analyzer. If this happens, the Innov-X software will provide an error message indicating that the iPAQ battery is too low. Recharge the iPAQ for at least a half an hour before attempting another measurement.

If the iPAQ battery is completely discharged, it will not be possible to turn on the iPAQ until it is recharged. A complete power failure will erase anything that is stored in the Main Memory of the iPAQ. All Innov-X program and data files are stored on the storage card, rather than in Main Memory, so you will not lose any data or have to reinstall the Innov-X software.

1. If the battery on the iPAQ is completely discharged, charge it for at least one half hour.
2. You will be required to follow the prompts on the iPAQ screen before you can use the iPAQ. This procedure involves realigning the screen by tapping in several spots, and going through a quick tutorial.
3. The iPAQ will reinitialize the Innov-X Systems software. A message will appear indicating that this is going to happen. You must tap ok to initialize.
4. The software will open automatically; a message will appear indicating that several registries have been restored. Tap ok to dismiss this message.
5. Set the clock to the current time. **Note, this is very important,** as your data is indexed by date. If the date in the iPAQ is incorrect, you may not be able to locate your results. The instrument will not allow you to take a reading until the date has been changed.
    a. From the Start Menu, tap Settings.
    b. Select the System tab, and tap clock.
    c. Set the proper date. Further details about this procedure can be found in the Compaq iPAQ user's manual.

2.5 REMOVING THE IPAQ FROM THE ANALYZER

It is very important to properly remove the iPAQ Pocket PC from the analyzer to avoid damaging the connector on the back of the iPAQ.

In order to remove the iPAQ, push the iPAQ retainer shown in Fig. 2.4 towards the front of the analyzer. Holding the retainer forward, grab the iPAQ from the sides, slide the iPAQ forward until it is clear of its connector, then tilt the front end up enough so it clears the front holder allowing the iPAQ to be lifted out of the instrument.

Note: Never grab the iPAQ and twist it side-to-side to remove it from the analyzer. Always move the iPAQ retainer forward as instructed above, slide the iPAQ forward and remove from the analyzer.

Figure 2.4. Removing the iPAQ from the analyzer.

2.6 STANDARDIZATION CAP and/or WELD TESTING MASK

All analyzers are supplied with either a standardization cap or a combination standardization cap welding mask. The standardization mask is the standard accessory. Welding masks can be purchased as an additional accessory, or in lieu of the standardization mask.

Standardization Cap

The cap clips on the front end of the analyzer and is used to standardize the system as described in Chapter 4. To attach the cap, snap it onto the nose of the analyzer over the Kapton window.

Combination Standardization Cap/Welding Mask

The standardization/welding mask is shown in Fig. 2.5. The cap clips onto the front end of the analyzer and is used to standardize the system as described in Chapter 4. To attach the cap, snap it onto the nose of the analyzer over the Kapton window. Be sure that when attaching the cap, that the solid end (as opposed to the end with the ¼" wide slit) is covering the window. To remove the mask, slide it off to either side.

The opposite end of the standardization cap serves as a welding mask. This mask is used to shield the base metal from analysis, when analyzing a weld. It is important to use this mask since failure to do so will produce an alloy chemistry that is a mixture of the base metal and the actual weld. For best results:

a. Use the welding mask only for welds that are larger than the opening in the mask;

b. Make solid contact between the surface of the mask and the material to test;
c. Use the mask only in the Analytical Mode – not with the standard Fast ID library;
d. Consider using longer test periods to compensate for the smaller testing area – especially with more difficult separations.

If it is desirable to use the welding mask in FastID mode, a user can create a special "Welding Mask Library." Teach all relevant alloys with the welding mask is in position. Make sure these fingerprints are saved in library that contains ONLY fingerprints taught with a welding mask. When measuring a weld, make sure the "Weld" library is the only one selected. By creating a special finger print library using the welding mask, a user can get good results in the Fast ID Mode as well.

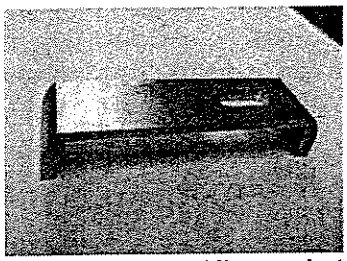


Figure 2.5 Standardization cap and welding mask. (Optional accessory)
The standard standardization cap does not have the welding slit.

2.7 TESTING STAND (optional accessory)

The testing stand is designed as a docking station for the handheld analyzer. It can be used as a bench-top system, or to test small samples. A list of components and an assembled stand is shown in Figure 2.6:

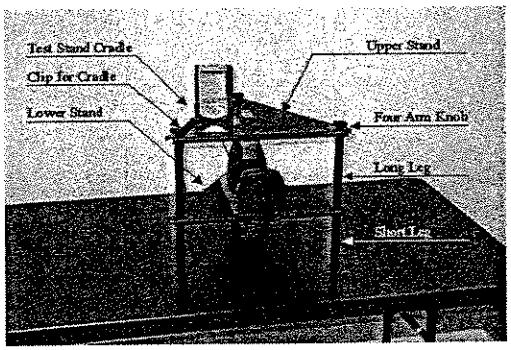


Figure 2.6. Assembled Testing Stand

Components of the testing stand:

1. Three (3) short legs
2. Three (3) long legs
3. Lower Stand
4. Upper Stand
5. Four (4) knobs for top plate
6. Test stand cradle
7. Clip for cradle.
8. Adaptor cable (connects serial connector on iPAQ cradle to auxiliary port on analyzer)

Assembly of Testing Stand

1. Insert the three Short Legs through the holes in the Lower Stand by inserting the threaded screw through the holes. This will balance the Lower Stand on the table top. (Fig. 2.7).

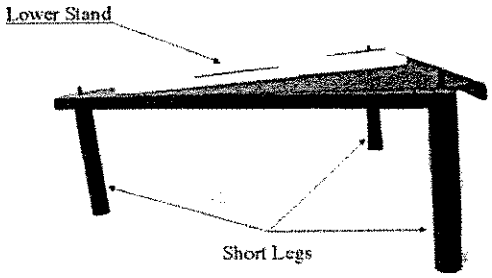


Figure 2.7. Mounting Lower Stand onto Short Legs.

2. Mount the three Long Legs onto the Lower Stand by inserting the threaded screws from the Short Legs into the holes on the Long Legs and turning until snug. Remove iPAQ from analyzer by following the instructions in Figure 2.4. Place the analyzer into the gap in the Lower Stand as shown. (Fig. 2.8).

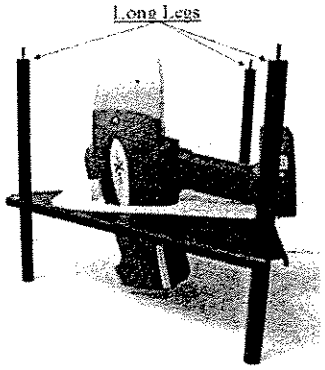


Figure 2.8. Mounting Long Legs onto Lower Stand and inserting analyzer.

3. Mount the Upper Stand onto the Long Legs. The Upper Stand has holes for the screws at the end of each of the Long Legs. The Upper Stand will also fit snugly over the front end of the analyzer. Be sure that the Upper Stand is mounted so that all three screws are inserted through the holes, and the front end of the analyzer is flush with the top surface of the upper stand. (Fig. 2.9).

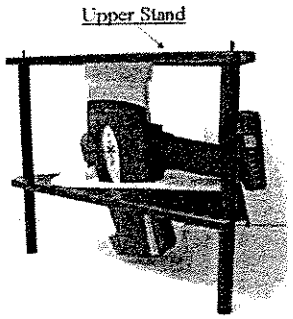


Figure 2.9. Mounting Upper Stand onto Testing Stand.

5. Put three knobs to secure testing stand onto analyzer. The iPAQ clip can be secured with any of the knobs. This clip grabs the base of the iPAQ cradle to hold the iPAQ securely in place.

6. Place the iPAQ in the cradle and connect it to the Auxiliary Port on the analyzer using the serial cable adaptor.

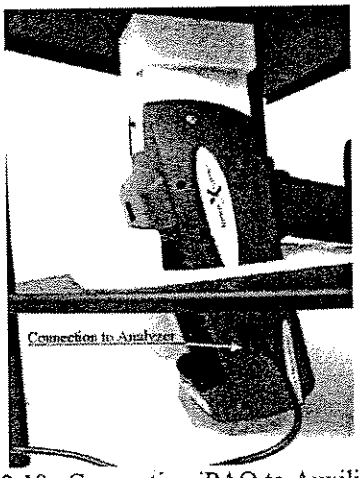


Figure 2.10. Connecting iPAQ to Auxiliary Port on analyzer.

3.0 Radiation Safety

3.0 IMPORTANT SAFETY INFORMATION

THE XRF SHOULD NOT BE POINTED AT ANYONE OR ANY BODY PART, ENERGIZED OR DE-ENERGIZED! The safe and proper operation of the Innov-X XRF instruments is the highest priority. These instruments produce ionizing radiation and should **ONLY** be operated by individuals, who have been trained by Innov-X Systems, Inc. and recieved a manufacturer's training certificate. Innov-X recommends that operators and companies implement a written Radiation Safety Program, with safety components specific to the site and application of use of the instrument. The Radiation Safety Program should be reviewed annually and revised appropriately by a competent individual.

The Innov-X analyzer is a very safe instrument when used according to manufacturer's recommended safety procedures as detailed in this chapter.

Radiation levels during testing are < 0.1 mR/hr on all surfaces of the analyzer except at or near the exit port for the radiation. This means that if an operator follows standard operating procedures, they will not obtain any detectable radiation dose above naturally occurring background radiation, on their hand while holding the analyzer, or on any area of their body.

This chapter details specifics of the radiation levels. It covers both standard (safe) and un-safe methods of operation, it provides radiation emission information, and also provides dose estimates for unsafe operations.

3.1 GENERAL SAFETY PRECAUTIONS AND INFORMATION:

Retain and follow all product safety and operating instructions. Observe all warnings on the product and in the operating instructions. To reduce the risk of bodily injury, electric shock, fire and damage to the equipment, observe the following precautions:

Heed service markings. Except as explained in this documentation, do not service any Innov-X product yourself. Opening or removing covers may expose you to electric shock. Service needed on components inside these compartments should be done only by Innov-X Systems, INC.

Damage requiring service:

- The power cord, plug or battery contacts for the battery charger are damaged.
- Liquid has been spilled or an object has fallen onto the instrument.
- The instrument has been exposed to rain or water.
- The instrument has been dropped or damaged.
- There are noticeable signs of overheating.
- The instrument does not operate normally when you follow operating instructions.

Safety Precautions:

Use the correct external power source: Ensure that the voltage is appropriate (100V-240 V/ 50-60 Hz) for charging the battery packs. Do not overload an electrical outlet, power strip, or convenience receptacle. The overall load should not exceed 80% of the branch circuit rating.

Use cables and power cords properly:
Plug the battery charger into a grounded electrical outlet that is easily accessible at all times. Do not pull on cords and cables. When unplugging the cord form the electrical outlet, grasp and pull the cord by the plug.

Handle battery packs properly; do not: disassemble, crush, puncture, short external contacts, dispose of in fire or water, or expose a battery pack to temperatures higher than 60 °C (140 °F).Do not attempt to open or service a battery pack.

WARNING: Danger of explosion if battery is incorrectly substituted. Replace only with Innov-X specified batteries. Used batteries may be returned to Innov-X Systems for disposal.

3.2 INNOV-X SYSTEMS – RECOMMENDED RADIATION SAFETY TRAINING COMPONENTS

Individual Companies and States have specific regulations and guidelines for the use of X-ray tube generated ionizing radiation. The purpose of the recommendations below is to provide generic guidance for an ALARA - best practice - approach to radiation safety. These recommendations do not replace the requirement to understand and comply with the specific policies of any state or organization.

1. **Proper Usage.** Never point the instrument at another person. Never point the instrument into the air and perform a test. Never hold a sample in your hand and test that part of the sample.
2. **Establish Controlled Areas.** The location of storage and use should be of restricted access to limit potential exposure to ionizing radiation. In use, the target should not be hand held and the area at least three paces beyond the target should be unoccupied.
3. **Specific Controls.** The instrument should be stored, in a locked case, or locked cabinets when not in use. When in use, it must remain in the direct control of a factory trained, certified operator.
4. **Time - Distance - Shielding Policies**. Operators should minimize the time around the energized instrument, maximize the distance from the instrument window, and shoot into high density materials whenever possible. Under no circumstances should the operator point the instrument at themselves or others.
5. **Prevent Exposure to Ionizing Radiation**. - All reasonable measures, including labeling, operator training and certification, and the concepts of time, distance, & shielding, should be implemented to limit radiation exposure to ***as low as reasonably achievable*** (ALARA).
6. **Personal Monitoring.** Radiation control regulations may require implementation of a radiation monitoring program, where each instrument operator wears a film badge or TLD detector for an initial period of 1 year to establish a baseline exposure record. Continuing radiation monitoring after this period is recommended, but may be discontinued if accepted by radiation control regulators. Please refer to Sect. 3.10 for a list of providers of film badges.

3.3 INNOV-X SAFETY FEATURES

The Innov-X analyzer is very safe when used correctly, however the analyzer does emit radiation through the analyzer window, and all precautions must be taken to reduce exposure to this radiation. In order to minimize the possibility of accidental exposure, the following safety features are standard in all Innov-X analyzers.

1. "Deadman" trigger. The trigger must be held for the duration of the test. This requires that the user consciously depress the trigger whenever x-rays are emitted, and ensures that the analyzer is attended at all times while x-rays are emitted.

   Upon completion of safety training, an INNOV-X certified trainer may deactivate this feature upon request. The deactivation of the trigger is recommended only if long tests are required (such as for soil mode) and if the unit is used primarily by only 1 or 2 users who utilize it frequently, in a

very controlled environment. In situations where multiple users are sharing the unit, it is recommended that the deadman trigger remain active.

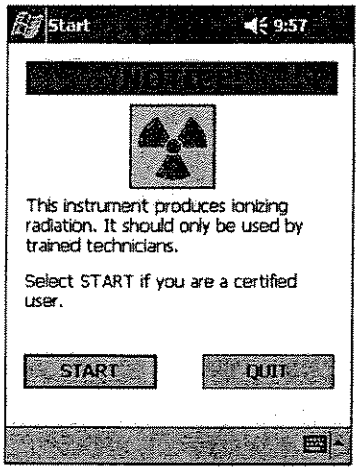
2. Software Trigger lock. In addition to the mechanical trigger lock, a secondary software trigger lock exists. Before using the trigger, the user must tap on a lock icon located in the lower right hand corner of the iPAQ screen. The user must then confirm that they wish to unlock the trigger. If the instrument is used continuously, the software trigger lock will remain off. If five minutes elapse between tests, the trigger will lock automatically.

3. Software Proximity sensor. The software requires that a sample be present in front of the analyzing window. This prevents the accidental exposure of bystanders to an open beam. If the analyzer detects that a sample is not present, it will abort the test and shut off x-rays two seconds after the test is started.

3.4 PERFORMING A TEST FOLLOWING APPROPRIATE RADIATION SAFETY PROCEDURES

Starting the Analyzer:

When an operator opens the Innov-X software on the iPAQ, he or she will be presented with the display shown to the right. Provided an operator has received training from an authorized Innov-X trainer, he/she should tap the START button to begin using the analyzer. From this point the operator is presented with the main menu of the analyzer to choose an operating mode and begin testing (described in Chapter 4). The remainder of this section is dedicated to operational and safety aspects that pertain to safe use and storage of the analyzer.



Starting a test using the trigger.

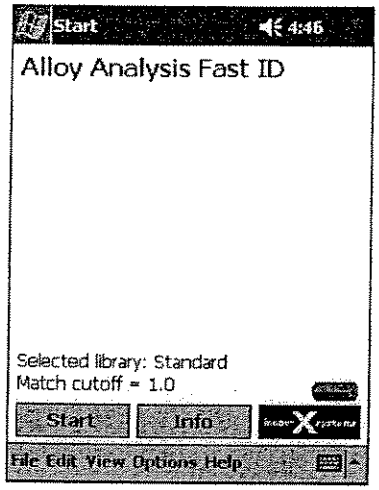
When the trigger is depressed, the analyzer supplies power to the x-ray tube and opens the shutter to emit x-rays. The analyzer is equipped with a trigger lock to prevent the user from accidentally beginning a test. Slide the lock from left to right to lock the trigger.

Recommended Operation: When the system is not in use, slide the trigger lock to the right to "lock" the trigger. This will prevent a person from starting a test accidentally when they grab the analyzer. The location of the trigger lock is shown to the right.

The trigger must be depressed for the duration of the test. Releasing the trigger will close the shutter and immediately end the test.

Figure 3.1 Handle of analyzer trigger and trigger lock are located at top of handle.

Starting a Test Using the "Start" Icon on the iPAQ Screen



This feature is disabled in all units shipped. It will become active only if the "deadman" trigger is disabled.

An operator may also begin a test by pressing the **Start** button on the touch screen, as shown at the right. The **Start** button, rather than the trigger, is generally used when the analyzer is docked into the testing stand. As an additional safety feature, the **Start** button also provides for "two handed" operation of the analyzer. To require two-handed operation, set the trigger lock by sliding the switch left to right. This will require the user to hold the analyzer with one hand and start a test by using the other hand to press the **Start** button.

This Feature is not available in Canada. All tests must be started via the trigger.

3.5 CORRECT AND INCORRECT INSTRUMENT USAGE:

The Innov-X XRF analyzer can be used in several different testing configurations. Safety guidelines are described for each configuration.

Configuration 1: Usage as a Handheld Alloy Analyzer:

In this configuration the analyzer is held in the hand, placed on various types of samples and a test is performed. Samples include pipes, valves, large pieces of scrap metal, basically any sample large enough to be tested in place, rather than held in the operator's hand. Point the instrument at a metal sample such that no part of your body including hands and/or fingers is near the aperture of the analyzer where x-rays are emitted.

Using the analyzer in this manner assures that the operator will not obtain a radiation dose to any body part or extremity in excess of naturally occurring background radiation. The radiation at any surface of the analyzer is < 0.1 mR/hr except at the exit port and the immediate area around the exit port.

The user should take care that personnel are not located within 3' (1 m) of the front end of the analyzer during testing, in the direction of the x-ray beam. Provided the analysis window is completely covered, there is virtually no radiation being emitted around the area of the sample. However, if a small component or curved surface is being analyzed, some radiation will be detectable.

Configuration 2: Usage in the Testing Stand

Innov-X strongly recommends that testing small pieces or small samples (rod, fasteners, turnings, XRF sample cups, bagged samples, etc.) be analyzed using the Innov-X Testing Stand. This allows the sample to be placed onto the analysis window of the analyzer without requiring the sample to be held by the operator. See figure below titled "Testing Stand Operation."

Note: If you are using the analyzer without the interlocked cover (as shown in Fig 3.2 below), be sure the analyzer is oriented such that the bottom of the handle is pointing towards the operator and the top of the analyzer (where the PDA normally is located during handheld operation) is pointing away from the operator. This configuration assures that any stray radiation emitted will be directed away from the operator, and there will be no detectable radiation exposure to the operator.

Note #2: Do not allow personnel to stand on the opposite side of the analyzer with respect to the operator's location as described in Note #1. Stray radiation may be emitted from the analysis area, particularly if the window is not completely covered, and that radiation will be directed upwards and away from the operator, provided the analyzer is oriented as described in Note #1.

Figure 3.2 Testing Stand Operation. Please refer to **Section 2.7: Testing Stand** for assembly instructions.

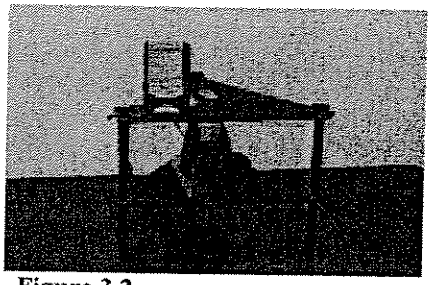


Figure 3.2.

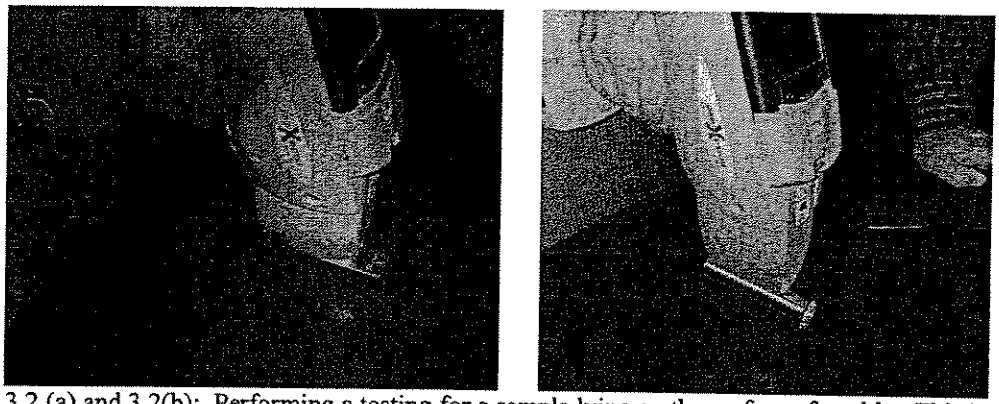
Warning: Innov-X strongly recommends that operators do NOT hold samples in their hand for testing. Never hold a small sample in your hand, and test that sample, such that your hand is exposed to the x-ray beam being emitted from the analyzer. This type of testing produces a small but non-negligible radiation dose to the operator's hand. Please see **Section 3.7: Radiation Doses for Several Scenarios** for dose levels. Also, see **Figure 3.4** for an example of incorrect usage.

Testing of Small Components:

Operators often are required to test small components, particularly in the field of alloy analysis. Examples of small samples include turnings, weld rod, wires, fasteners, nuts and/or bolts.

There are specific procedures to test small components. These procedures should be followed at all times. **Never hold a small part with your fingers or in the palm of your hand and perform a test. Doing so may deliver a significant dose of radiation to your fingers or hand.** Please refer to the Examples of Mis-use below.

Method 1: Testing a sample lying on a flat surface.



Figures 3.2.(a) and 3.2(b): Performing a testing for a sample lying on the surface of a table. This is a good way to test small samples, rather than holding them in your hand.

To analyzer small sample:

- Place the sample onto a flat surface.
- Place the window of the analyzer onto the sample and begin the test.

Safety Precautions:

Do not test samples in this manner at a desk or table where the operator is sitting are sitting. If the desk is made of wood or another non-metallic material, some radiation will penetrate the desk and may provide exposure to legs or feet if the operator is sitting at the desk or table.

Analytical Precautions:

If the sample does not completely cover the window, be sure the surface used does not contain metals or even trace levels of metals, as this may affect the accuracy of the XRF result. The XRF may report the presence of additional metals in the surface material. For this type of testing, it is good to place the sample onto a piece of 1100series aluminum alloy and perform the analysis. The operator should disable the aluminum analysis capability (See Section 8.3.3 in the manual for instructions).

Method 2: Use the testing stand as described above (see also Fig. 3.2).

Examples of Incorrect and Possible Unsafe Operation:

Improper Operation, DO NOT TEST SAMPLES LIKE THIS:

Exposure to the operator's hand/fingers will likely be minimal for this type of a testing, because the operator's hands and fingers are not in the primary beam. However, Innov-X believes that this type of the analyzer sets a poor safety precedent in that any operation where the operator places their fingers or hands near the window should not be permitted.

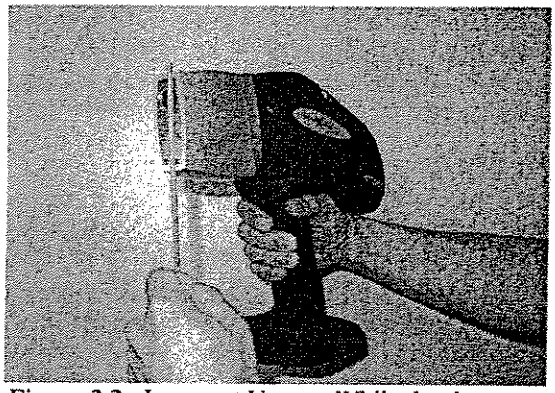


Figure 3.3. Incorrect Usage. While the dose to the operator's fingers/hand is negligible, testing this way sets a poor safety example for other operators, possibly encouraging other unsafe usage. Innov-X strongly recommends against this type of testing.

DO NOT TEST SAMPLES LIKE THIS:
Never hold a sample in your hand such that any part of your body or appendages are exposed to the x-ray beam. Testing samples in this way may generate significant radiation exposure (up to 27 R/hr) to the operator's fingers.

Figure 4.4 Extreme example of incorrect usage. An operator should NEVER hold small samples by hand

3.6 RADIATION WARNING LIGHTS AND LABELING:

3.6.1 Probe Light and Probe Label:

The Innov-X analyzer is equipped with warning lights that alert the operator when the tube is receiving power, and when x-rays are being emitted from the analyzer. Please see Fig. 3.5.

When the red light on the front nose of the analyzer is ON continuously (not blinking), this indicates the x-ray tube is receiving a low level of electrical power and the shutter is closed. The system is producing a low level of x-rays internally in this condition, but the shutter is providing adequate shielding to keep x-ray levels below levels of detection. The instrument is safe to be carried around or set down in this configuration.

When the red light is blinking, this indicates the tube is powered, the shutter is open and the analyzer is emitting x-ray radiation out of the analysis window. The analyzer should only be pointed at a sample, or be in the testing stand with a sample resting on the window, in this configuration.

3.6.2 Testing Light on Back of Analyzer:

The light on the back of the analyzer, shown in Fig. 3.6, is lit while a test is active. During a test – x-ray tube is energized and shutter is open – an LED on the back of the analyzer is lit. This LED remains lit until the test has ended. This light is for testing conditions (i.e. overhead) where the operator cannot see the Probe Light or the iPAQ display. The light turns off when the test is complete. When the light is off, the tube is de-energized and the shutter is closed.

3.6.3 Label Behind iPAQ:

The analyzer also has a label just below the iPAQ indicating, as shown in Figure 3.7:

CAUTION: Radiation. This Equipment Produces Radiation When Energized.

This label is required by most regulatory agencies. The term "When Energized" refers to the condition where the tube is fully energized and the shutter is open. This condition is also indicated by the red blinking light on the probe.

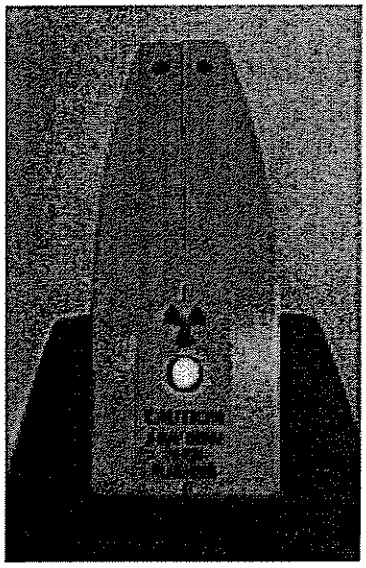


Figure 3.5. Probe light and labeling. When the light is on continuously, the x-ray tube is receiving minimal power and it is producing a minimum level of x-rays. The shutter is also closed so there is no radiation exposure to the operator or bystanders.

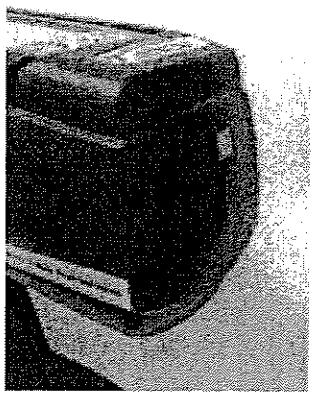


Figure 3.6. Back light on analyzer.

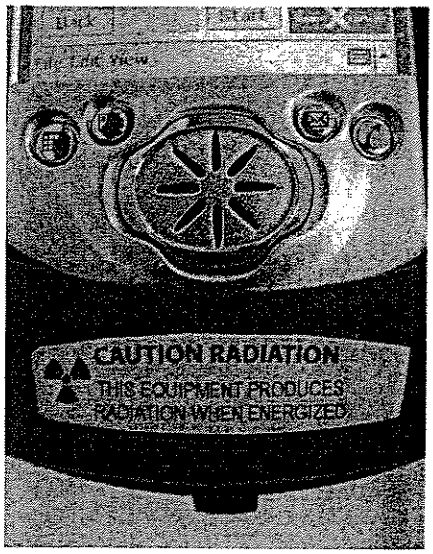


Figure 3.7. Label behind iPAQ.

3.7 RADIATION LEVELS FROM ANALYZER

Two pictures of the analyzer are shown below. In the first picture, all the relevant components referenced in this radiation safety section are displayed and labeled. The second picture shows a close-up of the front end of the window. The four sides A, B, C and D are indicated on this picture because they are referenced in terms of radiation levels output by the analyzer. The measured radiation levels for standard operating conditions are shown in the figures and tables below. Standard operating conditions are tube voltage operating at 35 kV, tube current of 5 uA, and 2 mm aluminum filtration.

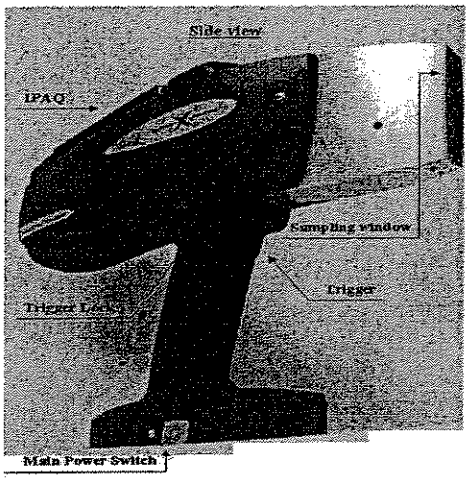


Figure 3.8 Innov-X Analyzer, Side View

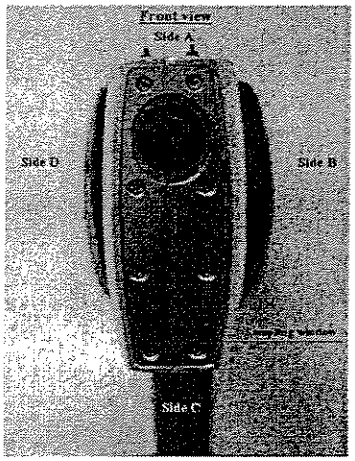


Figure 3.9 Innov-X Analyzer, Front View

Radiation Levels (mrem/hr) for Alloy Analysis, Standard Beam Conditions: 35kV, 5 uA, 2mm aluminum filtering:

Sample at Window	Trigger	Location A (Top)	Location B (Right Side)	Location C (Bottom)	Location D (Left Side)
Blank (Air)	<0.1	<0.1	<0.1	<0.1	<0.1
Metal	<0.1	<0.1	<0.1	<0.1	<0.1

Table 3.1. Dose rates (units of mrem/hr) at various locations with a metal sample covering the window and with no sample present. For "no sample" the analyzer is shooting the x-ray beam into air.

As shown in the Table 3-1, the dose to the operator's hand is negligible. The radiation levels at the side surfaces of the instrument snout (aluminum housing) are all <0.1 mrem/hour. Despite these low levels of radiation, there is no reason for any body part to be in the locations denoted A, B, C and D!

Table 3-2 shows the radiation levels directly in the x-ray beam that is emitted from the analyzer. Radiation levels at the exit aperture (or "port") are substantial. There is no reason for the operator or any personnel to be exposed by the direct beam. Operators should never hold samples in their fingers or cupped in their hands, as this may generate a significant radiation exposure.

Operations should never point the analyzer at another person and start a test, as this may also provide significant exposure to the person if they are within a few inches of the port of the instrument.

Radiation Levels in the Primary Beam Versus Distance from Port:
For Alloy Analysis, Standard Beam Conditions: 35kV, 5 uA, 2mm aluminum filtering:

Tube Conditions	At Trigger, or any part of operator's body.	At Window	4 inches	12 inches	36 inches	48 inches
35 kV, 5 uA, 2 mm Al filtering	<0.05	28,160	2,080	186	24	14
15 kV, 25 uA, thinner filter material	< 0.05	27,780	1,620	145	19	11

Table 3.2. Dose rates (units of mrem/hr) in the direct x-ray beam being emitted from the analyzer

3.8 RADIATION DOSES FOR SEVERAL SCENARIOS

In this section we provide data, concrete examples of use and misuse of the analyzer and common questions and answers we encounter when training personnel on the safe use of the Innov-X analyzer. The goal is to explain scenarios of safe versus improper usage of the analyzer.

The table below presents radiation doses for normal operating conditions and also for examples of misuse of the analyzer and even extreme misuse. Innov-X provides installation training that includes detailed radiation safety training and documentation designed to prevent misuse of the analyzer.

Example of Instrument Usage	**Radiation Exposure and Comments**
Normal Operation - Dose to Hand: User analyzes samples according to standard operating procedures described in this manual. Assumption: Operator using system with x-ray tube ON for 8 hours/day, 5 days/week, 50 weeks/year. (Practically constant usage).	Maximum exposure is to operator's hand, at the trigger. Exposure is < 0.1 mrem/hr. Annual exposure to hand is then < 200 mrem (2uSv). US: Maximum exposure under OSHA regulations is 50,000 mrem annually. Thus continuous operation provides a dose that is at least 250 times lower than maximum allowed by OSHA. Canada: Maximum exposure under ICRP regulations is 500 mSv for radiation workers and 50 mSv for the general public. Thus continuous operation provides a dosage 250 times lower for a radiation worker and and 25 times lower for the general public.
Normal Operation – Dose to Torso: Analyzer is used under the same operating conditions described above.	Exposure to Torso is so low it cannot be measured. To be conservative we use the same figure as the trigger, < 0.1 mrem/hrAnnual exposure using highly conservative operating conditions above is < 40 mrem. (0.2 uSv) Maximum allowed is 5,000 mrem under OSHA and 20 mSv under ICRP for radiation workers (1 mSv for general public).

Misuse Example 1:
Operator holds samples in front of window with fingers, such that fingers are directly in the primary beam. Do not do this!.

For fingers at the port, in the primary beam, the maximum dose to the fingers is 27,000 mrem/hr. Assume an operator performs a 10 sec test (typical). The dose to the operator's fingers or hand is 27,000 x (10/3600) = 75 mrem. If the operator did this 666 times/year they would exceed the allowable annual dose of 50,000 mrem to an extremity.

If the test time was 30 seconds instead of 10 seconds, the operator would exceed the annual safe limit of 50,000 mrem after 222 tests.
Even though it is unlikely to make this mistake so many times in a year, do not even do it once. Take the extra time to test a sample on a surface or use a testing stand.
Dose is about 440 mrem/year 4.4 mSv (year).
Maximum allowed dose is 50,000 mrem/year (US OSHA), 500 mSv/year (Canada ICRP radiation worker) or 50 mSv/year (Canada ICRP general public).

Misuse Example 2:
Operator places analyzer against body and pulls the trigger to start a test. Analyzer tests to preset testing time (usually 10 seconds) unless operator pulls trigger again to stop test. This applies to analyzer being in contact with operator or with bystander.

Dose at exit of sampling window is 27,000 mrem/hr.
Dose for a 10 second exposure with analyzer in contact with Torso: 75 mrem (.75 mSv).
US: If an operator did this act 66 times in a year, the operator would exceed the annual safe dosage to the torso.

If the testing time was 30 seconds instead of 10 seconds, thus the operator placed the port against his body or that of a bystander and performed a 30 second test, the dose would be 225 mrem. This is about the same as a mammogram. Repeating this gross mis-use 22 times would exceed the annual allowable limits.
Canada: Radiation worker would have to repeat this example of gross misuse 26 times to achieve the ICRP level of 20 mSv. (general public 1.3 times to achieve limit of 1mSv)

Misuse Example 4:
Operator manages to initiate a test for 10 seconds and exposes a bystander that is standing 12" away from analyzer port. What is exposure to bystander?

Note: The proximity sensor would automatically shut down the x-ray tube after 2 seconds, so this is an extremely improbably occurrence.

Note 2: Equations to scale these to other scenarios involving longer or shorter tests, and bystander being at distances other than 12" are provided at right.

Dose to bystander at 1 foot is 350 mrem/hr. For a 10 second exposure dose is 1 mrem. This is 5,000 times lower than the allowable dose to a worker in a year. This would have to happen 5,000 times to for that worker or bystander to obtain the maximum allowable dose.

Formula for calculating other scenarios:

$$Dose = 1\,mrem \left(\frac{13.25}{D + 1.25} \right)^2 x \left(\frac{t}{10} \right)$$

D = distance from port in inches
T = testing time

Example: Bystander is 3' away from port for a 30 second test. In this case the dose is calculated as:

$$Dose = 1\,mr \left(\frac{13.25}{36 + 1.25} \right)^2 x \left(\frac{30}{10} \right) = 0.38 mrem$$

US OSHA: Maximum allowable level is 5,000 mrem assuming bystander's torso is exposed. Thus, this misuse would have to occur 12,500 times in a year to the same bystander before that bystander achieved his maximum allowed dose.
ICRP: 5000 times for rad worker, 250 for general public

Comparative: Radiation Doses from Typical Exposures to Ionizing Radiation

Common medical and/or dental x-rays:	20-30 mrem each.
Mammogram:	100-200 mrem
Flying in a commercial jet coast to coast (6 hrs.):	1-2 mrem.
Daily exposure from background radiation: * depends on geographic location	0.3 to 0.5 mrem/day

Table 3.3 Radiation Doses from Typical Exposures to Ionizing Radiation

From the above table, nearly all the cases of analyzer misuse produce radiation exposures similar to flying in a commercial aircraft. Moreover, the typical exposure from a case of significant instrument misuse produces roughly the same dosage as the daily dose of radiation from naturally occurring background radiation.

3.9 COMMON QUESTIONS AND ANSWERS REGARDING RADIATION SAFETY

Question: When I'm shooting a piece of pipe or valve on a rack or on a table top, is there any exposure to people standing in other locations, or standing several feet away from the analyzer?

Answer: Even a thin amount of metal sample (1-2 mm thickness) is enough to completely attenuate the x-ray beam emitted from the Innov-X analyzer. Shooting a piece of material that covers the sampling window on the analyzer will completely shield any bystanders from radiation exposure. However, good practice recommends that the area for at least 4-5 feet in front of the analyzer is clear of people.

Question: If I forgot to switch the safety on the trigger to "ON", I pick up the analyzer and accidentally pull the trigger, is that dangerous to nearby personnel?

Answer: No, this example of misuse is not dangerous, but it may produce a non-negligible radiation exposure to nearby personnel. For an exposure to occur, the following things must happen. First, you must be holding the analyzer so that a bystander is actually standing in the x-ray beam being emitted. Just being near the analyzer is totally safe otherwise. Second, the bystander must be within 1-3 feet from the nose of the analyzer in addition to being in the beam path, to receive any appreciable dose. If all of these conditions are true, the dose received by a bystander is still extremely low. It ranges between 0.1 to 0.5 mrem depending on the exact location of the bystander. This dose is 10,000 to 50,000 times less than the allowed dose. Please see Misuse Example 4 in the table above.

Question: Do I need to create restricted areas where I am using the analyzer?

Answer: No, provided you are following normal operating procedures there is no reason to restrict access to an area where the analyzer is in use. The operator should take precautions to keep any personnel more than 3 feet away from the sampling window of the analyzer in the event of accidental misuse as detailed above. Should the operator also elect to test small components like weld rod as shown in Figure 3.3, the operator should also be sure that no personnel are standing within about 4-5 feet of the sampling window.

Question: How does the x-ray tube in the Innov-X system compare to a radiography system used for taking images of metal parts.

Answer: The x-ray tube used in the Innov-X system produces between 1,000 and 10,000 times lower power than most radiography systems (0.5-1 watt for Innov-X versus kW for radiography systems). This is because a portable XRF is designed to perform surface analysis of alloys and other samples, whereas radiography systems are designed to shoot x-rays entirely through metal components in order to obtain an image on the other side of the object being bombarded with x-rays. For example, many tube-based radiography systems use a 300-400 kV tube and currents in the tens or hundreds of milliamps (mA). The Innov-X analyzer uses a tube operating at 35 kV and 5-30 micro-amps. The radiation levels produced are therefore thousands or tens of thousands times lower with the Innov-X system.

Question: Should we use dosimeter badges with the Innov-X analyzer.

Answer: Dosimeter badges are required by some states, and optional by other states. Innov-X recommends that operators wear badges, at least for the first year of operation, as a general precaution to flag any misuse of the analyzer. Dosimeter badges are available for the torso (generally worn on the belt loop or shirt pocket) and are available as "ring" badges. The best single badge to obtain is a ring badge that is worn on a finger, on the opposite hand used to hold the analyzer. This will record accidental exposure for the most likely case – an operator grabbing a small sample and holding it in one hand while analyzing it. Note: these badges generally have a threshold of 10 mrem, and are renewed monthly. So it will take several cases of misuse even to obtain a reading on a typical badge. When purchasing a badge, obtain the type used for x-ray and low energy gamma ray radiation.

3.10 SAFE GUARDS AND EMERGENCY RESPONSE

The main safeguards to use as an owner of an Innov-X portable XRF are really intended to restrict access to properly trained operators:

1. Keep the system in a controlled location, where only authorized users are likely to have access to the analyzer at any given time.
2. Make a simple sign that is kept with the analyzer indicating that an operator must have completed a training class provided by your company or must have attended an Innov-X training course in order to use the analyzer. Note that when the Innov-X system is turned on, the screen displays a message indicating that the system should only be used by authorized personnel.

Emergency Response:

Because the Innov-X system is a battery operated, x-ray tube based analyzer, the emergency response plan is very simple. If the operator believes the analyzer is locked up in an "OPEN" position, they should do two things:

1. Press the On/Off switch on the base to power the analyzer off. The green LED indicator will turn off, indicating system power is off. At this point it is not possible for the analyzer to be producing x-rays.
2. As an additional precaution, the operator may remove the battery trap door at the bottom of the analyzer (have the nose pointing away from personnel), and pull out the battery. Even if the operator has failed to properly power the system off in Step #1, removing the battery guarantees that no x-rays can be produced. There is no electrical power being provided to the x-ray tube.

Note: It would be highly unusual for an operator to somehow lock up the analyzer with the x-ray tube powered on. This would require the operator to crash the iPAQ during an analysis. If this happens the analyzer will shut off the x-ray tube 10 seconds after the last communication with the iPAQ. However, if at any time the operator believes the x-ray tube is on and no test is in progress, powering off the analyzer and restarting will automatically shut down the x-ray tube and close the shutter. It will no longer be possible to produce x-rays at this point.

3.11 DOSIMETER BADGES

Dosimeter badges are provided as a monthly service by several companies, listed in this section (see below). The badges are generally provided monthly, and the operator returns the previous month badges to the company for analysis. The operator receives a monthly report showing any personnel with readings higher than typical background radiation.

Dosimeter badges are required by some states, and optional by other states. Innov-X recommends that operators wear badges, at least for the first year of operation, as a general precaution to flag any misuse of the analyzer. Dosimeter badges are available for the torso (generally worn on the belt loop or shirt pocket) and are available as "ring" badges. The best single badge to obtain is a ring badge that is worn on a finger, on the opposite hand used to hold the analyzer. This will record accidental exposure for the most likely case – an operator grabbing a small sample and holding it in one hand while analyzing it. Note: these badges generally have a threshold of 10 mrem, and are renewed monthly. So it will take several cases of misuse even to obtain a reading on a typical badge. When purchasing a badge, obtain the type used for x-ray and low energy gamma ray radiation.

Dosimeter Companies:

Here are two companies that provide badges as a regular service. There are certainly many more.

Landauer Inc.	AEIL
Glenwood, IL	Houston, TX
708-755-7000	713-790-9719

3.12 TYPICAL REGISTRATION REQUIREMENTS

Innov-X maintains a database of the registration requirements for every state, including sample registration forms. Most states require some form of registration, and generally they require the registration to be received within 30 days of receipt of the instrument. Some states require no registration, while a few require notification in advance. Please contact Innov-X for specific questions regarding the state where the instrument will be used, or for copies of registration forms.

In general a company will have to provide the following information regarding the device:

1. Purpose of device. Generally this is "Analytical" or "Industrial." Be sure to inform the state registration office that the device will NOT be used for radiography or for medical uses.
2. Radiation Safety Officer – Monitors training, safe use, and controls access to the instrument.
3. Authorized Users – Trained by Innov-X Factory Authorized Representatives in the safe and proper use of the XRF.
4. Operating parameters of the analyzer – 35 kV, 5-30 micro-amps.
5. Type of system, either fixed, mobile or portable. Generally the correct choice is "Portable."
6. User Training Specified – Indicate that only individuals receiving manufacturer training, documented by a manufacturer's training certificate will operate the instrument.
7. Personal Monitoring. This may be required by radiation control authorities. Many registration forms will ask that you indicate whether or not you intend to perform dosimeter monitoring.
8. Copy of Registration & Manual at the Job Site

If you have any questions regarding the type of registration form or filling out the form, please contact Innov-X Systems. Many states may confuse a portable XRF system that uses a tube with medical or industrial radiography systems. This is because of the relative newness of portable tube-based systems. In all likelihood, Innov-X personnel have experience providing the necessary documentation to the state in question, and can readily assist the customer in this process.

4.0 Operation

4.0 OPERATION - GENERAL

Power to the instrument is controlled by the ON/OFF button on the base of the pistol grip. The green LED next to this button will illuminate when the analyzer power is on. The iPAQ operates on the Microsoft Windows CE ® operating system and is activated separately by the power button on the right top face, just over the display. The trigger is locked via the software and can be locked manually by moving the trigger lock found just above the trigger.

4.1 WORKING WITH THE HP iPAQ Pocket PC®

The Microsoft Windows CE ® operating system and Innov-X software provided on the iPAQ handheld computer are operated by user input through the touch screen. For comprehensive details on the iPAQ's operation, please refer to the iPAQ reference materials included with your unit.

General tips

- The Start Menu is found in the upper left corner of the iPAQ screen. This is used to launch all applications, including the Innov-X Systems Analyzer software.
- The instrument is designed as a "point and shoot" system that requires little, if any, entry of information for most operations. In the event the user modifies the grade library, enters testing information data, or performs other functions, it will be necessary to enter data via the virtual keyboard, which can be accessed by tapping the keyboard icon in the lower right corner. The iPAQ also includes character recognition software. This can be selected from the drop-down menu to the right of the keyboard icon.
- The File toolbar which will be used to Change Functions, Screens and Options is located at the bottom of the screen.
- It is possible to cut, copy, rename and delete files from within Windows File Explorer by selecting the file to be modified and holding the stylus on the screen for 2 seconds.
- Pressing buttons on the bottom of the iPAQ will perform various functions that are described in the iPAQ documentation. The button on the right hand size of the analyzer is the iPAQ task manager. Pressing this button will show all programs that are currently open. Open files can be closed from this menu. Simply hold the stylus on the file for a few seconds. The option to close the file will appear.

4.2 OPERATION - MAIN SOFTWARE SCREENS

The Innov-X Software consists of three main screens:

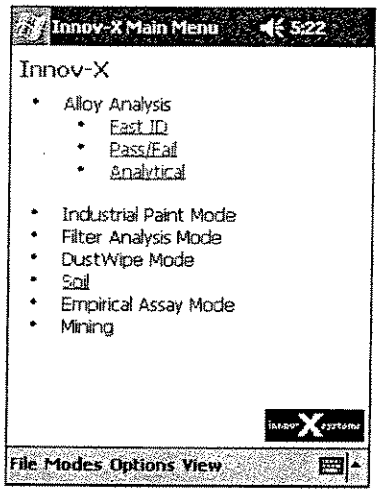
- **Main Menu screen:** Used to select the analysis mode, open the results screen, and change the administrator password.
- **Analysis Screen:** Used to change settings, edit libraries, and perform tests.
- **Results Screen:** Displays results from current reading, allows scrolling back to previous test results. Allows recorded data to be exported to a comma delimited file which is directly compatible with Microsoft Excel.

4.2.1 Innov-X Main Menu

The main menu below appears upon startup. The Main Menu allows you to choose an analysis mode, as well as perform certain administrative functions such as changing your login password. The modes which

are available on the analyzer are shown in blue. For information on adding additional analysis modes to an analyzer, please contact the Innov-X Sales Department at 781-938-5005.

- **Use the Main Menu to select the desired analysis mode.** The analysis mode can be selected by either tapping on the name of the method (shown in blue) or by selecting the appropriate mode from the Modes menu.
- The administrative password can be changed by selecting ***Options → Change Password.***
- It is possible to go directly to the Results Screen by selecting ***View→Results***. If the results screen is opened in this manner, it is possible to view results when the iPAQ is not connected to the analyzer.

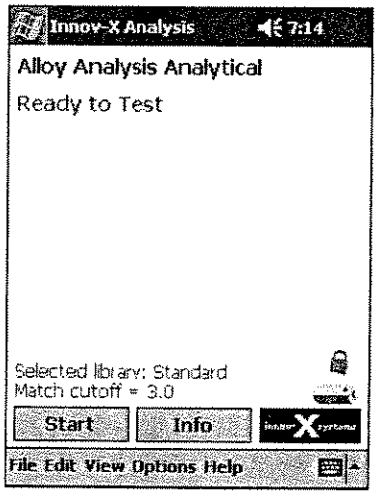


4.2.2 The Analysis Screen

Selecting a mode opens the analysis window for that mode. All data acquisition and analyzer control are done from this window. This window allows the user to start or stop an analysis, change testing parameters, and modify the fingerprint and grade libraries (Alloy Analysis only).

The analysis screen runs continually while during normal instrument operation. From the results menu, it is always possible to go back to the Analysis screen by selecting ***File→Exit*** or by tapping the X in the upper right hand corner of the screen.

The analysis screen for Analytical mode is shown to the right. Screens from other modes are similar and will be described in later in this manual. The analysis screen shows the name of the mode that is currently active, a start/stop button (which is inactive in most cases), an info button that is used to enter descriptive information for any given test, a trigger lock and a battery indicator. In addition, a message appears directly below the name of the mode which will indicate the current state of the analyzer. Typically it reads "Ready to Test," but also provides other information in certain circumstances. Any mode specific information will be displayed at the bottom of the screen above the menu choices.

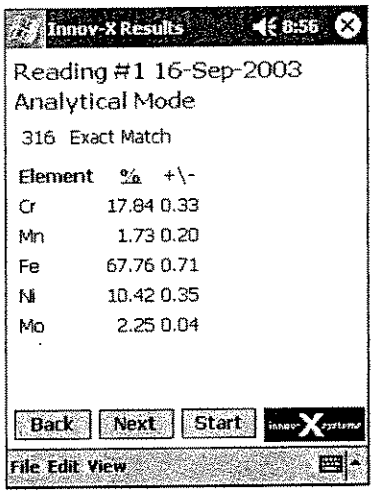


4.2.3 The Results Screen

The Results screen displays the current reading and old data. All data handling functions such as exporting and deleting readings are carried out from this screen. Once the Results Screen is open, the user may start new tests without going back to the analysis screen by pulling and holding the trigger. Tapping the X in the

upper right hand corner will return the user to the analysis screen without starting a test. If no analysis mode is running, an Exit button will appear which will close the Results screen.

The Results screen is automatically shown at the completion of any analysis. It can also be accessed from the analysis screen for any mode or the **Main Menu**, by selecting ***View→Results***. Once the Results screen has been opened, the information which is displayed can be changed by selecting options from the View menu. The various viewing options will be described in detail in later chapters.

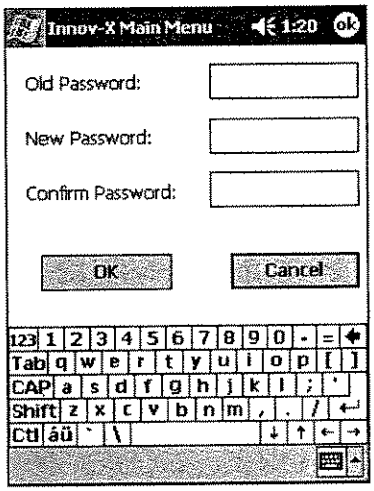


4.3 PASSWORDS - ABOUT PASSWORD PROTECTION

Certain functions such as adding and deleting fingerprints from the libraries, and Pass/Fail setup have been specified as Administrative Level Functions. These functions are described in detail in later sections of the manual. In order to use these functions, a password must be entered. The default password is set as the lowercase letter "z". This password can be entered whenever the system prompts for a password.

Changing the Administrator Password.

The Administrator password may be changed at any time from the **Innov-X Main Menu** by choosing ***Options→Change Password.*** When the change password option is selected, this screen will appear.



If you are changing the password for the first time, enter the letter "z"; otherwise enter the current system password. Then, choose a password and enter it twice, once in the "New Password" box and again in the "Confirm Password" box. Passwords may be any combination of letters or numbers.

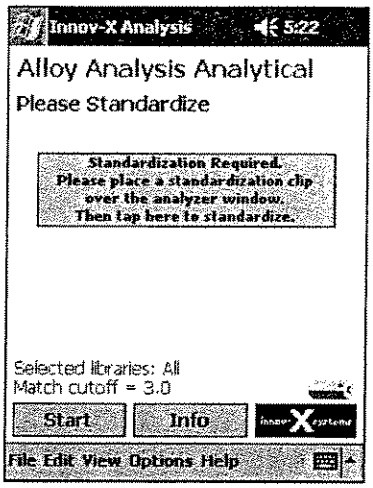
4.4 STANDARDIZATION

4.4.1 Standardization Procedure

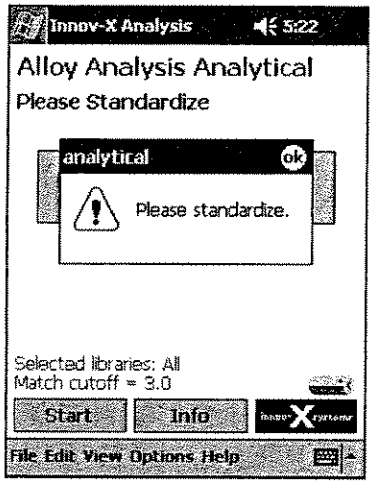
Before performing tests, it is necessary to standardize the instrument. This automated procedure involves collecting a spectrum on a known standard (Alloy 316) and comparing a variety of parameters to values stored when the instrument was calibrated at the factory. If there are any problems with the instrument, they will be indicated by an error message.

The standardization procedure takes about 1 minute. Standardization must be done any time the analyzer hardware is initiated or restarted and must be repeated if the instrument is operating for more than 4 hours. It is possible to re-standardize the instrument at any point while the software is running. Standardization is always initiated from the Analysis Screen of any Mode.

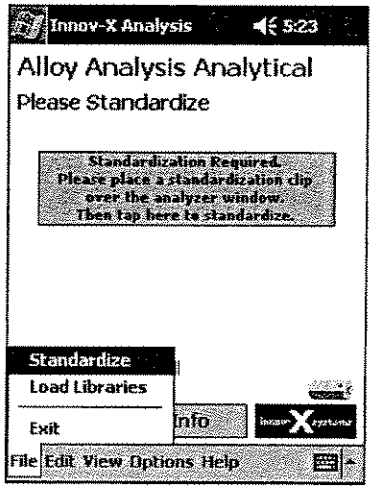
If the analyzer is restarted, you will be required to standardize the instrument before performing any measurements. This is indicated by the message "**Standardization Required. Please place a standardization clip over the analyzer window. Then tap here to standardize.**" on the analysis screen



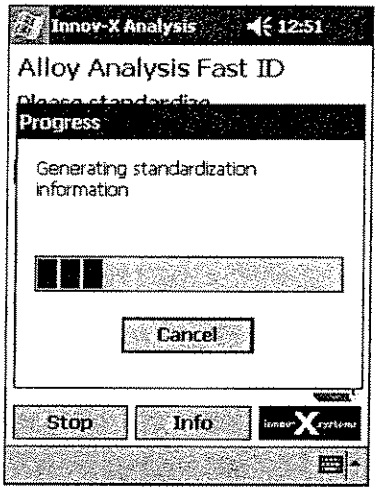
It is not possible to start a test before standardization. If the trigger is pulled before the standardization procedure is completed, a message box will appear. Press **ok** to acknowledge and clear the message.



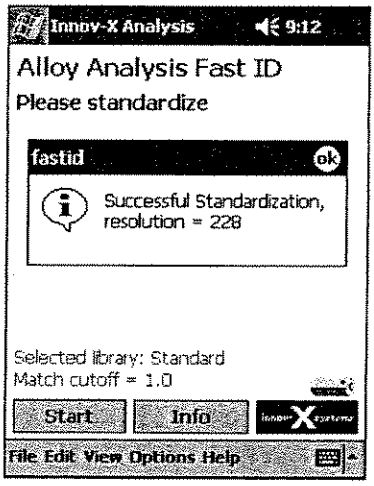
To initiate the standardization procedure, snap the standardization piece on the front of the instrument. Verify that it completely covers the analyzer window. When using a standardization mask with a weld collimator, be sure that the solid portion of the mask covers the analyzer window. Tap the grey box in the center of the screen or select ***File→Standardize*** to begin.



When standardization is in progress, the red light on the top of the instrument will blink, indicating that the X-ray tube is energized and the shutter is open. In addition, the amber light on the back of the instrument will illuminate and a status bar will appear, tracking the progress of the measurement.

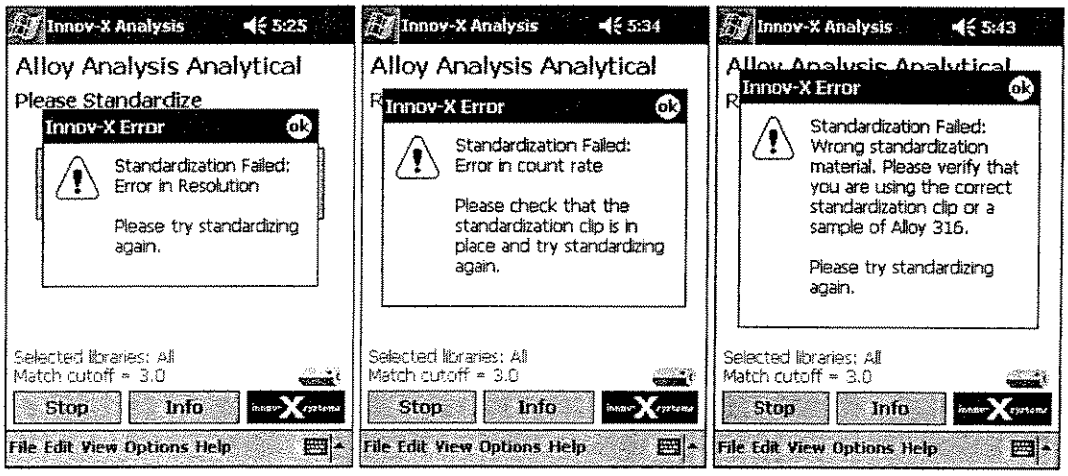


When standardization is complete, the message "Successful Standardization" will appear, along with the resolution of the instrument. Tap **ok** to acknowledge and clear the message. The instrument is ready for testing.

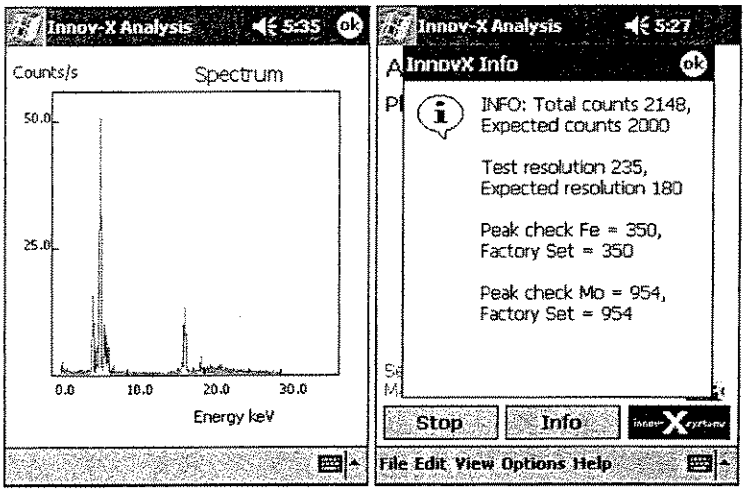


4.4.2 Standardization Errors

The analyzer performs several diagnostic checks during the standardization process. If the standardization fails, the instrument will prompt the user regarding the next step. Several errors could occur while standardizing: "Wrong Standardization Material," "Error in Resolution" or "Error in Count Rate"

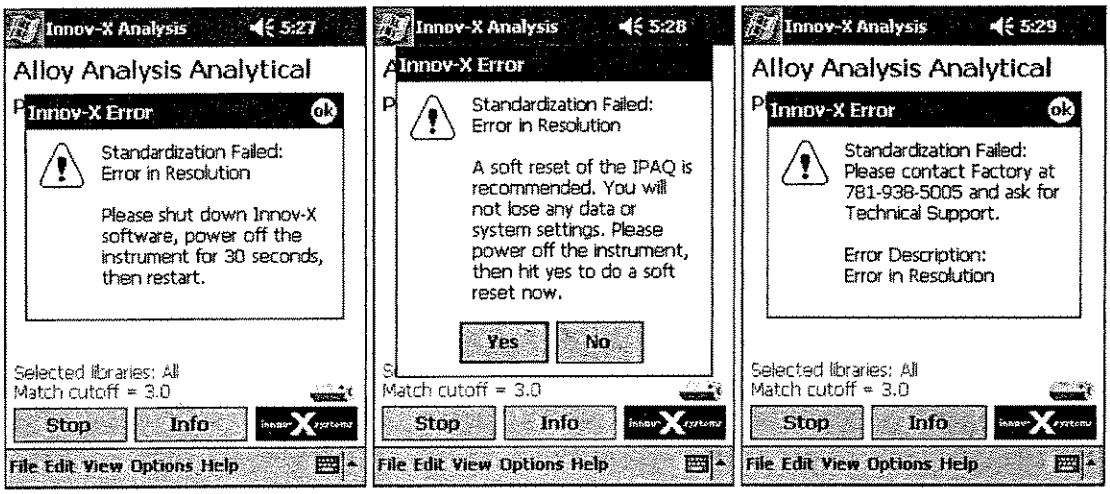


After closing the Standardization Failed message, two additional screens will appear. The first is a picture of the spectrum generated during the standardization. The second is a summary comparing factory set values for resolution, count rate, and peak positions to values calculated during the standardization.



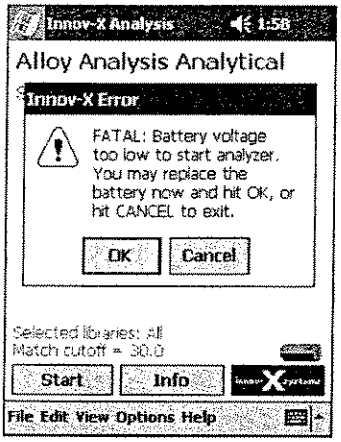
When standardization fails, verify that the standardization mask is in place, and attempt standardization again. To restandardize after a failure, tap the grey box in the center of the display, or choose ***File→Standardize***. If you are using a weld collimator, make sure that the solid part of the mask is covering the window.

If standardization fails again, exit the analysis screen and power off the instrument. Restart and restandardize. If the standardization fails a 3rd time, you will be prompted to perform a soft reset of the iPAQ. Selecting Yes on this screen will automatically soft reset the IPAQ. You should also power cycle the instrument. Restart and restandardize. If the standardization fails again, replace the battery in the instrument and attempt another standardization. If this fails, please contact the Innov-X Systems service center at **781-938-5005.**



4.4.3 Battery Replacement and Initialization/Standardization

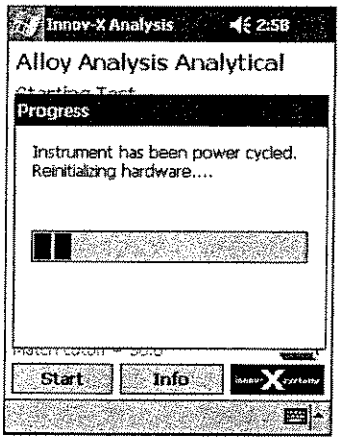
When the battery is too low to take a measurement, an error message will appear:



In order to continue testing, replace the battery immediately, and then tap "OK." The analysis screen will remain open, and the instrument will reinitialize. This process will take 1 minute. It is not necessary to re-standardize, provided that less than 4 hours has elapsed since the last standardization and the battery swap is completed within 10 minutes.

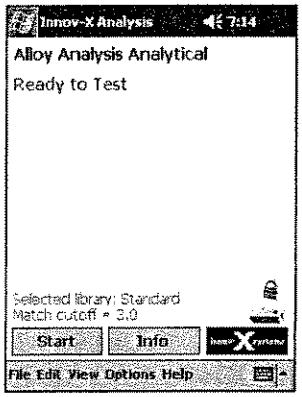
After re-initialization is completed, testing can continue.

If the battery is not replaced, and cancel is selected, the Analysis screen will close. When the software is restarted, the instrument will go through a complete 1 minute initialization and will require standardization.

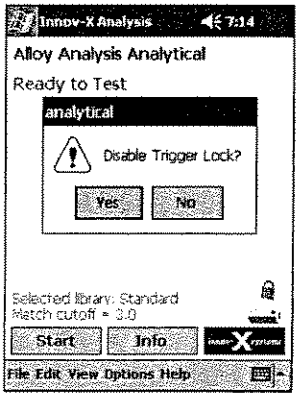


4.5 THE SOFTWARE TRIGGER LOCK

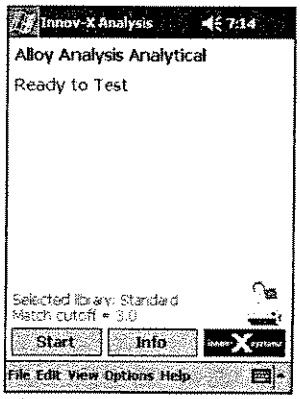
Innov-X analyzers are equipped with a software trigger lock which prevents the trigger from being actuated unintentionally. The lock is released by tapping an icon on the iPAQ screen. Once the lock is released, it will remain unlocked for subsequent tests, until more than five minutes has elapsed between tests. At that point, the trigger lock will be activated and will need to be disabled before additional testing can commence.



Tap the lock icon located directly above the battery indicator.



Select yes to disable the trigger lock



The open lock icon indicates when the trigger is disabled.

4.6 TEST INFORMATION - LABEL INPUT

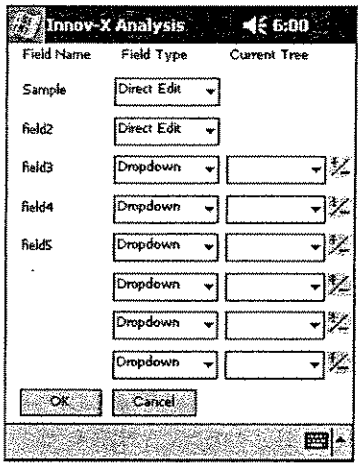
Information such as sample name, and identifying characteristics can be stored with each measurement. This is done from the test information (Test Info) screen which can be accessed from the **Analysis Screen** of any mode by tapping the **Info** button, or selecting ***Edit→Edit Test Information***.

The **Test Info** screen consists of eight fields. The name and format of each field can be changed by using the **Modify Test Info Template** feature described in section ***4.5.1* Modifying the Test Info Template**. The process of entering test information prior to each analysis is described in section **4.5.2 Entering Test Information**. Finally, the process of entering or changing test information after the analysis has been completed is described in section **4.6.3 Editing Test Info from the Results Screen**.

4.6.1 Modifying the Test Info Template

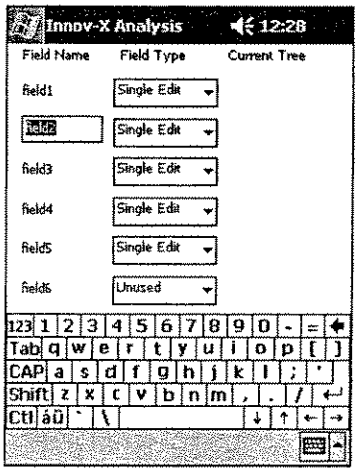
Test Info fields are modified via the Modify Test Info Template option found in the edit menu on the analysis screen in every software mode. Each field can be designated to be Direct Entry, Drop-down, or Tree. Direct entry fields allow users to enter characters directly from the virtual keyboard, or a bar code reader. Drop down menus provide a list of options to choose from. Trees are more complicated drop-downs; which allow users to subdivide large numbers of choices for ease in quickly locating the correct label. For example, a user may set up a tree with several parts for a main assembly. Subassemblies for the parts can be linked to their parent parts.

To make any changes to the Test Info format, select ***Edit →Modify Test Info Template*** from the analysis screen of any Mode. Modifications of Test Info screens are specific to each mode, and will need to be made to each mode if more than one is used.



4.6.1a Changing Field Names

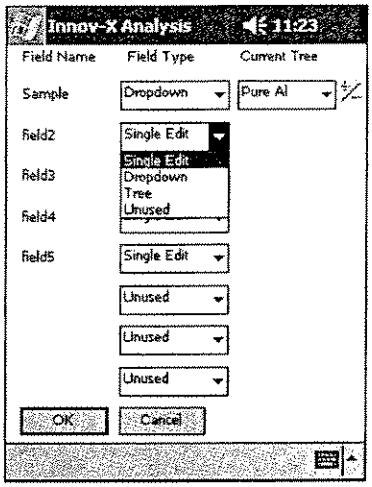
Field names can be edited by tapping on the current name. This will open an editable text box. A new name can be entered with the virtual keyboard. Selecting another cell or tapping **ok** will save this info.



4.6.1b Selecting Field Type

From the Modify Test Info screen, the type of field can be selected from a drop-down menu. Simply tap the arrow in the Field Type box for the field being modified.

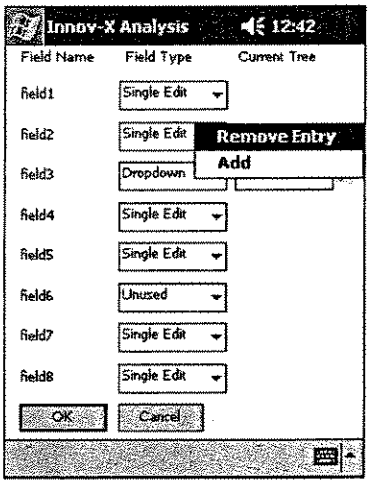
- Select **Direct Edit** for a text field which will accept data from the virtual keyboard, or a bar code scanner.
- Select **Drop-down** for a drop-down list
- Select **Tree** for a Drop-down menu with many choices, some of which may be grouped into categories and subcategories.
- Select **Unused** to eliminate the field from the Test Info screen.



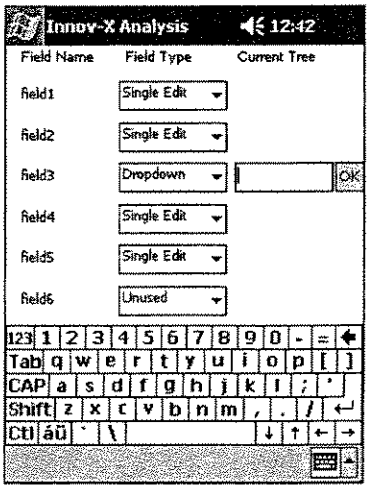
4.6.1c Changing Drop-down Menu Entries

Once a field has been designated a drop-down menu, entries can be added or deleted by clicking the +/- symbol to the right of the field. Two choices will appear; **Remove Entry** and **Add**.

To delete a drop-down entry, first select the label to be deleted, then press +/- and tap **Remove Entry**.

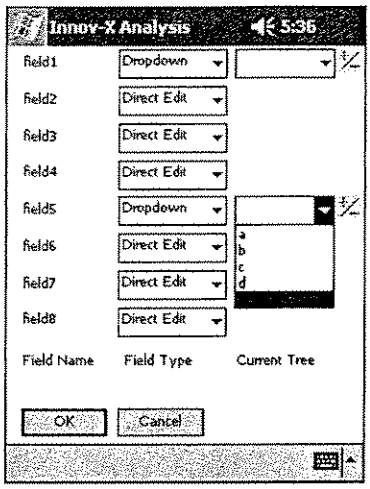


To add an entry from a drop-down list, tap the +/- symbol next to appropriate field, and select **Add**. Type the new info into the blank text box that appears. Select **OK** and the entry will be added to the drop-down menu.



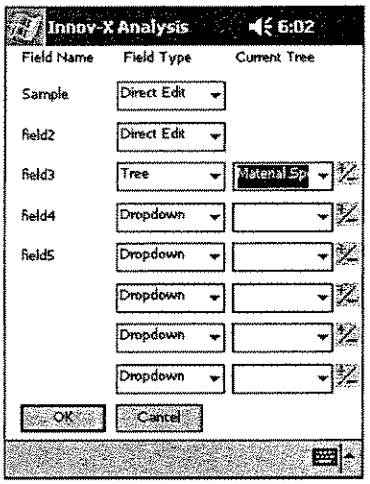
Repeat the process above to complete the complete drop-down list.

If it is anticipated that a drop-down field will not be used for all samples, enter an empty field as a choice so you can choose to leave the field blank.



4.6.1d Changing Tree lists.

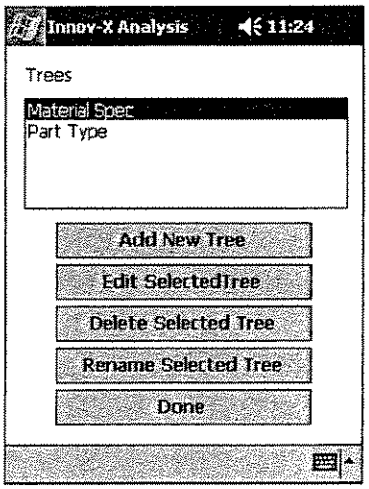
Once a field has been designated a tree, modifications to the contents of the tree can be made by tapping the +/- symbol to the right of the tree.



All modifications to trees are made from the menu shown on the right.

It is possible to add, edit, delete or rename trees. Select the appropriate choice from the menu to perform any of these functions.

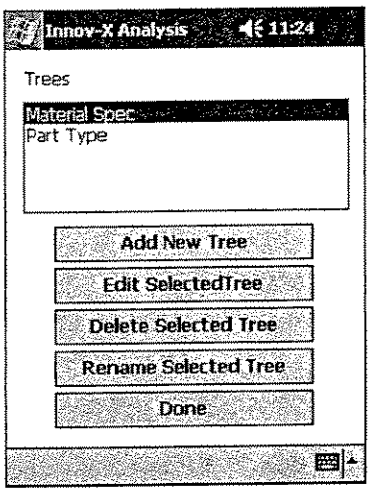
When you have finished creating/editing your tree, highlight it and select **Done.**



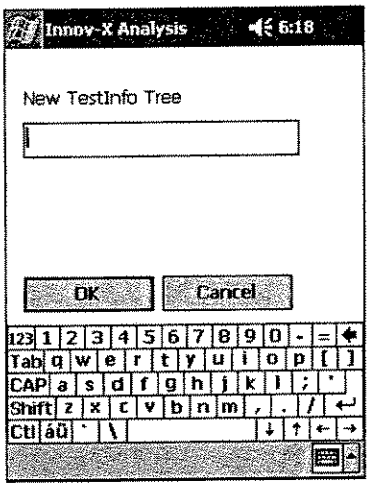
The following is an example of how a user might create a tree:
A manufacturer of tubes and valves tests all parts to ensure that they're made of the proper material. The company's QC procedure involves labeling each test with the part number of the item. Rather than forcing operators to look through a long list of part numbers, a tree is created in order to subdivide the parts number into groups based on part type.

The procedure for creating the tree is as follows:

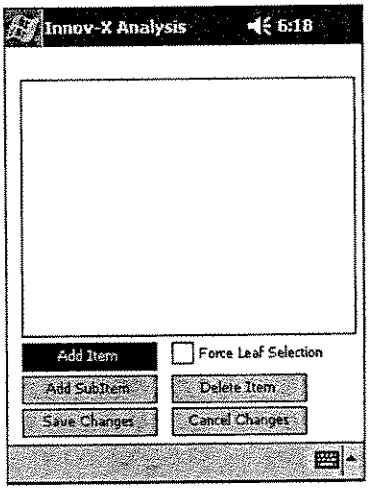
Select: Add New Tree:



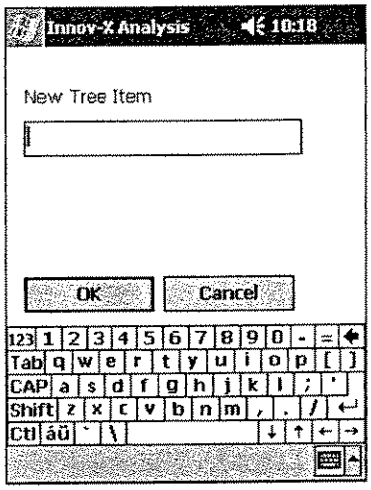
Enter the Name of the Tree in the text box and select OK.



Tap Add to add the first item

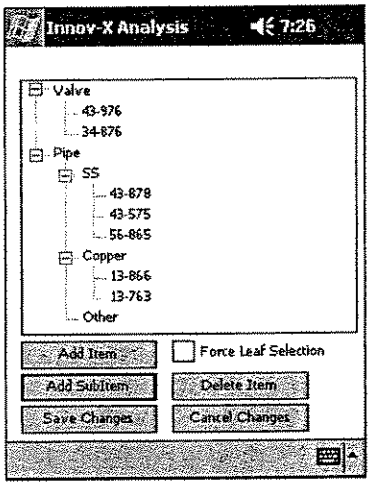


Enter the name of the item



Once the tree is started, continue to Tap Add Item to add a top level menu item, or select an item and tap Add SubItem to link a subcategory to the item. Continue until all items have been added.

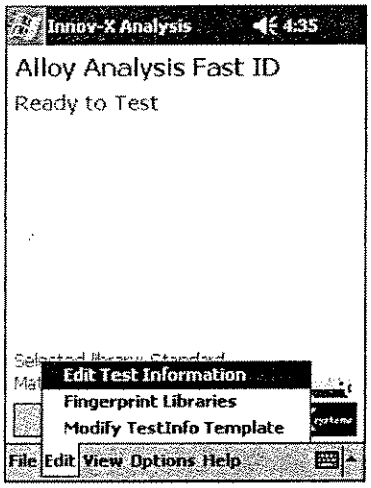
In this example, the part numbers for pipes and valves are separated into categories. The pipes are further subdivided by material type.



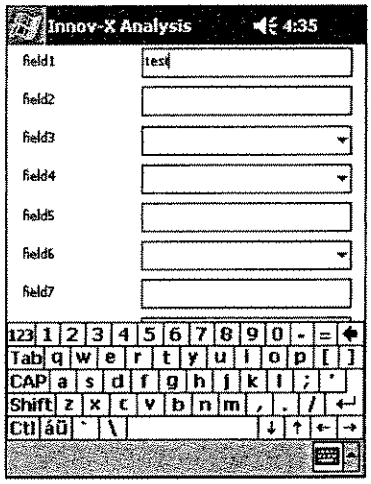
Clicking the "Force Leaf Selection" will require that the user select a bottom level menu item, (in this case, a part number.) If Force Leaf Selection is not checked, users may choose any field included in a tree, including category labels, such as Valve or Pipe in this example.

4.6.2 Entering Test Information

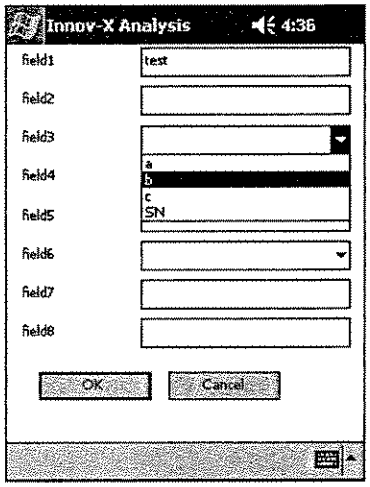
1. To enter the Test Info screen, you must be in the Analysis Screen. If the Results Screen is open, tap the ⊗ in the upper right hand corner to return to the Analysis Screen. From the Analysis Screen, select ***Edit→Edit Test Information,*** or tap the **Info** icon.



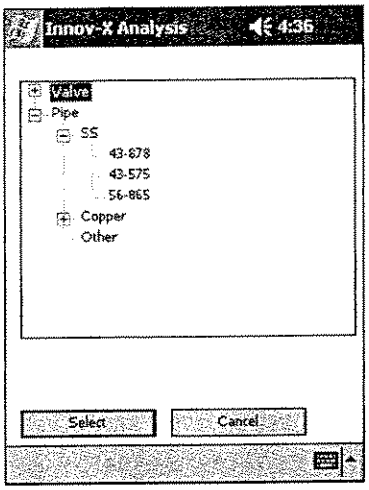
2. To enter a unique sample name or number, select a direct entry field by tapping anywhere within the field. Use the virtual keyboard to enter the information.



3. To select information from one of the drop-down menus, tap the arrow to the right of the box. Select the desired entry.



4. Some drop-down fields are formatted as trees. To select information from these fields, tap the arrow to the right of the box. A screen will appear showing options. The plus (+) symbol will appear before some choices indicating the presence of sub-items. Tap on the + symbol to expand the menu. Tap on any item or sub-item to select it, then press **Select**.

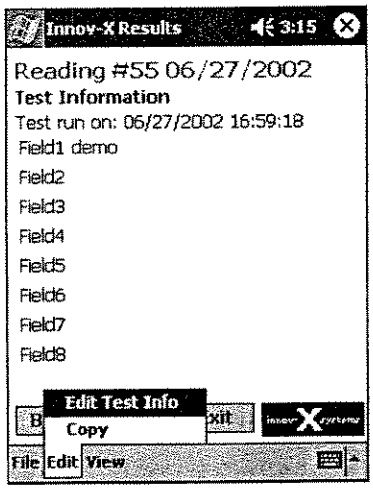


5. When all the necessary data have been entered. select OK
6. The information entered in the test info screen will be saved with each reading until the test info screen is modified again.

4.6.3 Editing Test Info from the results screen

Test information can be edited, or added to a test after its completion.

- From the results screen, scroll to the reading to be modified.
- Select ***View →Test Info*** to see in the information which is already stored.
- Select ***Edit → Edit Test Info*** to bring up the editing menu.



You will then be presented with the same test information screen described in **Section 4.5.2: Entering Test Information.**

4.7 EXPORTING AND ERASING DATA

Because the memory of the iPAQ is limited, you should periodically backup the data on your analyzer, and erase the memory. Depending on test volume, it is recommended that all data is erased on a weekly or monthly basis.

4.7.1 Installing ActiveSync

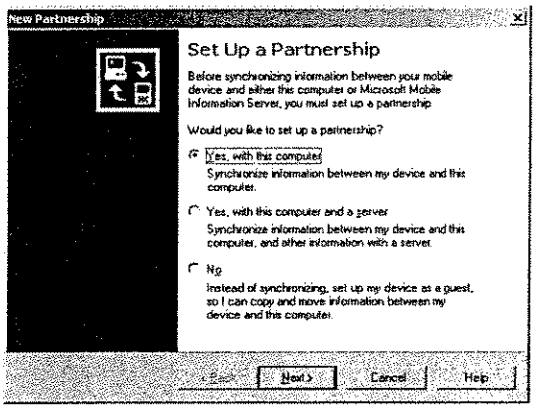
In order to copy files between the iPAQ and a desktop PC, Microsoft Active Sync Software must be installed on the desktop PC. Innov-X strongly recommends that you download the latest version of ActiveSync from the internet. ActiveSync v3.7 may be downloaded from http://www.microsoft.com/windowsmobile/resources/downloads/pocketpc/activesync37.mspx

If it is not possible to download the latest version, an ActiveSync CD (v3.5) was shipped with your analyzer. Check behind the foam in the instrument case.

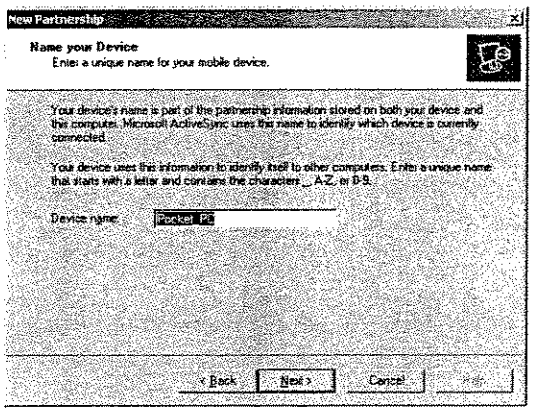
The iPAQ cradle should be hooked up to the USB port on the desktop computer before installing software.

The Procedure for installing and setting up ActiveSync is as follows:

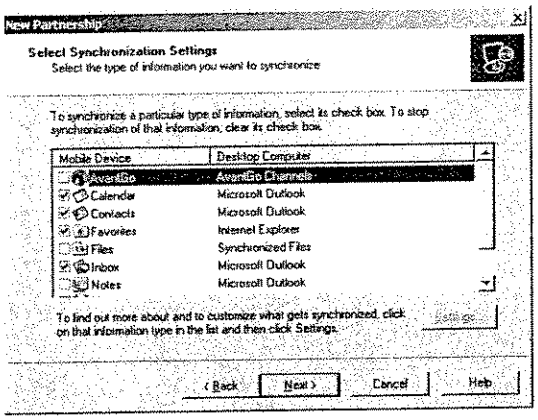
1. Insert the ActiveSync CD in your CD Drive. It will start automatically. The CD contains information about Getting Started with Your Pocket PC. This changes periodically, so it's difficult to describe exactly what the screens will look like. Step through the screens until you see the option "Install ActiveSync." Select this to start the installation process.
2. Follow the prompts on the screen. When given the choice, select "Run this program from its current location" and click OK.
3. Complete the install process. You will be required to restart your computer in order to complete the installation.
4. After restarting your computer, dock the iPAQ in the cradle. The iPAQ should automatically communicate with your computer. If it doesn't, check the connections and try removing the iPAQ and reseating it. If that doesn't work, try doing a soft reset on the iPAQ
5. When the computer communicates, you will be prompted to "Set Up a Partnership." Select "Yes, with this computer"



6. Enter a name for your iPAQ and click next.



7. You will be prompted to "Select Synchronization Settings." **Select "Files" only.** ***It is important to make sure that*** **Files** ***is the only item checked. Otherwise, the files such as address books and emails will be copied from the desktop computer to the iPAQ.***



8. Step through the rest of the process.

9. A folder will automatically be created on the PC's desktop with the name of the device entered in step 8 above. Results files saved on the iPAQ will automatically be synched and will be stored in this folder. Opening this folder and clicking on the name of the file will open the file in Excel.

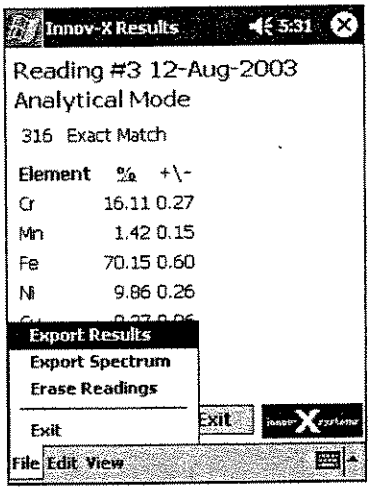
10. After ActiveSync is set up correctly, copying results to a desktop computer will consist of
    a. Exporting results on the iPAQ. (described in section 4.6.2)
    b. Synching the iPAQ to the computer
    c. Opening the results in Excel for viewing, or printing.

4.7.2 Exporting Results

All data from your Innov-X Systems analyzer can be exported as a comma delimited text file (csv). This format allows the data to be easily exported to spreadsheet programs. It is possible to export all data from a single day, or to export all data saved in the iPAQ. Results and spectra are exported separately.

To export or erase data, you must be in the Results Screen. This is automatically opened when a reading is taken, or can be accessed by choosing ***View→Results*** from any analysis screen.

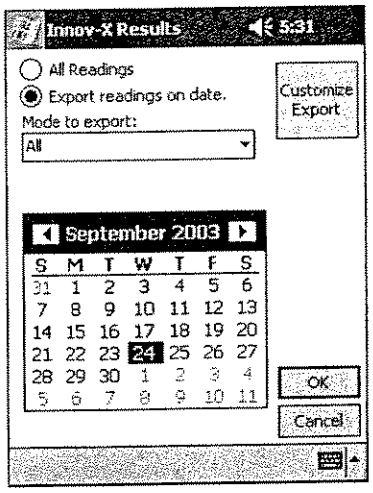
From the results screen, select ***File→Export Results***



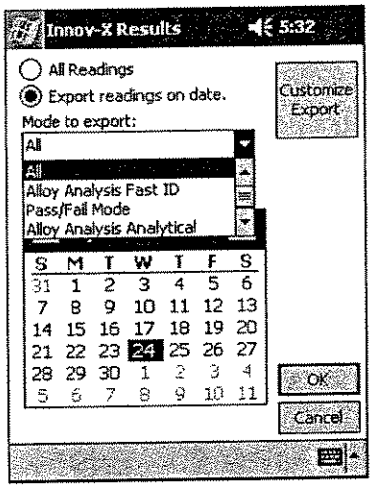
You can choose to export All Readings or just Readings on a specific date. Choosing **All Readings**: will export all readings saved in memory and is a good choice if you want to backup all data stored on the instrument before deleting. If a large number of readings stored, this option will take several minutes.

Choosing **Export Readings on date** requires that you pick a date from the calendar below. It is strongly recommended that you use this option and export data on a daily basis.

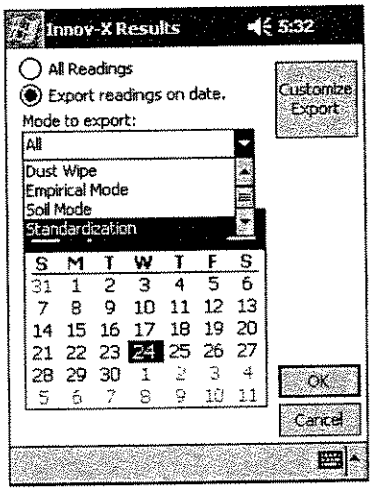
The customize export option allows users with administrative password privileges to customize the format in which data is exported. This is described in **Section 4.6.3: Customizing Results Export**.



After choosing which readings to export, you may choose to export all data, or just data from a specific mode. Selecting the arrow to the right of the mode to export will open a drop-down menu. Select the mode for which you want to export data.

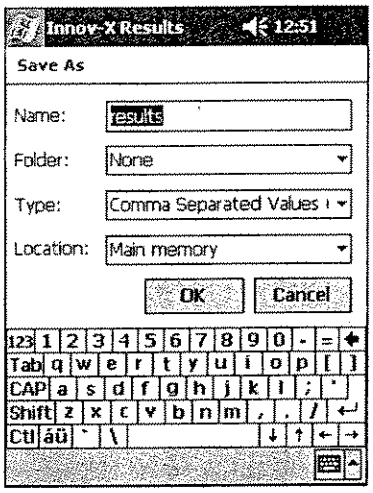


All standardization data are stored as results files. These data are automatically included in exported results files when the selected "Mode to export" is **All.** Additionally, it is possible to export only the standardization data by selecting **Standardization** as the "Mode to export."

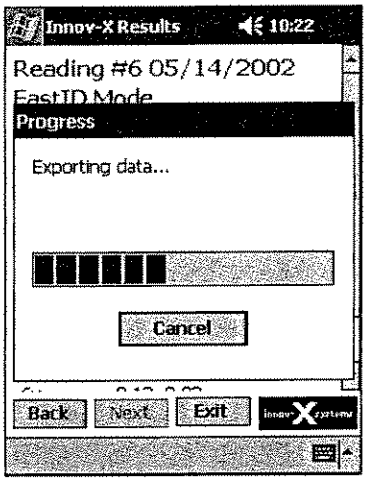


When the proper selections have been made, select **OK**. A **Save As** box will appear. Select the folder in which you want to save the data, and name the file. The file Type will always be **Comma Separated Values**. The recommended Location is Main memory and Folder is **None.** This will export files into the "My Documents" folder in the main Memory of the iPAQ.

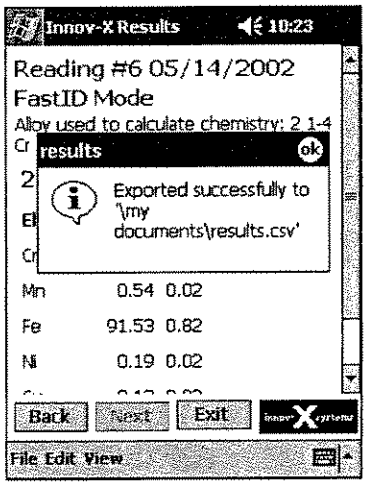
If you select a File Name which already exists, you will be asked if you want to replace the existing file. If you do, select **Yes**. Otherwise select **No** and choose another file name.



A status bar will indicate the progress of the export. It may take several minutes to export many readings. Daily downloading and weekly erasing of data simplifies and shortens this procedure.



When all readings are exported, a message will appear confirming the export. Tap **ok** to acknowledge and clear the reading.



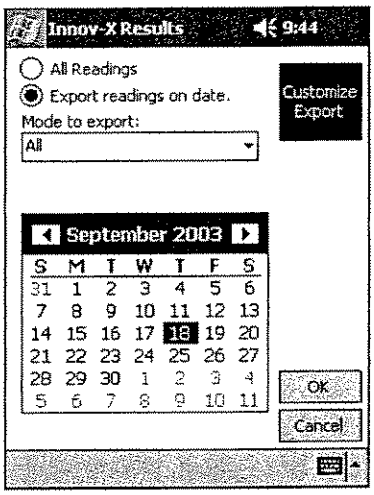
4.7.3 Customizing Results Export

All units come with a standard results export format which reports a variety of information relevant to a test. Users can select which fields are exported as well as modify the order.

To modify exported results files, select **File →Export Readings** from the Results screen.

Tap the **Customize Export** box.

Enter the administrative level password when prompted.



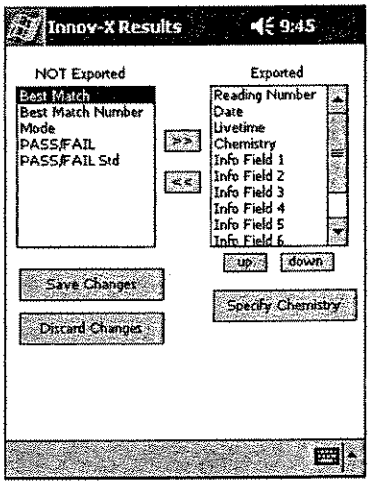
Two columns appear on the screen; the column on the left lists fields which will NOT be exported, and the right-hand column lists fields which will be exported.

Fields can be moved from one column to another via the >> and << buttons located in the center of the screen

Exported field order can be changed by using the **Up/Down** buttons. Select a field and move it up or down as desired

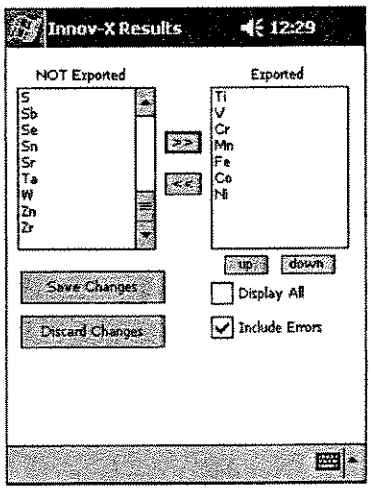
Once all changes have been made, choose **Specify Chemistry** if changes need to be made to the list of exported elements.

In chemistry is not edited, select **Save Changes** to keep the modified settings, or **Discard Changes** to ignore any changes.



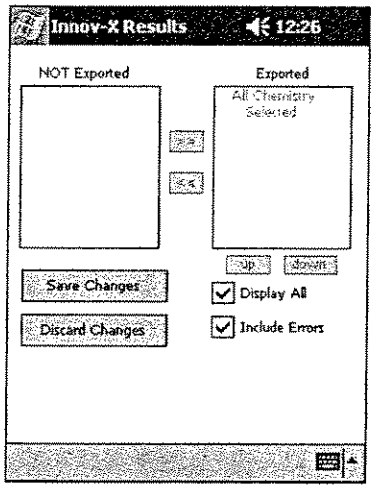
The Specify Chemistry screen resembles the previous screen. Move elements to the appropriate column, depending on whether or not an element should appear in exported files.

Select **Include Errors** to export the error associated with each measurement.



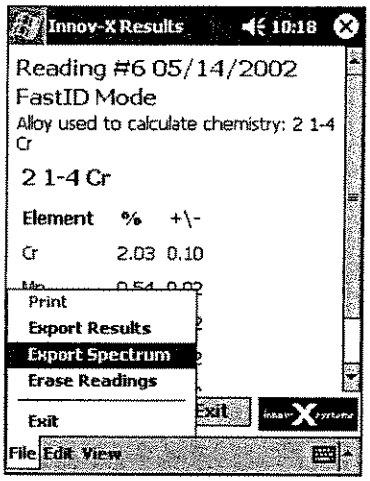
Select **Display All** to include all measured elements. *This setting is recommended, as it will ensure that all data measured with the instrument is exported.*

When all changes have been made, tap **Save Changes** or **Discard changes,** depending on whether the changes should be saved.

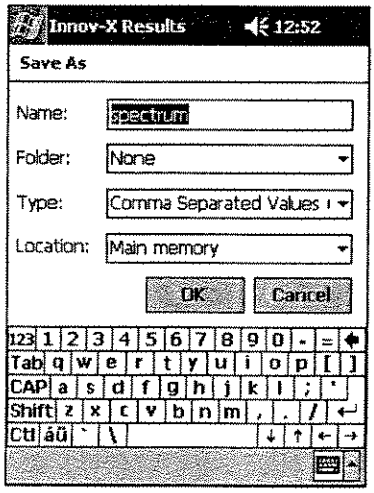


4.7.4 Exporting spectra

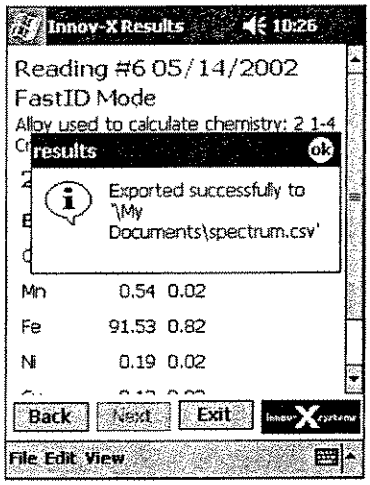
Only one spectrum may be exported at a time. In the results screen, scroll to the reading for which you wish to export the spectrum, and ***Select File→Export Spectrum.***



Choose the File name, and make sure that **Comma Separated Values** and **Main Memory** are selected. This will save the spectrum to the My Documents folder in the Main Memory of the iPAQ.



A message will appear indicating a successful export. Tap **ok** to acknowledge and clear the window.



4.7.5 Erasing readings

It is possible to erase a single reading, a range of readings, all readings from a specific data, or all readings before a specific date.

In order to erase a single reading, the reading to be erased must displayed on the screen before selecting delete. If necessary scroll to the reading you wish to delete.

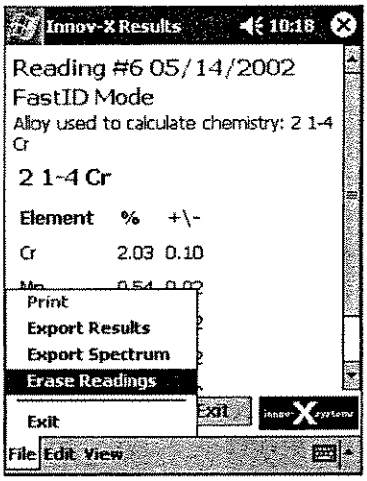
In order to select a range of readings, you must have a reading open from the date you wish to delete the readings. If a reading from the desired date is not open, you may select ***View→Go to date***, and select the appropriate date.

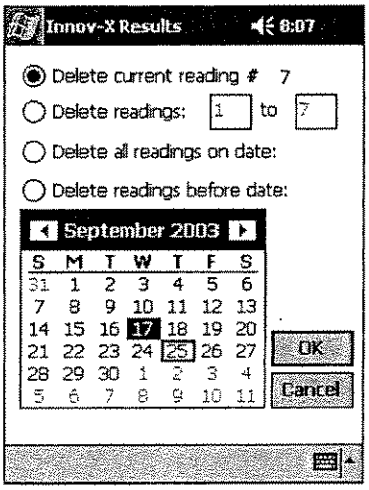
The reading displayed in the results screen is not relevant if you want to delete all readings from a specific date, or all readings before a specific date .

From the results screen, select ***File→Erase Readings.***

A message box will appear prompting you to enter your password.

Enter your administrative level password and select **OK**.





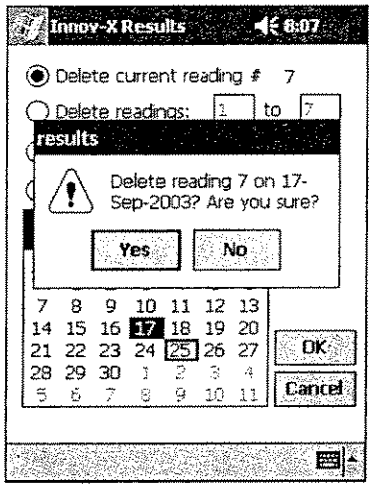
A dialogue box will appear allowing a choice of which results to delete. Select the appropriate choice:

- Selecting **Delete current reading** will delete the reading that is currently open.
- Choosing **Delete readings XX to XX** will delete a range of readings from the date of the reading that is currently open.
- **Delete all readings on date** deletes all readings from a specific day.
- **Delete readings before date** deletes all readings taken prior to a specific day.

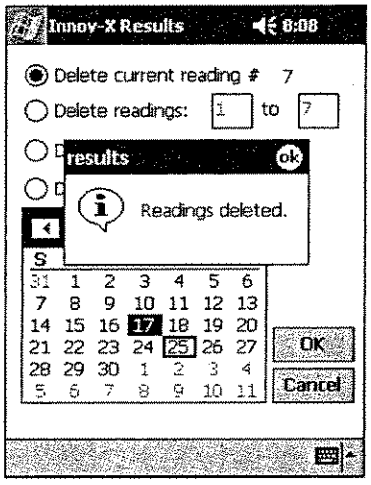
If you select **Delete all readings on date** or **Delete readings before date**, you must specify a date from the calendar. The default date is

the current date.

When you've selected the readings to delete, Click **OK**. You will be asked if you're sure you want to proceed. If you want to proceed with the data erase, select **Yes**. Otherwise, click **No.**



A message will indicate the readings were successfully deleted. Tap **ok** to acknowledge and clear the message window.



5.0 ALLOY ANALYSIS

5.0 ALLOY ANALYSIS INTRODUCTION

Three different modes exist for the analysis of alloys:

- **FastID Mode**
- **Pass/Fail Mode**
- **Analytical Mode**

Standard systems are equipped with all three modes; however, others may have only one or two available. Instruments can be upgraded for a fee at any point after purchase. General introductions to each of the modes, as well as basic operations are found in this chapter. Subsequent chapters describe each of the modes in greater detail.

FastID MODE

FastID mode is designed to quickly identify an alloy by matching the spectral signature of an unknown sample to the saved spectral signatures of reference standards in the FastID library. This mode can provide alloy chemistry if concentration data are entered for the standards. Chemistry results are a linear extrapolation from standard intensity data. FastID Mode is suited for determining accurate chemistry for alloys for which standards are available AND are loaded into the library. A standard library, as well as 3 user libraries can be used for matching. All libraries can be edited.

PASS/FAIL MODE

Pass/Fail mode is used to quickly test alloys to ensure that they meet quality control criteria. The operator chooses a stored spectral fingerprint which the system uses as a reference standard. Samples are compared to the reference, and a Pass or Fail result is displayed. Pass/Fail decision criteria can be spectral signature matching or concentration ranges for one or more elements. Pass/Fail mode uses the same fingerprint library as FastID mode.

ANALYTICAL MODE

Analytical Mode provides a full analysis of alloy chemistry using the method of fundamental parameters, as well as a grade match based on minimum and maximum grade specifications. This method uses a factory calibration, and requires no additional user supplied standards. In addition using the comprehensive grade library included with the analyzer, users may enter additional grade table specifications.

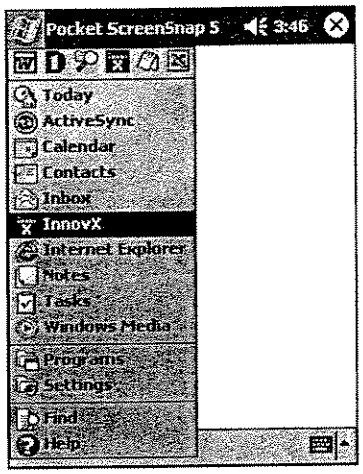
5.1 ALLOY ANALYSIS – STARTING THE INSTRUMENT AND TAKING A MEASUREMENT USING THE STANDARD LIBRARY

The basic startup and testing procedure is described below. Most screen shots were taken using **FastID Mode**; however, the basic procedure is the same for all three alloy modes.

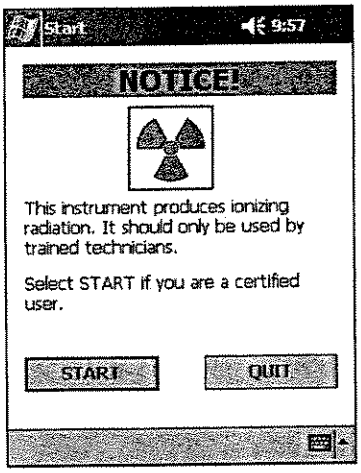
BASIC OPERATION

All Innov-X Systems Analyzers are shipped with a standard set of reference alloy standards that makes it possible to identify approximately 200 common alloys (35 in FastID). A list of the references in the library is provided in Appendix III. When you first receive your analyzer, it is recommended that you start by analyzing the 316 standardization piece included with your analyzer to gain an understanding of how the analyzer works.

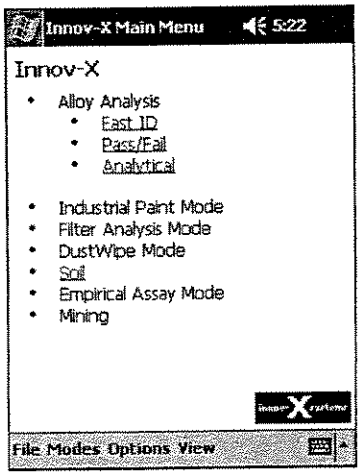
1. Install a freshly charged battery in the instrument.
2. Turn on the analyzer by pressing the power switch located on the base of the instrument.
3. Verify that the iPAQ is correctly seated on the top of the unit. If the iPAQ is properly connected, the amber light on the upper right side of the iPAQ next to the power button will blink, indicating that the iPAQ is receiving charge from the analyzer.
4. If the iPAQ is not on, turn it on by pressing the power button on the upper right side of the iPAQ.
5. Start the Innov-X Systems Software by selecting the Start Menu from the upper left hand corner of the iPAQ screen. Select the Innov-X Systems Software from the drop down menu.



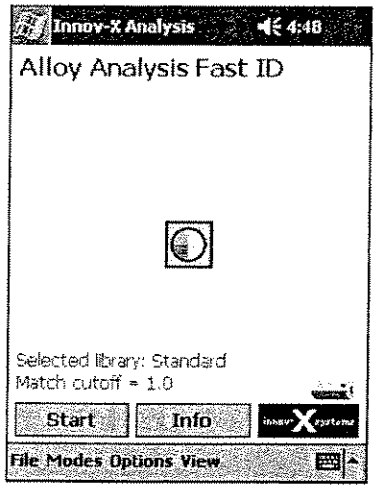
6. A notice will appear reminding the user that this instrument produces ionizing radiation and requires a trained user. . Select **START** to start the Innov-X Systems Software package. Selecting **QUIT** will exit the Innov-X Software.



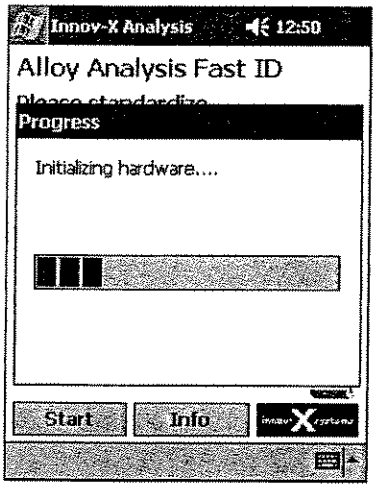
7. The Main Menu will open. Tap the name of the Mode you will be using to open it. First time users should Analytical Mode.



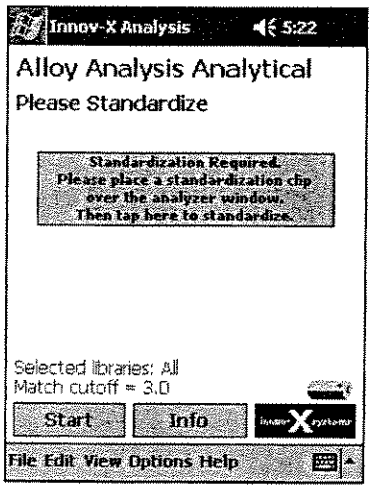
8. There may be a brief pause while the instrument loads the various parameters needed for operation. While this occurs, an icon will appear in the center of the iPAQ screen.



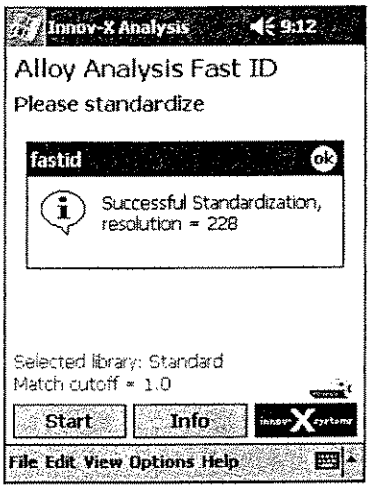
9. Once the analysis mode has been selected, the instrument will go through a 1 minute hardware initiation during which the electronics will stabilize and the detector cooling will be initialized.



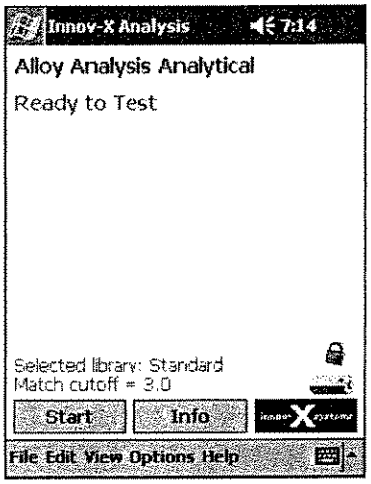
10. The message "**Standardization Required. Please place a standardization clip over the analyzer window. Then tap here to standardize.**" will appear. Standardization is required before testing can begin. Place the standardization clip in front of the analyzer window. Tap the message box. Standardization will take approximately 1 minute; a status bar will be displayed throughout the measurement. Standardization is described in more detail in **Section 4.4: Standardization**.



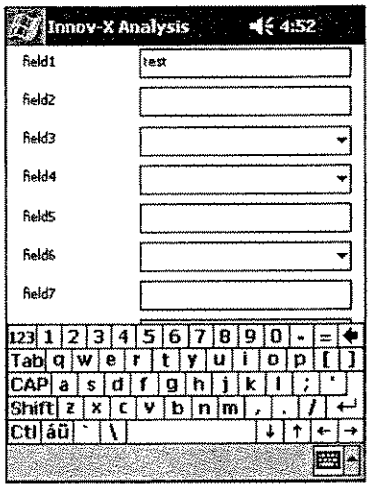
11. When standardization is complete, the resolution of the analyzer will be displayed. Tap **ok** to acknowledge and clear this screen.



12. The analyzer is now ready to take a measurement. The Trigger lock must be unlocked before pulling the trigger will start a test.

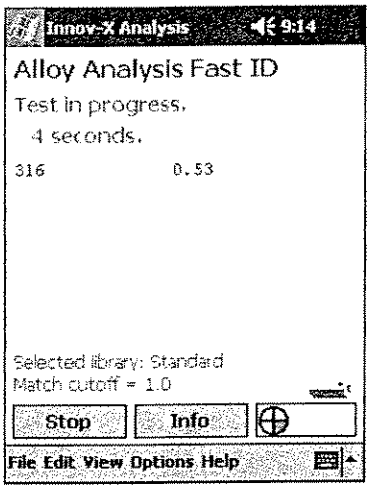


13. If you wish to enter a sample name or sample identifying characteristics, select ***Edit→Test Info***. Enter information in text fields, or select items from drop down menus. Select **ok** to close the Test Info window. The format of this screen may vary depending on user settings. See **Section 4.5: Test Information** for more information.

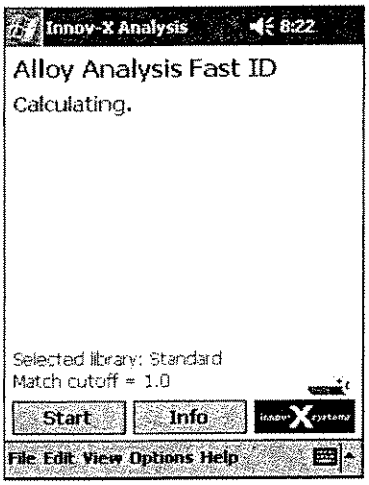


14. Hold the analyzer to the sample to be analyzed. Make sure the sample is as flush against the analyzing window as is possible. You may start an analysis by pulling and holding the trigger. Releasing the trigger will abort the test.

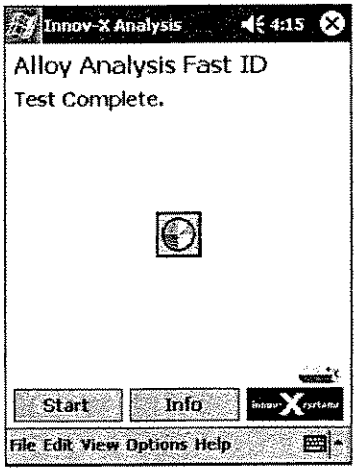
    a. After an analysis is started, the message "**Test in Progress.**" will appear, followed by the number of seconds elapsed during the measurement. For the duration of the test, the red light on top of the instrument will blink, and the "testing" icon will appear in the lower right corner of the IPAQ.



    b. When the measurement is complete, the analysis screen will display the word **Calculating**. There may be a slight delay while the instrument calculates the results. This will be indicated by the appearance of a "calculating" icon in the lower right hand corner of the iPAQ screen. Because the FastID calculation is very rapid, this icon is rarely seen, however there may be a few second calculation for Analytical Mode.

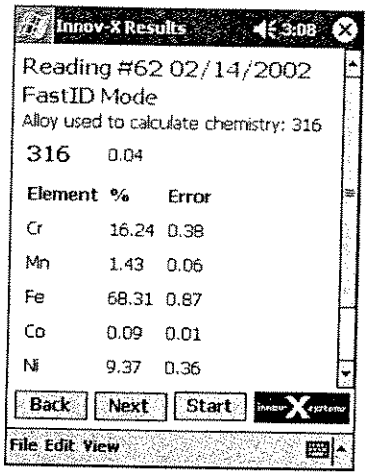


    c. When the calculations are complete, there will be a slight delay the first time the results screen is opened. An icon will appear in the center of the screen during this delay. This indicates that the results program is loading and re-indexing all saved results.



15. The Results screen will display the results. The information displayed on the screen may be changed by selecting one of the options under the View menu. This is described later in this chapter under the Results section. If you analyzed the standardization piece, the grade identification should be listed as 316.

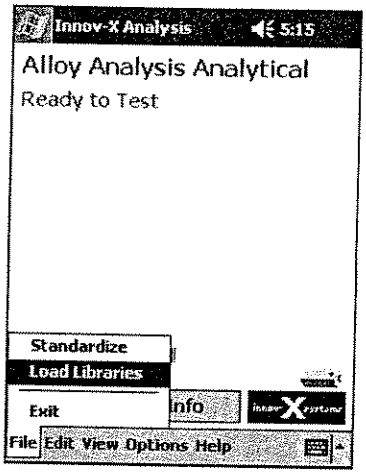
16. Once the results screen is open, subsequent readings may be started by depressing the trigger. If at any point, you wish to return to the analysis screen, select ***File→Exit*** or tap the X in the upper right hand corner of the screen.



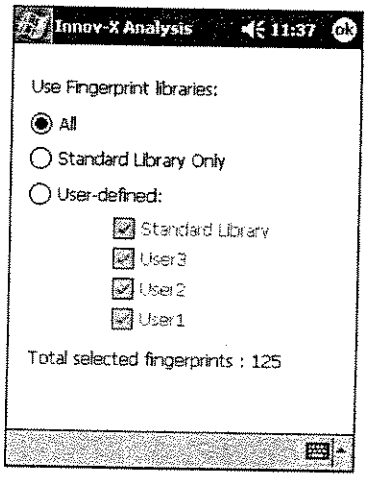
5.2 SELECTING A LIBRARY

The Innov-X Software can search any one of four libraries when in **FastID** or **Analytical Modes**. **ALWAYS VERIFY THAT THE CORRECT LIBRARY IS BEING SEARCHED.** More detailed information on library functions can be found in Chapter 5.

To select which library to search, go to the **FastID** Analysis Screen or the **Analytical** Analysis Screen – whichever mode is in use – then select ***File→Load Libraries*** .



A menu appears. The first line will read **Use Grade Libraries** for Analytical Mode and **Use Fingerprints** for FastID Mode

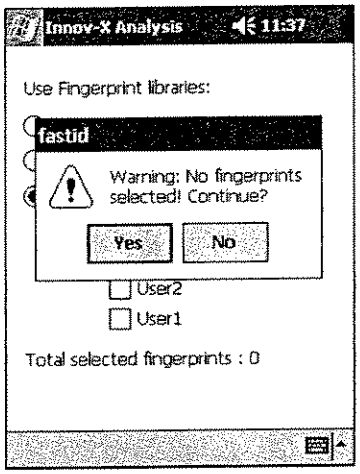


Choose the Fingerprint or Grade Libraries you wish to search. For the most comprehensive search, select **All** libraries. This will search the entire Standard Library, as well as any fingerprints or grades that have been added by the user.

Users who are primarily concerned with sorting the most common specialty, stainless, nickel and high temperature alloys should always search the **Standard Library**. This will ensure that the factory-installed library will be searched. The Standard Library can be searched by itself, or in combination with any of the other libraries.

Users who are sorting a small group of alloys may prefer to create their own libraries using their own standards. In this case, only the appropriate user library should be selected.

When loading libraries from the ***File→Load Libraries*** Menu, the number of fingerprints or grades in the selected libraries is displayed at the bottom of the screen. For best results especially when measuring complete unknowns, a large number of fingerprints should be selected because the analyzer cannot identify an alloy that is not in a library.



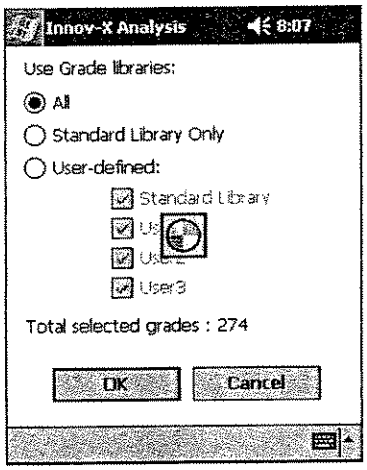
Since there is a good chance that searching a small number of libraries will result in No Matches, a warning message will appear if you select 10 or fewer grades or fingerprints.

Select **No** to return back to the Use Fingerprint Libraries screen to make another selection.

Select **Yes** to continue with the selected library. Keep in mind that with fewer fingerprints or grades being searched, you will likely get a larger number of No Matches.

If no fingerprints are selected, it will not be possible to get any valid results in FastID. If a user continues with no fingerprints selected, it will be necessary to teach fingerprints in the selected library before proceeding with the analysis. In Analytical Mode, chemistry will be calculated, but no grade matches will be displayed if no grades are loaded.

There will often be a pause of several seconds while the instrument loads the new libraries. A revolving icon will appear in the center of the screen indicating that the libraries are loading.



5.3 SETTING THE ANALYSIS TIME

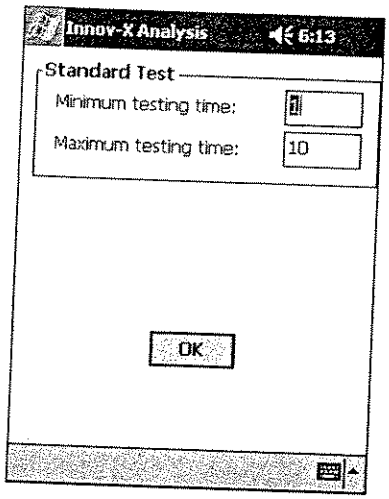
The software allows the user to set up minimum and maximum testing times.

The minimum testing time must elapse in order for results to be calculated. If a test is stopped before the minimum testing time, it will be treated as an aborted test, and no results will be calculated. Additionally, if the Live Update feature described in section 5.4 is active, results will not be displayed on the screen until after the minimum time period.

The test will end automatically when the maximum testing time is reached. A test can be ended manually at any time by releasing the trigger.

To change Testing times:

From any analysis screen, select ***Options→Set Testing Times***



Typical settings for standard test times, in seconds are:
Minimum testing time: 3
Maximum testing time: 10.
However, these values may be changed depending on the application and the desired results.

Alloy system equipped with Analytical ***Smartbeam*** will have an option for setting the test time in this screen as well. ***Smartbeam*** is discussed in chapter 8.

The minimum testing time is required to be no less than 1 second. An error message will appear if the time is set to be less than 1 second. Clear this message by selecting **ok**. The time will default to a minimum time of 1 second. This value may be used, or another value may be entered. Select **OK** to close the window.

You will not be allowed to exit the **Set Testing Times** window unless a valid minimum testing time has been entered.

Recommended Testing Times:

For most alloys, the recommended testing time is 5-10 seconds to obtain a unique grade ID and good alloy chemistry. For some alloys that only differ by small amounts of one or two elements, it may be necessary to perform longer tests. Examples include Low alloy steels 4140 and 4340. Alloys which differ by less than 1% of Ti or V require the optional ***Smartbeam*** feature for quick separation.

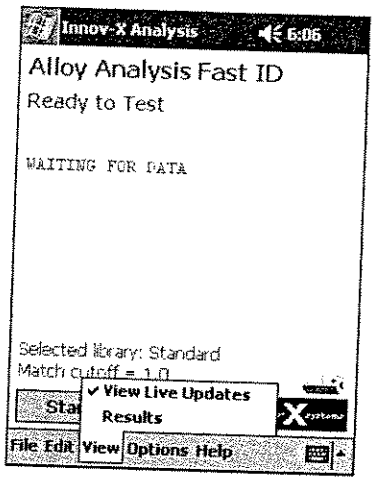
The maximum testing time will determine the length of a test. The analysis will automatically stop if the maximum testing time is reached. Normal maximum testing times will range from 5 to 20 seconds. Fundamentally, if the goal of the analysis is primarily grade identification, shorter analysis times are used. If greater precision is required in the calculation of chemistry or if an alloy separation is particularly difficult, longer test times may be used.

It should be noted that the pre-set time refers to the length of time the analyzer is actively collecting data from the detector. The total analysis time can be slightly longer than the maximum test time due to the small amount of time required to process the data and calculate the results.

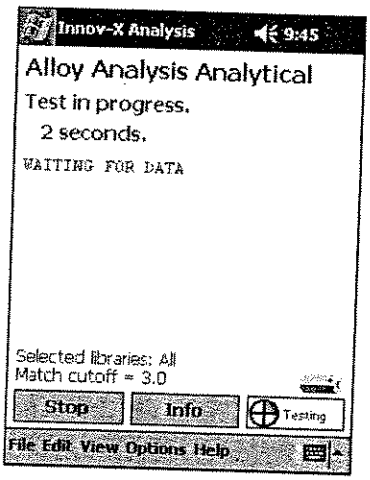
5.4 LIVE UPDATE DISPLAY

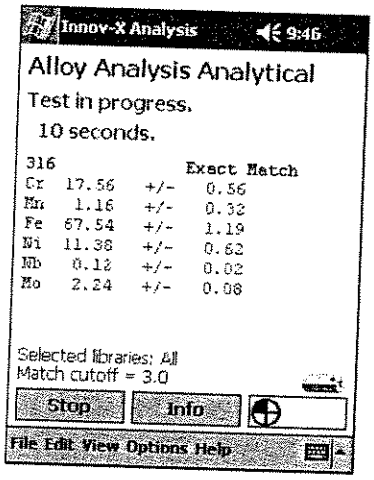
In addition to viewing completed tests in the results screen, the analyzer will display screen updates as the results are calculated during a test. This allows users to decide when to stop tests based on the precision of the reading.

To switch Live Updates on or off, select ***View→Live Updates***. A check mark will indicate if Live Updates are turned on.



When the Live Updates feature is on, and a test is in progress, the screen will show the message "WAITING FOR DATA" until the minimum testing time set in ***Options → Set Testing Times*** has elapsed. After that, chemistry and the errors on the chemistry will be displayed. This feature allows the user to stop the test as soon as the desired precision is reached.





If too short a maximum test time is set, the test may end before the desired precision is reached. As a result, some users who prefer to end tests based on the screen display may choose to set long maximum test times (60 seconds or so) and manually end all tests.

5.5 SAMPLE CONSIDERATIONS

5.5.1 Coated or Painted Samples

Innov-X Alloy Analyzers are capable of analyzing a wide variety of sample shapes and types. However, it is important to understand that XRF is fundamentally a surface analysis technique. X-rays penetrate a very short distance into most alloy samples. Therefore, the analyzer will detect what is on the surface of an alloy, rather than what comprises the bulk of the material. If a material has been coated, plated, painted, or has had some sort of surface treatment, such as heat treating, it may be misidentified. For example, a steel piece that has been painted grey will show high concentrations of titanium from the paint, and may be misidentified as a titanium alloy. In addition, large amounts of metal dust or turnings on a surface may be detected by the analyzer.

To ensure proper identification of coated materials, an area slightly larger than the analyzing window should be should be ground to remove the coating. This will allow the analyzer to measure the alloy rather than the coating. It is not necessary to completely clean and polish all materials, however, obvious metal dust should be removed.

5.5.2 Mixed samples, Heterogeneous materials

Often finished metal pieces may consist of more than one type of metal. In addition, some users may wish to measure mixed turnings, or an assortment of small pieces. In these cases, the user should remember that the analyzer will measure the entire area covered by the analyzing window and report an average chemistry. For turnings, this is useful, as the analyzer will provided an average composition. However, if two or more pieces of metal cover the window, the results will also be just an average reading, and may tell very little about the composition of one piece or the other. When shooting metal pieces, or welds, it is important to make sure that only the metal of interest is covering the analyzing window. It may be possible to use a welding mask to narrow in on the area of interest.

Keep in mind, that a welding mask should only be used in Analytical mode, unless fingerprints have been taught in FastID using the mask.

5.5.3 Small and irregularly shaped samples

All Innov-X Systems alloy software modes are able to measure parts that are smaller than the analyzing window; however, it is usually necessary to increase the testing time. The precision on measurements of small parts is reduced; since the signal from smaller samples is less then it is for samples that completely cover the window. It is also a good idea to try to maximize the material in contact with the window. If possible, analyze the largest flattest side of an irregularly shaped object.

5.5.4 Invisible elements

Since the Innov-X Systems Alloy Analyzer cannot directly analyze light elements such as carbon, aluminum and silicon, samples containing large amounts of these elements may not read correctly in Analytical Mode, depending on certain instrument settings. These settings are described in **Section 8.8.3: Light Element Analysis**.

Please read this section and familiarize yourself with the issues pertaining to Light Element analysis before attempting to analyze Aluminum alloys or other alloys containing significant amounts of non-detectable elements.

6.0A Alloy Analysis—FastID Mode

6.0 INTRODUCTION TO FastID MODE

FastID mode is designed to quickly identify an alloy by comparing and matching the spectral signature of an unknown sample to spectral signatures of reference standards stored in a library. This mode can provide alloy chemistry if concentration data is entered for the standards. These chemistry data are a linear extrapolation from standard intensity data.

The system is typically shipped with a library of approximately 35 stored spectral "fingerprint" reference standards and chemical assays for these standards. Some systems may be shipped with additional fingerprints, or with no fingerprints, depending on the details of the order. To identify one of the alloys contained in the standard library, no user calibration or input is required. The operator simply tests a sample, and the instrument determines the correct alloy grade by matching to the library of spectral fingerprints. The instrument then calculates the chemistry by using the stored elemental assays using the identified grade as a reference standard. The user may easily add up to 300 additional reference standards and assays if desired.

Warning: Because **FastID** Mode performs a spectral match to a library of reference standards, it is very important that a stored reference standard be in the FastID library that is being searched. For this reason, this mode is best suited for alloy verification, where in general the operator is checking that the alloy is the expected type. Thus, the operator can assure before commencing testing that a reference standard for that alloy is in the library.

FastID is ideal for most PMI, in-service PMI and QA/QC applications. This mode offers the best combination of speed and precision. By matching the sample spectra to a stored spectrum from a certified standard, the analyzer is able to make its chemistry calculation based on a calibration file created especially for the matching grade. This spectral matching technique offers the best combination of speed and accuracy. Some of the advantages of **FastID** mode include:

- Provides a grade and chemistry in as little as 5 seconds. This is the best precision for shortest test time, when compared to other modes. Matching the sample's spectral fingerprint first allows FastID to select from hundreds of certified spectra and use the single best set of calibration data for that sample. The benefit is the fastest AND most precise chemistry calculation.
- Operator may add up to 300 additional alloy grades and assays (alloy chemistries) — password protected.
- Instrument offers 3 separate grade libraries for multiple users, or multiple departments. User can choose to search one or more libraries.

6.1 ANALYZING A SAMPLE

Once the instrument is standardized (see **Section 4.4: Standardization**), your analyzer is ready for routine measurement.

1. Hold the analyzer up to the sample to be tested. Make sure the part of the sample you wish to analyze is in contact with the window on the front of the probe.
2. Unlock the trigger by tapping on the icon located on the iPAQ Screen directly above the battery indicator. Select Yes when prompted.
3. Pull the trigger to start the measurement. The trigger must remain depressed for the duration of the test.
4. While the analysis is in progress, the red LED on top of the instrument will blink, the amber light on the back of the instrument will glow, and the screen will display **Test in Progress**. In addition a "testing" icon will appear in the lower right hand corner of the iPAQ screen. All these indicators

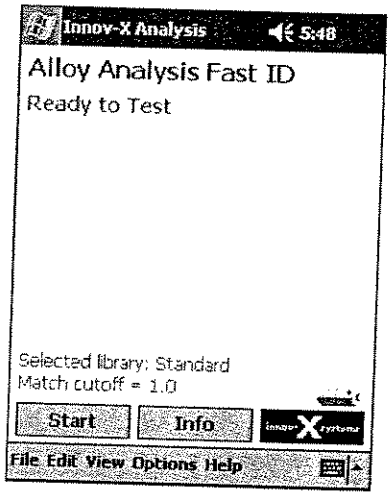
show that the X-ray tube is energized and the shutter is open. During the testing time, it is important to keep the analyzer flush with the sample surface.

5. A test can be aborted at any time by releasing the trigger.
6. Once the measurement is complete, the results screen will automatically open. The results will be displayed in one of three forms, depending on the view that is selected.
7. Subsequent measurements can be started from the Results screen by pulling and holding the trigger.

6.1.1 Troubleshooting

There are certain parameters that must be correct in order for the analyzer to take a measurement. The instrument must be set to search a library containing fingerprints, and the match number must be valid. The Analysis Screen displays the match number cutoff and selected libraries. This information is shown in green lettering, at the bottom of the screen.

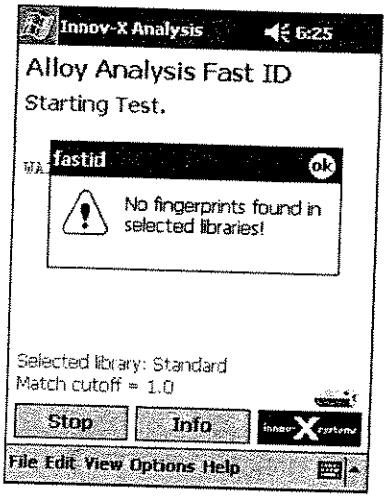
The selected library(ies) are listed. This is designed to allow the user to quickly verify that the correct library is being searched. The display will show "All" if all libraries are selected, or the names of the selected libraries. To change to Selected Libraries, choose ***File→Load Libraries***. It is recommended that all libraries are selected, unless it is necessary to search only a subset of stored fingerprints or grades.



The Match number is displayed to provide a quick check that the match number is set correctly. The factory set value for match numbers in FastID is 1. To change the match number, select ***Options→Fingerprint Settings***. More information about Match numbers can be found in the Advanced Features at the end of this section.

No Fingerprints Selected

It is impossible to start a test if no fingerprints are selected. If this is attempted, the following error message will result. Tap **ok** to acknowledge and clear the message box and select ***File→Load Libraries*** to choose libraries containing a valid number of fingerprints. See **Section 9.1.2: Loading Libraries** for more information.



Match cutoff too low

If the match cutoff is set too low, the instrument may fail to match alloys. Typically, the FastID match cutoff is set to 1. See the advanced features section at the end of this section for more information.

6.2 RESULTS DISPLAY

There are 3 possible ways to view information in the results screen; a user can view the Grade ID, the Grade ID and Chemistry, or the Raw Spectral Data. In addition, any test information entered for a reading may be viewed.

Regardless of what information is viewed, all results screens have similar characteristics. The **Date** and **Reading number** are shown at the top. Reading Numbers are useful for identifying readings. The first reading of a day will always be reading #1, thereafter; all readings within that day are labeled sequentially. Below the Date and Reading Number, the **Mode** used to acquire that reading will be listed.

Three buttons appear at the bottom of the screen: **Back, Next** and **Start**. **Back** and **Next** are used to scroll through stored data. The Start and Stop buttons are not active in most cases, and are normally only used in conjunction with a testing stand.

The results screens will show one of three possible results:

Successful Match
If an unknown alloy is a match to one of the grades contained in the Fingerprint libraries, a Grade ID will be shown.

Multiple Matches
In some cases, more than one grade will be shown as possible matches. This indicates that there was not enough statistical information to definitively separate two or more alloys, or the alloys are simply too similar to separate with portable XRF. The actual identification of the unknown alloy may be any one of the two grades listed.

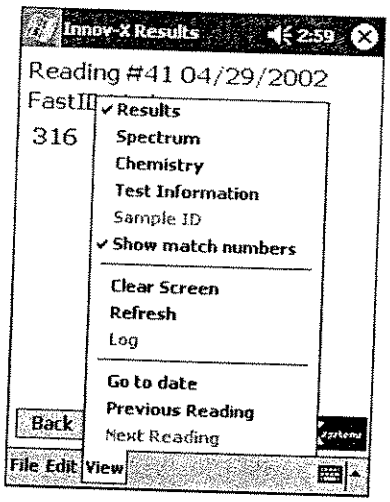
There are two procedures that may make it possible to separate the alloys:

1. Use a longer testing time. This will improve the measurement precision and may allow the alloys to be separated.
2. Define a specific element or elements that are different in the two alloys, which the analyzer can use to refine the identification. Please see Advanced Features later in this section for instructions to do this.

No Match
If no matches are found to the library, the words "no match" will be shown on the screen. If this occurs there may be several causes:

a. The alloy is not contained in the fingerprint library. Try using Analytical Mode to test the sample. Analytical Mode can provide chemistry information without requiring a library match. Alternatively, it is possible to add a standard to a library. This is described in Chapter 5.
b. The alloy may be coated. Try grinding or filing or sanding away any coating and repeat the test.
c. The testing time was too short. Trying increasing the testing time and measuring the sample again.
d. The match number is too low. See "Setting the Match cutoff" in the Advanced Features section of this chapter.

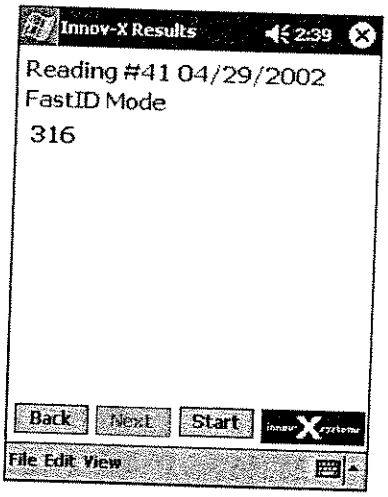
To change the appearance of the Results Screen click *View*, and select one of four choices: **Results**, **Chemistry**, **Spectrum** or **Test Information**. The active view will be denoted with a check mark.



6.2.1 Results Screen

This is the simplest screen. It displays only the Grade ID, and no extraneous information. This view is recommended if the primary goal of the analysis is grade identification, and it is not necessary to examine the chemistry results for every test.

Typically, one or more Grade IDs will be shown, or the words "No Match." In some cases, a number may be displayed after the grade identification. This is known as the match number. This number can be eliminated by Selecting ***View→Show Match Numbers***. This selection acts as a toggle. If ***View→Show Match Numbers*** is checked, match numbers will be displayed. Match numbers are described in greater detail in the Advanced Features part of this Chapter.

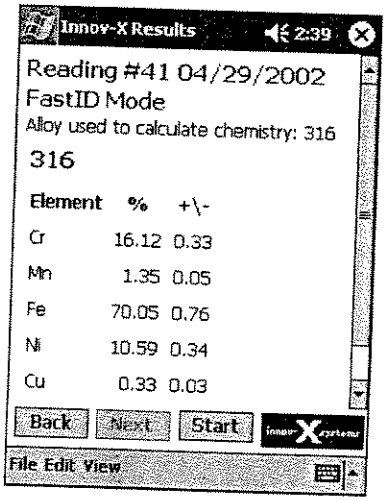


6.2.2 Chemistry Screen

This screen is the most versatile as it displays the Chemistry values, the uncertainty in the measurement and the Grade Identification. The Grade is listed at the top of the screen. The concentration (as a %) for all detected elements is then listed. After each concentration, the uncertainty in the measurement is shown. This is calculated as the 1-sigma error on the counting statistics.

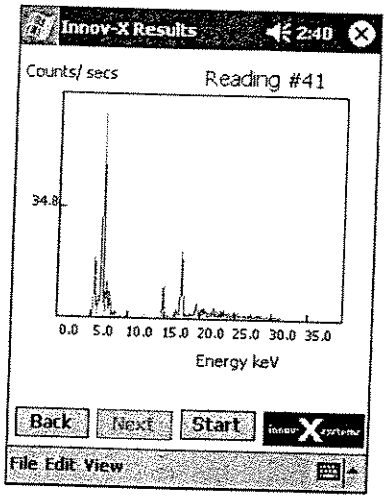
In cases where two or more matches shown, the results are based only on the first match listed. As a result there is some uncertainty associated with the chemistry values; however, given that two alloys are too close to separate, the chemistries should be fairly accurate.

Since **FastID** mode calculates chemistry results from standard assays, it cannot calculate chemistries for alloys that do not have assays stored in the fingerprint library. If no chemistries values have been entered in the library for any particular match, the message "Chemistry Values not calculated" will appear on the screen.



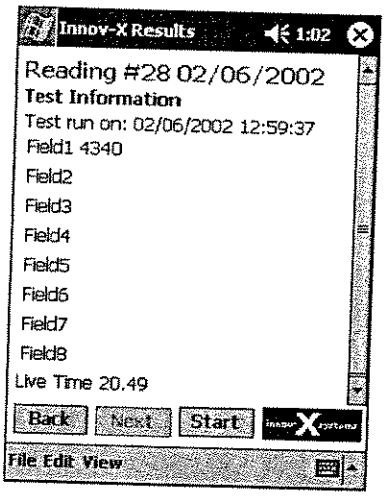
6.2.3 Spectrum Screen

This screen displays a plot of the x-ray fluorescence spectrum for an individual test, plotting the number of counts on the y axis versus the energy of the fluorescence x-rays on the x-axis. This spectrum is a unique energy signature resulting from the unique chemistry of the sample being tested.



6.2.4 Test Info Screen

The test information screen shows any information that was entered before starting a test.



6.3 ADVANCED FEATURES

This section we reviews two advanced features:

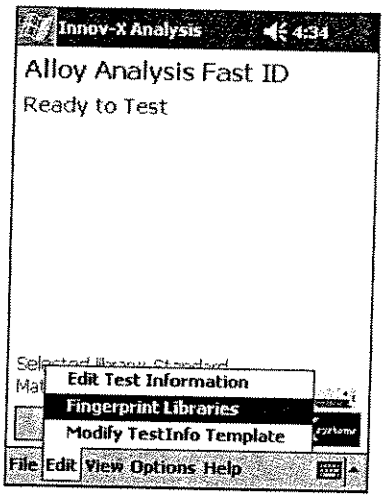
- Using Specific Regions to Separate Similar Alloys:
- Modifying the Fingerprint Cutoff Value

6.3.1 Specific Regions

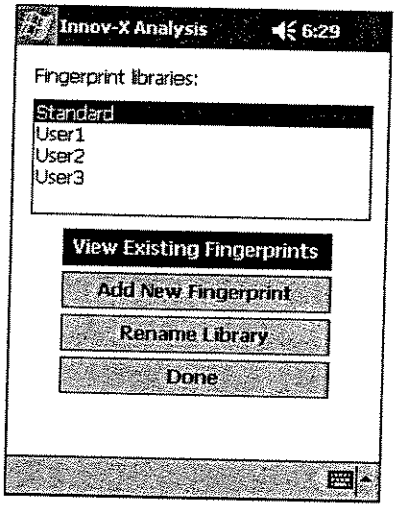
Some alloys only differ by a small concentration of a single element. For these alloys it may be necessary for the analyzer to examine the specific element or elements when performing a spectral match. In most cases, alloys that are difficult to separate when looking at all the elements may be easily separable if the analyzer is told to focus on one or more specific regions.

In order to instruct the analyzer to use one or more specific elemental regions, perform the following steps. This procedure can also be performed when reference standards are added by the user. For these instructions please refer the section on Adding a Fingerprint in Chapter 9. It is important to define the same specific elemental regions for all close alloys.

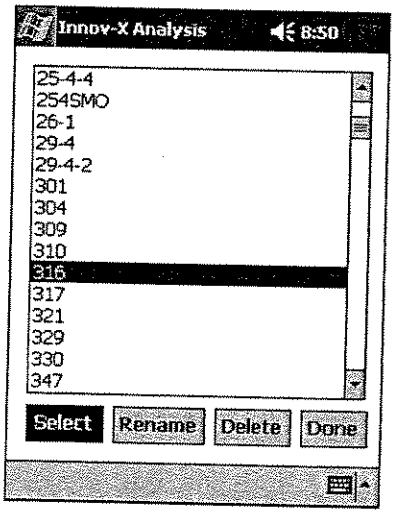
1. From the Analytical Menu, Select ***Edit→Fingerprint Libraries*** from FastID.



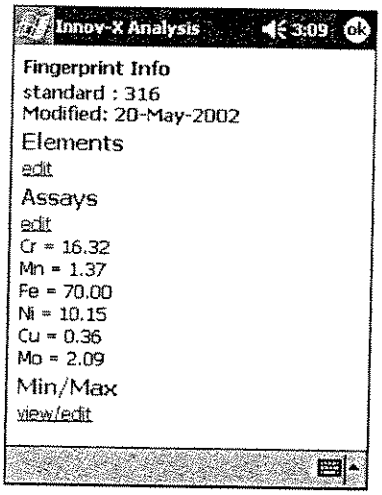
2. Select the library containing the alloy and click **View Existing Fingerprints.**



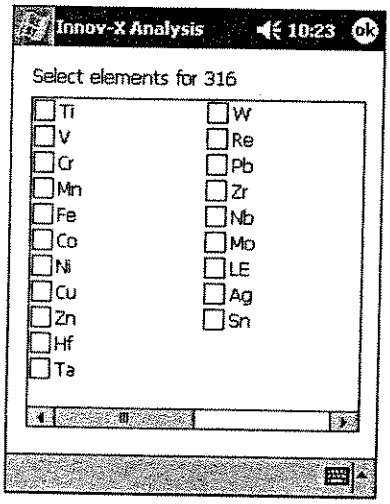
3. A list of the entries contain in the selected library will appear. Select the desired fingerprint.



4. Click the **edit** option underneath the heading **Elements**.



5. Tap the box for the element or elements you want to use for specific regions. A check will appear in that box. To disable this element, tap the element box again. The check will be removed. Select **ok**.



6.3.2 Modifying the Fingerprint Cutoff

In FastID Mode, the alloy matching is performed by comparing the x-ray spectrum of the sample to a library of reference spectra. Provided the sample spectrum is a close enough match to one or more reference spectra, the alloy grade(s) of the reference spectra is (are) displayed as the match. To determine a good match, a fingerprint match number is calculated by the analyzer by comparing the sample spectrum to the reference spectra. If the match number is below a pre-set cutoff value, then the sample is displayed as a good match to that particular reference standard. Ranges of match numbers are:

< 0.2 Excellent match
0.2-0.5 Good match
0.5-1.0 Reasonable match
1.0-2 Poor match
> 2.0 Sample is very different from reference standard.

Note: Factory default value = 1

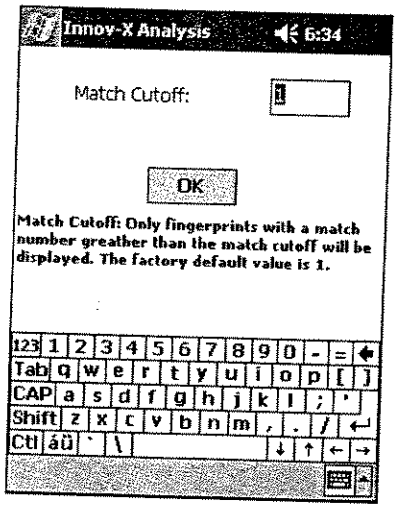
Generally, alloys within the same grade produce either excellent or good matches. Variations in match number occur because the reference standard has a slightly different chemistry than the sample being tested, even if they are the same grade. This is due to the usual grade-to-grade variations in the alloy chemistry. Testing small parts or parts with some surface oxidation may also elevate the match number.

Reasons to change the Fingerprint Cutoff:

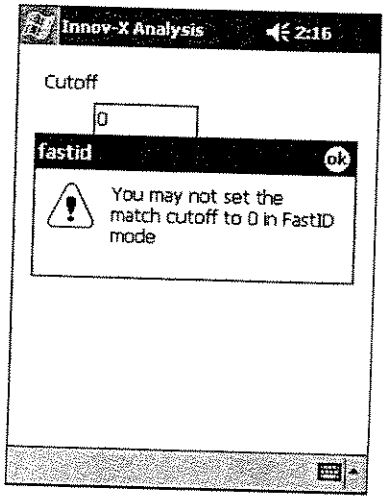
1. For sorting easily separated alloys such as 304 and 316, or alloys from different alloy bases, it is generally ok to raise the cutoff. This may be desirable if there is surface contamination like dirt, oil or mild oxidation, very small components like weld wire or turnings, or other things that may elevate the match number. It is advisable only to do this if the alloy sort being performed is known to be very easy for XRF technology.
2. The match cutoff may have been set to an extremely low number for a specific separation. If the match cutoff is too low, only very close matches will pass. Otherwise the result NO MATCH will be displayed.

How to Modify the Fingerprint Cutoff Value:

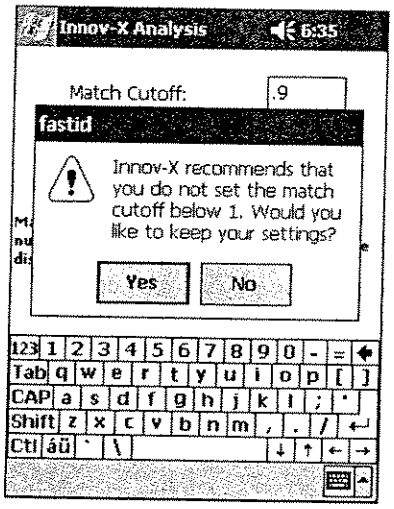
To change the Match number cutoff, from the Analysis Screen, select ***Options→Fingerprint Settings.*** The screen shown at the right will appear. Highlight the number shown in the box, tap the keyboard icon to bring up a keyboard, and enter a new cutoff value. Then tap OK.



If zero is entered for a match number, an error message will appear. Select ok to clear the message box, and select a valid match number. It will not be possible to close the Set Testing Times window with zero selected as a match number.



If the Match number is set to be a value below 1, a warning message will appear. Selecting **Yes** will keep the setting. Selecting **No** will allow the user to choose a new match number. Remember, the factory recommended setting for Match Number in FastID mode is 1.



7.0A Alloy Analysis—Pass/Fail

7.0 INTRODUCTION TO PASS/FAIL MODE

Pass/Fail mode is designed for high-throughput alloy sorting and quality control. All sorting is done by comparison to a reference standard which is chosen by the operator.

Analyzed samples are compared to the reference samples, and results are displayed as a PASS or a FAIL, depending on whether they match the reference standard. Pass/Fail criteria may be based on the quality of fit to the spectral fingerprint or on elemental chemistry. Pass/Fail ranges may be implemented for one or more elements. This mode offers a full range of options from the simplest sorting of mixed loads in a recycling facility to QC on specific element(s) in even the most complex superalloys.

Two options exist for Pass/Fail mode: **Fingerprint** and **Chemistry**. Fingerprint matching should be used when the goal of the analysis is to determine whether or not analyzed samples are a specific grade. Chemistry should be used when it is important to determine whether the chemistries for specific elements fall within specified min/max grade specifications.

Fingerprint Pass/Fail uses the same method used in FastID to determine matches. Data from analyzed samples are compared to the fingerprint of a reference standard. If the differences between the fingerprints are small enough, the sample is judged to be of the same grade as the reference sample. This method requires only that a valid fingerprint for the reference standard is contained in the library.

Chemistry Pass/Fail. In addition to requiring that an alloy matches the fingerprint of a specific alloy, it requires that all detected elements fall within specified ranges.

The process followed in chemistry Pass/Fail is as follows:

1. Analyzer uses the fingerprint method to determine whether the sample matches the reference sample. If it does not, it automatically fails.
2. In the case of a match in step one, the chemistry of the alloy is calculated from assays stored for the standard fingerprint.
3. The calculated chemistry for each element is compared to the values stored in a Grade Table. In order for a sample to pass, all the chemistries must be within n standard deviations of the min and max values specified in the grade table, where n is a number which can be specified by the user.

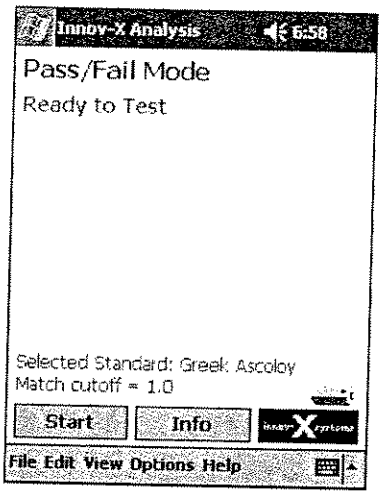
This method requires that a valid fingerprint, assays for that fingerprint, and Min/Max values are saved in the library.

7.1 USING PASS/FAIL

Before starting Pass/Fail mode, make sure that a signature for the reference sample you will be using is stored in the Fingerprint Library. You may use a fingerprint stored in the standard library, or you may add your own standard. To add a standard to the fingerprint library, follow the procedure listed in Chapter 9.

To start Pass/Fail mode, select Pass/Fail from the Main Menu. As with all modes, you will be informed if you must standardize the instrument before you can proceed with a measurement. Refer to the Chapter 4 for information on starting the analyzer and taking a measurement.

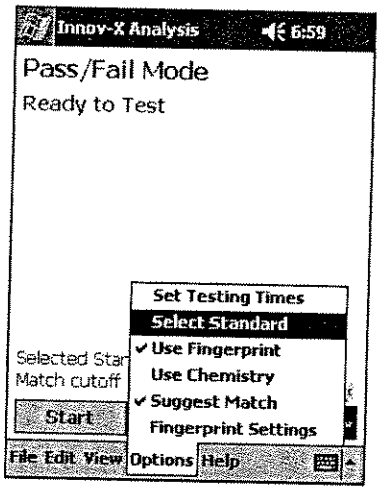
The Pass/Fail screen always shows the Selected Standard. This is the reference sample to which all other samples will be compared. Upon opening the mode, verify that the correct standard is selected.



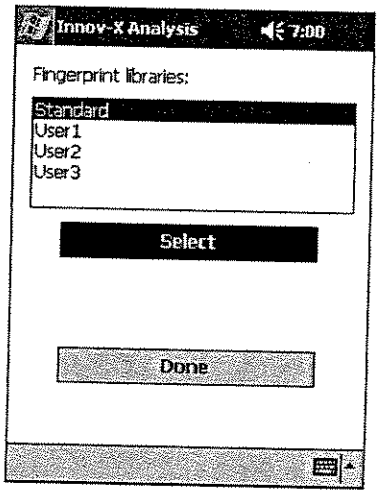
7.1.1. Selecting a Reference Standard

Once the standard you want to use is stored in a fingerprint library, select ***Options→Select Standard.***

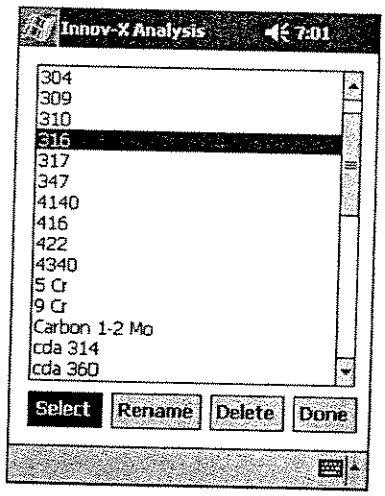
Enter your administrative level password when prompted.



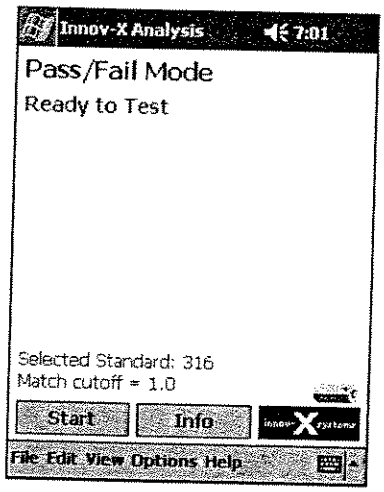
Select the library in which the fingerprint of your standard sample is stored. Choose the library and click **Select**.



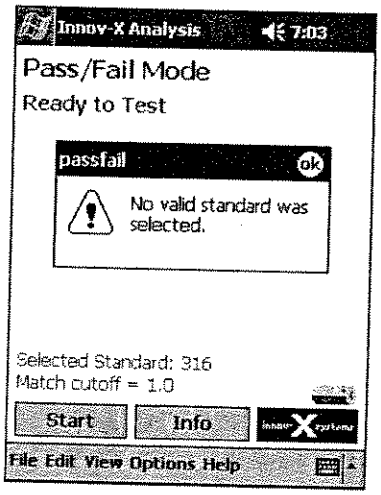
Select the name of your reference standard and click **Select**.



Verify that the proper standard is on displayed on the screen.



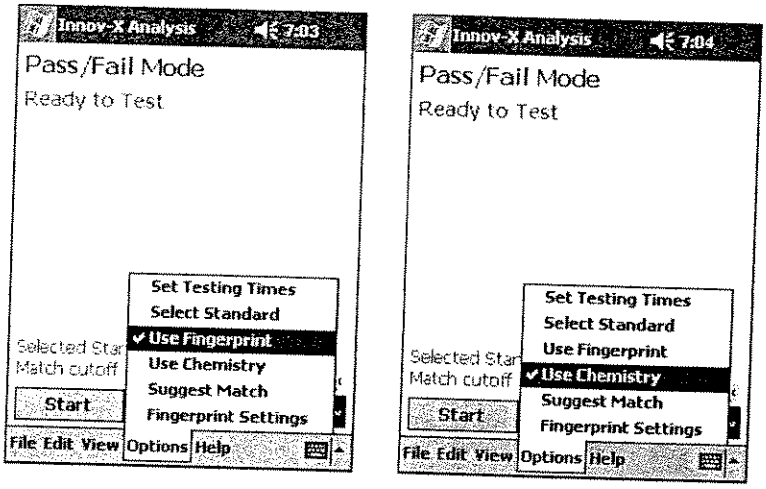
If you fail to select a standard, the instrument will always default to the last standard used. If a valid standard has not been selected, a warning message will appear. It will be impossible to start a test until a standard has been selected.



7.1.2. Select Pass/Fail Method

To use the fingerprint method and simply compare unknowns to a stored fingerprint, select ***Options → Use Fingerprint***.

Select **Options** → ***Use Chemistry*** from the menu if your Pass/Fail criteria will be chemistry-based.



7.2 ANALYZING A SAMPLE

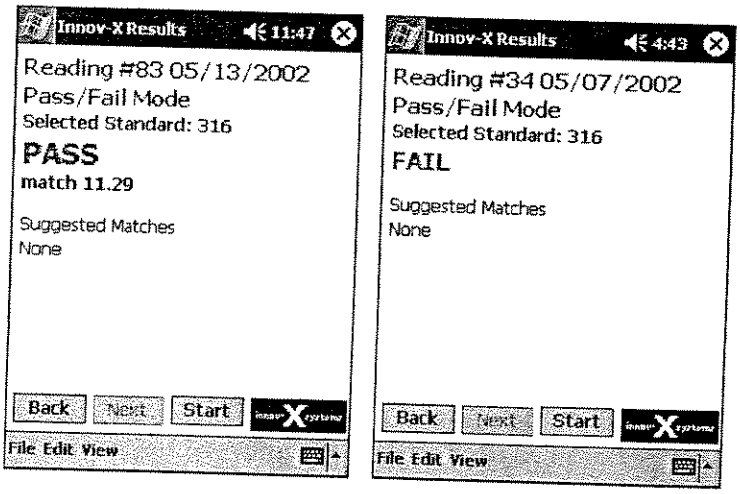
Once the instrument is successfully standardized as is described in section 4.4, your analyzer is ready for routine measurement.

1. Hold the analyzer up to the sample to be tested. Make sure the part of the sample you wish to analyze is in contact with the window on the front of the probe.
2. Unlock the trigger by tapping on the icon located on the iPAQ Screen directly above the battery indicator. Select Yes when prompted.
3. Pull the trigger to start the measurement. It is necessary to hold the trigger for the duration of the measurement.
4. While the analysis is in progress, the red LED on top of the instrument will blink, the amber light on the back of the instrument will turn on, and the screen will say "Test in Progress." In addition a "testing" icon will appear in the lower right hand corner of the iPAQ screen. All these indicators show that the X-ray tube is energized, and the shutter is open. During the testing time, it is important to keep the analyzer in contact with the sample surface, and to keep all body parts away from the measuring window.
5. A test can be aborted at any time by pulling the trigger, or by tapping **Stop** on the iPAQ screen.
6. Once the measurement is complete, the results screen will automatically open. The results will be displayed in one of two formats, depending on the view that is selected.

7.2.1 Use Fingerprint

Since Pass/Fail by fingerprint requires only that a valid fingerprint is selected, the analysis is very straightforward. Taking a measurement will open the results screen which will display the results of the measurement.

The results for Pass/Fail using Fingerprint comparison is very simple. Choosing ***View→Results*** will show only the reading, number, date, mode, selected standard and the result of the test; either the word **PASS** or **FAIL**. In the event of a failure, if the Advanced Feature: **Suggest Match** is

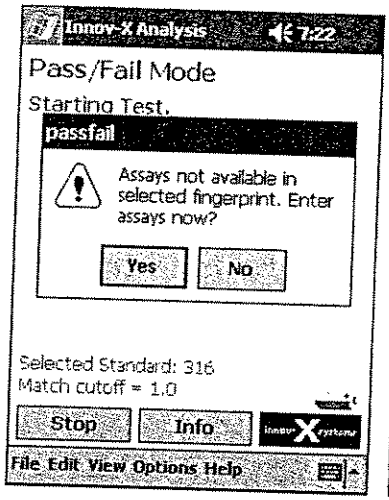


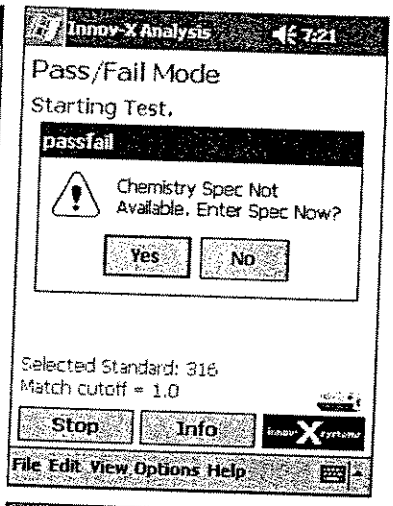
enabled; possible Grade IDs will be displayed on the screen.

7.2.2. Use Chemistry

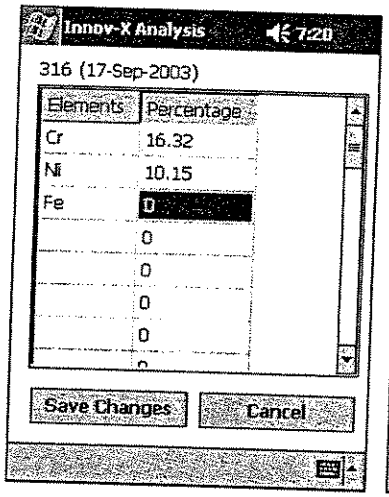
In order to get a valid reading with Use Chemistry selected, a fingerprint with an assay, and a grade table must exist. Since multiple parameters are required, it is strongly suggested that a known alloy grade is tested to make sure all parameters are set up correctly.

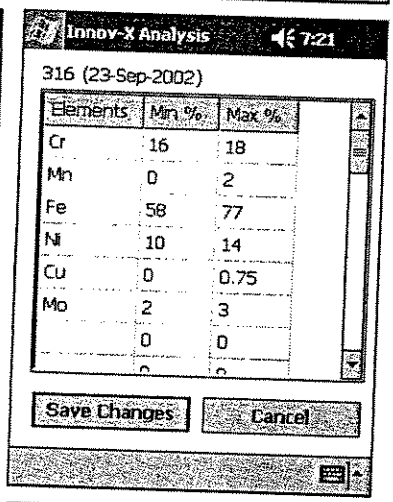
If a parameter is missing for a selected standard, a warning message will appear when the test is started indicating what needs to be added:



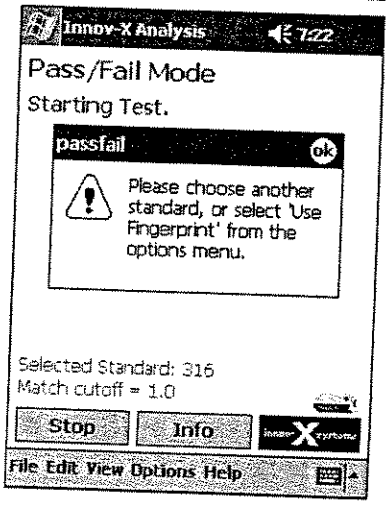


Selecting **Yes** to either of these screens will bring up either the Assays, or the Grade tables screen. Enter standard values in the assay table, and allowable Min/Max specifications in the Grade Table screen. Further information on either of these screens can be found in Chapter 9.





If you do not want to enter assays or grade libraries select No in response to the error message. You will not be able to take a reading until you either choose another standard or select Use Fingerprint.



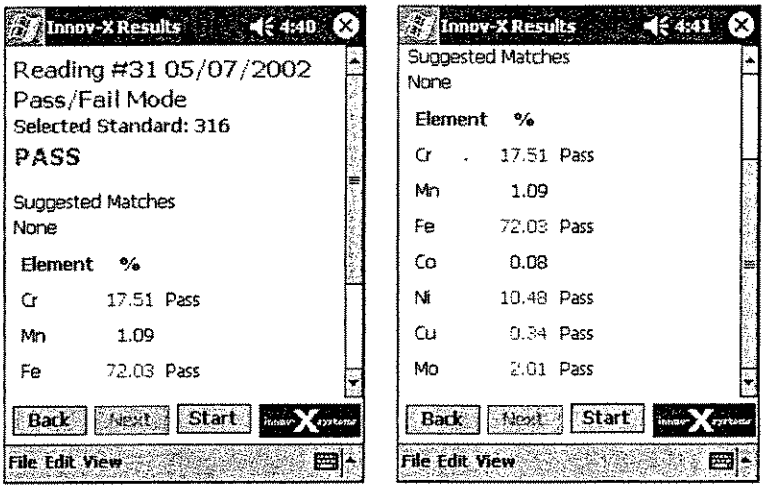
It is important that an assay is entered for every element that is listed in the grade table. If an assay is not listed for an element, the chemistry will not be calculated for that element. If this is the case, there will be

no value to compare to the Min/Max spec. This will result in an automatic failure for every sample. Make sure that a standard sample is measured to ensure it is possible to get a PASS result.

Results—Use Chemistry

In addition to the PASS or FAIL results, the Chemistry results screen will show the calculated chemistry results. The percentage reading for each element will be color coded to show whether the value is within spec. A green color indicates that the reading is within specifications; a red color indicates the element is out of spec. If no Min/Max specification is provided for an element, the concentration will be shown in black. Any elements that don't have Min/Max specs will not be used as criteria for determining Pass or Fail.

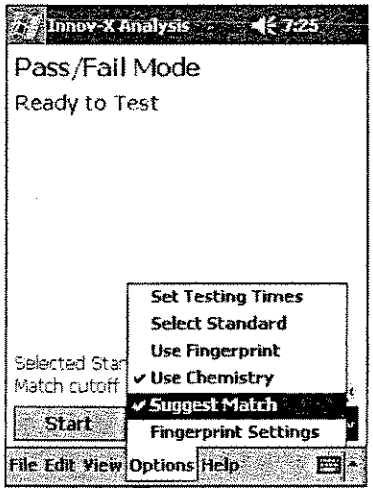
If the list of elements exceeds the room available on the screen, it will be necessary to scroll down to see the complete list.



7.3 ADVANCED FEATURES

Suggest Match: Suggest Match is designed to provide information about a sample in the event of a **FAIL** result. When suggest match is enabled, the software will search the library and provide a list of one or more possible Grade IDs if the sample fails to match the selected standard.

To activate Suggest Match, Select ***Options→Suggest Match***. Once suggest match has been selected, it will remain active until it is deselected. A checkmark before the menu selection will indicate that the option is enabled.



If suggest match is enabled, the analyzer will search all active libraries for the sample(s) with the lowest match number. The match number is an indication of the degree to which the analyzed sample matches a library entry. The number is unit-less, and will vary depending on a variety of parameters. In general, the closer a match number is to zero, the better the match.

Suggested results will appear only in the results screen, not in the chemistry screen. The display will indicate a no-match, or display the suggested match. In many cases, a single match will appear. However, in cases where it is impossible to statistically separate two or more matches; all close matches will be displayed on the screen. Keep in mind that a suggested match is not necessarily a correct grade identification. It is simply the closest matching grade found in the fingerprint library.

8.0A Alloy Analysis—Analytical Mode

8.0 INTRODUCTION TO ANALYTICAL MODE

Analytical mode utilizes a Fundamental Parameters (FP) algorithm to determine elemental chemistry. This method calculates chemistry from the spectral data, without the requirement of stored fingerprints. The Analytical FP calibration is done at the factory, and requires no user set-up or recalibration. The software also searches an alloy grade library to produce a grade match to calculated chemistry, based on the calculated chemistry. Analytical mode can provide a grade ID and chemistry in as little as 2-3 seconds, with increased precision for longer test times.

The FP method utilized in Analytical mode is ideal for applications that require analysis of proprietary or uncommon alloys, for monitoring chemistry of tramp elements, or for monitoring chemistry during processing. The fundamental parameters method is also ideal for obtaining an average chemistry of turnings, especially mixed turnings.

In many ways, analytical mode is the easiest to use of all the modes, since it is possible to acquire good solid chemistry data and grade identifications by using only the instrument default setup. Users who are analyzing complete unknowns or samples from a wide variety of alloy families may find this to be the most appropriate mode for their needs.

Determination of Grade Identification:

Analytical mode utilizes a Grade Library consisting of a set of minimum and maximum values for each element in an alloy. The factory installed standard grade library contains 250 alloy grades. The Operator may add up to 300 additional alloys. These alloys may be added to any of the 3 user libraries or to the standard Grade Library. For the sake of simplicity, we recommend any alloys added be added to the user libraries and not the Standard (Factory) library. The libraries may be searched individually or together. All libraries, including the standard library, may be edited by the user.

Analytical mode calculates chemical composition using a fundamental parameters algorithm. Once these values are calculated, they are compared to the grade tables stored in the grade library. The software calculates a number, called a Match Number, which is an indication of how close the chemistry of a measured alloy is to the library values. The lower this number, the better the match. A match number of 0 is an exact match, meaning that the calculated chemistry for all elements falls within the grade table specifications.

The presence of tramp elements, as well as uncertainty associated with any measurement, makes it possible for a valid match to fail to register as an Exact Match. Therefore, a cutoff value is set to determine whether or not a grade is considered a match. If the Match Number is below the cutoff value, it is considered to be a good match. The default cutoff value is set at a value that works for a wide range of alloys, but it may need to be adjusted for certain specialty applications.

8.1 USING ANALYTICAL MODE

A detailed startup procedure is described in chapter 4. The procedure is summarized here:

1. From the main menu, select Analytical Mode by tapping on the word "Analytical".
2. Hold the analyzer up to the sample to be tested. Ensure that the sample is as flat as possible against the window, and is covering as much of the window as possible.
3. Unlock the trigger by tapping on the icon located on the iPAQ Screen directly above the battery indicator. Select Yes when prompted.

4. Start the measurement by pulling the trigger. When a test is in progress, the words "Test in Progress" will be displayed, along with the elapsed time of the measurement and a "testing" icon. The LED on the front of the instrument will blink, indicating that the X-ray tube is on, and the shutter is open.
5. Make sure the sample maintains contact with the analysis window for the entire duration of the test.
6. When the test is complete, the words "Test Complete" will appear. For the first reading of the day, there will be a slight delay while the results screen is opened. This will be indicated by the appearance of a rotating icon in the center of the screen.
7. After taking the initial measurement, tests can be started from the results screen by pulling the trigger. This will close the results screen and display the analysis screen, which will show the progress of the test.

8.2 RESULTS DISPLAY

There are 3 possible ways to view information in the results screen; a user can view the Grade ID, the Grade ID and Chemistry, or the Raw Spectral Data. In addition, any test information entered for a reading may be viewed.

Regardless of what information is viewed, all results screens have similar characteristics. The **Date** and **Reading number** are shown at the top. Reading Numbers are useful for identifying readings. The first reading of a day will always be reading #1, thereafter; all readings within that day are labeled sequentially. Below the Date and Reading Number, the Mode used to acquire that reading will be listed.

Three buttons appear at the bottom of the screen: **Back, Next** and **Start**. **Back** and **Next** are used to scroll through stored data. The **Start** button is inactive in most cases, but may be used in conjunction with the test stand.

The results screens will show one of three possible results:

Successful Match
If an unknown alloy is a match to one of the grades contained in the Fingerprint libraries, a grade ID will be shown.

Multiple Matches
In some cases, more than one grade will be shown as possible matches. This indicates that there was not enough statistical information to definitively separate two or more alloys. The actual identification of the unknown alloy may be any one of the grades listed. Increasing the testing time may make it possible to separate the alloys.

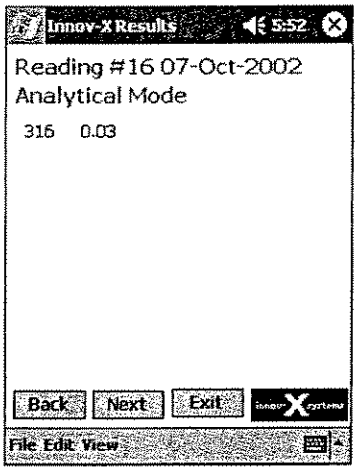
No Match
If no matches are found to the library, the words "no match" will be shown on the screen. If this occurs there may be several causes:

a. The alloy does not meet any of the specifications in the Grade Library.
b. The alloy may be coated. Try grinding or filing or sanding away the coating and repeat the test.
c. The testing time was too short. Trying increasing the testing time and measuring the sample again.
d. The match number is too low. See **Section 8.3.1: Nearest Match/Exact Match** for more information.

To change the appearance of the Results Screen click ***View***, and select one of four choices: **Results, Chemistry, Spectrum or Test Information**. The active view will be denoted with a check mark.

8.2.1 Results Screen

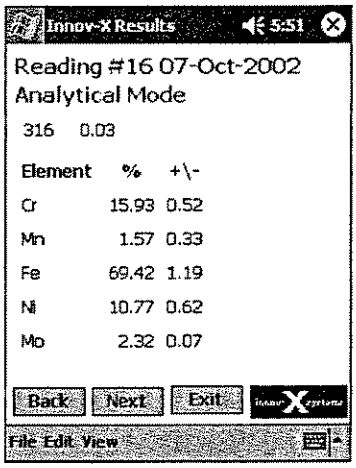
This is the simplest screen. It displays only the Grade ID, and no extraneous information. This view is recommended if the primary goal of the analysis is grade identification, and it is not necessary to examine the chemistry results for every test.



Typically, one or more Grade IDs will be shown, or the words "No Match." In some cases, a number may be displayed after the grade identification. This is known as the match number. This number can be eliminated by Selecting ***View→Show Match Numbers***. This selection acts as a toggle. If ***View→Show Match Numbers*** is checked, match numbers will be displayed. Match numbers are described in greater detail in the Advanced Features part of this Chapter.

8.2.2 Chemistry Screen

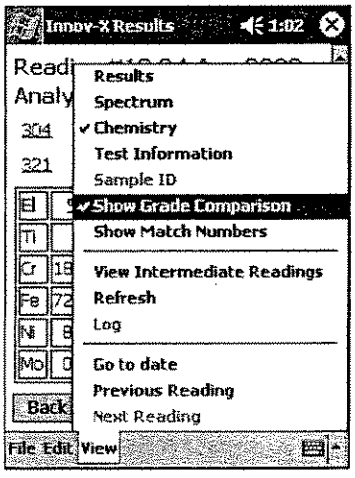
This screen is the most versatile as it displays the Chemistry values, the uncertainty in the measurement and the Grade Identification.



The Grade is listed at the top of the screen. The concentration in percent for all detected elements is then listed. After each element's chemistry, the uncertainty in the measurement is shown. This is calculated as the 1-sigma error on the counting statistics.

8.2.2A Grade Comparison

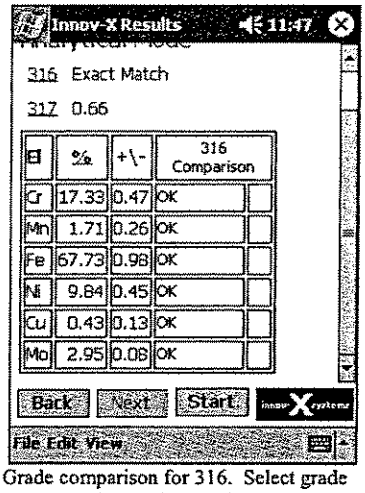
The Show Grade Comparison feature allows users to see at a glance which elements are outside the concentration range specified for a Grade Match. When this feature is activated the results will show up in a table format. If the chemistry of an element, plus or minus the error on the reading, is within the specified range for a specific grade, the word "OK" will appear next to that element. If the chemistry is out of range, the screen will indicate whether the measured elemental value is "low" or "high" and list the corresponding grade specification.



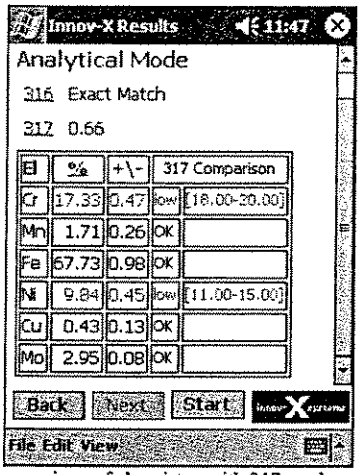
The show Grade Comparison function works only in the Chemistry view. If the results screen is not displaying chemistry results, select **View→Chemistry** from the results screen. Show Grade Comparison can be turned on or off by selecting **View→Show Grade Comparison** from the Results screen. A check mark will appear on the menu if the feature is active.

When Show Grade Comparisons is active, it is possible to show the comparison for any Grade that appears as a match for the analyzed sample. Select which grade comparison to view by tapping on the name of that grade.

The figures show the results for the measurement of 316. Both 316 and 317 show up as matches, however, 316 shows up as an "exact match" while 317 has a higher match number. The grade comparison shows that all the elemental concentrations are within specification for 316, while the Cr and Ni are both lower than specified for 317. Obviously, 316 is a better match and is the correct grade identification for the alloy.



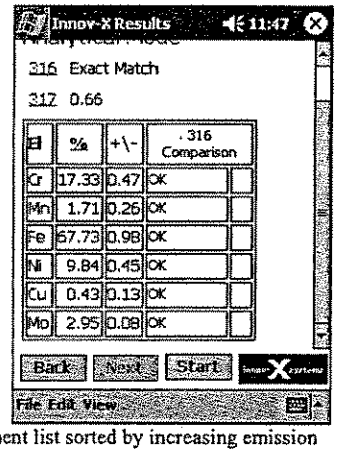
Grade comparison for 316. Select grade to compare by tapping on the name of the grade.



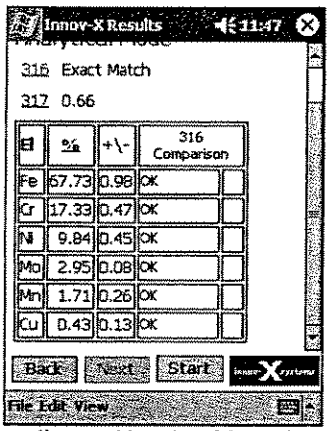
Comparison of chemistry with 317 grade spec.

8.2.2B Changing the order in which elements are displayed

Users may order detected elements in two ways; by emission line energy, or in order of decreasing concentration. To change the order, simply tap on the blue "%" header above the column displaying elemental chemistry. Tapping this header will switch the order. Tapping again will return the list to its original order.



Element list sorted by increasing emission line energy.

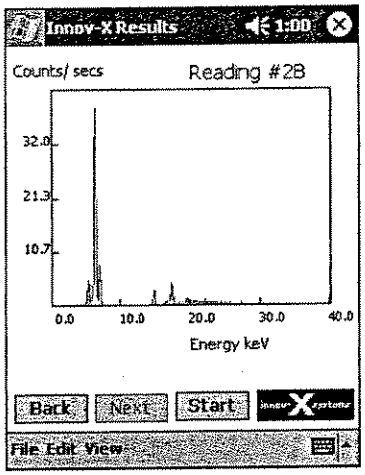


Element list sorted in order of decreasing composition.

8.2.3 Spectrum Screen

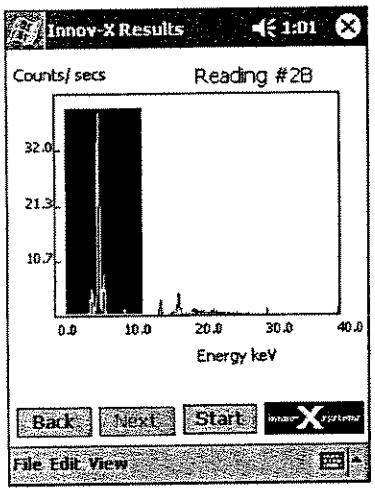
This screen displays a plot of the x-ray fluorescence spectrum for an individual test, plotting the intensity on the y-axis versus the energy of the fluorescence x-rays on the x-axis.

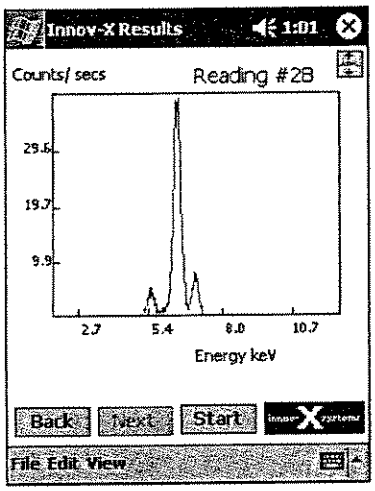
Tapping on the spectra will show the energy scale and count rate at the selected point.



It is possible to zoom in on certain areas of the graph by selecting one corner and drawing out the out the region

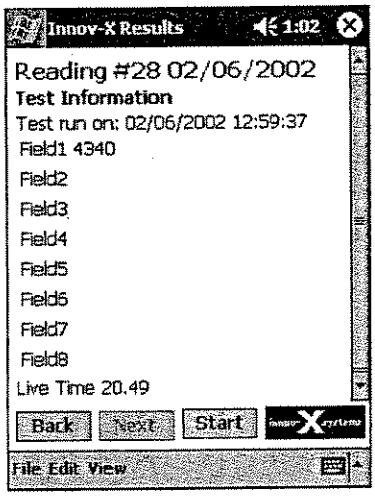
Tapping the symbol in the upper right hand corner beneath the X will restore the graph to full scale.





8.2.4 Test Info Screen

The test information screen shows any information that was entered in **Test Information** before the test was started.



8.3 ADVANCED FEATURES

8.3.1 Nearest Match/Exact Match

After calculating chemistry with the Fundamental Parameters algorithm, the analyzer software searches the Grade Library for alloy specifications which are close to the calculated chemistries. In order to evaluate which alloy is the best match for the measured sample, a number is calculated which compares the measured samples to the Grade Table. This number, referred to as a match number, is a measure of the difference between the measured chemistry and Minimum and Maximum specifications for the various alloys. A Match number of zero (0) indicates that measured chemistry is an "EXACT MATCH;" the measured chemistry for all detected elements falls within specifications. It is possible to have good matches that are not "EXACT," as there are uncertainties associated with any measurement. The presence of tramp elements (small amounts of unspecified elements) may also elevate the match number on valid matches.

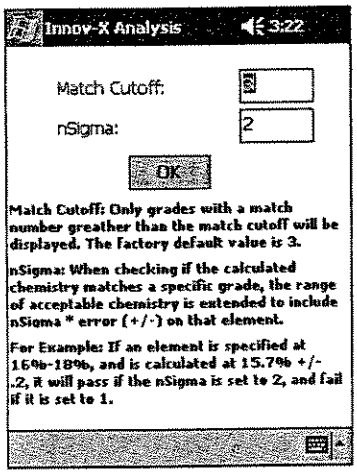
It is possible to specify whether the analyzer will report all possible matches, or just Exact Matches. These two options are referred to as Exact Match and Nearest Match. To switch between Exact and Nearest Match modes, select ***Options***. Clicking on ***Exact Match*** works as a toggle. If a checkmark appears before the words "Exact Match," Exact match is enabled. Otherwise, Nearest Match is the active method.

- **Nearest Match** When the analyzer is in Nearest Match mode, it calculates chemistries using the fundamental parameters algorithm, and searches the grade libraries and determines which alloy(s) is the closest match to the calculated results. The analyzer determines whether a grade is considered a match by comparing the calculated Match Number for that alloy to a cutoff value. This cutoff value is user modifiable. Typically this cutoff value is set at 3 and should not be changed, except in very special circumstances.

- **Exact Match** Exact match requires that all chemistry values are within a user settable error band of the min/max values specified in the Grade Libraries. The allowable error band can be changed by modifying the "nSigma" value. If nSigma is set as 0, all chemistry values must fall within the Grade Specifications. If nSigma is set as 2, for example, the chemistry value +/- 2*precision must fall within the Grade Specifications.

  Both the nSigma and Match Cutoff values are changed by selecting ***Options→Grade Library Settings.***

  A brief description of each field appears on this screen

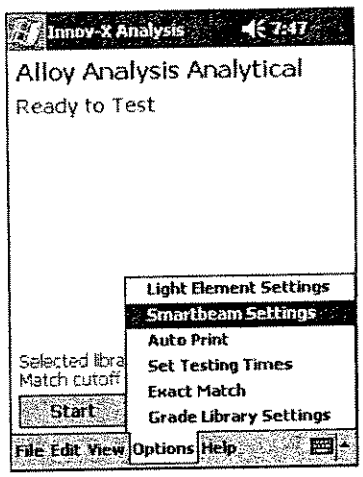


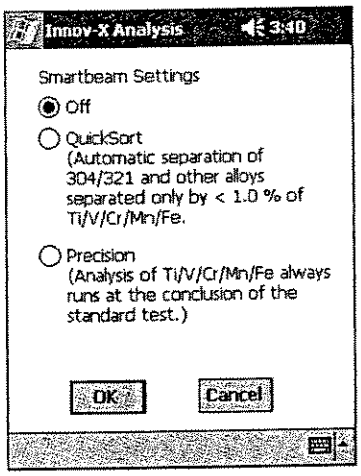
8.3.2 *Smartbeam* (optional feature)

Smartbeam adjusts the voltage, current and filtering to optimize detection of Ti and V in alloy samples. This feature is designed to provide quick, accurate separations of alloys which contain low concentrations (<1.0 %) of Ti and V, and to provide accurate and precise measurements of these elements.

Users can configure ***Smartbeam*** in two different ways: **Quicksort** mode provides automatic separation of alloys separated by a small amount of Ti or V. This mode *automatically* turns on ***Smartbeam*** and does a test with a second beam condition; if an alloy is found to match two alloy grades that only differ by a small amount of Ti or V. **Precision** mode forces ***Smartbeam*** on for every test in order to get precise chemistry on Ti and V at low levels. ***Smartbeam*** can also be disabled when it is not required.

Smartbeam settings:
To configure ***Smartbeam***, Select **Options→Smartbeam Settings** from the Analytical "Ready to Test" screen. A screen will appear providing three options.





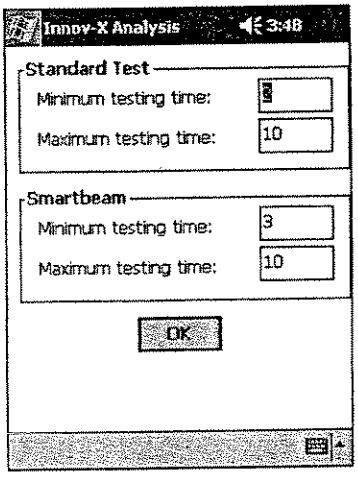
***Smartbeam* Off:**
If ***Smartbeam*** is disabled, the analyzer will perform a single, one beam analysis. This will separate most alloys; however a short test will not be sufficient to separate alloys which differ by a small amount of Ti or V. This is the recommended mode if the separation of alloys such as 304 and 321 is not required.

Quicksort:
Quicksort is the recommended ***Smartbeam*** setting for most applications. It allows for the quickest throughput of samples while maintaining the ability to separate alloys which require ***Smartbeam***. The analyzer automatically switches to a second beam condition when presented with a sample which closely matches two grades that differ by a small amount of Ti and/or V.

Precision:
This mode does a two beam test on all samples. Precision mode is only recommended for users who require precise chemistry on low concentrations of Ti and V. This is the most infrequently used ***Smartbeam*** option.

8.3.2A Setting *Smartbeam* Testing time

The Options **Set→Testing Times** screen for instruments equipped with ***Smartbeam*** allows users to set the smart beam testing times, as well as those for the Standard Test. Typical Testing times are shown.

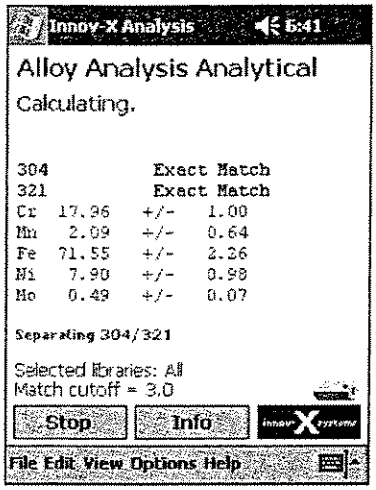


8.3.2B Testing with *Smartbeam* Enabled

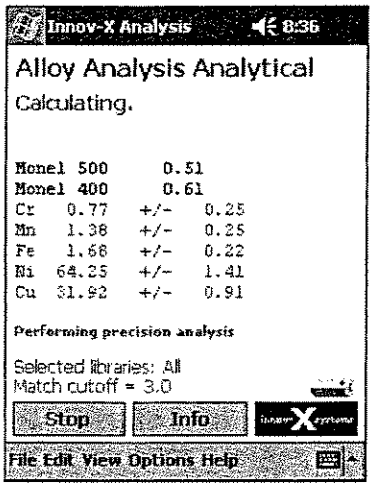
Once ***Smartbeam*** is enabled, users will operate the instrument exactly as they do when ***Smartbeam*** is disabled. Tests are started and stopped via the trigger. The analyzer will start by testing using standard beam conditions, then switch to the second beam condition automatically, if appropriate.

If Quicksort is active, the instrument will start a test using the standard beam settings. If a sample is found to match two alloys which differ by only a small amount of Ti or V, the instrument will switch to a 2nd beam condition. It will test using the second beam until the maximum testing time for beam 2 has elapsed. When the analyzer switches to 2nd beam conditions, it will display the name of the two alloys being separated.

If the alloy has a unique ID, or if the best matches differ by something other than a small amount of Ti or V, the analyzer will function as it does with Smartbeam deactivated.

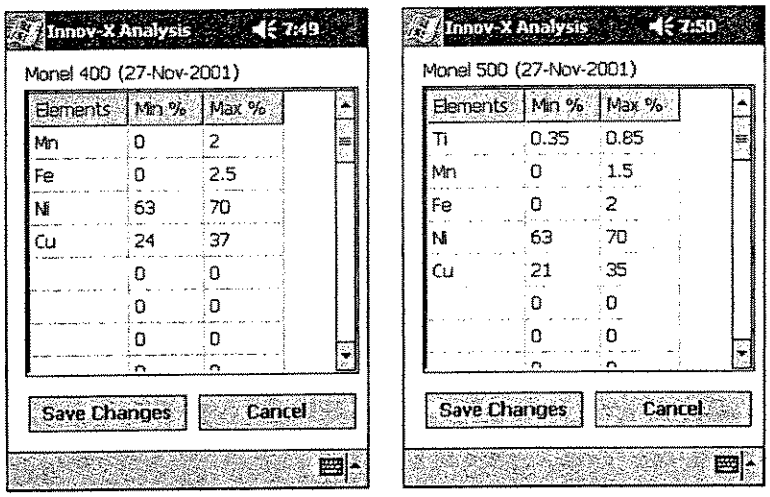


If Precision mode is active, the instrument will automatically switch to the second beam condition after the set time has elapsed for the standard beam. When the second beam is active the words "Performing precision analysis" will appear on the screen. The second beam will be active for the amount of time specified in the **Set Testing Times** screen, under the ***Smartbeam*** heading. At the completion of the test, a final result which reflects information from both beam settings will be displayed.



8.3.2C Creating alloy grades which utilize Quicksort *Smartbeam* Separation Mode.

When Quicksort is activated, the software uses the grade library to determine which alloys require a second beam analysis for separation. If the grade specifications for two alloys overlap completely, with the exception of Ti and/or V, Quicksort will use a second beam test. For example, the grade specifications for Monel 400 and 500 are shown below. They do not completely overlap, however, there are numerous concentrations which fall within the specifications of both grades. A second beam test will be required if a sample matches both of these alloys because Ti is specified in 500, but not 400.

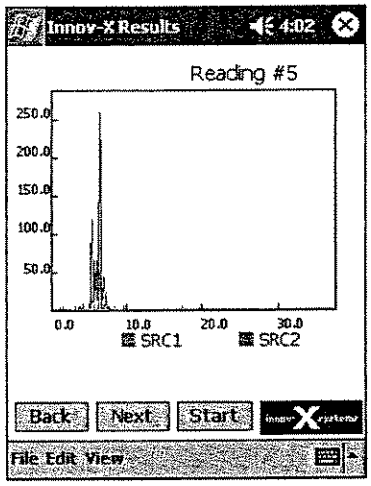


The most common grades requiring ***Smartbeam*** for quick separation; 304/321 and Monel 400/Monel 500 are included in the library. Users may add alloys to the library simply by entering the grade specifications. Quicksort will automatically use the second beam if a sample matches 2 alloys whose grade library specifications differ by <1% of Ti or V.

8.3.2D ***Smartbeam*** Results

The Chemistry results screen for ***Smartbeam*** tests is identical to that for standard tests. A single result is shown which includes information from both beams.

The Spectrum screen shows spectral overlays of data from both beams.



8.3.3 Light Element Analysis.

Innov-X Portable analyzers, like all hand-held XRF analyzers, cannot directly detect "light" elements such as Al, Si and Mg. In this manual, and in the software, light elements will be referred to as "LE" for light element. In practice Al is the most common light element of concern in alloys measured, so most of this discussion focuses on how aluminum is handled.

Innov-X analyzers handle light elements in two different ways.

1. **Use of nominal value**. All Analytical results are normalized to 100%. Since Al is invisible to the analyzer; the presence of several percent of Al can cause the other elements to appear too high after normalization. To correct for this, the software can normalize to 100% minus a nominal value for LE.

- Users should enter a nominal value for Al (or any other light element) as LE. If LE is specified for a grade, and the grade is found to be the best match for an alloy, the analyzer will use the average of the min and max specification as a nominal value. The measured results for all other elements will be normalized to 100% minus the LE nominal value.
- This is most useful for compounds which have less than 10% aluminum. This is typically used for titanium alloys and some copper alloys.

This method does not measure LE. It relies on data in the grade libraries. It's designed primarily to reduce the bias on other elements that can be caused by a significant amount of Al or other light elements. The nominal LE value will appear in blue to indicate that it is calculated, not measured.

2. **Calculation of LE using scatter lines.** A portion of x-rays from the x-ray tube are scattered back to the detector. The amount of scatter can provide additional information about the sample. In particular the amount of inelastic scatter, called Compton scatter is increased as the density decreased. As a result, the scatter lines can be used to indirectly calculate the LE concentration in low density samples, such as Aluminum alloys.
   - This method is recommended mainly for aluminum alloys, which typically contain more than 85% aluminum
   - The software will calculate the LE from the scatter lines, and all other elements from their x-ray emission lines. LE will be treated as any other element and included in the grade library search. Thus, Al alloys need to be included in the library for proper identifications.
   - Although this method can determine the amount of LE in an aluminum alloy, it is only sufficient to sort major grades of Al alloys. Many aluminum alloys cannot be separated because they differ by small amounts of Si, Mg or other light elements which cannot be measured. Please contact Innov-X System for more information on the capability of the analyzer for testing Al alloys.

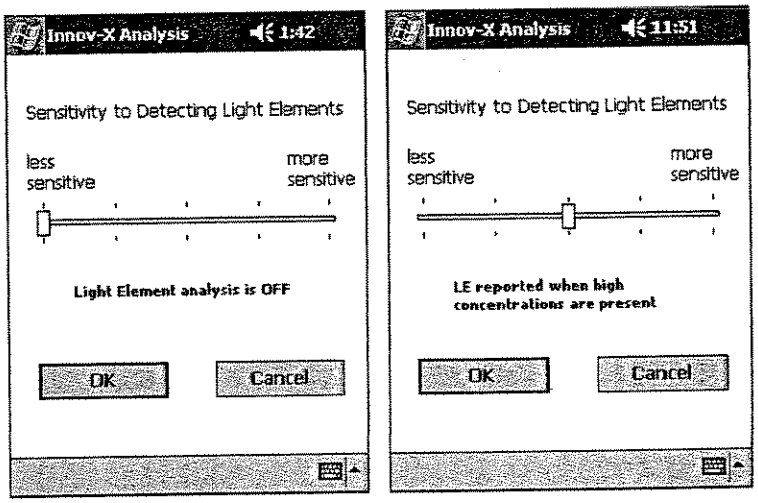
Since the calculation of LE is done indirectly, LE can be reported erroneously in some conditions if the amount of scatter is increased. For example, some customers who produce specialty alloys wrap the samples in plastic before testing. This scatter from the plastic will be erroneously reported as LE. Likewise, irregularly shaped or heterogeneous samples can, on occasion, produce false LE readings.

For these reasons, Innov-X allows customers to adjust their analyzer's sensitivity to Light Element detection. To change the LE sensitivity, select ***Options→Light Element Settings***.

If aluminum alloys are never measured, the slider bar should be positioned all the way to the left. This will ensure that Light elements are not erroneously detected. The default setting for all analyzers disables *Light Element analysis*.

Customers who measure Al alloys should set the slider to the middle of the screen.

The most sensitive setting should be used only in special cases, when recommended by Innov-X Application staff.



9.0A Alloy Analysis—Libraries

9.0 LIBRARIES

All reference data for alloy identification is stored in a standard database, or library. Libraries are all completely editable by a user with password privileges.

There are two types of library entries: Fingerprints and grade tables. Fingerprints are used in both FastID and Pass/Fail modes. Fingerprint files contain a variety of information about a standard sample, including a spectral fingerprint, assay information, and a link to a grade library entry. Grade tables contain minimum and maximum specifications for each element present in an alloy. Grade tables are used in Analytical mode, as well as in Pass/Fail if use chemistry is selected.

A library entry may contain a variety of information about the sample. This information includes:

1. Fingerprint files (editable through FastID or Pass/Fail Modes). These files may contain:
   - Spectral signatures. Signatures or fingerprints are the basis for identifying samples in both FastID and Pass/Fail Modes.
   - Specific Elements—This information is used by the FastID Specific regions Advanced feature. This is used to separate alloys that are very close and differ by only one or two elements. Certain elemental regions are selected for comparison.
   - Assays—These assays are used by FastID and Pass/Fail mode to calculate chemistry.
   - Min/Max Ranges. These are used in Pass/Fail mode for matching by chemistry. Creating Min/Max tables in Fingerprint mode results in a grade table that can be used and edited in analytical Mode.

2. Grade tables (editable through analytical mode)
   - Grade tables include a list of minimum and maximum specifications for use in grade matching.

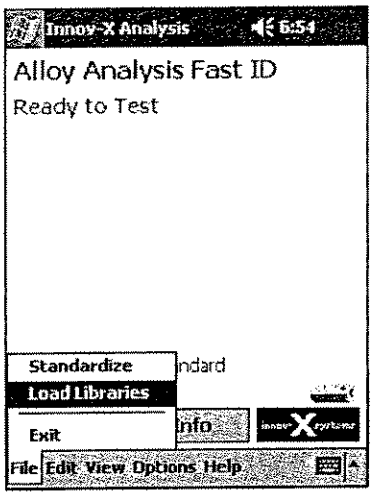
The spectral signature is automatically stored when the user adds a fingerprint to a library in FastID mode. The remaining information can be entered by the user if it is relevant. In order to calculate chemistry in either FastID or Pass/Fail, an assay must be entered. A grade table must exist to use Pass/Fail chemistry, or to get a grade ID in Analytical mode.

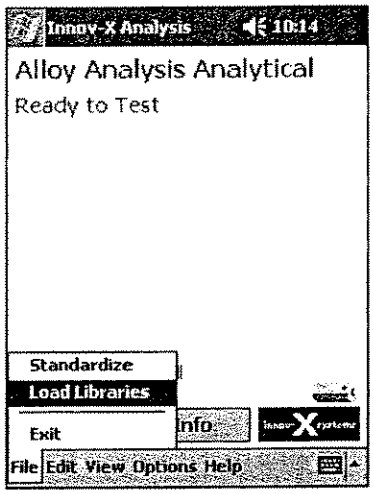
9.1 SELECTING A LIBRARY.

There are four libraries available. Each library can contain both Fingerprints and Grade Tables. The first library is the Standard Library which contains up to 300 fingerprints or grades and is supplied with every analyzer. Typically 35 FastID, and 200 Grade Tables are supplied with new analyzers. The remaining three libraries are empty, and are available for users to use create their own custom libraries. Each of these libraries can contain up to 100 samples, for a total of 300 custom samples. Users may add standards to any of the custom libraries, as well as to the standard library, however, it is good practice to make changes only to the user libraries.

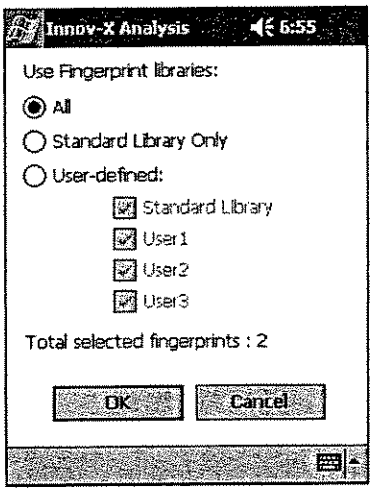
Each of the libraries may be searched individually, or in combination with any or all of the other libraries. The default setup searches all four libraries. It is possible to search any library in FastID. Pass/Fail will use only one fingerprint, so it is not necessary to select a library to search.

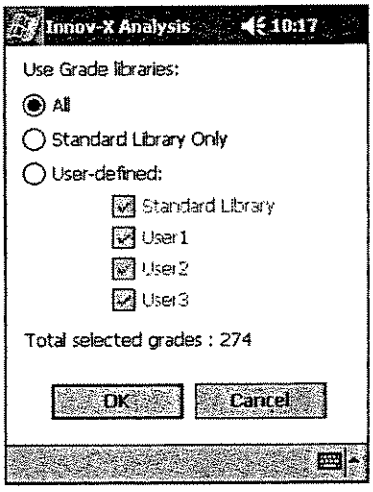
To select which library to search, select ***File→Load Libraries*** from either the FastID or the Analytical Analysis Screen.





A menu will appear. The first line reads **Use Grade Libraries** for Analytical Mode or will read **Use Fingerprints** for FastID Mode.





Choose the Fingerprint or Grade Libraries you wish to search. For the most general search, select **All** libraries. This will search the entire Standard Library, as well as any fingerprints that have been added by the user.

Users who are primarily concerned with sorting the most common specialty, stainless, nickel and high temperature alloys should always search the **Standard Library**.

Users who are sorting a small group of alloys may prefer to create their own libraries using their own standards. In this case, only the appropriate user library should be selected.

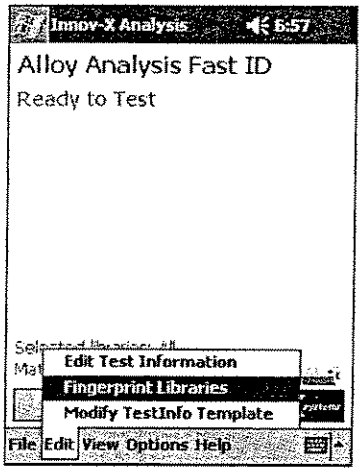
9.2 EDITING LIBRARY FUNCTIONS

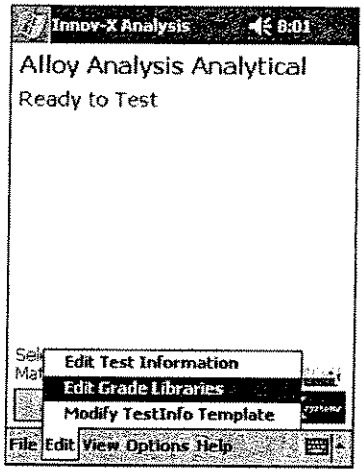
Innov-X Systems libraries are completely user editable. Library entries may be added, deleted, renamed, and the information contained within them, such as assays and min/max grade tables, can be modified.

The information contained in libraries is essential to the proper functioning of your analyzer. Care should be taken when editing libraries as incorrect settings may result in incorrect grade identification.

It is recommended that the standard library is not modified. All new alloys should be added to a user library.

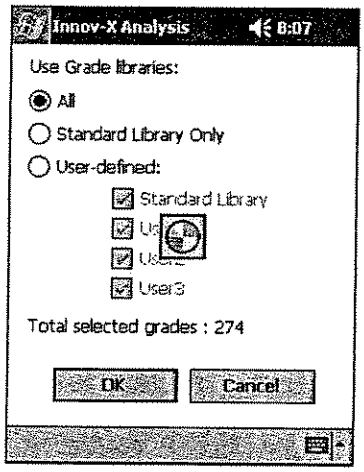
The edit libraries menu is reached by selecting either ***Edit→Grade Libraries*** from Analytical Mode, or by selecting ***Edit→Fingerprint Libraries*** from FastID or Pass/Fail modes.





All library functions require an administrative level password. The password needs to be entered only once during each editing session. The default administrator password is a lowercase z. This password can be changed from the main menu.

When you are finished with any edits, there may be a slight pause while the analyzer loads and re-indexes the library. This will be indicated by the following graphic, which will rotate in the center of the screen.

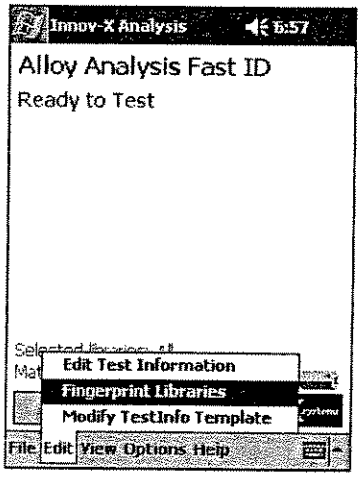


Functions such as renaming and deleting libraries are the same for both Fingerprint Libraries and Grade Libraries. They will therefore be described together in the following sections. Editing library contents and adding new library entries require different procedures for different library types and will be described separately at the end of the chapter.

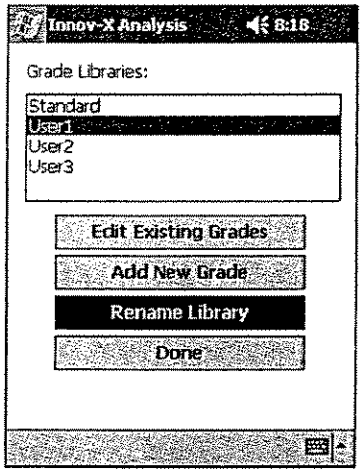
9.3 CHANGING LIBRARY NAMES

The default names for the libraries are Standard Library, User1, User2 and User3. It is possible to change the name of each of the User Libraries; however, the Standard Library can not be renamed. When a library is renamed, the new name will be used for all alloy modes, regardless of the mode that was active when the name was changed.

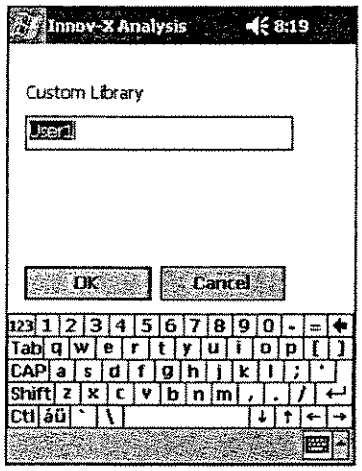
1. Library names can be changed either by selecting ***Edit→Grade libraries*** from Analytical Mode or by selecting ***Edit→Fingerprint libraries*** from Pass/Fail or FastID Mode.



2. To rename a library, select it and tap **Rename Library.**
3. Enter the administrative password when prompted.



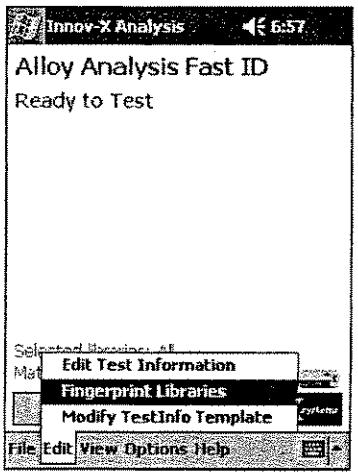
4. Type in the new name. The name may include any combination of letters or numbers, but may not include the characters "/", "." , "+", "_" or "?" . Enter the new name via the virtual keyboard. Tap **OK** to save the new name. If you do not wish to modify the name, select **Cancel.**



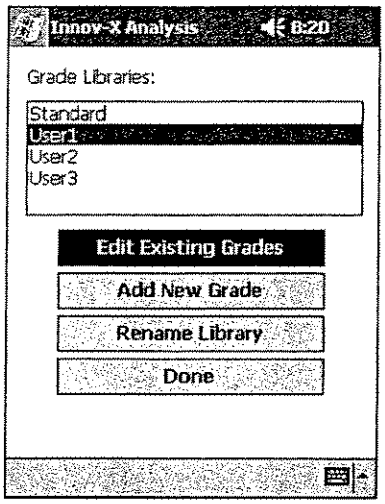
9.4 CHANGING THE NAMES OF INDIVIDUAL FINGERPRINTS OR GRADE ENTRIES.

If typographical errors are made when entering the name of a library entry, the name may be edited. Care should be taken when renaming a library entry. The name must correspond to the data saved in the file. An incorrect Fingerprint or Grade name will result in a wrong Grade ID

1. From the Analytical Menu, Select ***Edit→Grade Libraries,*** or select ***Edit→Fingerprint Libraries*** from FastID or Pass/Fail.

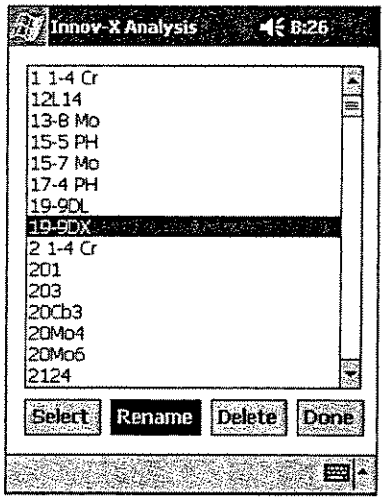


2. Select the library containing the entry you wish to rename and tap **Edit Existing Grades.**

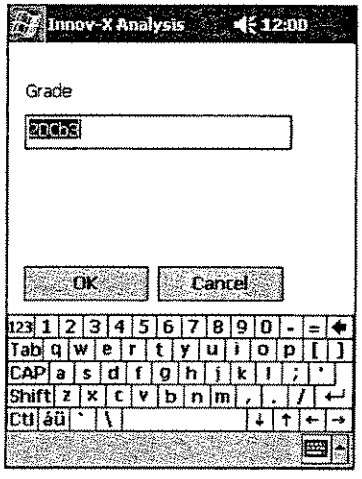


3. A list of the entries contain in the selected library will appear. Select the name to be changed, and click **Rename**. . The name may include any combination of letters or numbers, but may not include the characters /, . , +, _ or ?.

4. You will be prompted for your password.



5. Type the new name in the dialogue box. Select **OK** to accept the new name, or **Cancel** to exit without saving changes.

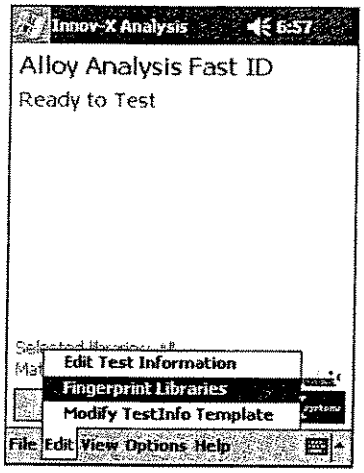


Note, because Grade Table information is stored in Fingerprint files, renaming a fingerprint file will also rename the corresponding Grade Table. However, the reverse is not true. Renaming a Grade Table entry will not rename the fingerprint with the same name. If a grade name is changed, that grade will not be useable in Pass/Fail Mode if **Use Chemistry** is selected.

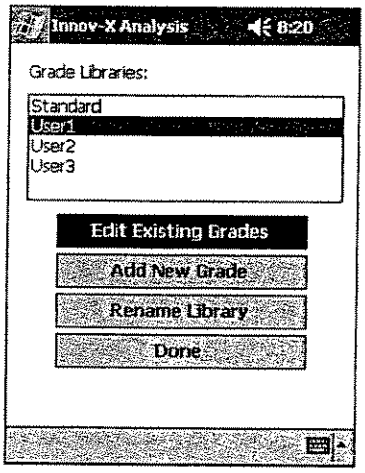
9.5 DELETING A GRADE OR A FINGERPRINT

Caution: Deleting a library entry will permanently delete the Fingerprint and Assay (FastID/PassFail) or the Grade Table (Analytical). Proceed with caution.

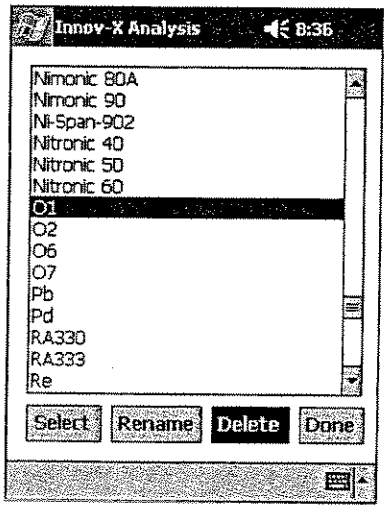
1. From the Analytical Menu, Select ***Edit→Grade Libraries,*** or select ***Edit→Fingerprint Libraries*** from FastID or Pass/Fail.



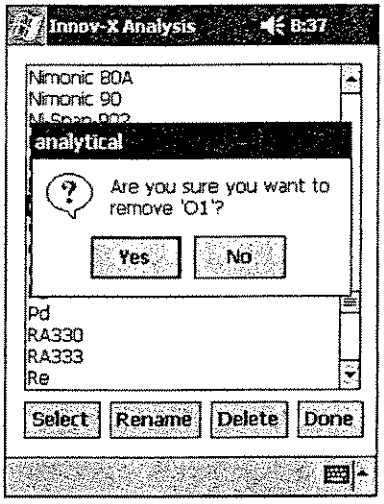
2. Select the library containing the entry you wish to delete and tap **Edit Existing Grades.**



3. Select the sample to be deleted and tap **Delete.**
4. Enter password when prompted.

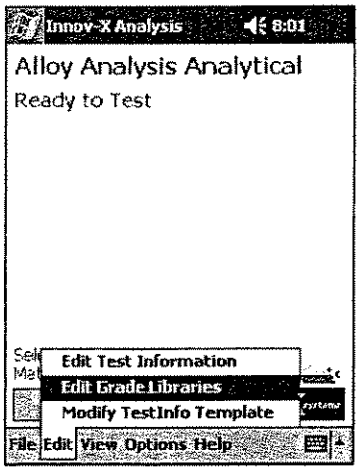


5. You must select **Yes** to confirm deletion. Otherwise select **No**.



9.6 ADDING A GRADE

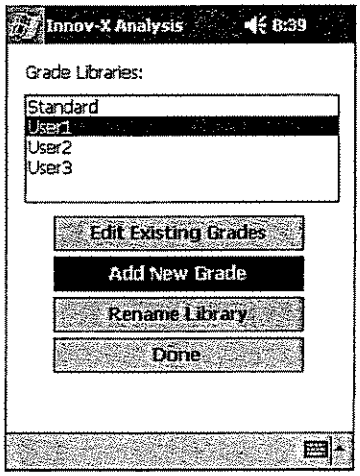
If you wish to add a grade to a library, you must have a list of the minimum and maximum allowable concentrations of each element in the library. It is important to include ALL elements that may be present in an alloy, including the balance element. Pay special attention to tramp elements that may not be specified but may be contained in an alloy of that grade. For example, many stainless alloys may contain small amounts of Molybdenum. If Mo is not included in the grade table, but is detected in sample, the sample may not be correctly identified. In a case like this, it is recommended that a maximum allowable specification is entered, such as 0-.5%.



Follow this simple procedure to add a grade:

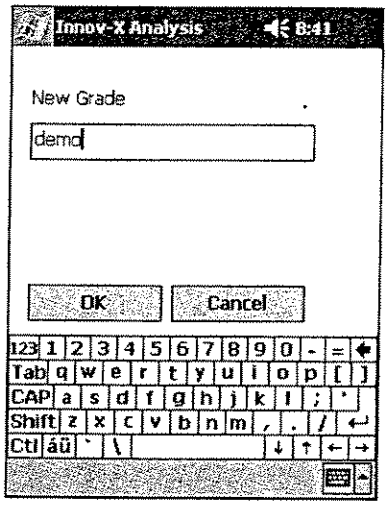
1. From Analytical Mode, Choose **Edit→Grade Libraries.**

2. Select the Library to which you want to add an entry, and tap **Add New Grade.** Enter your password when prompted.

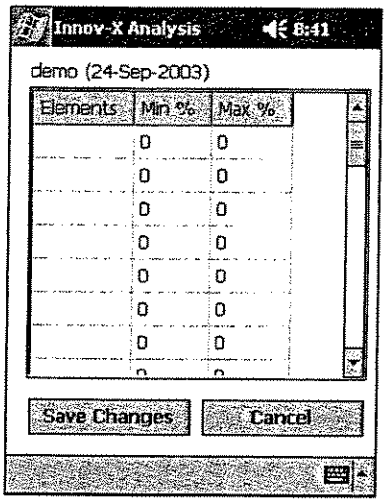


There is a limit of 100 entries in each of the libraries. If you attempt to add a grade to a library which already contains 100 entries, the message "Maximum number of user-defined libraries already exist" will appear. You must either select another library or delete a grade from the current library.

3. Enter the name of the new Grade, and tap **OK**.

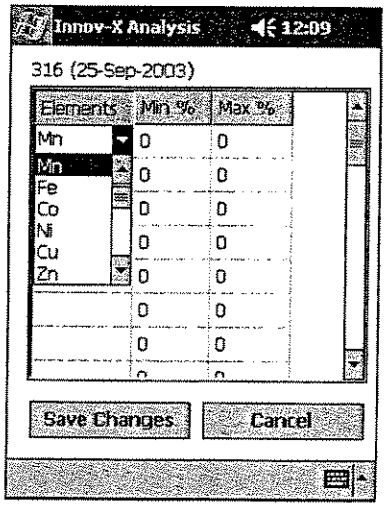


4. A new Min/Max Table will appear. It will contain no elements. A value of zero will be entered for all Min and Max values.



5. To select an element name, click twice in a box in the "Elements" Column of the table. This will bring up a drop down menu.

   You may scroll down an element, or you may advance to a specific element by pressing the first letter of the element on the virtual keyboard. Each time you press a letter, you will go to the next element in the list beginning with that letter. For example, the first time you select M, you will advance to Mn. Selecting M again will advance to Mo.

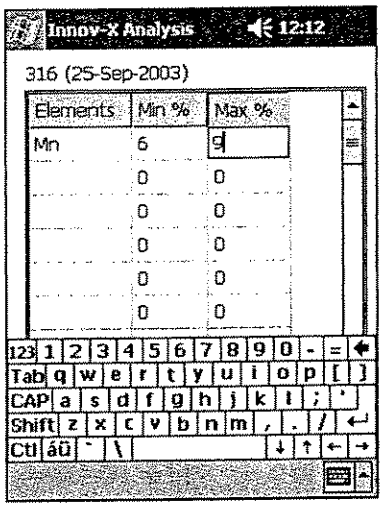


6. To enter a minimum or maximum value, tap in the appropriate space to select it, then enter the desired value.

   a. If an element is listed as being between 6 and 9 %, enter a 6 in the Min % column and a 9 in the Max % column.

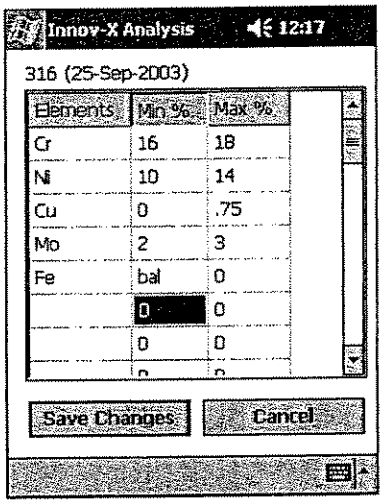
   b. If a maximum value is specified for an element, enter 0 in the Min % column and the maximum specification in the Max % column.

   c. To enter a spec that has only a minimum value specified, enter the value in the Min %column and 100 in the Max %column.

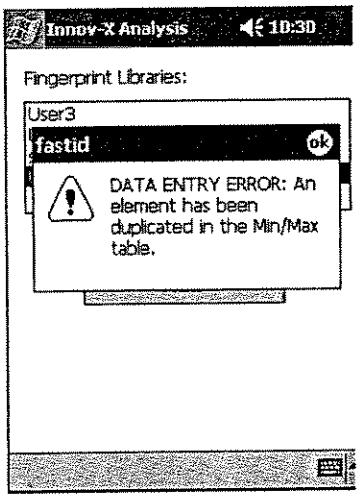


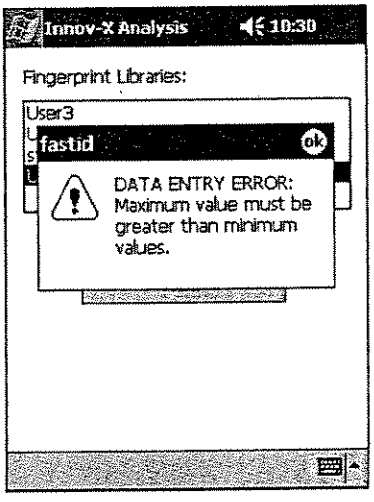
7. Repeat for all relevant elements. Bal may be entered for the balance element.

8. Tap **Save Changes**.



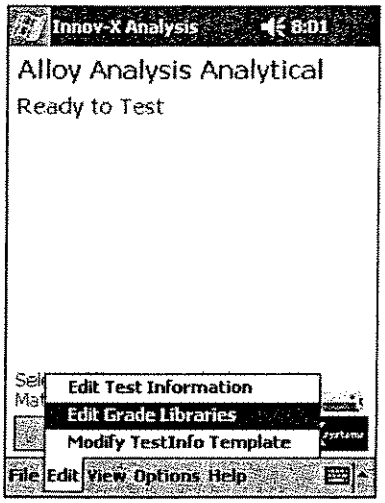
The software requires that the minimum value is less than the maximum value for each element, and that each element is only entered once. If there is a problem with the data entered, a warning message will appear. Click **ok**. The Min/Max table will appear. You must correct any errors before you are allowed to save the data.



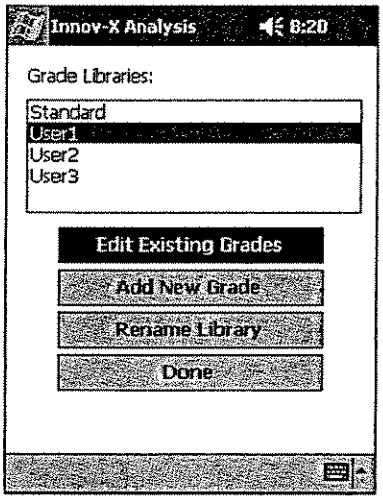


9.7 ANALYTICAL MODE--EDITING A GRADE

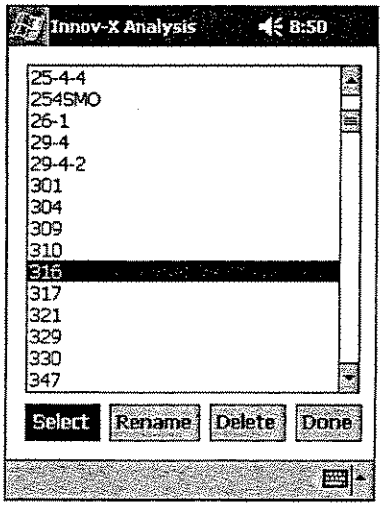
1. From Analytical Mode, Choose *Edit→Grade Libraries.*



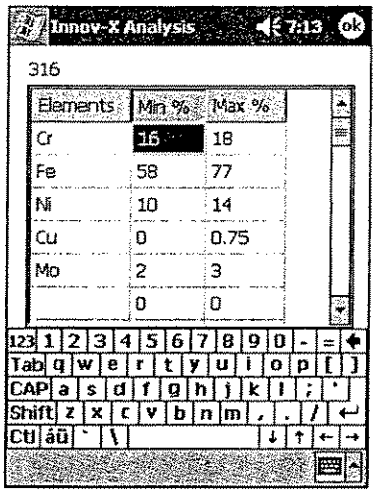
2. Select the library containing the entry you wish to rename and tap **Edit Existing Grades.**



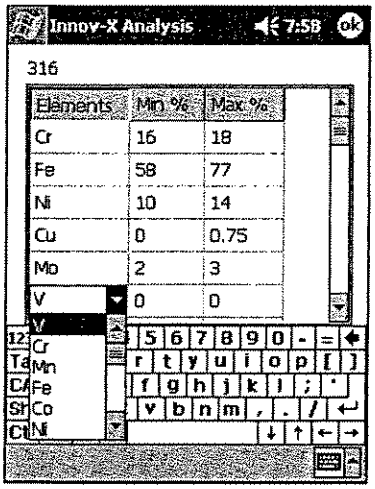
3. A list will appear showing the entries in the library. Tap on the grade name you wish to modify and tap **Select** to bring up the specifications.



4. Element specific minimum and maximum values are shown. Only elements with specified values are shown on the list. To modify min or max values for any listed element, select the appropriate field and enter the new value using the virtual keyboard.

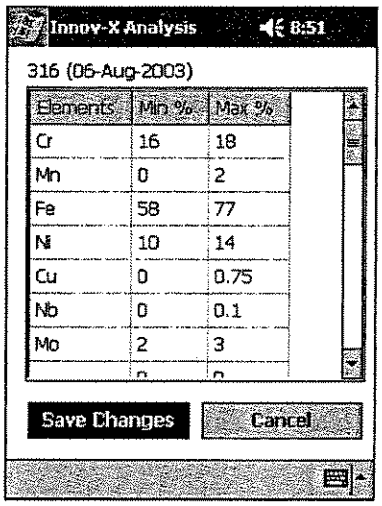


5. To add specifications for an element that is not present, tap twice in an empty box in the Elements column. Use the drop-down menu to select a new element in the field directly below the last listed element.



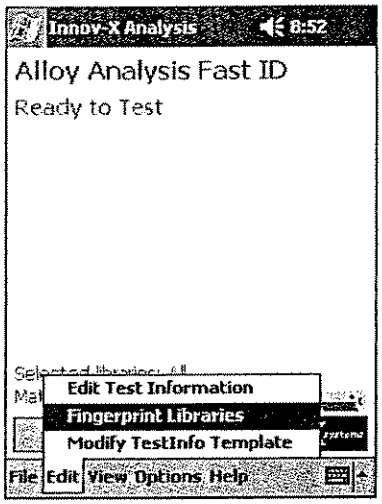
6. Repeat for all relevant elements.

7. Tap **Save Changes**.

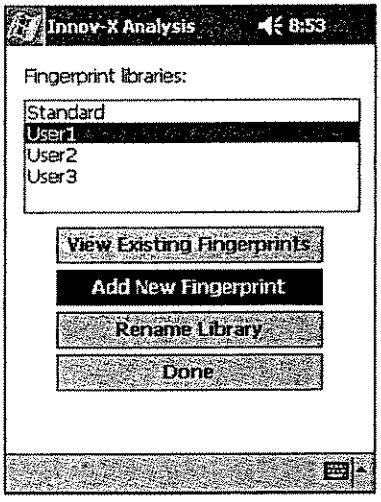


9.8 ADDING A FINGERPRINT

Adding a standard to a fingerprint library requires a sample of the material to use to create a fingerprint. In order to calculate chemistry for this type of alloy, assay values must be available and must be entered into the software. Since assay values are used to calculated chemistries for other alloys, it is important that this information is very accurate. When possible, it is strongly recommended that a certified standard be used.

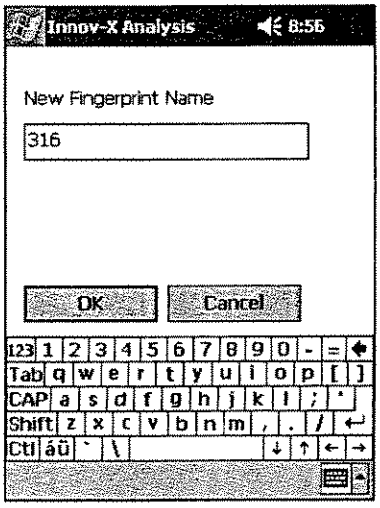


1. From the FastID Analysis Screen, Choose ***Edit→Fingerprint Libraries***.



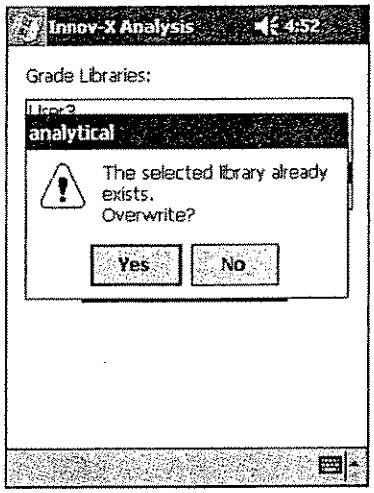
2. Select the Library to which you want to add an entry, and tap **Add New Fingerprint.** Enter your password when prompted. Remember that your password is the lowercase letter **z** unless it has been changed.

The size of the libraries is limited to 300 entries in the standard grade library, and 100 in each of the custom libraries. If the library is full, a message will appear telling you to either delete a grade, or choose a different library.

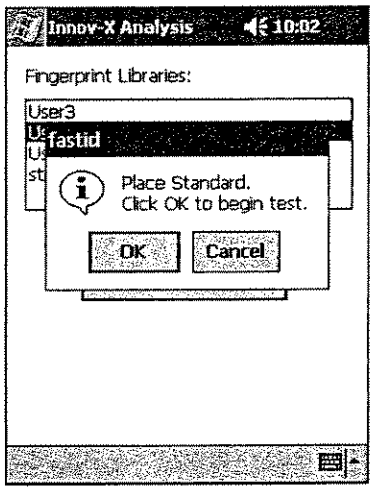


3. Enter the name of the new Fingerprint, and tap **OK**. The alloy name may be any combination of letters or numbers but may not include symbols such as ?, /, ., or +.

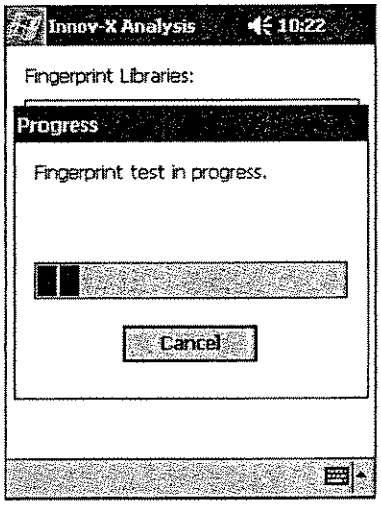
4. If you enter a sample name that is already stored in the library, you will receive a warning message. If you wish to overwrite the existing file tap **Yes,** otherwise select **No** and choose another name.



5. The analyzer will prompt you to place the sample.



6. Place the sample in front of the analyzer window and tap **OK**. The analyzer will acquire a spectrum for storage in the library. The fingerprinting process will take 30 seconds. It is very important that the analyzer window remain in contact with the standard for the entire duration of the fingerprint measurement.

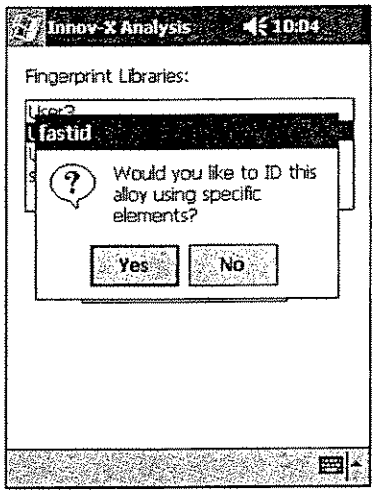


7. When the fingerprint has been stored, you will be asked if you want to enter specific elements.

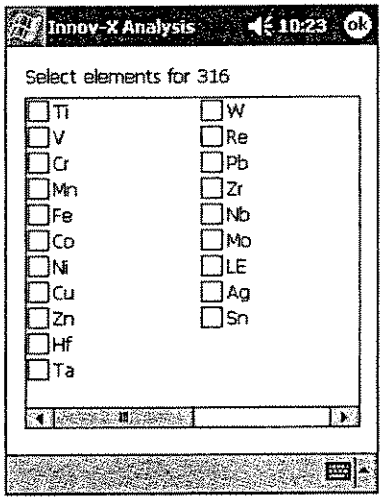
   Using specific elements is described in more detail in the FastID section of this manual. It is useful in situations where you are trying to separate two or more similar alloys that differ only in the composition of one or two elements. Note that this feature is not often used. Most users will select **No**

   If you wish to utilize this function, select **Yes**, otherwise, select **No**.

   If **No** is selected, skip to step number 10.



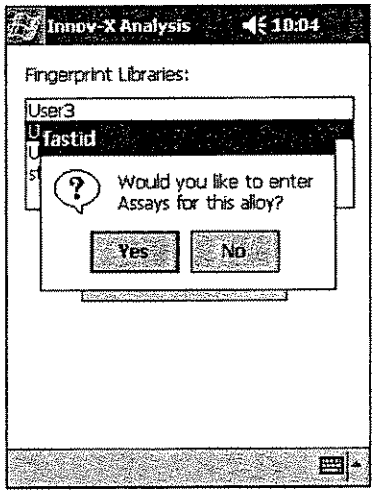
8. To enter specific elements, select the elements you wish to use by checking the box to the left of the element name. Usually, only one or two elements will be selected. Tap **ok** when you are finished



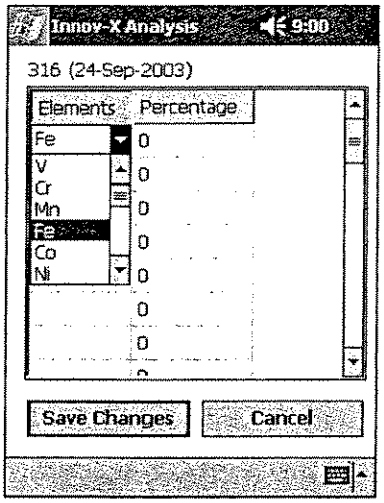
9. After specific elements have been selected, or after selecting **No** in step 8, you will be asked whether you want to enter assays.

   In order for the Innov-X Systems Software to calculate chemistries in FastID or Pass/Fail Modes, assays must be entered.

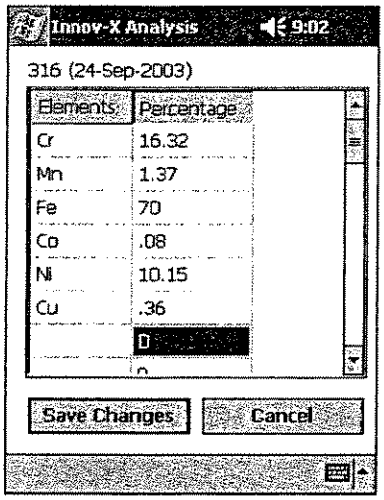
   If you do not wish to enter assays, or they are not available, select **No**. If you select **No**, you will be able to use this Fingerprint for Grade Identification in FastID, and using the **Fingerprint** method in Pass/Fail. However, it will not be possible for the instrument to calculated chemistries for alloys matching this fingerprint. Skip to step 12 if **No** is selected.



10. A blank table will appear. Enter the element name and assay into this table.



    a. To select an element name, click twice in a box in the "Elements" Column of the table. This will bring up a drop down menu. Scroll down to the element you wish to select, or select the first letter in the element symbol using the keyboard.



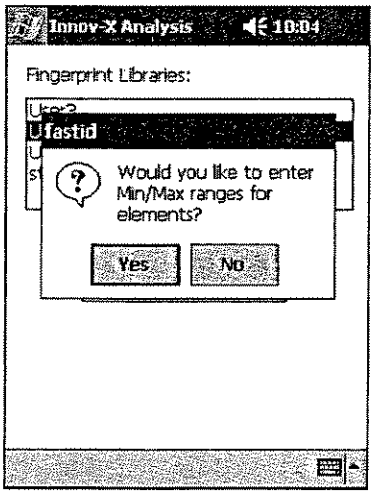
    b. Enter the assay for the selected element in the next column.

       The software will automatically calculate the value of a balance component if "bal" is typed into the percentage column.

       Keep in mind typical detection limits of the instrument when entering assays. As a general rule, do not enter assays which are below 0.3%.

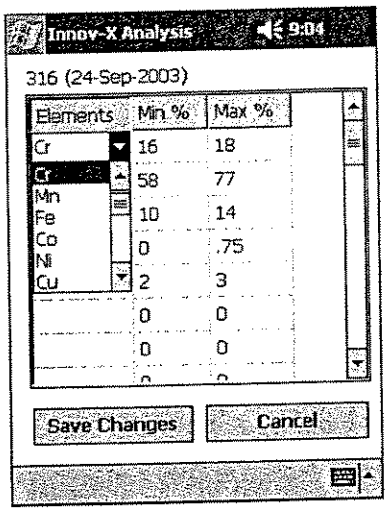
    c. When all assays have been entered, tap **Save Changes**.

11. After entering assays (or if no was selected in step 10), the system will ask if you want to enter Min/Max ranges. This is recommended only if you will be using both Analytical and FastID to identify this standard alloy, or if you will be using Pass/Fail mode with **Use Chemistry** activated. The vast majority of users will select **No** in answer to this question.



    If you wish to enter Min/Max ranges, select **Yes**; otherwise select **No**. If you select **No**, the process of entering a fingerprint is complete.

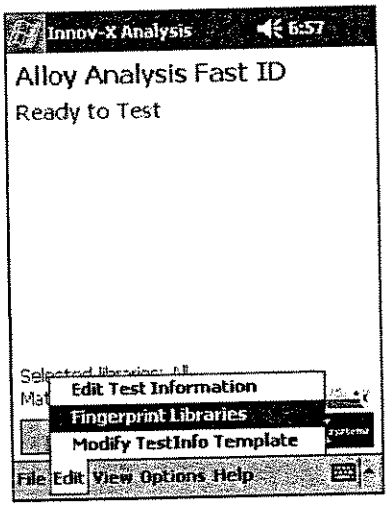
12. Enter your Min and Max ranges for each of the elements in your sample. If you have any questions about this procedure, you can refer to the description in **Section 9.6: Adding a Grade.**



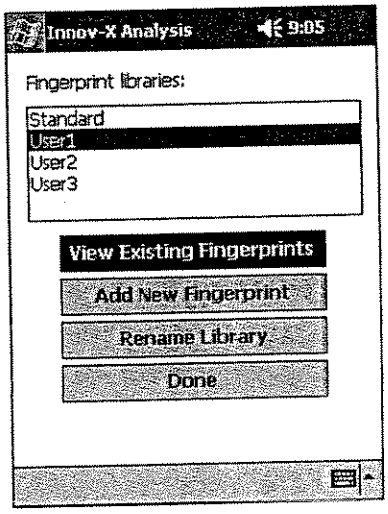
9.9 EDITING FINGERPRINT LIBRARIES

It is possible to edit Assays, Specific Regions and Min/Max (Grade Tables) for existing elements.

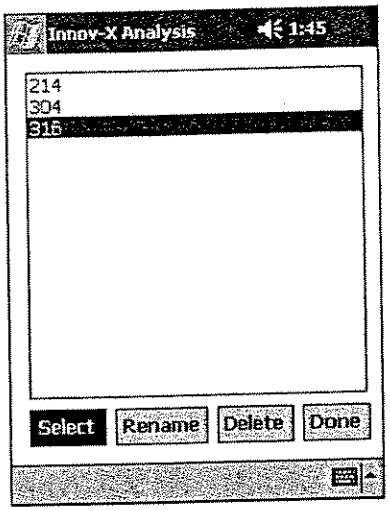
1. From the Fast ID Analysis Screen, Choose ***Edit→Fingerprint Libraries.***



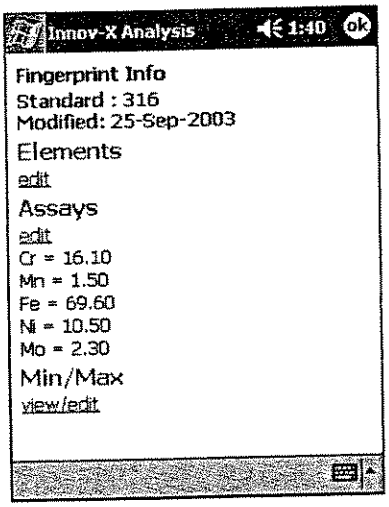
2. Select the Library containing the fingerprint you want to modify and select **View Existing Fingerprints.**



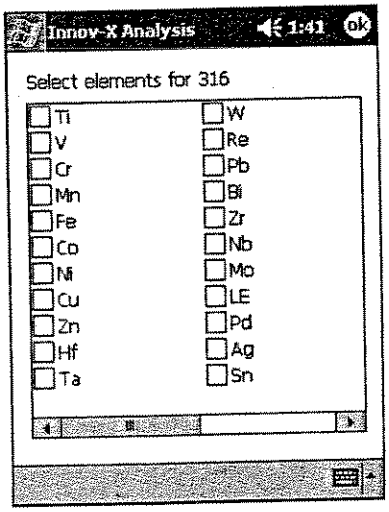
3. A list will appear showing the entries in the library. Tap on the grade name you wish to modify and tap **Select** to bring up the specifications. Refer to the **Section 9.8: Adding a Fingerprint** for more information on any of these features.



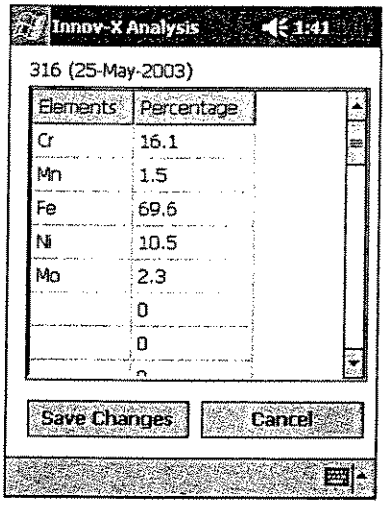
4. The fingerprint info screen will be selected. If any assays are stored with the fingerprint, they will be shown here. To edit, tap the words **edit** or **view/edit** below the information you wish to enter.



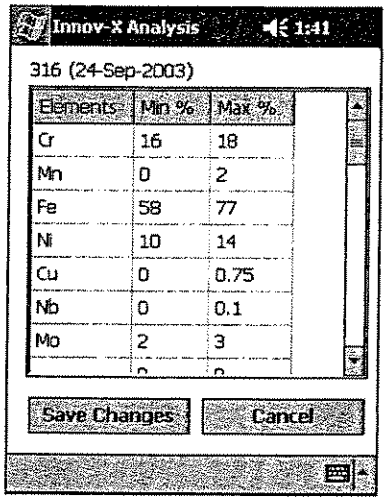
5. Editing elements brings up the specific elements screen. Select elements you wish to use. Press **ok** to select.



6. If you wish to enter assays, enter the elements contained in the sample and the certified values.



7. Min/Max **View/Edit** allows you to enter minimum and maximum specifications for each element.



5.0S Soil Analysis

The Innov-X analyzer can be used to analyze in situ (directly on the ground), bagged or prepared soil samples. A guide to Soil analysis using field portable X-ray fluorescence is found in the appendix. This document summarizes EPA Method 6200 which is the standard protocol for field screening. It also provides information on prepared sample testing.

5.0 CHECK STANDARDS

It is recommended that a check standard is measured after each standardization, and periodically throughout the day. Innov-X provides several NIST certified standards for verification. The certified values for these samples are provided in the appendix. At least one standard should be measured for a minimum of 1 minute. Elemental concentrations for elements of interest plus or minus the error on the reading should be within 20% of the standard value. The Field screening guide in the appendix describes in more detail recommended quality assurance considerations.

The standards provided with the XRF analyzer are contained in XRF sample cups with a Mylar window (through which the soil can be viewed) on one side, and a solid cap on the other side. Samples should be measured in the sample cup, through the Mylar window. The best way to measure a prepared sample is using the test stand. If this is not available, the sample may be placed on the ground, and the analyzer may be pointed downwards in full contact with the soil cup. Do not hold the soil cup in your hand while measuring.

5.1 SAMPLE PRESENTATION

In situ testing:

In situ testing is performed by pointing the analyzer at the ground. Any grass or large rocks should be cleared away and the analyzer should be held such that the front of the probe head is held flush to the ground.

Since dirt can accumulate on the analyzer window, it is recommended that the window is wiped clean after each analysis. The window should also be checked to ensure it is not ripped or punctured. Instructions for replacing the window are found in the appendix.

Bagged or prepared sample testing:

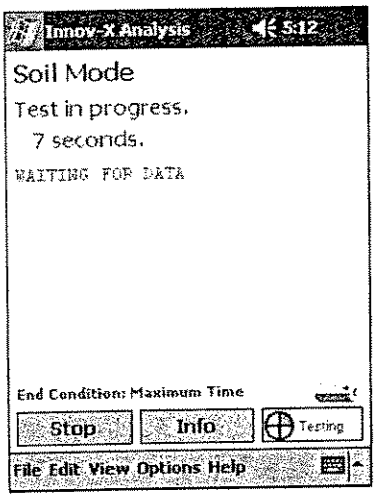
It is strongly recommended that all prepared samples be analyzed in the testing stand. Samples should be placed on top of the testing stand, completely covering the window. **Never hold prepared or bagged samples while testing,** as this could expose the operator to the x-ray beam.

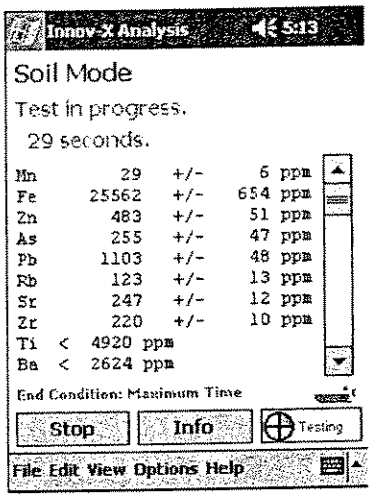
Avoid measuring very thin samples, as this can affect results. Prepare samples cups to contain at least 0.5 inches of packed samples. When analyzing bagged samples, make sure that sufficient sample exists in the bag to completely cover the window with a sample thickness of a minimum of 0.5 inches.

5.2 TESTING IN SOIL MODE

After the instrument has been standardized, testing can begin. Simply pull the trigger or press **Start** on the iPAQ screen to begin the test. The red warning light on the top of the instrument will blink, indicating X-rays are being emitted. The screen will display the words "Test in progress" and the time elapsed. The word "Testing" will blink on and off in the low right hand corner of the screen.

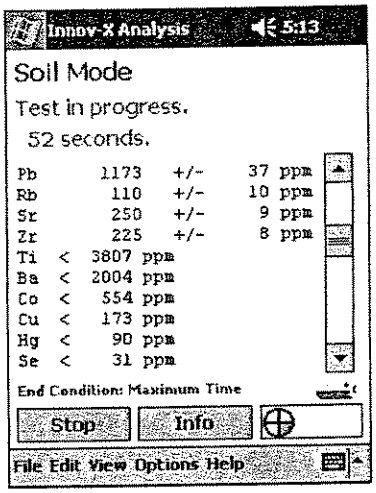
After a minimum time has elapsed, intermediate results will be displayed on the screen. Until this minimum time has elapsed, the words "WAITING FOR DATA" will appear instead. This minimum time can be set by the user by selecting ***Options→Set Testing Times***, which is described in **Section 5.4: Soil Mode Options.** Each line of the results display shows the name of an element, its calculated concentration and the error on the measurement. This error is the 1 sigma error on the counting statistics of the measurement. The error will decrease with increased testing time.





Too many elements are measured in soil mode to display them at one time. However, is possible to use the scroll bar located to the right of the chemistry display to view other elements. The complete display shows detected elements first, listed in order of emission line energy, from lowest to highest. Following the detected elements are the elements which are below the detection limit of the instrument. These elements are shown as less than a calculated LOD. This LOD is defined as three times the error on the counting statistics of the measurement.

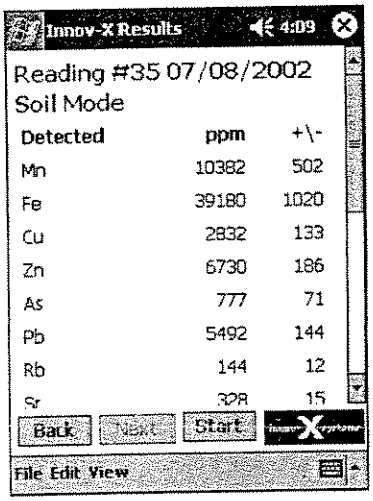
When the measurement is complete the results screen will open, displaying the final results of the measurement.

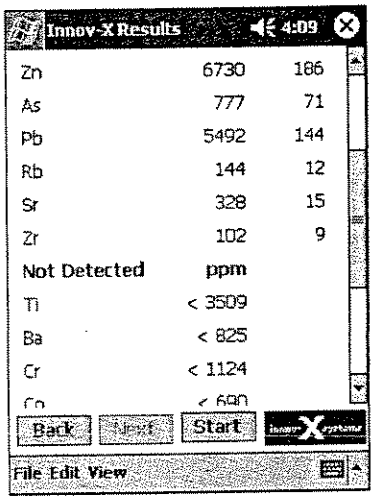


5.3 SOIL RESULTS SCREEN

5.3.1 Results View Menu

The standard Soil Mode results screen displays the concentration (in ppm) and error in measurement for detected elements, followed by the list of non-detected elements with the calculated limit of detection for each element for that test. If the display does not show soil chemistry results, change the display by selecting ***View→Results.***



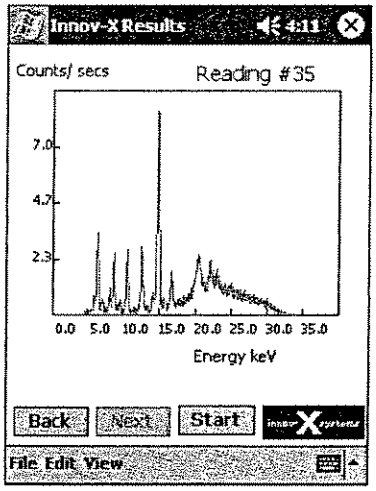


The standard soil chemistry display can be modified by using the View Menu. As with all Innov-X analytical modes, it is possible to view spectra and Test Information.

5.3.2 Spectrum Screen

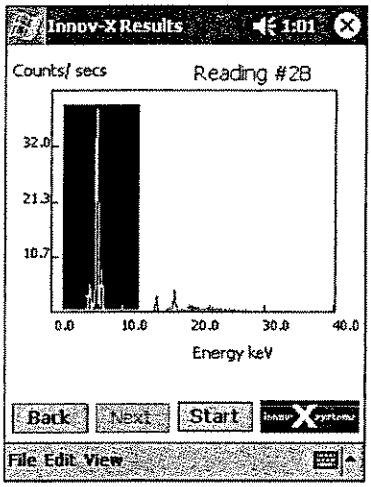
This screen displays a plot of the x-ray fluorescence spectrum for an individual test, plotting the intensity on the y-axis versus the energy of the fluorescence x-rays on the x-axis.

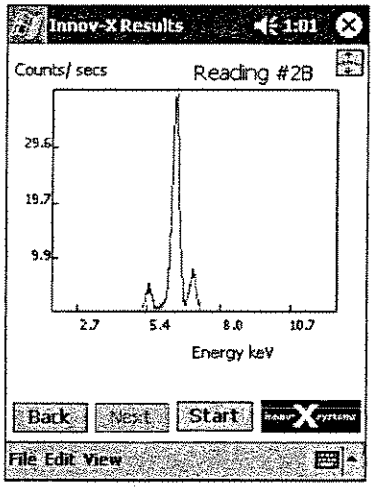
Tapping on the spectra will show the energy scale and counts rate at the selected point



It is possible to zoom in on certain areas of the graph by selecting one corner and drawing out the region

Tapping the symbol in the upper right hand corner beneath the X will restore the graph to full scale.





5.3.3 Test Info Screen

The test information screen shows any test information that was entered prior to the start of the test. Changes to that test information can be made by selecting **Edit→Test Information.**

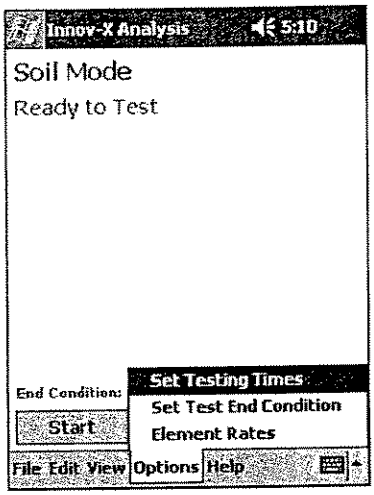
5.4 SOIL MODE OPTIONS

The length of tests in Soil Mode is user settable. Users may select a minimum testing time, and as well as choose from a variety of test end conditions.

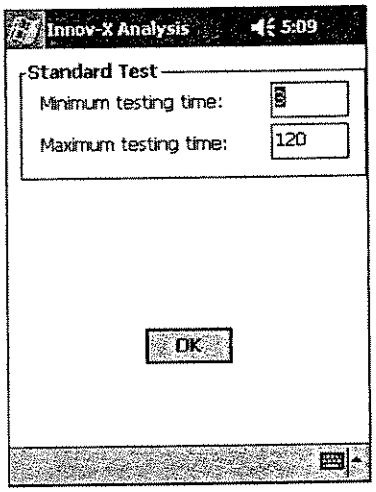
The options related to test time are contained in two menus: ***Options→Set Testing Times***, and ***Options→Set Test End Condition. Set Testing Times*** contains minimum and maximum testing time information, while ***Set Test End Condition*** allows the user to select test end conditions.

5.4.1 Set Testing Times

To set the minimum and maximum test lengths, select **Options→Set Testing Times**



A screen appears prompting you to enter a Minimum and Maximum Testing times. Instruments equipped with the optional LEAP package will be able to set Light Element Testing times in this screen, as well.



The minimum testing time is the required time that must elapse before results can be calculated. Live Update results will not be displayed on the screen until the minimum has elapsed, likewise a test must complete the minimum time before any test end condition can be used. If a test is stopped before the minimum testing time has elapsed, the test will be aborted, and no results will be calculated.

Maximum testing time is relevant only if "Maximum Testing Time" is selected from **Set Test End Condition**. This will automatically end the test at a preset testing time. Typically, the maximum testing time will be in excess of 30 seconds, and may be 1 or 2 minutes, depending on detection limits and desired precision.

It should be noted, that all testing times in this section refer to "Real Time," the time the measurement takes when timed on a normal clock. The time stored with each analytical result (accessible by selecting **View→Test Information** from the Results screen), refers to the test's "Live Time". This is the amount of time that the analyzer hardware was collecting spectra. Since there is some detector dead time associated with a measurement, the live time of a test will be slightly shorter than the preset "Real time".

5.4.2 Soil Mode Test End Condition

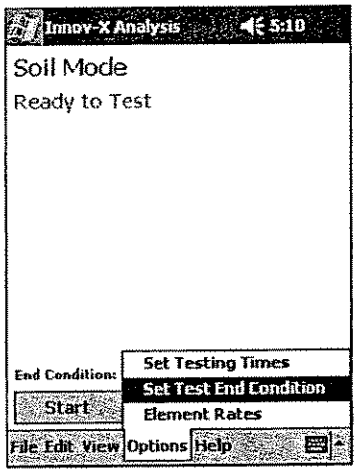
Four options exist for the test end criteria in soil mode. Depending on your application, you may choose to end the test manually, at a preset testing time, or when the uncertainty in the measurement is within a

specified relative standard deviation of the reading. Additionally, you can set up an action level for a single element. As soon as the measuring statistics are good enough to ensure that that the reading is above, below or at the action level, the test will end automatically. This allows for very rapid tests for elements that are well above or below an action level.

In all modes, pressing Stop, or pulling the trigger will end the test. If the minimum testing time has elapsed, results will be calculated. Otherwise the test will be aborted without calculating results.

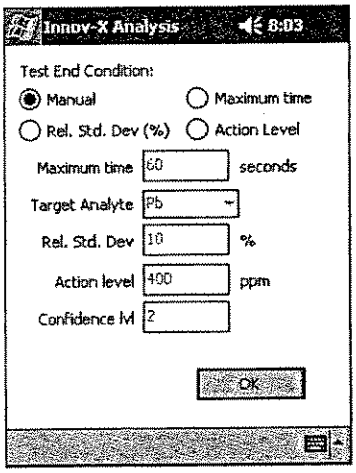
Changes to the test end condition are made by selecting ***Options→Set Test End Condition***

The currently selected end condition will be displayed at the bottom of the screen above the Start button on the Ready To Test screen.



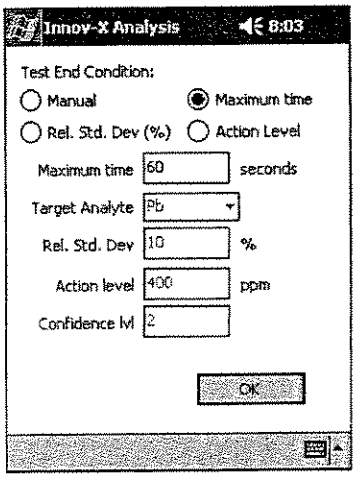
Manual: This option allows you to look at the results which are being continually updated on the screen and determine when the results look satisfactory. The test will continue until the trigger is pulled, or **Stop** is tapped on the iPAQ screen. Results will be calculated if the testing time has exceeded the Minimum Test time which is set up in ***Options→Set Testing Times***. In order to preserve battery life, the software will stop if the testing time exceeds 300 seconds, since there is little to no advantage to continuing a test beyond 300 seconds.

To use Manual Test End Condition, simply choose ***Options→Set Test End Condition*** and select **Manual**. Press **OK** to return to the analysis screen.



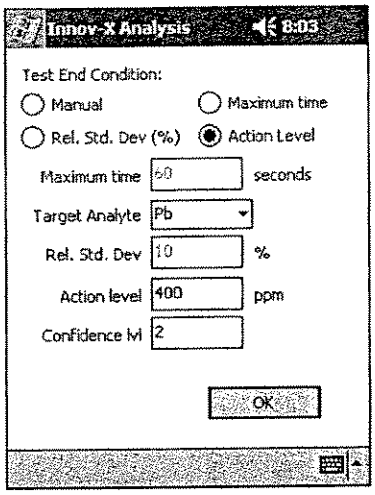
Maximum Time: If Maximum Time is selected, the test will continue until the preset time is reached. This is useful if you wish to do a set of measurements with the same testing time.

To choose to end test based on a maximum time, select ***Options→Set Test End Condition*** and select **Maximum Time**. Enter the desired testing time in the appropriate box. Tap OK to save your selections.



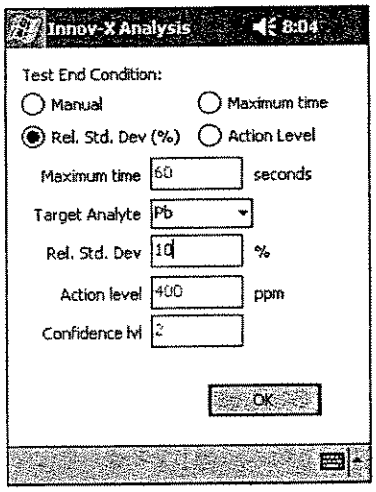
Action Level: System ends test when result for target analyte including chosen precision level is above or below pre-set action level.

To choose to end a test based on an Action Level, select ***Options→Set Test End Condition*** and select **Action Level**. Select a target analyte, specify an action level in ppm, and a confidence level. This confidence level refers to the number of sigma required for the precision. This should typically be set to 2. Tap **OK** to save your selections.



Relative Standard Deviation (RSD): When RSD is selected as a test end criteria, the system will end a test when the relative standard deviation on a target analyte reaches a pre-set level. This standard deviation is specified as a percentage of the reading. For example, if the measured value for an analyte was 1000 ppm, and the RSD was set to 10, the reading would stop when the error reached 100 ppm, or 10% of 1000.

To choose to end a test based on a Relative Standard Deviation, select ***Options→Set Test End Condition*** and select **Rel. Std. Dev (%).** Select a target analyte and the desired Relative Standard Deviation. Tap **OK** to save your selections.



5.5 LEAP Mode (Light Element Analysis Program):

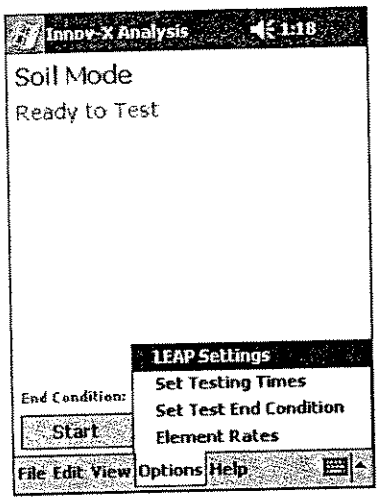
This is a factory installed optional module. Instruments can be upgraded to LEAP capabilities. Please contact the Innov-X Systems Sales department for information and pricing.

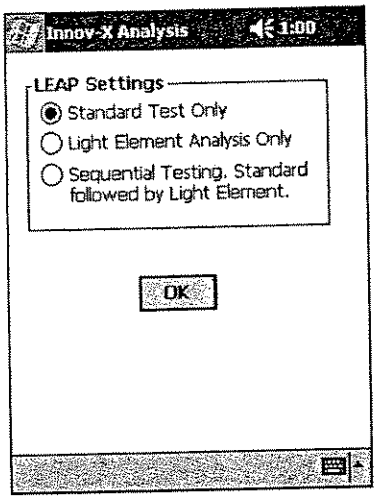
The LEAP module provides the lowest possible detection limits for elements lighter than iron. The standard LEAP package includes the elements Ti, Ba and Cr. Elements as low as Phosphorus can be detected with the Advanced LEAP package which includes a thin window detector.

The standard x-ray beam conditions used by Innov-X environmental analyzers are designed to provide good excitation for a wide range of detected elements. However it is not possible to select one beam condition which provides the absolute best excitation conditions for all elements of interest. Elements such as Chromium produce lower energy x-rays then other elements analyzed. These lower energy x-rays are not as effectively excited by the standard conditions. LEAP works by changing the X-ray tube beam conditions to settings which are optimized for the detection of elements lighter than iron. Instruments are factory calibrated with the LEAP beam conditions for all applicable elements.

5.5.1 LEAP Settings

To activate LEAP, select ***Options→LEAP Settings*** from the Soil analysis screen. This brings up the menu shown below on the right.



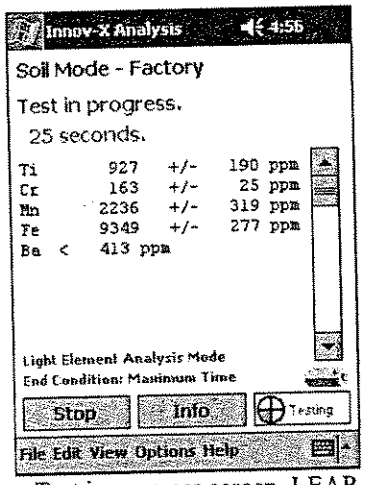


Standard Test Only: The analyzer will provide analysis for the standard suite of elements.

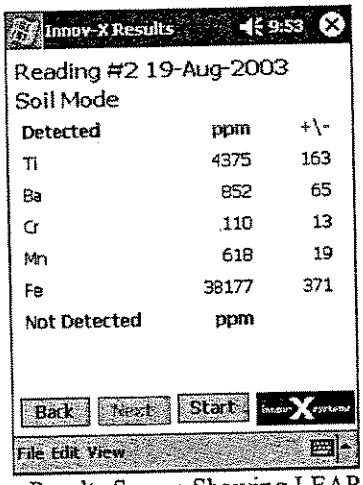
Light Element Analysis Only: The analyzer will provide analysis for elements in the LEAP suite (Typically Ti, Ba and Cr)

Sequential Testing: When sequential testing is selected, all tests will start with an analysis of elements in the standard suite. If that test ends due to reaching the selected end condition of Maximum Test Time, Action Level, or RSD, then the analyzer will immediately begin a second test analyzing the LEAP suite of elements. At the conclusion of this test, the Results screen will open with two new entries. The first summarizes the standard test results, while the second summarizes the LEAP results. For safety reasons, the second test will not begin if the test ends due to user intervention (pulling the trigger or hitting Stop). In this case, the Results screen will open with only one reading.

If Light Element Analysis Only is activated, the words "Light Element Analysis Mode" will appear above the currently selected End Condition. Instrument operation in this mode is identical to Standard (Non-LEAP) analysis. Tests can be started or stopped either by pulling the trigger, or by tapping the Start/Stop button on the iPAQ screen. The results screen for a test will show results for all elements analyzed with the LEAP mode.

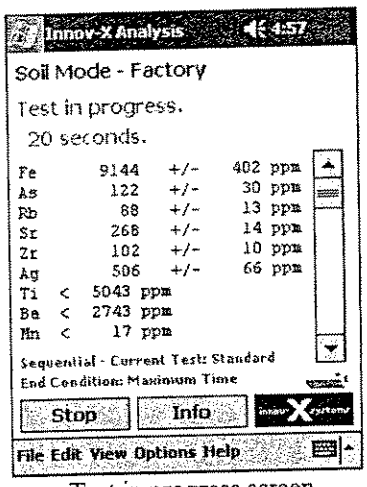


Test in progress screen, LEAP Only, Live Updates on

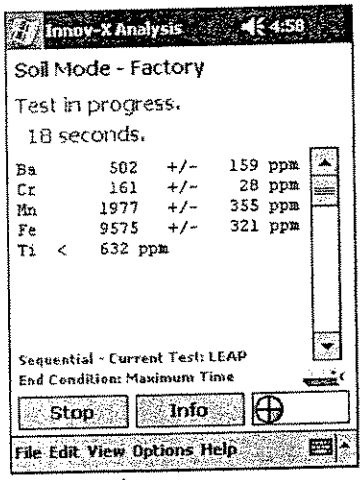


Results Screen Showing LEAP results

If Sequential testing is selected, the words "Sequential – Current Test: Standard" will appear above the currently selected End Condition. When a test is started, the instrument will appear to operate in the same manner as a Standard test. However, if the test ends according to the specified end condition (excluding Manual), the results screen will not open. Instead, the timer will reset to 0, and the description of the current test will change from "Standard" to "LEAP". The live update screen will begin to show analysis for all LEAP elements.



Test in progress screen, Sequential.
First Test – Standard Analysis.

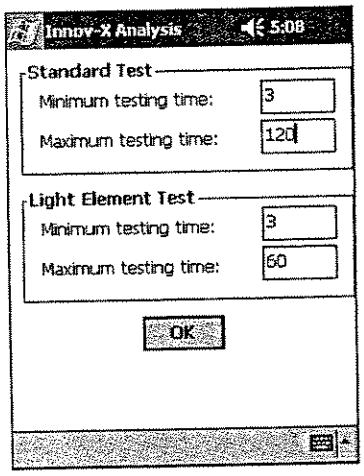


Test in progress screen, Sequential.
Second Test – LEAP Analysis

5.5.2 Testing Times

To set the minimum and maximum test lengths for LEAP analysis, select **Options→Set Testing Times.**

The testing time screen includes an extra section labeled "Light Element Test" that is not found on non-LEAP systems. These are the minimum and maximum test lengths for any LEAP tests.



As with standard tests, the minimum testing time is the required time that must elapse before results can be calculated. Live Update results will not be displayed on the screen until the minimum has elapsed, likewise a test must complete the minimum time before any test end condition can be used. If a test is stopped before the minimum testing time has elapsed, the test will be aborted, and no results will be calculated.

Appendix 1: Standard Fingerprint Library

Standard Fast ID Library

Stainless	*Chrome-Moly*	*Nickel Base*
304	1 1/4 Cr	Inco 600
309	2 1/4Cr	Inco 625
310	5 Cr	Inco 718
316	9 Cr	Inco 750
317		Inco 800
321	*Cobalt Base*	Inco 825
347	F-75	Hast C-276
410/416	HS-6	Hast X
	HS-25	Monel 400
Low Alloy		Monel 500
CS	*Copper Base*	Waspaloy
C ½ Mo	70-30	
4140, 4130	90-10	*Ti Base*
4340	CDA 836	CP Ti
		Ti 6-4

Appendix 2: Standard Grade Library

Iron Base Alloys

201	Alnico VIII	**Tool Steels**
203	AL6XN	
301	AMS 350	A2
304	AMS 355	A6
309	CD4MCU	A7
310	Custom 450	A10
316	Custom 455	D2, D4
317	Duplex 2205	D7
321	Elgiloy	H12
329	Ferallium 255	H13
330	Greek Ascoloy	L6
347	Hy Mu 80	O1
410/416/420	Kovar	O6
410 Cb	Invar 36	O7
422	Maraging C200	M1
430/440	Maraging C250	M2
431	Maraging C300	M42
434	Maraging C350	M4
441	N-155	S1
446	Ni-hard #1	S7
12L14	Ni-hard #4	T1
13-8 Mo	Nitronic 40	
15.5 PH	Nitronic 50	**Low-Alloy Cr-Mo Steels**
17-4 PH	Nitronic 60	
19-9DL	RA333	Carbon steel
19-9DX	RA330	4140
20Cb3		1 1/4 Cr
20Mo4		2 1/4Cr
20Mo6		5 Cr
25-4-4		9 Cr
254SMO		C - 1/2 Mo
21-6-9		
26-1 (Ebrite)		
29-4		
29-4-2		
904 L		
A-286		
Alloy 42		
Alloy 49		
Alnico II		
Alnico V		

Ni-base Alloys

Ni	Inco 718
80-20	Inco 722
B-1900	Inco 738
B-1900 Hf	Inco 750
Inco 617	Inco 792
Inco 625	Inco 800
C-1023	Inco 801
GMR 235	Inco 825
GTD 222	Inco 901
Hast B	Inco 903
Hast B2	Inco 909
Hast C-4	Mar M 002
Hast C-22	Mar M 200
Hast C-276	Mar M 246
Hast C-2000	Mar M 247
Hast F	Mar M 421
Hast G	Monel 400
Hast G-2	Monel 411
Hast G-3	Monel 500
Hast G-30	MP35N
Hast N	Mu Metal
Hast R	Nichrome V
Hast S	Nickel 200
Hast X	Nim 101
Hast W	Nim 263
Haynes 25	Nimonic 75
Haynes 36	Nimonic 80A
Haynes 214	Nimonic 90
Haynes 230	Ni-Span 902
Haynes 188	Rene 41
Haynes 556	Rene 77
HR-160	Rene 80
IN 100	Rene 95
Inco 600	Rene 125
Inco 601	Supertherm
Nim 101	Udimet 500
Nim 263	Udimet 520
Inco 690	Waspaloy
Inco 702	
Inco 706	
Inco 713	

Co-base Alloys	Cu-base Alloys	Ti-base Alloys	Misc. Alloys	Pure Elements
Co	Cu	CpTi	97-3	Ag
F-75	70-30	Cp Ti Pd	Cb 103	Cr
FSX 414	80-20	6-4	CP Ta	Hf
HS-1	90-10	6-6-2	Densalloy	Mn
HS-4	CDA 110	6-2-4-2	Tungsten	Mo
HS-6	CDA 314	6-2-4-6	Carbide	Nb
HS-12	CDA 360	3-2.5	Zir 702	Pb
HS-19	CDA 544	5-2.5	Zir 705	Pd
HS-21	CDA 630	15-3-3-3	Zircaloy 2, 4	Re
HS-25 (L605)	CDA 706	10-2-3	Zr	Sb
HS-31	CDA 836	Ti-8		Sn
Haynes 188	CDA 863	Ti-12		V
Jetalloy	CDA 875	Ti-17		W
Mar M 302	CDA 903	Ti 6-22-22		Zn
Mar M 509	CDA 932	Ti 13-11-3		Fe
MP 35N	CDA 937	Beta C		
Star J	CDA 954	Ti 6-2-1-1		
Ultimet	CDA 955			
	CDA 8932			

The Standard Grade library holds 250 alloys with specifications. Three additional user libraries are available, each hold 100 alloys. Users may edit all libraries entries and may add or delete grades and fingerprints.

Appendix 3: Troubleshooting Guide—Alloy Analysis

Problem	Possible Solutions
Software won't start: Software will not start when the Innov-X Systems Icon is tapped.	The flash card or the iPAQ may not be correctly seated in the black external sleeve. Remove the flash card and press it firmly into its holder. Press the iPAQ down into the black sleeve.
Software won't start: Software doesn't start when the Innov-X System icon is tapped; instead, the following error message occurs: "Cannot find 'startup' (or one of its components). Make sure the path and filename are correct and all the required libraries are available"	The flash card or the iPAQ may not be correctly seated in the black external sleeve. Remove the flash card and press it firmly into its holder. Press the iPAQ down into the black sleeve.
IPAQ locks up: iPAQ screen "locks up" and doesn't respond when screen is tapped or buttons are pressed	Remove the iPAQ from the analyzer and perform a soft reset by pressing the tip of the stylus into the small indentation found on the bottom of the iPAQ. If the iPAQ is lying flat on a table with the screen facing upwards, the reset button is found to the extreme right of the side containing the power plug and connector. See Page 4 of the Compaq "Getting Started" manual for an illustration showing the location of the reset button.
Analyzer will not standardize	Try again. Choose File -> Standardize to attempt a new standardization. Also be sure the standardization cap is on correctly, and that the solid half is in front of the window. It is OK to try this 2-3 times in the event of a failure. If a repeat attempt fails: Change the battery. In some cases the battery may be too low to provide enough power for tube startup. Follow this procedure: • Reset the iPAQ; • Turn off the analyzer and remove the battery. • Verify that the battery is completely charged. If it is not, replace it with a fresh battery. Even if the battery has been recently recharged, remove it, and replace it in the analyzer. • Restart the analyzer and software. Wait several minutes after the software has initialized before attempting standardization.
Incorrect Alloy ID in FAST ID Mode: Analyzer does not correctly ID sample that was just added to the library in FastID.	Verify that the Alloy was saved in a library which is being searched. ***Use File→Load libraries*** to change the library being search. ***Edit→Fingerprint libraries*** "Show/Modify" can be used to check that the fingerprint was saved in the proper library.

Analyzer gives "No Match" for every sample.	1. Verify that Match Numbers are set to 1 for Fast ID and 3 for Analytical. Change values by selecting ***Options→Fingerprint Setup*** from the Analysis screen for FastID mode, or ***Options→Grade Library Settings*** **from Analytical mode.** 2. Verify that you are searching the correct library. Use ***File→Load Libraries*** to change the library being searched. Most users should search all libraries. 3. Check to make sure that the analyzing window is clean.
All tests yield incorrect match	Check the date and time on the last result shown. It should show the current date. If it doesn't, check the date on the iPAQ. The Innov-X Systems software indexes stored results by date. If the date is incorrect, results may not be displayed in the correct order.
Results screen doesn't show new readings after a test is completed	Check the date on the iPAQ. The Innov-X Systems software indexes stored results by date. If the date is incorrect, results may not be displayed in the correct order.
Serial Communication Error Message: Serial Communication error occurs because iPAQ has been removed from instrument or cradle, with the software open and the instrument standardized.	This error reflects the temporary loss in communications when the iPAQ was removed. To avoid this problem, always use the **File→Exit** command to exit the software properly. Try simply removing and reseating the iPAQ to solve this problem. If that fails, see steps 1 – 4 below.
Serial communication error on startup, or while testing.	1. If the analysis screen is still open, attempt another test. 2. Verify that the iPAQ is correctly seated in the analyzer by removing and replacing it. 3. Remove the iPAQ and perform a soft reset. Replace iPAQ and restart software. 4. Turn the analyzer off and restart it.
Trigger will not start test.	Verify that the trigger lock is off. Reset the instrument. If this fails, call Innov-X Systems Technical Support at 781-938-5005.

Broken Kapton Window	The window is designed as a barrier to dust and dirt. If it is damaged, it should be replaced. To change the window: Turn off the analyzer Remove the screws holding the front plate in place. Remove the old kapton and adhesive, replace with new kapton and replace front plate. **Important Note:** It is very important to avoid getting dirt and sharp objects within the probe, due to the close proximity of the detector. Do not use the analyzer without a kapton window for any length of time. Also, be very careful when removing/replacing screws in face plate so as to not accidentally damage the detector. If the detector is damaged, the instrument will require factory service.

Appendix 4: Guide to Product Registration

Generally, the Innov-X portable XRF system must be registered in the state of usage. Registration requirements are somewhat state dependent, but there are many similarities. You may contact Innov-X at 866-4-Innov-X (781-938-5005) to receive specific registration information. Innov-X also maintains sample registrations for every state that we can forward to you. Outside the United States, our local sales agents provide guidance in the proper registration of the analyzer.

Common Registration Features:

Most states require the following for registering an x-ray emitting device that does NOT use radioactive sources:

1. Registration within 30 days of receipt of the analyzer.
2. Annual fee in the $25 to $200 range, depending upon the state.
3. Basic registration form with main information described below.

Common information required on Registration Form, and responses:

Company name, address, phone/fax numbers.

Name of responsible person:	Generally the person designated as the Radiation Safety Officer (RSO).
Name of the manufacturer:	Innov-X Systems, Inc., Woburn, MA
Model of Analyzer:	XT-220 or XT-260.
Tube Operating Parameters:	35 kV, 20 uA current.
Type of Analysis:	Choose Analytical or Industrial
	(as opposed to radiography, medical, dental, veterinarian, etc.)
Utilization Mode:	Portable or Mobile assuming you will carry system to different locations.
	Fixed or stationary ONLY if you will always use the analyzer in the docking station

Appendix 1: Troubleshooting Guide—Soil Analysis

Problem	Possible Solutions
Software won't start: Software will not start when the Innov-X Systems Icon is tapped.	The flash card or the iPAQ may not be correctly seated in the black external sleeve. Remove the flash card and press it firmly into its holder. Press the iPAQ down into the black sleeve.
Software won't start: Software doesn't start when the Innov-X System icon is tapped; instead, the following error message occurs: "Cannot find 'startup' (or one of its components). Make sure the path and filename are correct and all the required libraries are available"	The flash card or the iPAQ may not be correctly seated in the black external sleeve. Remove the flash card and press it firmly into its holder. Press the iPAQ down into the black sleeve.
IPAQ locks up: iPAQ screen "locks up" and doesn't respond when screen is tapped or buttons are pressed	Remove the iPAQ from the analyzer and perform a soft reset by pressing the tip of the stylus into the small indentation found on the bottom of the iPAQ. If the iPAQ is lying flat on a table with the screen facing upwards, the reset button is found to the extreme right of the side containing the power plug and connector. See Page 4 of the Compaq "Getting Started" manual for an illustration showing the location of the reset button.

nalyzer will not standardize	Try again. Choose File -> Standardize to attempt a new standardization. Also be sure the standardization cap is on correctly, and that the solid half is in front of the window. It is OK to try this 2-3 times in the event of a failure. If a repeat attempt fails: Change the battery. In some cases the battery may be too low to provide enough power for tube startup. Follow this procedure: Reset the iPAQ; Turn off the analyzer and remove the battery. Verify that the battery is completely charged. If it is not, replace it with a fresh battery. Even if the battery has been recently recharged, remove it, and replace it in the analyzer. Restart the analyzer and software. Wait several minutes after the software has initialized before attempting standardization.
esults screen doesn't show new readings after a test .s completed	Check the date on the iPAQ. The Innov-X Systems software indexes stored results by date. If the date is incorrect, results may not be displayed in the correct order.
Serial Communication Error Message: Serial Communication error occurs because iPAQ has been removed from instrument or cradle, with the software open and the instrument standardized.	This error reflects the temporary loss in communications when the iPAQ was removed. To avoid this problem, always use the **File / Exit** command to exit the software properly. Try simply removing and reseating the iPAQ to solve this problem. If that fails, see steps 1 – 4 below.
Serial communication error on startup, or while testing.	1. If the analysis screen is still open, attempt another test. 2. Verify that the iPAQ is correctly seated in the analyzer by removing and replacing it. 3. Remove the iPAQ and perform a soft reset. Replace iPAQ and restart software. 4. Turn the analyzer off and restart it.

esults take a very long time to display on the first test of the day.	There may be too many readings stored in memory. Erase readings from the results screen by selecting ***File → Delete Readings***.
Trigger will not start test.	Verify that the trigger lock is off. Reset the instrument. If this fails, call Innov-X Systems Technical Support at 781-938-5005.
Broken Kapton Window	The window is designed as a barrier to dust and dirt. If it is damaged, it should be replaced. To change the window: Turn off the analyzer Remove the screws holding the front plate in place. Remove the old kapton and adhesive, replace with new kapton and replace front plate. **Important Note:** It is very important to avoid getting dirt and sharp objects within the probe, due to the close proximity of the detector. Do not use the analyzer without a kapton window for any length of time. Also, be very careful when removing/replacing screws in face plate so as to not accidentally damage the detector. If the detector is damaged, the instrument will require factory service.
Results screen shows message "Error in calculation: No Results"	The soil mode calculation is only valid for "soil-like" samples which contain primarily light elements such as carbon, oxygen and silicon. If a dense, highly metallic sample is analyzed, the calculation fails. Make sure the sample being analyzed is a soil sample, if it is and this message occurs repeatedly; call Innov-X technical support.

Appendix 2:

Metals in Soil Analysis Using Field Portable X-ray Fluorescence

A guideline to using portable XRF according to EPA Method 6200, basic overview of the technique of x-ray fluorescence (XRF), appropriate data quality assurance protocols and sample preparation steps for operators analyzing prepared soil samples.

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Section 1: Regulatory Status for Field Portable XRF

EPA Reference Method 6200 has been incorporated into SW486 under RCRA, and is now available for field portable XRF analysis of soils and sediments. Please call or email Innov-X Systems for a copy of Method 6200.

Method 6200: Field Portable XRF Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment.

Features of this method:

1. It is a field screening method, for analysis of *in-situ* or bagged samples.
2. The method provides basic quality assurance methods, including calibration verification, determination of instrument precision, accuracy and limit of detection.
3. The method recognizes the some XRF instruments do not require site-specific calibrations by the operator, that is, the factory calibration provides appropriate data quality.
4. The method recommends that a minimum of 5-10% of samples tested by XRF be confirmed by an outside laboratory using a total-digestion EPA analytical reference method.

The purpose of EPA Method 6200 is NOT to replace laboratory analysis. There are two primary sources of error in assessing a site for metal concentration: **Analytical error** and **Sampling error**. Analytical error is the error in the analysis of any one sample by whatever technique is used, for example XRF, ICP, or AA. Sampling error arises when too few samples are collected and tested. In this case an incomplete picture of the extent of metals contamination may be obtained. Although any one sample may be analyzed with very high analytical accuracy, measuring too few samples may result in contamination plumes being mis-judged in size, or depth into the soil. In extreme cases contamination may missed entirely.

EPA Method 6200 was developed to reduce Sampling Errors by increasing the number of samples measured. In general, a large number of screening-level measurements provide a better characterization of contamination than a small number of measurements produced by sample removal and analytical analysis. Portable XRF is an ideal tool to make a large quantity of measurements in a short period of time. A large number of in-situ samples provides detailed data on contamination profiles, depth (provided surface soil is moved aside), and approximate contamination levels. Portable XRF also can provide results with a high degree of analytical accuracy on any given sample. Please see Section 2 "Overview of Field Usage" for this discussion.

Section 2: Overview of Field Usage:

Field portable XRF is generally used in three ways to test for metals in soil:

- **In-situ soil testing:** The XRF is placed directly onto the ground for soil testing. Operators remove any plant growth and foreign objects so that the analyzer probe is flush to the soil.
- **Bagged soil sample testing.** A soil sample is collected in a thin plastic bag (i.e. a "Baggie") and testing directly through the Baggie. Except for a few elements – namely Cr, V and Ba – testing through the thin plastic used for a plastic bag has little effect on the test result. Results for Cr, V and Ba will be lower by 20-30%.
- **Prepared soil sample testing.** Prepared sample testing assures the operator of the maximum possible accuracy. Prepared sample tests require a sample to be collected, dried if necessary, sieved and ground into a powder. The prepared sample is then placed into a baggie or XRF cup for analysis. **A complete Soil Preparation Guide is provided in Appendix 1.**

All analytical methods require a uniform, homogenous sample for the best results. **XRF is no different!** The methods described in EPA Method 6200, namely In-situ and bagged sample testing, are considered *field-screening methods*. Although a field-screening method, in-situ testing is a valuable technique because it generates a great deal of data very quickly. Prepared soil samples generally offer the best accuracy, albeit with several minutes of sample preparation required per sample.

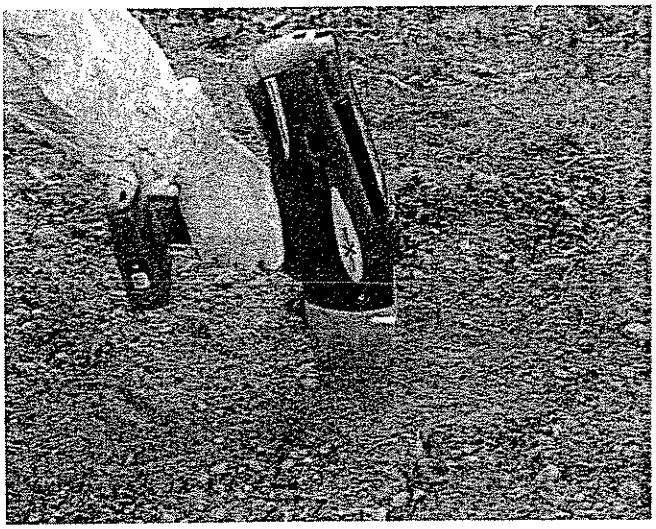


Figure 1. Use of a field portable XRF for in-situ soil testing.

Subsection 2-A: Data Quality Objectives.

The objectives of the testing generally determine the mixture of in-situ versus prepared sample testing. It is important to understand your data quality objectives (DQO) in order to determine the appropriate mix of field screening and prepared sample testing.

In-situ testing usually provides only screening-level data quality. This is because analytical testing always requires a uniform, homogeneous sample matrix. A laboratory achieves this by digesting the sample into a hot acid before analysis. Testing directly on the ground does not ensure uniformity is met. Preparing a sample provides a uniform sample and likely better analytical data quality, although several minutes of testing time is required.

Most portable XRF operators use a mixture of in-situ and prepared sample testing. Several examples are described below. The exact mixture of in-situ and prepared sample testing depends upon the goals of the soil testing. The examples below serve as guidelines. Please contact Innov-X (1-866-4 Innov-X or 866-446-6689) to discuss your specific testing requirements.

Example 1: Initial site investigation to provide detailed contamination data with efficient use of laboratory analysis costs.

Problem: Site needs to be assessed for metals contamination. Little information is available about what metals are present, likely contamination levels or geographic profile of contamination.

The goal of testing is to determine what metals are present at what levels, both in area and in depth into soil. Additionally, testing will locate possible contamination plumes and/or possible sources of contamination.

Recommended Testing Plan: This example uses predominately in-situ testing. The analyst will perform in-situ testing, and gather samples into plastic bags for XRF analysis. A testing grid should be established in two or three dimensions, every several feet. XRF tests can be taken at each location or bagged samples can be collected from each location for later analysis. The in-situ data for each element analyzed may be plotted in a 2-dimensional grid (X, Y coordinates versus elemental concentration) to profile a site. These concentration profiles are ideal for showing contamination patterns, boundaries and plumes. Combining this data with historical use data from the site often allows the operator to deduce sources of contamination. Obtaining this level of geographic data with purely laboratory analysis would produce excessive analytical costs.

Prepared sample analysis should also be done to confirm the regions where in-situ data indicates low or non-detected levels of metal contaminant. There is little need to prepare areas where in-situ testing indicates high concentration levels. Innov-X recommends the same procedure as EPA Method 6200. For locations where in-situ tested indicate low or non-detected concentrations, calculate the total number of in-situ tests, collect 5% of this number of tests from the various locations, and prepare these samples according to Appendix 1. Use these prepared samples to confirm the findings of the in-situ testing. Send a subset of these prepared samples to a laboratory for confirmatory results.

Cost Justification. To adequately characterize a site may require 100-200 samples/acre to be sure the contaminated areas are firmly established. This work may be done with in-situ testing to generate laboratory savings of $5,000 - $10,000/acre depending upon the number of elements being analyzed. The cost reduction in off-site analysis often justifies the price of the XRF.

Example 2: Monitor remediation efforts and assure site meets clearance levels before contractors leave the site.

Goal: Minimize remediation costs by only treating contaminated soil, and obtain immediate verification that various site locations meet clearance objectives.

Recommended Testing Plan: This type of project uses a lot of both in-situ and prepared sample testing. Use in-situ testing to thoroughly delineate contamination regions in both area and depth. To determine depth profiles, test surface soil, remove at least 1-2 inches, and retest. Repeat this step as necessary to profile contamination depth to guide remediation activities. (XRF is a surface technique and only analysis the first few mm of soil sample). As part of clearance, collect several samples from "cleared" area. Prepare samples according to Appendix 1 and test with portable XRF.

If XRF indicates that concentration levels are in excess of clearance requirements, then continue remediation efforts.

If XRF indicates that concentration levels are below clearance requirements, then discontinue remediation efforts, and send a subset of the samples to an analytical laboratory to confirm results. Most operators safely assume that the cleanup requirements have been met for the elements in question, but await final analysis from the laboratory.

If XRF lists concentration levels as non-detected, but the detection level reported exceeds clearance requirements, send samples to a laboratory for final results.

Cost Justification: In-situ results are used to guide remediation efforts, in order to obtain maximum efficiency. Efficiency is produced because contamination boundaries are firmly established, thus avoiding remediation efforts with "clean" soil. Prepared sample testing is used to assure that clearance requirements are met on-site in near real-time (pending laboratory confirmation). Costs savings are generated by avoiding clearance failures. The contractors can leave the site earlier and will not be called back to the site for additional cleanup.

Important Note: Never clear a site based solely on in-situ testing. Always use well-prepared samples to make a clearance decision.

Example 3: Minimize volume of hazardous waste for treatment or disposal.

Goal: For some cleanup projects, the cost of soil disposal in a hazardous waste landfill is much greater than disposal in a standard landfill. Testing soil samples with XRF may minimize the amount of "clean" soil that is inadvertently shipped to a hazardous-waste landfill.

Recommended Testing Plan: This example is almost entirely prepared sample testing. Representative samples are removed from the soil being hauled to landfill. Obtaining an accurate analysis of the samples is crucial for making a hazardous versus non-hazardous determination. For this reason, prepared sample testing is strongly recommended.

Important Note: These types of samples are subject to TCLP procedures for the landfill determination. In general, 20 times the XRF result should be less than the allowable limit for the metal in question. Please contact Innov-X Systems for more details on testing samples versus TCLP regulatory requirements.

Section 3: Quality Assurance.

Quality assurance is detailed for both the proper use of the analyzer (which is also provided in Method 6200) and for verifying the data quality of in-situ testing. All operators should perform the QC procedure, regardless of their data quality objectives. Method 6200 has strict requirements about quality assurance. Additionally, Innov-X recommends that operators verify the data quality of in-situ test results, if they are using in-situ data to guide their reporting or remediation decisions. Procedures are listed below:

3.1: Proper verification of instrument operation

These procedures are taken from EPA Method 6200 and updated to be specific to the Innov-X analyzer. Quality assurance here consists of testing known standards to verify calibration, as well as testing blank standards to determine limits of detection and to check for sample cross-contamination or instrument contamination. EPA Method 6200 provides a detailed procedure, which is provided here in abbreviated form.

Components of instrument QC:

1. An energy calibration check sample at least twice daily
2. An instrument blank for every 20 environmental samples
3. A method blank for every 20 prepared samples
4. A calibration verification check sample for every 20 samples
5. A precision sample at least one per day.
6. A confirmatory sample for every 10 environmental samples

Energy Calibration Check: The Innov-X analyzer performs this automatically; this is the purpose of the standardization check when the analyzer is started. The software does not allow the analyzer to be used if the standardization is not completed.

Instrument Blank: The operator should use the SiO_2 (silicon dioxide) blank provided with the analyzer. The purpose of this test is to verify there is no contamination on the analyzer window or other component that is "seen" by the x-rays. Method 6200 recommends an instrument blank at least once per day, preferably every 20 samples. For either in-situ or prepared-sample testing, the operator should just test the SiO_2 blank to be sure there are no reported contaminant metals.

Method Blank: The purpose of the method blank is to verify that cross-contamination is not introduced into samples during the sample preparation process. Method 6200 recommends following the sample preparation procedures with clean SiO_2 once very 20 prepared samples. This QC step is not required if the operator is not preparing samples.

Calibration Verification: Innov-X provides NIST standard reference samples for calibration check by operator. The operator should perform a 2-minute test on a NIST standard. The difference between the XRF result for an element and the value of the standard should be 20% or less. Calibration Verification should be performed upon instrument startup and periodically during testing. Note: Innov-X recommends a calibration check every 4 hours. EPA Method 6200 recommends a calibration check every 20 samples NIST reference standards are generally applicable for Pb, As, Cr, Cu, Zn. Innov-X provides additional reference standards for other RCRA or Priority Pollutant metals including Cd, Se, Ag, Hg, Ag, Ba, Sn, Sb, and Ni.

Precision Verification: Quoting from EPA "A minimum of one precision sample should be run per day by conducting from 7 to 10 replicate measurements of the sample. The precision is assessed by calculating a relative standard deviation (RSD) of the replicate measurements for the analyte. The RSD values should be less than 20 percent for most analytes, except chromium, for which the value should be less than 30 percent.

Confirmatory Sample: It is recommended that one confirmatory sample is run for every 10 samples collected. According to EPA Method 6200: "Confirmatory samples are collected from the same sample material that is analyzed on site, but are sent to an off-site laboratory for formal analysis. The purpose of a confirmatory sample is to judge the accuracy of the data obtained by analysis on site and to allow corrections, if necessary."

Important Notes about confirmatory samples:

Innov-X always recommends that customers compare prepared-sample results to laboratory results. To do this, collect and prepare a sample following the protocols of Appendix 1. Take a subsample and submit to the laboratory for analysis. The single largest error in XRF analysis is lack of sample preparation. For the best comparison, always use prepared samples.

3.2: Determining data quality of in-situ testing:

For operators relying extensively on in-situ testing, it is important to determine the data quality of this testing at a given site. *This protocol is not intended for every sample, but rather for a small percentage of samples considered representative of the site.* If the operator can demonstrate that quantitative data is achieved with little or no sample preparation, then the site characterization will be completed much more quickly but correctly.

For example, an operator may be able to demonstrate that the XRF result changes considerably when samples are passed through a 2 mm sieve, but that XRF results do NOT change appreciably upon finer sieving. In this case the operator can conclude that good XRF data is achievable with only 2 mm sieving. Sieving only to this level requires far less time than a more robust sample preparation. A protocol to determine the appropriate level of sample preparation is the following:

1. Delineate a region of soil approximately 4" x 4".
2. Perform several in-situ tests in this area, or collect the top (approximately) quarter inch of soil from this region, bag the soil, test through the bag. In either case, average the results.
3. If you did not bag the in-situ test sample, collect the top (approximately) quarter inch of soil from this region and sieve through the 2 mm sieve provided. Otherwise sieve the bagged sample used for the in-situ test. Thoroughly mix the sieved sample, and place some of the sieved material into an XRF cup, and perform a test of this sample.
4. If the results of this prepared sample differ less than 20% with the average in-situ result, this indicates the soil in this region is reasonably homogeneous. The data quality in this case is probably at the semi-quantitative level, rather than just screening data.
5. If the results differ by more than 20%, this indicates the soil is not very homogeneous, and there are serious particle size effects affecting your in-situ measurements.
6. In this case, sieve the sample through the 250 ~m sieve. Mix this sample and place a sub-sample into an XRF cup for testing. If this result differs from the previous by less than 20% then this indicates that at a minimum the 2mm sieving is necessary to achieve higher data quality.

7. If this result differs by more than 20% from the sample sieved through 2 mm, then particle size effects are still affecting the XRF result. In this case samples should be sieved through 125 μm to assure data quality at the quantitative level.

Section 4: Calibration for Innov-X Portable XRF

The Innov-X analyzer may run three different calibration methods, described below. In nearly all cases, customers use the Compton Normalization method. This method (recognized in EPA 6200) offers speed, ease of use, and generally good accuracy for concentration ranges from the ppm level up to 2-3% concentrations. As most field-testing is seeking to remediate or locate environmental contaminants, the upper limit of the calibration (2-3%) is generally not a limitation. If customers do require a calibration up to 100% concentration (i.e. a pure element) then Innov-X recommends they also include the Fundamental Parameters (FP) software module with the analyzer. The FP module may be added at time of purchase or as an upgrade at any later date.

Note: In general customers do not need to calibrate the Innov-X analyzer for soil testing. The analyzer is delivered with a factory calibration, generally based upon the Compton Normalization (CN) method. The CN method has been proven over the past several years to provide a robust calibration generally independent of site-specific soil matrix chemistry. The operator may calibrate the Innov-X system if desired, but calibration is not required to use the analyzer effectively. All customers should follow the QC procedure described in Section 3, which includes a check of the calibration.

The final model is the empirical calibration. In this case, customers run standards to generate calibration curves for various elements in specific soil matrices. Provided the sample is well-prepared, the empirical method generally yields the most accurate result. In our experience, the accuracy gains going from Compton Normalization to Empirical Mode are small and not worth the extra effort in setting up calibration curves. (The greatest source of error for in-field XRF analysis of soil is lack of adequate sample preparation, thus there is little gained in developing a sophisticated empirical calibration if the operator does to grind and homogenize the all measured samples). The empirical calibration module is an optional software package, available for an upgrade fee at the time of purchase, or as an upgrade at any later date.

Calibration Requirements:

The concentration of an element in a soil sample is well-described by the formula:

$$w_i = \frac{k_i}{M(Z,i)} I_i$$

k_i = calibration constant for element "i"

ω_i = concentration of element "i" – the quantity being measured.

I_i = measured x-ray intensity from element "i"

M(Z,I) = Soil matrix value

The factory calibration determines the value of the calibration constants k_i for each element, and a typical value M(Z,I). The calibration method – either CN, fundamental parameters, or empirical – performs the necessary corrections to the value M(Z,I) that are important for the site-specific soil chemistry. The XRF analyzer uses the measured intensity of each element's fluorescence from the sample, and the calibration data, to produce elemental concentrations.

Compton Normalization:

The Compton Normalization method calibration consists of the analysis of a single, well-characterized standard, such as an SRM or SSCS. The standard data are normalized to the Compton peak. The Compton peak is produced from incoherent backscattering of X-ray radiation from the excitation source and is present in the spectrum of every sample. The matrix affects the way in which source radiation is scattered off the samples. This scatter is directly related to the intensity of the Compton peak. For that reason, normalizing to the Compton peak can reduce problems with matrix effects that vary among samples. Compton normalization is similar to the use of internal standards in analysis for organic analytes.

Fundamental Parameters Calibration:

The fundamental parameters (FP) calibration is a "standardless" calibration. Rather than establishing a unit's calibration curve by measuring its response to standards that contain analytes of known concentrations, FP calibration relies on the known physics of the spectrometer's response to pure elements to set the calibration. Built-in mathematical algorithms are used to adjust the calibration for analysis of soil samples and to compensate for the effects of the soil matrix. The FP calibration is performed by the manufacturer, but the analyst can adjust the calibration curves (slope and y-intercept) on the bases of results of analyses of check samples, such as SRMs which are analyzed in the field.

Empirical Calibration:

The empirical calibration method requires that a number of site-specific calibration standards (SSCS) are used to establish calibration parameters. The instrument response to known analytes is measured and used to create calibration curves. Empirical calibration is effective because the samples used closely match the sample matrix. SSCSs are well-prepared samples collected from the site of interest in which the concentrations of analytes have been determined by inductively coupled plasma (ICP), atomic absorption (AA), or other methods approved by the US Environmental Protection Agency (EPA). The standards should contain all the analytes of interest and interfering analytes. Manufacturers recommend that 10 to 20 calibration samples be used to generate a calibration curve. The empirical method is the least desirable calibration method as it requires that new standards and curves are generated for each site that is analyzed.

Section 5: Effects of Moisture on XRF Results:

Sample moisture has two effects on XRF results:

- It alters the soil chemistry, since water is another chemical compound that comprises the soil matrix.
- Moisture impedes the ability to properly prepare samples.

- Laboratory results are provided on a "dry weight" basis.

Effect on Soil Chemistry:

While the presence of significant moisture does impact the soil chemistry, modern XRF analyzers all perform automatic corrections for variations in soil chemistry from site to site. Indeed, such variations are expected, and that is the reason analyzers use Compton Normalization or fundamental parameters, in order to correct for moisture content changes as well as other differences in soil geochemistry.

EPA Method 6200 states "Moisture content above 20 percent may cause problems, since moisture alters the soil matrix for which the FPXRF has been calibrated." However, the Compton Normalization or fundamental parameters methods are implemented in order to automatically correct results for changes to the soil matrix. Thus, we believe that soil moisture is not a significant effect on accuracy due to effects of soil matrix, except for the "dilution" effect that can cause discrepancies with laboratory results which is described below.

Sample preparation issues:

The inability to adequately prepare a wet sample is, we believe, the single biggest contributor to errors when testing wet samples. It is very difficult to grind or sieve a wet sample. The highest quality XRF results are generally obtained from prepared samples. If the operator is unwilling to dry the sample to prepare it, comparisons to the laboratory may yield poorer correlation since the samples are not homogeneous.

Laboratory Tests on Dry-Weigh Basis:

Laboratories always dry samples prior to analysis. They report percent weight content based upon a dry sample basis. Portable XRF may often be used to analyze wet samples in the field, and results are thus reported that include the moisture content. Thus, with all other factors the same, the laboratory will report results higher than portable XRF. The results will be higher by the amount of moisture content in the sample. For example laboratory results will be 10% higher compared to XRF results, if the sample contained 10% by weight water when it was tested with XRF. Recall, this applies to samples where other possible sources of error are the same or negligible.

Section 6: Comparing XRF Results to Laboratory Results:

Innov-X strongly recommends that operators compare prepared sample results to laboratory results. This is because prepared-sample results yield the best possible accuracy with portable XRF. Moreover, the most common source of error is due to non-uniform samples. The XRF technique, nor can any analytical technique, properly account for non-uniform sample types.

To perform a comparison between XRF results and laboratory:

1. Collect a sample and prepare it according to the sample preparation guide in Appendix 1.

2. Take a sub-sample (5-10 grams) of the fully-prepared sample, place it into an XRF cup and perform at least a one-minute test on that sample.

3. Send the same sample to the laboratory for wet chemistry analysis.

4. Require the laboratory to use a total-digestion method. If the laboratory does not use a total digestion method, they may not extract all of the elemental metal from the sample. In this case, the lab result will be lower than the XRF result. Incomplete sample digestion is one of the most commons sources of laboratory error, thus it is very important to request a total digestion method.

Example of Error: The operator collects a bag of sample, performs XRF analysis on one part of the bag, and sends the bag, or part of the bag of sample to a laboratory for analysis. The laboratory reports a very different value than the operator obtained with the XRF.

Problem: Since the sample is very non-homogeneous, the operator did not obtain a result that was representative of the entire bag of sample. The lab analyzed a different part of the sample and obtained a very different result due to the non-uniformity of the sample. The solution to this problem is, at a minimum, to test several locations in the bag of sample and report the average value. Also note the differences between the tests, as this is indicative of the non-uniformity of the sample. Operator should send entire bag of sample to the lab, and instruct lab to prepare the sample before removing sub-sample for lab analysis.

Best Practice: The operator should homogenize and prepare the entire bag of sample, and then collect a sub sample for XRF testing. After testing, the same sample should be sent to the lab.

Section 7: Common Interferences:

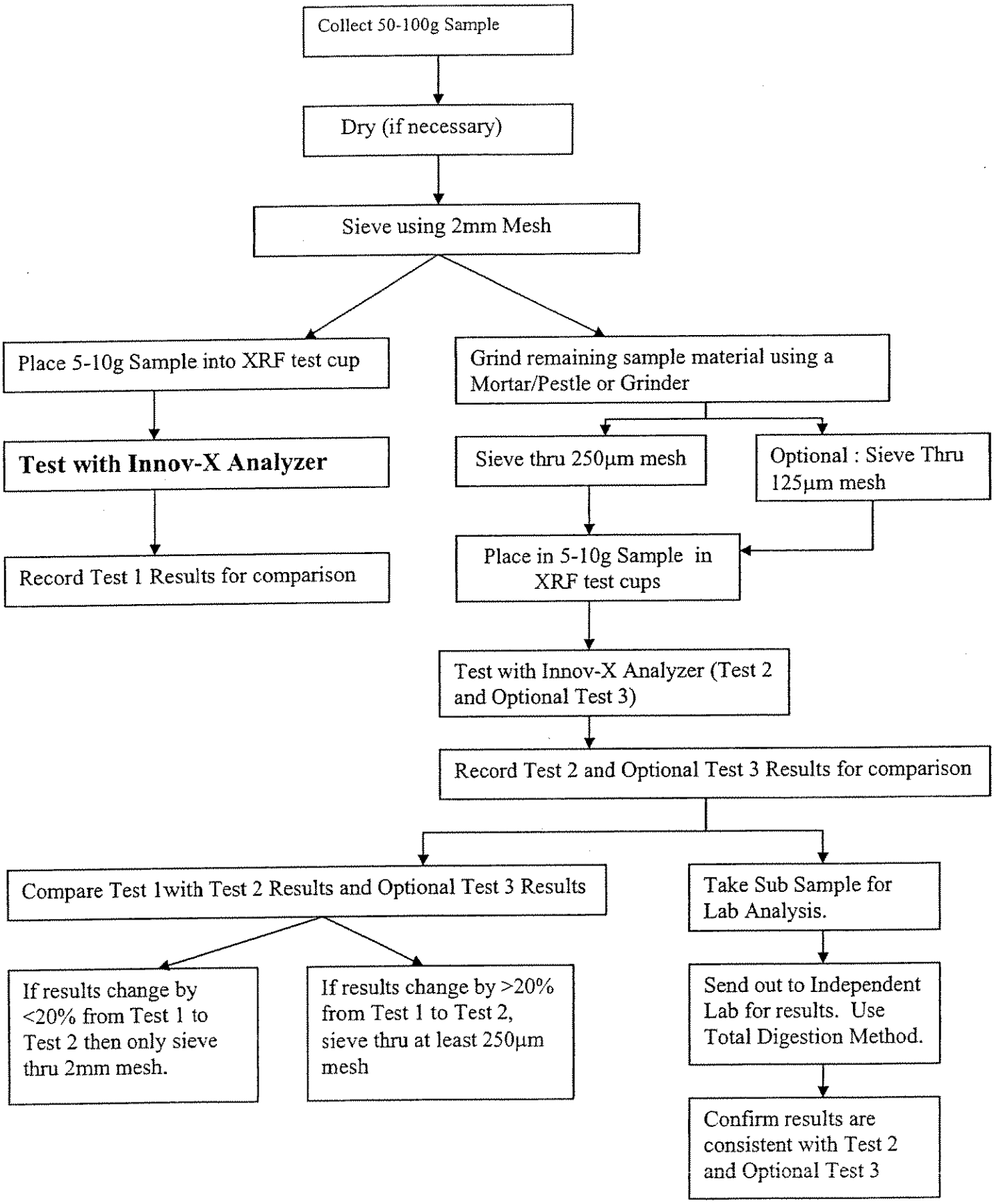
An interference occurs when the spectral peak from one element overlaps either partially or completely with the spectral peak of another. If the XRF is calibrated for both elements (CASE 1) i.e. the one causing the interference and the one being interfered with, it is generally capable of correctly handling the interference. In this case, the element being interfered with may be measured with a poorer detection limit or poorer precision, but the analytical results should still be acceptable for field-portable XRF. If the XRF is not calibrated for the element causing the interference (CASE 2), then the XRF may report the presence of elements not in the sample, or greatly elevated concentrations of elements in or not in the sample.

Example CASE 1: Lead and arsenic. Most XRFs are calibrated for lead and arsenic. Lead interferes with arsenic (not vice-versa though). The net effect is a worsened detection limit for arsenic, and poorer precision. The XRF handles the correction automatically, but the precision is affected. The loss of precision is also reported by the XRF. (Please refer to Innov-X Applications Sheet: *In-field Analysis of Lead and Arsenic in Soil Using Portable XRF* for more detail).

Example CASE 2: Bromine in the sample, but XRF is not calibrated for bromine. Bromine, as a fire retardant, is being seen more and more in soil and other sample types. For this reason, Innov-X analyzers include Br in the calibration data. If Br is not calibrated, but is present in the sample, the analyzer will report highly elevated levels of Pb, Hg and As. The levels will depend upon the concentration of Br in the sample.

Interferences between elements can be broadly categorized into a) Z, Z-1, Z+1 interferences, and b) K/L interferences. Interference type "a" occurs when high levels of an element of atomic number Z are present. This can cause elevated levels of elements with atomic number Z-1 or Z+1. Generally, portable XRFs have good correction methods, so this interference only causes problems with very high levels of the element in question. Example: High concentrations of Fe (Z=26) in excess of 10% may cause elevated levels of Mn or Co (Z=25 or Z=27 respectively).

The type "b" interference occurs when the L-shell line of one element overlaps with the K-shell spectral line of another element. The most common example is the lead/arsenic interference where the L-alpha line of lead is in nearly the exact same location as the K-alpha line of arsenic.


Collect 50-100g Sample
Dry (if necessary)
Sieve using 2mm Mesh
Place 5-10g Sample into XRF test cup
Test with Innov-X Analyzer
Record Test 1 Results for comparison
Grind remaining sample material using a Mortar/Pestle or Grinder
Sieve thru 250µm mesh
Optional : Sieve Thru 125µm mesh
Place in 5-10g Sample in XRF test cups
Test with Innov-X Analyzer (Test 2 and Optional Test 3)
Record Test 2 and Optional Test 3 Results for comparison
Compare Test 1with Test 2 Results and Optional Test 3 Results
If results change by <20% from Test 1 to Test 2 then only sieve thru 2mm mesh.
If results change by >20% from Test 1 to Test 2, sieve thru at least 250µm mesh
Take Sub Sample for Lab Analysis.
Send out to Independent Lab for results. Use Total Digestion Method.
Confirm results are consistent with Test 2 and Optional Test 3

Appendix 3: Guide to Product Registration

Generally, the Innov-X portable XRF system must be registered in the state of usage. Registration requirements are somewhat state dependent, but there are many similarities. You may contact Innov-X at 866-4-Innov-X (781-938-5005) to receive specific registration information. Innov-X also maintains sample registrations for every state that we can forward to you.

Common Registration Features:

Most states require the following for registering an x-ray emitting device that does NOT use radioactive sources:

1. Registration within 30 days of receipt of the analyzer.
2. Annual fee ranging from $25 to $100, depending upon the state.
3. Basic registration form with main information described below.

Common information required on Registration Form, and responses:

Company name, address, phone/fax numbers.

Name of responsible person:	Generally the person designated as the Radiation Safety Officer (RSO).
Name of the manufacturer:	Innov-X Systems, Inc., Woburn, MA
Model of Analyzer:	XT-220 or XT-260.
Tube Operating Parameters:	35 kV, 20 uA current.
Type of Analysis:	Choose Analytical or Industrial
	(as opposed to radiography, medical, dental, veterinarian, etc.)
Utilization Mode:	Portable or Mobile assuming you will carry system to different locations.
	Fixed or stationary ONLY if you will always use the analyzer in the docking station

Innov-X Analyzer Limited Warranty

General Terms

EXCEPT AS EXPRESSLY SET FORTH IN THIS LIMITED WARRANTY, INNOV-X SYSTEMS, INC. (INNOV-X) MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. INNOV-X EXPRESSLY DISCLAIMS ALL WARRANTIES AND CONDITIONS NOT STATED IN THIS LIMITED WARRANTY. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD.

This Limited Warranty applies to Innov-X analyzers sold or leased from Innov-X its affiliates, authorized resellers, or country distributors (collectively referred to in this Limited Warranty as ("Innov-X")).

Innov-X warrants that the analyzer and all its internal components that you have purchased are free from defects in materials or workmanship under normal use during the Limited Warranty Period. The Limited Warranty Period starts on the date of shipment by Innov-X. You may be required to provide proof of purchase or lease as a condition of receiving warranty service. You are entitled to warranty service according to the terms and conditions of this document if a repair to your Innov-X analyzer is required within the Limited Warranty Period.

During the Limited Warranty Period, Innov-X will repair or replace the defective component parts. All component parts removed under this Limited Warranty become the property of Innov-X. In the unlikely event that your Innov-X analyzer has a recurring failure, Innov-X, at its discretion, may elect to provide you with a replacement unit of Innov-X's choosing that is at least equivalent to your Innov-X analyzer. This is your exclusive remedy for defective products. The repaired or replacement analyzer is warranted for the remainder of the limited Warranty Period.

YOU SHOULD MAKE PERIODIC BACKUP COPIES OF THE DATA STORED ON YOUR ANALYZER AS A PRECAUTION AGAINST POSSIBLE FAILURES, ALTERATION, OR LOSS OF THE DATA. BEFORE RETURNING ANY UNIT FOR SERVICE, BE SURE TO BACK UP DATA AND REMOVE ANY CONFIDENTIAL, PROPRIETARY, OR PERSONAL INFORMATION. INNOV-X IS NOT RESPONSIBLE FOR DAMAGE TO OR LOSS OF ANY PROGRAMS, OR DATA. INNOV-X IS NOT RESPONSIBLE FOR THE RESTORATION OR REINSTALLATION OF ANY PROGRAMS OR DATA OTHER THAN SOFTWARE INSTALLED BY INNOV-X WHEN THE ANALYZER IS MANUFACTURED.

Innov-X does not warrant that the operation of this analyzer will be uninterrupted or error-free. Innov-X is not responsible for damage that occurs as a result of your failure to follow the instructions that came with the Innov-X analyzer.

This Limited Warranty does not apply to expendable parts. This Limited Warranty does not extend to any analyzer from which the serial number has been removed or that has been damaged or rendered defective (A) as a result of accident, misuse, abuse, or other external causes; (b) by operation outside the usage parameters stated in user documentation that shipped with the product; (c) by modification or service by anyone other than (i) Innov-X, or(ii) a Innov-X authorized service provider, (d) installation of software not approved by Innov-X.

These terms and conditions constitute the complete and exclusive warranty agreement between you and Innov-X regarding the Innov-X analyzer you have purchased or leased. These terms and conditions supersede any prior agreements or representations --- including representations made in Innov-X sales literature or advice given to you by Innov-X or any agent or employee of Innov-X --- that may have been made in connection with your purchase or lease of the Innov-X analyzer. No change to the conditions of this Limited Warranty is valid unless it is made in writing and signed by an authorized representative of Innov-X.

Limitation of Liability

IF YOUR INNOV-X ANALYZER FAILS TO WORK AS WARRANTED ABOVE, YOUR SOLE AND EXCLUSIVE REMEDY SHALL BE REPAIR OR REPLACEMENT. INNOV-X'S MAXIMUM LIABILITY UNDER THIS LIMITED WARRANTY IS EXPRESSLY LIMITED TO THE LESSER OF THE PRICE YOU HAVE PAID FOR THE ANALYZER OR THE COST OF REPAIR OR REPLACEMENT OF ANY COMPONENTS THAT MALFUNCTION IN CONDITION OF NORMAL USE.

INNOV-X IS NOT LIABLE FOR ANY DAMAGE CAUSED BY THE PRODUCT OR THE FAILURE OF THE PRODUCT TO PERFORM INCLUDING ANY LOST PROFITS OR SAVINGS OR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. INNOV-X IS NOT LIABLE FOR ANY CLAIM MADE BY A THIRD PARTY OR MADE BY YOU FOR A THIRD PARTY.

THIS LIMITATION OF LIABILITY APPLIES WHETHER DAMAGE ARE SOUGHT, OR A CLAIM MADE, UNDER THIS LIMITED WARRATNY OR AS A TORT CLAIM (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY), A CONTRACT CLAIM, OR ANY OTHER CLAIM. THIS LIMITATION OF LIABILITY CANNOT BE WAIVED OR AMENDED BY ANY PERSON. THIS LIMITATION OF LIABILITY WILL BE EFFECTIVE EVEN IF YOU HAVE ADVISED INNOV-X OR AN AUTHORIZED REPRESENTATIVE OF INNOV-X OF THE POSSIBILITY OF ANY SUCH DAMAGES.

Software

This Limited Warranty does not warrant software products. The Innov-X software installed on your analyzer is covered by the Innov-X Software License.

Warranty Period

The warranty period for a Model XT-245 or Model XT-260 Innov-X analyzer is two years or four thousand hours of use, whichever occurs first. The warranty for all other analyzers is one year or two thousands hours of use whichever occurs first. This warranty does not extend to expendable parts. Extended warranties are available from Innov-X.

Warranty Returns

A Return Material Authorization (RMA) Number must be obtained from the INNOV-X Service Department before any items can be shipped to the factory. Returned goods will not be accepted without an RMA Number. Customer will bear all shipping charges for warranty repairs. All goods returned to the factory for warranty repair should be properly packed to avoid damage and clearly marked with the RMA Number.

Warranty Repairs

Warranty repairs will be done either at the customer's site or at the INNOV-X plant, at our option. All service rendered by INNOV-X will be performed in a professional manner by qualified personnel.

Contacting Innov-X

Be sure to have the following information available before you call Innov-X:

- Analyzer serial number, model name, and model number
- Applicable error messages
- Description of problem
- Detailed questions

Methods of Contact

- Phone: 781-635-5005
- Fax 781-938-0128
- Email service@Innov-Xsys.com
- Mail & Shipping Address: Innov-X Systems, Inc. 10 Gill Street, Suite Q. Woburn MA 01801

APPENDIX F

ASTM D 2488 STANDARD METHOD FOR CLASSIFICATION OF SOILS IN THE FIELD

Designation: D 2488 – 93

AMERICAN SOCIETY FOR TESTING AND MATERIALS
100 Barr Harbor Dr., West Conshohocken, PA 19428
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If not listed in the current combined index, will appear in the next edition

Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)[1]

This standard is issued under the fixed designation D 2488; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.

1. Scope

1.1 This practice covers procedures for the description of soils for engineering purposes.

1.2 This practice also describes a procedure for identifying soils, at the option of the user, based on the classification system described in Test Method D 2487. The identification is based on visual examination and manual tests. It must be clearly stated in reporting an identification that it is based on visual-manual procedures.

1.2.1 When precise classification of soils for engineering purposes is required, the procedures prescribed in Test Method D 2487 shall be used.

1.2.2 In this practice, the identification portion assigning a group symbol and name is limited to soil particles smaller than 3 in. (75 mm).

1.2.3 The identification portion of this practice is limited to naturally occurring soils (disturbed and undisturbed).

NOTE 1—This practice may be used as a descriptive system applied to such materials as shale, claystone, shells, crushed rock, etc. (See Appendix X2).

1.3 The descriptive information in this practice may be used with other soil classification systems or for materials other than naturally occurring soils.

1.4 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For specific precautionary statements see Section 8.

1.5 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:*

D 653 Terminology Relating to Soil, Rock, and Contained Fluids[2]

D 1452 Practice for Soil Investigation and Sampling by Auger Borings[2]

D 1586 Method for Penetration Test and Split-Barrel Sampling of Soils[2]

D 1587 Practice for Thin-Walled Tube Sampling of Soils[2]

D 2113 Practice for Diamond Core Drilling for Site Investigation[2]

D 2487 Classification of Soils for Engineering Purposes (Unified Soil Classification System)[2]

D 4083 Practice for Description of Frozen Soils (Visual-Manual Procedure)[2]

3. Terminology

3.1 *Definitions:*

3.1.1 Except as listed below, all definitions are in accordance with Terminology D 653.

NOTE 2—For particles retained on a 3-in. (75-mm) US standard sieve, the following definitions are suggested:

Cobbles—particles of rock that will pass a 12-in. (300-mm) square opening and be retained on a 3-in. (75-mm) sieve, and

Boulders—particles of rock that will not pass a 12-in. (300-mm) square opening.

3.1.1.2 *clay*—soil passing a No. 200 (75-μm) sieve that can be made to exhibit plasticity (putty-like properties) within a range of water contents, and that exhibits considerable strength when air-dry. For classification, a clay is a fine-grained soil, or the fine-grained portion of a soil, with a plasticity index equal to or greater than 4, and the plot of plasticity index versus liquid limit falls on or above the "A" line (see Fig. 3 of Test Method D 2487).

3.1.1.3 *gravel*—particles of rock that will pass a 3-in. (75-mm) sieve and be retained on a No. 4 (4.75-mm) sieve with the following subdivisions:

coarse—passes a 3-in. (75-mm) sieve and is retained on a ¾-in. (19-mm) sieve.

fine—passes a ¾-in. (19-mm) sieve and is retained on a No. 4 (4.75-mm) sieve.

3.1.1.4 *organic clay*—a clay with sufficient organic content to influence the soil properties. For classification, an organic clay is a soil that would be classified as a clay, except that its liquid limit value after oven drying is less than 75 % of its liquid limit value before oven drying.

3.1.1.5 *organic silt*—a silt with sufficient organic content to influence the soil properties. For classification, an organic silt is a soil that would be classified as a silt except that its liquid limit value after oven drying is less than 75 % of its liquid limit value before oven drying.

3.1.1.6 *peat*—a soil composed primarily of vegetable tissue in various stages of decomposition usually with an organic odor, a dark brown to black color, a spongy consistency, and a texture ranging from fibrous to amorphous.

3.1.1.7 *sand*—particles of rock that will pass a No. 4

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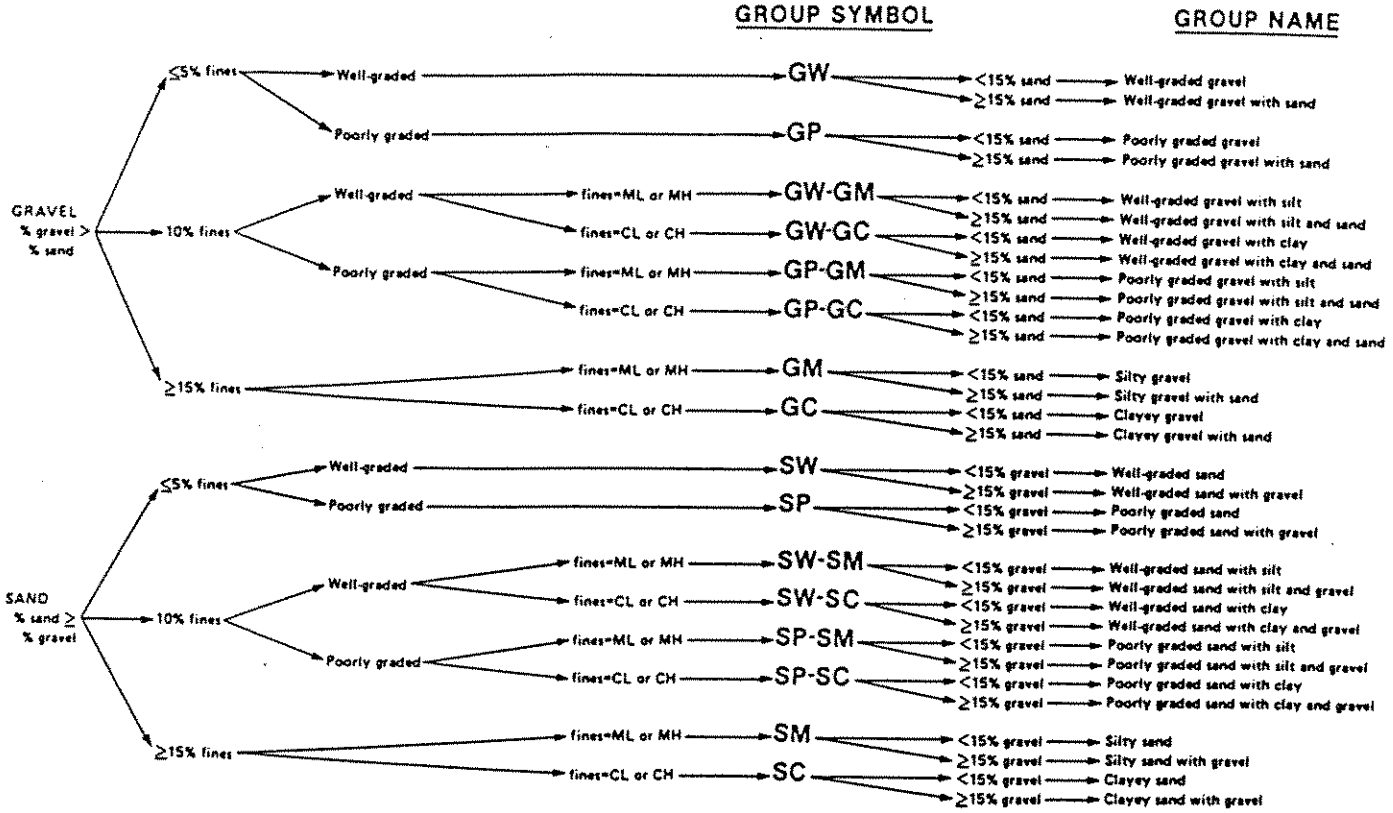
[1] This practice is under the jurisdiction of ASTM Committee D-18 on Soil and Rock and is the direct responsibility of Subcommittee D18.07 on Identification and Classification of Soils.

Current edition approved Sept. 15, 1993. Published November 1993. Originally published as D 2488 – 66 T. Last previous edition D 2488 – 90.

[2] *Annual Book of ASTM Standards*, Vol 04.08.



NOTE—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5 %.

FIG. 2 Flow Chart for Identifying Coarse-Grained Soils (less than 50 % fines)

when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart.

Borderline Symbol—A borderline symbol is two symbols separated by a slash, for example, CL/CH, GM/SM, CL/ML. A borderline symbol should be used to indicate that the soil has been identified as having properties that do not distinctly place the soil into a specific group (see Appendix X3).

5. Significance and Use

5.1 The descriptive information required in this practice can be used to describe a soil to aid in the evaluation of its significant properties for engineering use.

5.2 The descriptive information required in this practice should be used to supplement the classification of a soil as determined by Test Method D 2487.

5.3 This practice may be used in identifying soils using the classification group symbols and names as prescribed in Test Method D 2487. Since the names and symbols used in this practice to identify the soils are the same as those used in Test Method D 2487, it shall be clearly stated in reports and all other appropriate documents, that the classification symbol and name are based on visual-manual procedures.

5.4 This practice is to be used not only for identification of soils in the field, but also in the office, laboratory, or wherever soil samples are inspected and described.

5.5 This practice has particular value in grouping similar soil samples so that only a minimum number of laboratory tests need be run for positive soil classification.

NOTE 4—The ability to describe and identify soils correctly is learned more readily under the guidance of experienced personnel, but it may also be acquired systematically by comparing numerical laboratory test results for typical soils of each type with their visual and manual characteristics.

5.6 When describing and identifying soil samples from a given boring, test pit, or group of borings or pits, it is not necessary to follow all of the procedures in this practice for every sample. Soils which appear to be similar can be grouped together; one sample completely described and identified with the others referred to as similar based on performing only a few of the descriptive and identification procedures described in this practice.

5.7 This practice may be used in combination with Practice D 4083 when working with frozen soils.

6. Apparatus

6.1 *Required Apparatus:*

6.1.1 *Pocket Knife or Small Spatula.*

6.2 *Useful Auxiliary Apparatus:*

6.2.1 *Small Test Tube and Stopper* (or jar with a lid).

6.2.2 *Small Hand Lens.*

7. Reagents

7.1 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean water from a city water supply or natural source, including non-potable water.

7.2 *Hydrochloric Acid*—A small bottle of dilute hydrochloric acid, HCl, one part HCl (10 *N*) to three parts water (This reagent is optional for use with this practice). See Section 8.

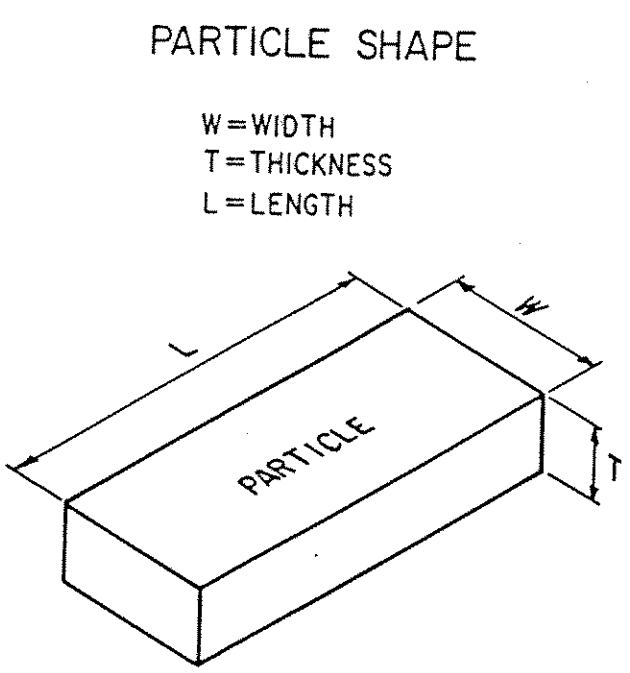


FIG. 4 Criteria for Particle Shape

TABLE 3 Criteria for Describing Moisture Condition

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

locality it may also be useful in identifying materials of similar geologic origin. If the sample contains layers or patches of varying colors, this shall be noted and all representative colors shall be described. The color shall be described for moist samples. If the color represents a dry condition, this shall be stated in the report.

10.4 *Odor*—Describe the odor if organic or unusual. Soils containing a significant amount of organic material usually have a distinctive odor of decaying vegetation. This is especially apparent in fresh samples, but if the samples are dried, the odor may often be revived by heating a moistened sample. If the odor is unusual (petroleum product, chemical, and the like), it shall be described.

10.5 *Moisture Condition*—Describe the moisture condition as dry, moist, or wet, in accordance with the criteria in Table 3.

10.6 *HCl Reaction*—Describe the reaction with HCl as none, weak, or strong, in accordance with the critera in Table 4. Since calcium carbonate is a common cementing agent, a report of its presence on the basis of the reaction with dilute hydrochloric acid is important.

TABLE 4 Criteria for Describing the Reaction With HCl

Description	Criteria
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

TABLE 5 Criteria for Describing Consistency

Description	Criteria
Very soft	Thumb will penetrate soil more than 1 in. (25 mm)
Soft	Thumb will penetrate soil about 1 in. (25 mm)
Firm	Thumb will indent soil about ¼ in. (6 mm)
Hard	Thumb will not indent soil but readily indented with thumbnail
Very hard	Thumbnail will not indent soil

10.7 *Consistency*—For intact fine-grained soil, describe the consistency as very soft, soft, firm, hard, or very hard, in accordance with the criteria in Table 5. This observation is inappropriate for soils with significant amounts of gravel.

10.8 *Cementation*—Describe the cementation of intact coarse-grained soils as weak, moderate, or strong, in accordance with the criteria in Table 6.

10.9 *Structure*—Describe the structure of intact soils in accordance with the criteria in Table 7.

10.10 *Range of Particle Sizes*—For gravel and sand components, describe the range of particle sizes within each component as defined in 3.1.2 and 3.1.6. For example, about 20 % fine to coarse gravel, about 40 % fine to coarse sand.

10.11 *Maximum Particle Size*—Describe the maximum particle size found in the sample in accordance with the following information:

10.11.1 *Sand Size*—If the maximum particle size is a sand size, describe as fine, medium, or coarse as defined in 3.1.6. For example: maximum particle size, medium sand.

10.11.2 *Gravel Size*—If the maximum particle size is a gravel size, describe the maximum particle size as the smallest sieve opening that the particle will pass. For example, maximum particle size, 1½ in. (will pass a 1½-in. square opening but not a ¾-in. square opening).

10.11.3 *Cobble or Boulder Size*—If the maximum particle size is a cobble or boulder size, describe the maximum dimension of the largest particle. For example: maximum dimension, 18 in. (450 mm).

10.12 *Hardness*—Describe the hardness of coarse sand and larger particles as hard, or state what happens when the particles are hit by a hammer, for example, gravel-size particles fracture with considerable hammer blow, some gravel-size particles crumble with hammer blow. "Hard" means particles do not crack, fracture, or crumble under a hammer blow.

10.13 Additional comments shall be noted, such as the presence of roots or root holes, difficulty in drilling or augering hole, caving of trench or hole, or the presence of mica.

10.14 A local or commercial name or a geologic interpre-

TABLE 6 Criteria for Describing Cementation

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

TABLE 9 Criteria for Describing Dilatancy

Description	Criteria
None	No visible change in the specimen
Slow	Water appears slowly on the surface of the specimen during shaking and does not disappear or disappears slowly upon squeezing
Rapid	Water appears quickly on the surface of the specimen during shaking and disappears quickly upon squeezing

TABLE 10 Criteria for Describing Toughness

Description	Criteria
Low	Only slight pressure is required to roll the thread near the plastic limit. The thread and the lump are weak and soft
Medium	Medium pressure is required to roll the thread to near the plastic limit. The thread and the lump have medium stiffness
High	Considerable pressure is required to roll the thread to near the plastic limit. The thread and the lump have very high stiffness

the surface of the soil. Squeeze the sample by closing the hand or pinching the soil between the fingers, and note the reaction as none, slow, or rapid in accordance with the criteria in Table 9. The reaction is the speed with which water appears while shaking, and disappears while squeezing.

14.4 *Toughness:*

14.4.1 Following the completion of the dilatancy test, the test specimen is shaped into an elongated pat and rolled by hand on a smooth surface or between the palms into a thread about ⅛ in. (3 mm) in diameter. (If the sample is too wet to roll easily, it should be spread into a thin layer and allowed to lose some water by evaporation.) Fold the sample threads and reroll repeatedly until the thread crumbles at a diameter of about ⅛ in. The thread will crumble at a diameter of ⅛ in. when the soil is near the plastic limit. Note the pressure required to roll the thread near the plastic limit. Also, note the strength of the thread. After the thread crumbles, the pieces should be lumped together and kneaded until the lump crumbles. Note the toughness of the material during kneading.

14.4.2 Describe the toughness of the thread and lump as low, medium, or high in accordance with the criteria in Table 10.

14.5 *Plasticity*—On the basis of observations made during the toughness test, describe the plasticity of the material in accordance with the criteria given in Table 11.

14.6 Decide whether the soil is an *inorganic* or an *organic* fine-grained soil (see 14.8). If inorganic, follow the steps given in 14.7.

14.7 *Identification of Inorganic Fine-Grained Soils:*

TABLE 11 Criteria for Describing Plasticity

Description	Criteria
Nonplastic	A ⅛-in. (3-mm) thread cannot be rolled at any water content
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit

14.7.1 Identify the soil as a *lean clay*, CL, if the soil has medium to high dry strength, no or slow dilatancy, and medium toughness and plasticity (see Table 12).

14.7.2 Identify the soil as a *fat clay*, CH, if the soil has high to very high dry strength, no dilatancy, and high toughness and plasticity (see Table 12).

14.7.3 Identify the soil as a *silt*, ML, if the soil has no to low dry strength, slow to rapid dilatancy, and low toughness and plasticity, or is nonplastic (see Table 12).

14.7.4 Identify the soil as an *elastic silt*, MH, if the soil has low to medium dry strength, no to slow dilatancy, and low to medium toughness and plasticity (see Table 12).

NOTE 11—These properties are similar to those for a lean clay. However, the silt will dry quickly on the hand and have a smooth, silky feel when dry. Some soils that would classify as MH in accordance with the criteria in Test Method D 2487 are visually difficult to distinguish from lean clays, CL. It may be necessary to perform laboratory testing for proper identification.

14.8 *Identification of Organic Fine-Grained Soils:*

14.8.1 Identify the soil as an *organic soil*, OL/OH, if the soil contains enough organic particles to influence the soil properties. Organic soils usually have a dark brown to black color and may have an organic odor. Often, organic soils will change color, for example, black to brown, when exposed to the air. Some organic soils will lighten in color significantly when air dried. Organic soils normally will not have a high toughness or plasticity. The thread for the toughness test will be spongy.

NOTE 12—In some cases, through practice and experience, it may be possible to further identify the organic soils as organic silts or organic clays, OL or OH. Correlations between the dilatancy, dry strength, toughness tests, and laboratory tests can be made to identify organic soils in certain deposits of similar materials of known geologic origin.

14.9 If the soil is estimated to have 15 to 25 % sand or gravel, or both, the words "with sand" or "with gravel" (whichever is more predominant) shall be added to the group name. For example: "lean clay with sand, CL" or "silt with gravel, ML" (see Figs. 1a and 1b). If the percentage of sand is equal to the percentage of gravel, use "with sand."

14.10 If the soil is estimated to have 30 % or more sand or gravel, or both, the words "sandy" or "gravelly" shall be added to the group name. Add the word "sandy" if there appears to be more sand than gravel. Add the word "gravelly" if there appears to be more gravel than sand. For example: "sandy lean clay, CL", "gravelly fat clay, CH", or "sandy silt, ML" (see Figs. 1a and 1b). If the percentage of sand is equal to the percent of gravel, use "sandy."

15. Procedure for Identifying Coarse-Grained Soils (Contains less than 50 % fines)

15.1 The soil is a *gravel* if the percentage of gravel is estimated to be more than the percentage of sand.

TABLE 12 Identification of Inorganic Fine-Grained Soils from Manual Tests

Soil Symbol	Dry Strength	Dilatancy	Toughness
ML	None to low	Slow to rapid	Low or thread cannot be formed
CL	Medium to high	None to slow	Medium
MH	Low to medium	None to slow	Low to medium
CH	High to very high	None	High

APPENDIXES

(Nonmandatory Information)

X1. EXAMPLES OF VISUAL SOIL DESCRIPTIONS

X1.1 The following examples show how the information required in 16.1 can be reported. The information that is included in descriptions should be based on individual circumstances and need.

X1.1.1 *Well-Graded Gravel with Sand (GW)*—About 75 % fine to coarse, hard, subangular gravel; about 25 % fine to coarse, hard, subangular sand; trace of fines; maximum size, 75 mm, brown, dry; no reaction with HCl.

X1.1.2 *Silty Sand with Gravel (SM)*—About 60 % predominantly fine sand; about 25 % silty fines with low plasticity, low dry strength, rapid dilatancy, and low toughness; about 15 % fine, hard, subrounded gravel, a few gravel-size particles fractured with hammer blow; maximum size, 25 mm; no reaction with HCl (Note—Field sample size smaller than recommended).

In-Place Conditions—Firm, stratified and contains lenses of silt 1 to 2 in. (25 to 50 mm) thick, moist, brown to gray; in-place density 106 lb/ft^3; in-place moisture 9 %.

X1.1.3 *Organic Soil (OL/OH)*—About 100 % fines with low plasticity, slow dilatancy, low dry strength, and low toughness; wet, dark brown, organic odor; weak reaction with HCl.

X1.1.4 *Silty Sand with Organic Fines (SM)*—About 75 % fine to coarse, hard, subangular reddish sand; about 25 % organic and silty dark brown nonplastic fines with no dry strength and slow dilatancy; wet; maximum size, coarse sand; weak reaction with HCl.

X1.1.5 *Poorly Graded Gravel with Silt, Sand, Cobbles and Boulders (GP-GM)*—About 75 % fine to coarse, hard, subrounded to subangular gravel; about 15 % fine, hard, subrounded to subangular sand; about 10 % silty nonplastic fines; moist, brown; no reaction with HCl; original field sample had about 5 % (by volume) hard, subrounded cobbles and a trace of hard, subrounded boulders, with a maximum dimension of 18 in. (450 mm).

X2. USING THE IDENTIFICATION PROCEDURE AS A DESCRIPTIVE SYSTEM FOR SHALE, CLAYSTONE, SHELLS, SLAG, CRUSHED ROCK, AND THE LIKE

X2.1 The identification procedure may be used as a descriptive system applied to materials that exist in-situ as shale, claystone, sandstone, siltstone, mudstone, etc., but convert to soils after field or laboratory processing (crushing, slaking, and the like).

X2.2 Materials such as shells, crushed rock, slag, and the like, should be identified as such. However, the procedures used in this practice for describing the particle size and plasticity characteristics may be used in the description of the material. If desired, an identification using a group name and symbol according to this practice may be assigned to aid in describing the material.

X2.3 The group symbol(s) and group names should be placed in quotation marks or noted with some type of distinguishing symbol. See examples.

X2.4 Examples of how group names and symbols can be incororated into a descriptive system for materials that are not naturally occurring soils are as follows:

X2.4.1 *Shale Chunks*—Retrieved as 2 to 4-in. (50 to 100-mm) pieces of shale from power auger hole, dry, brown, no reaction with HCl. After slaking in water for 24 h, material identified as "Sandy Lean Clay (CL)"; about 60 % fines with medium plasticity, high dry strength, no dilatancy, and medium toughness; about 35 % fine to medium, hard sand; about 5 % gravel-size pieces of shale.

X2.4.2 *Crushed Sandstone*—Product of commercial crushing operation; "Poorly Graded Sand with Silt (SP-SM)"; about 90 % fine to medium sand; about 10 % nonplastic fines; dry, reddish-brown, strong reaction with HCl.

X2.4.3 *Broken Shells*—About 60 % gravel-size broken shells; about 30 % sand and sand-size shell pieces; about 10 % fines; "Poorly Graded Gravel with Sand (GP)."

X2.4.4 *Crushed Rock*—Processed from gravel and cobbles in Pit No. 7; "Poorly Graded Gravel (GP)"; about 90 % fine, hard, angular gravel-size particles; about 10 % coarse, hard, angular sand-size particles; dry, tan; no reaction with HCl.

X3. SUGGESTED PROCEDURE FOR USING A BORDERLINE SYMBOL FOR SOILS WITH TWO POSSIBLE IDENTIFICATIONS.

X3.1 Since this practice is based on estimates of particle size distribution and plasticity characteristics, it may be difficult to clearly identify the soil as belonging to one category. To indicate that the soil may fall into one of two possible basic groups, a borderline symbol may be used with the two symbols separated by a slash. For example: SC/CL or CL/CH.

X3.1.1 A borderline symbol may be used when the

X6. RATIONALE

Changes in this version from the previous version, D 2488 – 90, include the addition of X5 on Abbreviated Soil Classification Symbols.

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APPENDIX G
LOW FLOW GROUNDWATER SAMPLING PROCEDURES DOCUMENTS

APPENDIX G-1
Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling

Low-Flow Purging and Sampling

A. Method Summary and Application

The purpose of Low-Flow Purging and Sampling (LFPS) is to collect groundwater samples from monitor wells that are representative of ambient groundwater conditions in the aquifer. This is accomplished by setting the intake velocity of the sampling pump to a flow rate that limits drawdown inside the well. LFPS has three primary benefits. First, it minimizes disturbance of sediment in the bottom of the well, thereby producing a sample with low turbidity. Second, LFPS minimizes aeration of the groundwater during sample collection. Third, the amount of groundwater purged from a well is usually reduced as compared to conventional groundwater purging and sampling methods.

Because the method allows collection of groundwater samples with low turbidity, it was originally used for collecting samples for inorganics analysis. The method typically allows the collection of samples for total metals analysis and eliminates the need to filter the samples for dissolved metals analysis. In addition, since the method minimizes aeration of the samples, it can be used to collect samples for analysis of volatile and semi-volatile organic compounds (VOCs and SVOCs), provided that appropriate pumps are used in sample collection, as discussed below.

Advantages of LFPS are:

- Groundwater samples tend to be more representative of actual aquifer conditions with respect to mobile contaminants and turbidity
- It causes minimal disturbance of the formation adjacent to the screened interval
- It is generally less prone to sampling variability compared to other groundwater sampling techniques (e.g., bailers)
- Smaller purge volumes and associated disposal expense
- Increased sample consistency from dedicated systems and reproducibility of data due to reduced operator variability

Disadvantages of LFPS are:

- Misconceptions regarding reduced purging and sampling time
- Sampling from non-dedicated systems requires greater set-up time
- Sampling from dedicated systems requires higher initial capital expenses
- Increased technical complexity
- Increased training needs for sampling personnel
- Attractiveness of advantages may lead to improper and inconsistent application
- Typically not a “first round” sampling option
- Not recommended for wells with long screen intervals unless multiple samples are collected

1. Introduction

The following procedures are specific to LFPS of monitor wells in New Jersey. These procedures were developed in consideration of the USEPA-Region I guidance document dated July 30, 1996

(http://www.epa.gov/region01/measure/well/lowflow8.pdf) and the USEPA-Region II guidance document dated March 16, 1998 (http://www.epa.gov/Region2/desa/hsw/lowflow.txt). In addition, the U.S. Geological Survey's (USGS) Techniques of Water-Resources Investigations, Book 9, National Field Manual for the Collection of Water-Quality Data was consulted (http://water.usgs.gov/owq/FieldManual/). The reader is encouraged to review these guidance documents prior to performing LFPS. The procedures provided in the USEPA and USGS guidance must be followed except where they differ from the information provided below.

2. Low Flow Policy

In the event that a responsible party is conducting a Remedial Investigation without Departmental oversight, submittal of a sampling plan is not required. However, it is highly recommended that the responsible party seek approval for any deviations from this guidance prior to conducting LFPS. In the event that a responsible party decides to use LFPS without submitting a sampling plan and receiving approval, it must be recognized that any deviations from this guidance may result in rejection of the data. In addition, when submitting the results of the LFPS event, the responsible party must include specific details of the LFPS techniques used which demonstrate that they were consistent with the guidance specified below. The responsible party shall also provide adequate rationale justifying any deviations from this guidance whether or not they were previously approved by the Department.

It is also Departmental policy that LFPS is not an acceptable method for any wells with screened or open borehole intervals greater than 5 feet in length **unless:** 1) multiple locations at five-foot intervals along the screen/borehole are sampled, or 2) the data quality objectives (DQOs) warrant sampling a specific zone (e.g., the shallow water table to investigate the potential for vapor intrusion inside a building) or specific zones where sufficient geophysical (e.g., heat-pulse flowmeter, caliper and temperature logs, etc.) and hydrogeological information (e.g., tracer tests) or other evidence (e.g., stained soils or fractures noted on boring logs) that **clearly** identifies the depth(s) at which contaminants are entering the well screen or open borehole.

Once the collection of multiple samples (vertical profiling) in a well has been completed, long-term sampling of the well may require LFPS at fewer depth intervals, or even just one depth interval, depending on the data quality objectives of the sampling and the types of contamination present in the groundwater (e.g., LNAPL, DNAPL, etc).

3. Laboratory Certification (N.J.A.C. 7:18)

N N.J.A.C. 7:18 requires that any environmental laboratory* submitting analytical data to the Department, regardless of quality level, must be certified by the Office of Quality Assurance. This applies to those firms using LFPS instruments associated with the "analyze immediately" category of water quality indicator parameters (WQIPs) including pH, temperature, and dissolved oxygen. Regardless of whether or not the equipment in question is rented or privately owned the requirement for certification can not be ignored. All certification documentation must accompany the instrument into the field and accompany all WQIP data submitted to the Department. (*Environmental laboratory is defined as any laboratory, facility, consulting firm, government or private agency, business entity or other person that the Department has authorized, pursuant to N.J.A.C. 7:18, to perform analysis in

accordance with the procedures of a given analytical method using a particular technique as set forth in a certain methods reference document and to report the results from the analysis of environmental samples in compliance with a Departmental regulatory program).

B. Specific LFPS Considerations

1. Pump Intake Location

When LFPS is performed correctly, the data being collected should be a snapshot of a narrow zone along a length of well screen or fracture in an open borehole. For these reasons, it is important to place the pump intake in the zone of highest contaminant concentration or contaminant flux along the screened/open-hole interval. This is particularly important in wells constructed with more than 5 feet of well screen.

Information to be considered when selecting the pump intake depth should include: 1) evidence of soil/sediment contamination from boring logs; 2) soil/sediment sampling analytical results; 3) vertical profiles of groundwater and soil contamination developed from direct-push sampling and field-screening techniques; and; 4) lithology/stratigraphy, particularly the permeability of the aquifer materials.

Typically, the most permeable zones are selected for the pump intake location since the majority of contaminant mass will be transported through them, particularly as the plume migrates downgradient of the source area. Identification of these zones may be made from borehole geophysical data, (e.g., resistivity, fluid conductance, or natural gamma logging, etc.) and hydraulic conductivity data or grain-size analyses. The use of a series of passive-diffusion-bag samplers in a well may also help to identify the zone of highest VOC contamination. The physical/chemical behavior of the contaminants of concern should be considered when determining the pump intake depth . For example, gasoline-related contaminants may be present near the water table while chlorinated VOCs may be present deeper in the aquifer. If a well is contaminated by both types of contaminants, both may need to be sampled, each from a discrete sampling interval.

As discussed above, LFPS is not an option in wells with screened intervals that exceed 5 feet in length, **unless** multiple sample locations at five-foot intervals along the screen/borehole are investigated. Monitor wells screened across zones of significant geologic heterogeneity or open boreholes in fractured rock may be subject to significant vertical flow. Under those conditions, use of packers to isolate specific zones should be considered.

2. Water Quality Indicator Parameters (WQIPs)

For groundwater investigations in New Jersey utilizing LFPS, the following parameters must be measured in order to determine when well stability has been achieved prior to sampling. Their respective measurements must fall within the stated range for three consecutive readings. If the anticipated “third” reading of any individual parameter does not fall within the stated range, then the process to achieve three consecutive readings for that parameter must be restarted. If, after four

hours, stability has not been achieved for the parameters listed below, follow the recommendations above.

Water Level Drawdown	< 0.3 ft*
pH	± 0.1 unit
Specific Conductance	± 3%
Temperature	± 3%
Dissolved Oxygen	± 10%
Turbidity	± 10% for values greater than 1 NTU
ORP/Eh	± 10 millivolts

* During pump start-up, drawdown may exceed the 0.3-ft target and then recover as flow-rate adjustments are made. In wells with short screens (i.e., 5 to 10 ft long) or when sampling for gasoline constituents at the water table, it is much more important to limit the drawdown to less than 0.3 ft, for example, than a well with 15 ft of screen being sampled for metals only with the pump intake set in a permeable zone 5 ft or more below the water table. When sampling groundwater for VOCs and SVOCs, aerating the water by allowing it to cascade down the inside of the well should be avoided. Therefore, drawdown should not expose the screen more than 0.3 ft below the static water level in the well.

Measurements should be taken once every 5 to 6 minutes. This interval is based upon the time it takes for purge water to replace one flow-through-cell volume (generally 250 ml) and the time it takes to measure and record the data. If the purge rate decreases or if the flow cell volume is increased, the time required for purge water replacement will increase. Forms at the end of this document should be used to record drawdown and the WQIPs.

WQIP measurements must be collected in a manner that will insure integrity of the data being collected. To insure consistency of the data, consideration of the following must be made: 1) tubing diameter, length, and material of construction; 2) flow-through cell design, capacity, decontamination, and "purge-train" set-up; 3) pump selection and plumbing fittings; 4) calibration of flow-through cell probes; 5) purge rate; and, 6) water-level-measurement technique.

3. Purge Volume vs. Stabilization Time

In some cases, it may take considerable time to achieve stabilization of the WQIPs. In other cases, they may never stabilize. However, as provided in USEPA guidance, the following options are available if stability has not been achieved after **FOUR** hours of purging: 1) continue purging until stabilization occurs, no matter how long it takes; 2) discontinue purging, do not collect a sample and document the attempts to reach stabilization; or 3) discontinue purging, collect a sample and document the attempts to reach stabilization. In situations where WQIPs do not stabilize, the sampler must document that LFPS could not be performed and document in the report how the samples were collected.

While every effort should be taken to assure that all of the WQIPs stabilize prior to sample collection, one should keep in mind that the stabilization of some WQIPs may be more difficult to achieve than others. Also, achieving stabilization of some WQIPs may be more important with respect to some contaminant types (e.g., metals versus VOCs, etc.) than others. For example, total metals concentrations tend to increase with increasing turbidity of a water sample due to sorption of metals on solids in the water. Similarly, VOC concentrations may be affected by dissolved oxygen (DO) concentrations (i.e., whether the groundwater is aerobic or anaerobic). In addition to providing information on the effectiveness of LFPS, collection of accurate DO data also aids in the evaluation of monitored natural attenuation (MNA) of VOC plumes. Similarly, temperature data can provide useful information regarding the sampling method. For example, temperature increases resulting from dissipation of heat generated by the submersible pump or from exposure of the tubing to excessive heat at the ground surface can have a significant impact on VOC concentrations in water samples.

If, for whatever reason, a WQIP is not accurately measured during the monitoring process or a certain WQIP does not stabilize, and that particular WQIP **is not** significant with respect to the type of contaminant of concern, sample collection may still proceed. For example, if DO data do not stabilize but all of the other WQIPs including drawdown and turbidity stabilize and samples will be collected for metals only, then the samples may be collected. However, any WQIPs that are affected by field conditions or instrument malfunction, must be discussed in the text of the report in order to alert the end-user of potential data bias. If questions arise regarding when stabilization occurs, the sampler should contact the Department's assigned case manager for the site, if any, either prior to (preferably) or when performing LFPS.

4. Tubing

The inside diameter (ID) of tubing should be no greater than three-eighths of an inch (3/8-in). Quarter-inch (1/4-in) tubing is preferred. Larger tubing diameters reduce flow velocity resulting in a corresponding increase of pump speeds to maintain flow. Increased pump speed will, in turn, elevate the potential for turbulent flow across the screened interval and this may affect the quality of the water being sampled. Conversely, any reduction in flow velocity may allow air to become trapped in the tubing, which may ultimately affect air-sensitive parameters or allow particulates to settle, which may affect turbidity values.

The length of tubing, from the top of the well casing to the flow-through chamber, should be the shortest length manageable. Attention to this detail will help ensure that: 1) exposure to ambient temperature, direct sunlight, and bubble formation are kept to a minimum, and 2) deposited solids or air bubbles will less likely be trapped in tubing bends and re-mobilized after accidental movement. Occurrence of any one or combination of these factors can cause variations in WQIP measurements, which could increase stabilization time. Therefore, tubing must be completely full of water at all times.

If the sampling plan calls for multiple sample locations within the well screen, sampling should proceed from the top location to the bottom location. This will require that additional tubing be coiled at the surface to allow for pump relocation to the next deeper sampling location. In these instances,

the coiled tubing must be protected from ambient conditions and the ground surface, in order to avoid impact to the WQIPs and sample data.

The tubing's material of construction must be either Teflon® or Teflon®-lined polyethylene up to the flow-through cell. This is consistent with collection of any groundwater sample. Tubing downstream of the flow cell may be constructed of a lower-quality, more flexible material. However, when sampling for metals analysis only, the tubing may be constructed of flexible polypropylene or polyethylene.

Tubing "reuse" is not recommended when sampling well-to-well since decontamination of tubing is difficult and time consuming. If tubing is to be reused, it must undergo a rigorous decontamination procedure, which must include a hot water wash/hot air drying process. In addition to the hot water wash/hot air drying, separate decontamination solutions of acetone and nitric acid may have to be pumped through the tubing for 15 minutes, followed by copious amounts of distilled, deionized water rinses. The cost of labor associated with decontamination, including the special handling of cleaning solvents and acid, often exceeds the cost of simply discarding the old tubing and using new tubing for each well. If a decision is made to reuse tubing, then one of the following requirements in the USGS "Water-Quality National Field Manual" must be considered: 1) Collect additional field blanks if VOC concentrations in the last sample collected through the tubing are greater than 500 µg/L, or 2) The tubing should be replaced, rather than cleaned, if VOC concentrations in the last sample exceed 700 µg/L.

5. Flow-Through Cell

Typical flow-through cell design is not complicated and almost all on the market today have common shared features. Cells should be transparent in order to "see" the physical condition of the purge water or air bubbles passing through the system. Highly turbid or iron bacteria-laden water can be visually monitored for change as the purge progresses. The cell must be sealed against unwanted exposure to the atmosphere, thus insuring accurate measurement of air-sensitive parameters (dissolved oxygen, pH, etc.). The total capacity of the cell must be small (<300 ml) in order to maintain a desirable turnover rate of water coming into the cell to ensure real-time data integrity. The in-line design must allow for purge water to enter the flow cell from a bottom port and exit at the top. The discharge may be fitted with a check valve.

Upon initial pump startup, it is good practice to not connect the pump discharge line to the flow-through cell. This will allow the sampler time to monitor drawdown, stabilize the flow rate and prevent fowling of probes by bacteria, sediment, or NAPL. Once drawdown measurements indicate that the flow rate has been controlled and a few minutes (<10) have been allowed to clear any unwanted material, the pump discharge line can then be connected to the flow cell.

Flow cell decontamination is important, not only to reduce the potential for cross contamination, but also to ensure data integrity and consistent instrument performance. The cell and probes should be rinsed with distilled/deionized water between each monitor well as accumulation of suspended material may impact probe performance. If they are exposed to contaminants, use a mild detergent or laboratory glassware cleaning solution. Flow cell exposure to high levels of contamination may

damage probes and require their repair by the manufacturer. Since LFPS is NOT normally a first-round sampling option, knowledge of contaminant levels will generally be known prior to the cell's exposure to purge water.

The location of the flow cell or cells in relation to the sample port is critical. Samples for turbidity measurement, general chemistry and laboratory analysis must be collected ahead of the flow cell. When two cells are used in series, the dissolved oxygen probe must be located in the first cell.

Set up the flow-through cell in a location which will cause minimal fluctuation of the flow rate due to elevation changes in the sample tubing as the tubing is disconnected from the cell prior to sample collection. It is also important to locate the flow-through cell as close as possible to the well head in order to minimize the length of tubing needed between the well head and flow-through cell. The flow-through cell must be protected from ambient conditions and the ground surface.

6. Pump Selection

Pumps used for monitoring WQIPs must be submersible, positive-displacement pumps. Examples of acceptable positive-displacement pumps include bladder, variable-speed submersible-centrifugal, reciprocating-piston, progressive-cavity, and gear pumps. The pump discharge must be fitted appropriately to receive either ¼- or 3/8-inch inside-diameter (ID) Teflon® or Teflon®-lined polyethylene tubing.

Peristaltic pumps are suction-lift pumps which can create a negative pressure gradient. Therefore, their use is not appropriate when collecting groundwater samples for analysis of organic compounds. However, peristaltic pumps may be used for the collection of groundwater samples for analysis of inorganic compounds. It should be kept in mind, however, that sampling with peristaltic pumps may affect the stabilization of some WQIPs including dissolved oxygen, pH and redox potential. Since these WQIPs can be affected by the peristaltic pump, this pump should not be used when these data are to be used to evaluate the effectiveness of Monitored Natural Attenuation of groundwater.

Two basic collection scenarios have a bearing on pump selection. These include: 1) a permanently installed pump system, or 2) a portable (well-to-well) pump installation. Bladder pumps can be used for either scenario, however, only those with disposable bladders and easily cleaned parts are suitable when sampling on a well-to-well basis. Variable-speed submersible-centrifugal pumps, gear or progressive-cavity pumps can be used for either scenario as long as they are constructed of easy to clean stainless steel/Teflon® parts. Pumps constructed with impellers, helicoils, or gears, which are difficult to clean or are constructed of unacceptable plastic parts, are not suitable for sampling. In addition, when conducting LFPS on a portable basis, the power or gas supply line should be isolated from the sample tubing. Power supply and sample tubing lines that form a single unit do not allow for easy decontamination and are not recommended.

7. Plumbing Fittings

A check valve should be incorporated into the tubing train or flow cell discharge to eliminate accidental drainage and subsequent aeration of the flow cell. More importantly, a check valve will

prevent a back-surge of purged water being reintroduced at the screen interval of the well should the power source or pump experience mechanical failure. A back-surge of purge water into the screened interval of the well may result in variability of the WQIPs and create analytical bias. In order to avoid the need to decontaminate the check valve, it may be placed on the discharge side of the flow cell or installed immediately above the pump discharge. Some flow-through cells have check valves built into the unit. By design, bladder pumps also have a check valve built into their construction.

A ¼- or 3/8-inch ID barbed "T" or "Y" fitting, placed ahead of the flow cell, may be used to establish the line which will receive a needle valve for turbidity, general chemistry and analytical sample collection. The "T" or "Y" fitting used should be constructed of Teflon® or stainless steel and decontaminated between each use, if used for analytical samples. The fitting may be constructed of polyethylene and decontaminated between each use if it is only used to sample for turbidity and general chemistry parameters. If analytical samples are collected through the "T" or "Y" fitting and needle valve, then those parts must be incorporated into the field blank collection technique.

When collecting a sample at the port ahead of the flow cell, a flow control valve (stainless-steel needle valve [preferred] or stainless steel/Teflon ball valve [optional]) must be used to prevent backpressure and air bubbles from forming in the tubing (see http://water.usgs.gov/owq/FieldManual/chap4_rpt.pdf, page 84). The "needle valve" offers versatility as it can be used for collection of turbidity, general chemistry **and** analytical samples. It can be used with Teflon® tubing and can be used to control sample flow rate because the design significantly reduces any backpressure gradient. Like all other sampling equipment, the "needle valve" must be decontaminated before use at any well.

8. Calibration of Probes

> CALIBRATION OF THE PROBES USED TO MONITOR WATER QUALITY INDICATOR PARAMETERS MUST TAKE PLACE **IN THE FIELD PRIOR** TO THE DAY'S EVENTS. THE OFFICE OF QUALITY ASSURANCE MUST CERTIFY THE PROBES USED FOR pH, DISSOLVED OXYGEN AND TEMPERATURE MEASUREMENT.

There are no exceptions to these rules. Probe calibration is critical to the accurate and precise measurement of WQIPs.

For warranty purposes, **all** manufacturers' instructions for proper care and calibration must be followed. Solutions for probe calibration must be held to the temperature of the liquid (groundwater) being measured as temperature correlation is critical in calculating conductivity, dissolved oxygen and pH. Tables and equations to compensate for the difference between ambient groundwater and calibration solution temperature are sometimes provided in the operating manuals or with the calibration solutions. Some instruments are designed with internal features to compensate for this difference in temperature. The respective difference between calibration of conductivity and specific conductivity requires compensation for groundwater temperature at the time of calibration vs. solution temperature adjusted to 25°C at the time of calibration. For dissolved oxygen, the flow cell itself must

be maintained at the temperature of groundwater during calibration. All efforts made to account for proper temperature control of solutions during calibration must be reported to the end user. All steps must be recorded in the field notes. No sampling shall commence until all instruments are calibrated and operating properly. See the "Tips" section below for further discussion on Temperature of Calibration Solutions.

9. Water Level Measurements

The depth to the top of the water column must be recorded prior to pump installation and/or prior to purging. If the **total** depth of the well needs to be determined (e.g., to verify the correct well designation and/or to determine if silt has accumulated in the bottom of a well), it should be measured at least 48 hours prior to sample collection or after the sample has been collected and the pump removed. Total depth measurements must never be taken immediately before purging as this may cause the re-suspension of solids in the well and prolong the purge time.

Once the initial water-level measurement has been recorded and the pump installed, suspend the water-level probe in the well at the point at which drawdown is equivalent to a 0.3-foot drop. Record water levels simultaneously with WQIP measurements once every five minutes.

Water-level-measurement devices, which may impart some disturbance to the water column (i.e., stainless steel “popper” or coated tape), are not acceptable.

10. Pump Installation

LFPS pump installation can be divided into two general collection scenarios: permanent and portable (well-to-well). Permanent pump installation is the most desirable. Among other advantages are improved consistency in data acquisition and reduced long-term labor, preparation and material costs. However, permanent installation is more typically associated with long-term monitoring due to the high initial capital investment required.

The more common practice is to use a pump on a portable or well-to-well basis. While initial capital investment is comparatively less than that of a permanent installation, this practice requires close attention to quality control aspects of pump selection, preparation and decontamination.

Once pumps have been properly decontaminated and fitted with appropriate tubing, installation of the pump can begin. Ideally, pumps should be installed 24 to 48 hours prior to initiation of purging. However, this is not always practical, especially when site security can not be guaranteed. In addition, wells constructed with flush-mount casing are difficult to protect from storm water or infiltration of other contaminants during the extended period monitor wells are open.

Pumps must be installed in such a manner as to insure any disturbance in the well is kept to an absolute minimum. Once pumps reach the top of the water column, their descent should proceed very slowly through the water column. The actual level where the pump intake is to be suspended must be predetermined. Under no circumstance should the pump make contact with, or be “bounced” off, the bottom of the well.

One helpful method to insure proper intake location is to accurately measure and pre-cut the tubing for each individual well prior to site activity. A mark can be made on the tubing, which coincides with the top of the well. Cutting the tubing off-site in a controlled setting is most desirable. Tubing can be wiped down with paper towels, moistened with distilled/ deionized water, labeled and then sealed into plastic bags until needed. If this practice is used, be sure to allow enough tubing to account for the distance from the top of the well casing to the flow cell.

11. Purge Rates

Control over the purge rate is one of the most critical aspects of this technique. Once the pump is set within the screened interval at the desired location, a clean electronic water-level-monitoring device is lowered approximately 0.3 ft into the water column. Start the pump at a speed that results in a flow rate in the range of 100 to 500 ml/min. Pump the initial purge water to waste in order to prevent any fouling of the flow-through cell. *With the pump running,* connect the tubing to the cell. Make sure that all air is purged from the tubing and flow cell as the system fills with purge water. For LFPS, the pump speed must remain constant such that flow rates never exceed 500 ml/min and, once stabilized, the flow rate must not be varied, even during sample collection. If drawdown continues to exceed 0.3 ft., reduce the pump speed until the drawdown has stabilized but do not adjust pump speed to a flow rate below 100 ml/min. Flow rates below this level may induce pump stalling and undo the effort to reach stabilization. If drawdown does not come under control at 100 ml/min, then a field decision should be rendered as to how far to allow drawdown to continue until sample collection. At no time should evacuation allow any portion of the well screen to be exposed (for wells screened below the water table) or bring the well to dryness.

Adjustments to pump speed are best made during the first 15 minutes. Once a "feel" for the purge rate is obtained, begin recording well stabilization indicators. Any significant change to purge rates after this time may negatively impact well stabilization measurements.

Purge rates are best monitored by measuring the flow from the discharge side of the flow cell with a graduated cylinder. Record all of the required WQIPs once every 5 minutes. Once stability has been attained and recorded, begin sample collection

12. Sampling

Once WQIPs have stabilized, or a 4-hour time decision has been rendered, sampling can proceed. Do not adjust the flow rate; maintain the same pumping rate during sampling that was used to purge the well. Collect the sample directly from the needle valve at the sample port. The needle valve allows for sample collection with significantly reduced backpressure and turbulence and offers the best means for sample collection without affecting water quality. It also allows for monitoring using the flow-through cell during sample collection, thereby allowing a final WQIP measurement to be recorded immediately after sample collection. This is the preferred method, especially if volatile organic compounds are the parameters of concern. Any exceptions to this technique must first be approved in writing from the NJDEP on a case-by-case basis before commencing sampling operations.

If higher than expected water temperatures are being observed, evaluate whether the submersible pump is overheating. If the pump motor is not suspected, check the system for any exposure to direct sunlight, especially during warmer periods of the year.

13. Pump Decontamination

The pump forms one of the two key elements of sampling equipment (tubing is the other). The importance of proper pump decontamination is especially true when pumps are rented and utilized on a well-to-well basis. Never assume that rented pumps have been thoroughly cleaned. **Pumps constructed with plastic parts, or sealed inner workings that are inaccessible to direct handling are not an option for LFPS well-to-well consideration because of their limited ability to be decontaminated thoroughly**.

Most bladder pumps can not be easily decontaminated in the field due to their unique construction. For that reason, bladder pumps are not employed on a well-to-well basis **unless** they are constructed with easy to clean parts and *disposable* bladders. Bladder pumps are best suited for dedicated (permanently installed) scenarios. Another popular pump, the variable-speed, 2-inch diameter submersible, is more adaptable for well-to-well sampling; however, close attention to decontamination is warranted. One manufacturer, Grundfos®, clearly states in the operational handbook that the pump must be completely disassembled, including removal of the motor shaft from the stator housing, and all components within the impeller housing. Care must be taken upon reassembly to insure that the cavity housing the motor shaft is *completely* refilled with distilled/deionized water. Care must also be taken with this pump during periods of cold weather to avoid freezing of the coolant water. Proper decontamination not only helps to ensure more reliable data; it also prolongs the life of any pump.

14. Field Blank Collection

When employing LFPS techniques, collection of the field blank must follow the same general rules for all groundwater sampling equipment. This includes the requirement that "all" sampling equipment, which comes in contact with the sample, must also come into contact with the field blank water. To overcome some of the difficulties that manual field blank collection through the inside of a pumping system creates, the following procedure is strongly recommended. Fill a 1000-ml decontaminated, graduated glass cylinder with method blank water supplied by the laboratory performing the analysis. Place a properly decontaminated pump into the graduated cylinder with sample tubing and plumbing fittings attached. Activate the pump and collect the required field blank samples. As the water is removed from the cylinder, replace it with additional method blank water. This procedure will require that the laboratory supply larger volumes of field blank water i.e., bulk water in liter or 4-liter containers. The traditional requirement that field blank water be supplied in the same identical containers as the sample being collected can not be practically satisfied when using LFSP. The identical bottle-to-bottle field blank requirement is waived for this sampling technique procedure only.

15. Tips

a). Temperature Measurement and Submersible Pumps

Variable-speed submersible pumps such as the Grundfos® Redi Flo 2 pump use water to cool the motor during operation. Sometimes, reduced flow rates may result in insufficient cooling of the motor and may elevate the temperature of the water to a point where it may begin to affect sample integrity. If the pump is used in low-yielding, two (2)- or four (4)- inch-diameter wells, temperature increases that do not stabilize may result. If this is observed, a field decision must be made to either discontinue or continue with LFPS. If all other WQIPs have stabilized, then collecting the sample and qualifying the water-quality data accordingly may be acceptable. If the temperature increase continues and eventually exceeds 40% of the initial recorded temperature (Celsius) and other WQIPs have not stabilized, sampling should be discontinued. Turning the pump off and on to control overheating is not acceptable. Always keep in mind that elevated temperature has a direct relationship with dissolved oxygen, specific conductance and, to a lesser degree, pH measurement. Higher temperatures may also reduce the concentrations of volatile organic compounds in groundwater samples due to their relatively high Henry's Law constants. If sampling with submersible pumps continues to result in elevated water temperature, other sampling alternatives should be discussed with the appropriate regulatory program.

When using some submersible pumps in large-diameter wells (six inch and greater), overheating of the motor, followed by mechanical shutdown and possible motor damage, may occur. This is the result of water being drawn to the pump intake in a more horizontal flow pattern which diminishes the design feature that normally moves cool water vertically across the motor (stator) housing. The use of specially designed shrouds may overcome this condition.

b). Control of Pump Speed

In order to achieve the high turning speeds, low-speed startup torque is generally lacking in some submersible pumps including the Grundfos® Redi Flo 2 pump. When attempting to control initial drawdown and/or sample flow rates, it is possible for the pump to cease pumping. Then, if a check valve has been installed, the pump may not have enough torque to overcome the head pressure when attempting to restart it. Sometimes, turning the pump to the highest speeds will overcome this situation or sometimes the pump may have to be pulled from the well and reinstalled. Neither of these corrective measures is conducive to LFPS. To avoid this scenario, make sure the control box comes equipped with a "ten turn pot" frequency adjustment knob. This will allow significantly greater control over pump speeds and the risk of losing pump flow will be reduced.

c). pH

Monitoring for stabilization of pH in groundwater is relatively straightforward and rarely requires serious troubleshooting. When calibrating for pH, do a two-point calibration, at a minimum. The calibration range should bracket the anticipated pH. If the pH is unknown, then a three-point calibration must be made. The temperature of the buffer solutions should be as close to the

temperature of the groundwater as possible. If the probe does not calibrate properly, check to make sure that the probe's electrical contact points are dry. As with preventative maintenance of any probe, make sure that the pH probe is rinsed with distilled/deionized water between use and cleaned periodically per the manufacturer's specifications. Overnight storage generally requires placement of the probe into a 2-molar (M) solution of potassium chloride. This solution may cause an unwanted build up of salt, therefore, frequent rinsing is necessary.

d). Temperature of Calibration Solutions

Correct field measurement of dissolved oxygen, conductivity and pH requires tight control over calibration solution temperature. Proper calibration calls for solution temperatures of these parameters to be the same as the groundwater being measured. This may be difficult to achieve when field sampling well-to-well as groundwater temperature can vary between wells based on depth, local setting (asphalt vs. open field) and other atmospheric and hydrogeological factors. In addition, it is logistically difficult to bring solutions to groundwater temperature at the point of pump intake without first installing the pump, collecting purge water and allowing sufficient time to bring calibration solutions to appropriate temperatures.

For the purposes of LFPS in New Jersey, calibration solution temperatures and the flow-through cell itself must be maintained at approximately 54° F (12° C ± 2° C) during calibration. When ambient conditions warrant, this will require the suspension of the solutions and flow-through cell in a container/bucket of water at the aforementioned temperature. When calibrating for dissolved oxygen, always make sure the cell is vented to the atmosphere by attaching short pieces of tubing to the inlet and outlet fittings while the cell is submerged.

During the purge phase, record the difference between the stabilized temperature and the temperature of the calibration solutions. This information must be presented to the end user. If the sampling event is extended for two or more days, appropriate adjustments can then be made to more accurately reflect the groundwater temperature during calibration.

16. Low Flow Purging and Sampling for Low Yielding Wells

The principal focus of water supply well installation is well yield. In contrast, the principal focus of monitor well installation is water quality; well yield is of secondary importance. In an attempt to locate and delineate groundwater contamination, monitor wells are frequently installed in low-yielding water-bearing zones.

Low-yield wells present challenges with respect to representative groundwater sample collection. The removal of water by bailers draws down the water level in the well by slug- type increments. Peristaltic pumps draw water out of the well by vacuum (negative pressure) which may result in degassing and VOC loss. The operation of variable-speed, submersible pumps at low flow rates may result in heating of the sample as it flows around and through the pump, which may also lead to degassing and VOC loss.

Wells that yield less than 0.1 l/min (100ml/min) frequently incur significant drawdown during well purging. If drawdown occurs across the screened interval or open borehole of a well, VOC loss may result. The increased stress on a well caused by significant drawdown may also result in an increase in water turbidity. In an effort to facilitate the collection of a representative groundwater sample from low-yielding wells, NJDEP will allow special sampling procedures to be used. This may include sample collection without regard to monitoring WQIPs associated with well stabilization.

At a minimum, water-quality data, well-construction data, water-level data, and accurate well-yield data for each low-yielding well will need to be submitted to the Department prior to the development of an acceptable sampling procedure. Since sample collection may begin almost as soon as purging is initiated, it is imperative that the exact interval where the sample will be collected along the screen be predetermined. Aside from the considerations for monitoring drawdown and WQIPs, all other LFPS considerations discussed above apply here as well. The owner of the well shall also propose possible explanations for the low yield of the well(s). Once the aforementioned information has been received, the Department will work with the well owner to formulate an acceptable sampling plan. The sampling plans will be approved on a case-by-case basis and will be well-specific. Implementation of any special sampling procedure or use of any special sampling equipment shall not be performed without prior NJDEP approval.

LOW FLOW SAMPLING
DATA SHEET

SHEET ____ OF ____

SITE: _____ **CONSULTING FIRM:** _____
DATE: _____ **FIELD PERSONNEL:** _____
WEATHER: _____

MONITOR WELL #: _____ **WELL DEPTH:** _____ **SCREENED/OPEN INTERVAL:** _____
WELL PERMIT #: _____ **WELL DIAMETER:** _____ **inches**

PID/FID READINGS (ppm): **BACKGROUND:** _____
BENEATH OUTER CAP: _____
BENEATH INNER CAP: _____

PUMP INTAKE DEPTH: _____ **ft below TOC**
DEPTH TO WATER BEFORE PUMP INSTALLATION : _____ **ft below TOC**

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
				NA		NA		NA		NA		NA		NA		

COMMENTS:

***INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity**

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
FIELD INSTRUMENT AND CALIBRATION DATA

SITE:_____
DATE: _____
FIELD PERSONNEL:_____
START TIME:_____**STOP TIME:**_____

	METER	**PROBE**
DO	_____	_____
PH	_____	_____
SPEC. COND.	_____	_____
ORP	_____	_____
TURBIDITY	_____	_____

DISSOLVED OXYGEN **TURBIDITY** **ORP**
Standard **Reading**

Water Temp_____ **D.I. Water** _____ **Standard Temp.**_____
Baro. Pres. _____ _____ **Standard Conc.**_____
Saturation _____ _____ _____ **Initial Reading** _____
Init. Mtr. Rd. _____ _____ _____ **Meter reset to** _____
Mtr. reset to _____ _____ _____
O_2 Satur. % _____ _____ _____

SPECIFIC CONDUCTANCE

	Conc.	**Initial Reading**	**Meter Reset to**	**Temperature**	**Lot # and Exp. Date**
Standard#1	_____	_____	_____	_____	_____
Standard#2	_____	_____	_____	_____	_____
Standard#3	_____	_____	_____	_____	_____
Standard#4	_____	_____	_____	_____	_____

pH CALIBRATION

Buffer	**Temp.**	**Initial Reading**	**mV**	**Meter Reset To**	**Lot # and Exp. Date**
4	_____	_____	_____	_____	_____
7	_____	_____	_____	_____	_____
10	_____	_____	_____	_____	_____

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APPENDIX G-2
Low Flow (Minimal Drawdown) Ground-Water Sampling Procedures

United States Environmental Protection Agency | Office of Research and Development | Office of Solid Waste and Emergency Response | EPA/540/S-95/504 April 1996

EPA Ground Water Issue

LOW-FLOW (MINIMAL DRAWDOWN) GROUND-WATER SAMPLING PROCEDURES

by Robert W. Puls[1] and Michael J. Barcelona[2]

Background

The Regional Superfund Ground Water Forum is a group of ground-water scientists, representing EPA's Regional Superfund Offices, organized to exchange information related to ground-water remediation at Superfund sites. One of the major concerns of the Forum is the sampling of ground water to support site assessment and remedial performance monitoring objectives. This paper is intended to provide background information on the development of low-flow sampling procedures and its application under a variety of hydrogeologic settings. It is hoped that the paper will support the production of standard operating procedures for use by EPA Regional personnel and other environmental professionals engaged in ground-water sampling.

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I. Introduction

The methods and objectives of ground-water sampling to assess water quality have evolved over time. Initially the emphasis was on the assessment of water quality of aquifers as sources of drinking water. Large water-bearing units were identified and sampled in keeping with that objective. These were highly productive aquifers that supplied drinking water via private wells or through public water supply systems. Gradually, with the increasing awareness of subsurface pollution of these water resources, the understanding of complex hydrogeochemical processes which govern the fate and transport of contaminants in the subsurface increased. This increase in understanding was also due to advances in a number of scientific disciplines and improvements in tools used for site characterization and ground-water sampling. Ground-water quality investigations where pollution was detected initially borrowed ideas, methods, and materials for site characterization from the water supply field and water analysis from public health practices. This included the materials and manner in which monitoring wells were installed and the way in which water was brought to the surface, treated, preserved and analyzed. The prevailing conceptual ideas included convenient generalizations of ground-water resources in terms of large and relatively homogeneous hydrologic *units*. With time it became apparent that conventional water supply generalizations of *homogeneity* did not adequately represent field data regarding pollution of these subsurface resources. The important role of *heterogeneity* became increasingly clear not only in geologic terms, but also in terms of complex physical,

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chemical and biological subsurface processes. With greater appreciation of the role of heterogeneity, it became evident that subsurface pollution was ubiquitous and encompassed the unsaturated zone to the deep subsurface and included unconsolidated sediments, fractured rock, and *aquitards* or low-yielding or impermeable formations. Small-scale processes and heterogeneities were shown to be important in identifying contaminant distributions and in controlling water and contaminant flow paths.

It is beyond the scope of this paper to summarize all the advances in the field of ground-water quality investigations and remediation, but two particular issues have bearing on ground-water sampling today: aquifer heterogeneity and colloidal transport. Aquifer heterogeneities affect contaminant flow paths and include variations in geology, geochemistry, hydrology and microbiology. As methods and the tools available for subsurface investigations have become increasingly sophisticated and understanding of the subsurface environment has advanced, there is an awareness that in most cases a primary concern for site investigations is characterization of contaminant flow paths rather than entire aquifers. In fact, in many cases, plume thickness can be less than well screen lengths (e.g., 3-6 m) typically installed at hazardous waste sites to detect and monitor plume movement over time. Small-scale differences have increasingly been shown to be important and there is a general trend toward smaller diameter wells and shorter screens.

The hydrogeochemical significance of colloidal-size particles in subsurface systems has been realized during the past several years (Gschwend and Reynolds, 1987; McCarthy and Zachara, 1989; Puls, 1990; Ryan and Gschwend, 1990). This realization resulted from both field and laboratory studies that showed faster contaminant migration over greater distances and at higher concentrations than flow and transport model predictions would suggest (Buddemeier and Hunt, 1988; Enfield and Bengtsson, 1988; Penrose et al., 1990). Such models typically account for interaction between the mobile aqueous and immobile solid phases, but do not allow for a mobile, reactive solid phase. It is recognition of this third *phase* as a possible means of contaminant transport that has brought increasing attention to the manner in which samples are collected and processed for analysis (Puls et al., 1990; McCarthy and Degueldre, 1993; Backhus et al., 1993; U. S. EPA, 1995). If such a phase is present in sufficient mass, possesses high sorption reactivity, large surface area, and remains stable in suspension, it can serve as an important mechanism to facilitate contaminant transport in many types of subsurface systems.

Colloids are particles that are sufficiently small so that the surface free energy of the particle dominates the bulk free energy. Typically, in ground water, this includes particles with diameters between 1 and 1000 nm. The most commonly observed mobile particles include: secondary clay minerals; hydrous iron, aluminum, and manganese oxides; dissolved and particulate organic materials, and viruses and bacteria. These reactive particles have been shown to be mobile under a variety of conditions in both field studies and laboratory column experiments, and as such need to be included in monitoring programs where identification of the *total* mobile contaminant loading (dissolved + naturally suspended particles) at a site is an objective. To that end, sampling methodologies must be used which do not artificially bias *naturally* suspended particle concentrations.

Currently the most common ground-water purging and sampling methodology is to purge a well using bailers or high speed pumps to remove 3 to 5 casing volumes followed by sample collection. This method can cause adverse impacts on sample quality through collection of samples with high levels of turbidity. This results in the inclusion of otherwise immobile artifactual particles which produce an overestimation of certain analytes of interest (e.g., metals or hydrophobic organic compounds). Numerous documented problems associated with filtration (Danielsson, 1982; Laxen and Chandler, 1982; Horowitz et al., 1992) make this an undesirable method of rectifying the turbidity problem, and include the removal of potentially mobile (contaminant-associated) particles during filtration, thus artificially biasing contaminant concentrations low. Sampling-induced turbidity problems can often be mitigated by using low-flow purging and sampling techniques.

Current subsurface conceptual models have undergone considerable refinement due to the recent development and increased use of field screening tools. So-called hydraulic *push* technologies (e.g., cone penetrometer, Geoprobe®, QED HydroPunch®) enable relatively fast screening site characterization which can then be used to design and install a monitoring well network. Indeed, alternatives to conventional monitoring wells are now being considered for some hydrogeologic settings. The ultimate design of any monitoring system should however be based upon adequate site characterization and be consistent with established monitoring objectives.

If the sampling program objectives include accurate assessment of the magnitude and extent of subsurface contamination over time and/or accurate assessment of subsequent remedial performance, then some information regarding plume delineation in three-dimensional space is necessary prior to monitoring well network design and installation. This can be accomplished with a variety of different tools and equipment ranging from hand-operated augers to screening tools mentioned above and large drilling rigs. Detailed information on ground-water flow velocity, direction, and horizontal and vertical variability are essential baseline data requirements. Detailed soil and geologic data are required prior to and during the installation of sampling points. This includes historical as well as detailed soil and geologic logs which accumulate during the site investigation. The use of borehole geophysical techniques is also recommended. With this information (together with other site characterization data) and a clear understanding of sampling

objectives, then appropriate location, screen length, well diameter, slot size, etc. for the monitoring well network can be decided. This is especially critical for new in situ remedial approaches or natural attenuation assessments at hazardous waste sites.

In general, the overall goal of any ground-water sampling program is to collect water samples with no alteration in water chemistry; analytical data thus obtained may be used for a variety of specific monitoring programs depending on the regulatory requirements. The sampling methodology described in this paper assumes that the monitoring goal is to sample monitoring wells for the presence of contaminants and it is applicable whether mobile colloids are a concern or not and whether the analytes of concern are metals (and metalloids) or organic compounds.

II. Monitoring Objectives and Design Considerations

The following issues are important to consider prior to the design and implementation of any ground-water monitoring program, including those which anticipate using low-flow purging and sampling procedures.

A. Data Quality Objectives (DQOs)

Monitoring objectives include four main types: detection, assessment, corrective-action evaluation and resource evaluation, along with *hybrid* variations such as site-assessments for property transfers and water availability investigations. Monitoring objectives may change as contamination or water quality problems are discovered. However, there are a number of common components of monitoring programs which should be recognized as important regardless of initial objectives. These components include:

1) Development of a conceptual model that incorporates elements of the regional geology to the local geologic framework. The conceptual model development also includes initial site characterization efforts to identify hydrostratigraphic units and likely flow-paths using a minimum number of borings and well completions;

2) Cost-effective and well documented collection of high quality data utilizing simple, accurate, and reproducible techniques; and

3) Refinement of the conceptual model based on supplementary data collection and analysis.

These fundamental components serve many types of monitoring programs and provide a basis for future efforts that evolve in complexity and level of spatial detail as purposes and objectives expand. High quality, reproducible data collection is a common goal regardless of program objectives.

High quality data collection implies data of sufficient accuracy, precision, and completeness (i.e., ratio of valid analytical results to the minimum sample number called for by the program design) to meet the program objectives. Accuracy depends on the correct choice of monitoring tools and procedures to minimize sample and subsurface disturbance from collection to analysis. Precision depends on the repeatability of sampling and analytical protocols. It can be assured or improved by replication of sample analyses including blanks, field/lab standards and reference standards.

B. Sample Representativeness

An important goal of any monitoring program is collection of data that is truly representative of conditions at the site. The term *representativeness* applies to chemical and hydrogeologic data collected via wells, borings, piezometers, geophysical and soil gas measurements, lysimeters, and temporary sampling points. It involves a recognition of the statistical variability of individual subsurface physical properties, and contaminant or major ion concentration levels, while explaining extreme values. Subsurface temporal and spatial variability are facts. Good professional practice seeks to maximize representativeness by using proven accurate and reproducible techniques to define limits on the distribution of measurements collected at a site. However, measures of representativeness are dynamic and are controlled by evolving site characterization and monitoring objectives. An evolutionary site characterization model, as shown in Figure 1, provides a systematic approach to the goal of consistent data collection.

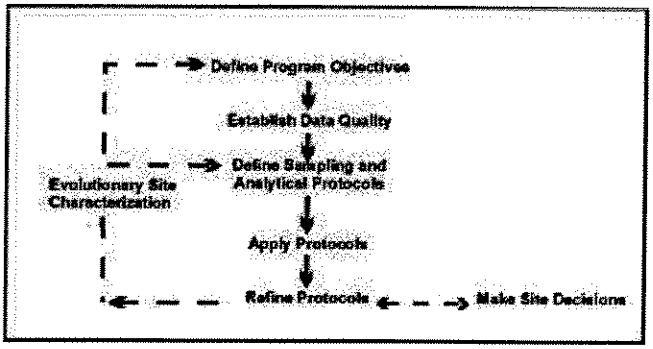

Figure 1. Evolutionary Site Characterization Model

The model emphasizes a recognition of the causes of the variability (e.g., use of inappropriate technology such as using bailers to purge wells; imprecise or operator-dependent methods) and the need to control avoidable errors.

1) Questions of Scale

A sampling plan designed to collect representative samples must take into account the potential scale of changes in site conditions through space and time as well as the chemical associations and behavior of the parameters that are targeted for investigation. In subsurface systems, physical (i.e., aquifer) and chemical properties over time or space are not statistically independent. In fact, samples taken in close proximity (i.e., within distances of a few meters) or within short time periods (i.e., more frequently than monthly) are highly auto-correlated. This means that designs employing high-sampling frequency (e.g., monthly) or dense spatial monitoring designs run the risk of redundant data collection and misleading inferences regarding trends in values that aren't statistically valid. In practice, contaminant detection and assessment monitoring programs rarely suffer these *over-sampling* concerns. In corrective-action evaluation programs, it is also possible that too little data may be collected over space or time. In these cases, false interpretation of the spatial extent of contamination or underestimation of temporal concentration variability may result.

2) Target Parameters

Parameter selection in monitoring program design is most often dictated by the regulatory status of the site. However, background water quality constituents, purging indicator parameters, and contaminants, all represent targets for data collection programs. The tools and procedures used in these programs should be equally rigorous and applicable to all categories of data, since all may be needed to determine or support regulatory action.

C. Sampling Point Design and Construction

Detailed site characterization is central to all decision-making purposes and the basis for this characterization resides in identification of the geologic framework and major hydro-stratigraphic units. Fundamental data for sample point location include: subsurface lithology, head-differences and background geochemical conditions. Each sampling point has a proper use or uses which should be documented at a level which is appropriate for the program's data quality objectives. Individual sampling points may not always be able to fulfill multiple monitoring objectives (e.g., detection, assessment, corrective action).

1) Compatibility with Monitoring Program and Data Quality Objectives

Specifics of sampling point location and design will be dictated by the complexity of subsurface lithology and variability in contaminant and/or geochemical conditions. It should be noted that, regardless of the ground-water sampling approach, few sampling points (e.g., wells, drive-points, screened augers) have zones of influence in excess of a few feet. Therefore, the spatial frequency of sampling points should be carefully selected and designed.

2) Flexibility of Sampling Point Design

In most cases *well-point* diameters in excess of 1 7/8 inches will permit the use of most types of submersible pumping devices for low-flow (minimal drawdown) sampling. It is suggested that *short* (e.g., less than 1.6 m) screens be incorporated into the monitoring design where possible so that comparable results from one device to another might be expected. *Short*, of course, is relative to the degree of vertical water quality variability expected at a site.

3) Equilibration of Sampling Point

Time should be allowed for equilibration of the well or sampling point with the formation after installation. Placement of well or sampling points in the subsurface produces some disturbance of ambient conditions. Drilling techniques (e.g., auger, rotary, etc.) are generally considered to cause more disturbance than *direct-push* technologies. In either case, there may be a period (i.e., days to months) during which water quality near the point may be distinctly different from that in the formation. Proper development of the sampling point and adjacent formation to remove fines created during emplacement will shorten this water quality *recovery* period.

III. Definition of Low-Flow Purging and Sampling

It is generally accepted that water in the well casing is non-representative of the formation water and needs to be purged prior to collection of ground-water samples. However, the water in the screened interval may indeed be representative of the formation, depending upon well construction and site hydrogeology. Wells are purged to some extent for the following reasons: the presence of the air interface at the top of the water column resulting in an oxygen concentration gradient with depth, loss of volatiles up the water column, leaching from or sorption to the casing or filter pack, chemical changes due to clay seals or backfill, and surface infiltration.

Low-flow purging, whether using portable or dedicated systems, should be done using pump-intake located in the middle or slightly above the middle of the screened interval. Placement of the pump too close to the bottom of the well will cause increased entrainment of solids which have collected in the well over time. These particles are present as a result of well development, prior purging and sampling events, and natural colloidal transport and deposition. Therefore, placement of the pump in the middle or toward the top of the screened interval is suggested. Placement of the pump at the top of the water column for sampling is only recommended in unconfined aquifers, screened across the water table, where this is the desired sampling point. Low-

flow purging has the advantage of minimizing mixing between the overlying stagnant casing water and water within the screened interval.

A. Low-Flow Purging and Sampling

Low-flow refers to the velocity with which water enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. It does not necessarily refer to the flow rate of water discharged at the surface which can be affected by flow regulators or restrictions. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system to the extent practical taking into account established site sampling objectives. Typically, flow rates on the order of 0.1 - 0.5 L/min are used, however this is dependent on site-specific hydrogeology. Some extremely coarse-textured formations have been successfully sampled in this manner at flow rates to 1 L/min. The effectiveness of using low-flow purging is intimately linked with proper screen location, screen length, and well construction and development techniques. The reestablishment of natural flow paths in both the vertical and horizontal directions is important for correct interpretation of the data. For high resolution sampling needs, screens less than 1 m should be used. Most of the need for purging has been found to be due to passing the sampling device through the overlying casing water which causes mixing of these stagnant waters and the dynamic waters within the screened interval. Additionally, there is disturbance to suspended sediment collected in the bottom of the casing and the displacement of water out into the formation immediately adjacent to the well screen. These disturbances and impacts can be avoided using dedicated sampling equipment, which precludes the need to insert the sampling device prior to purging and sampling.

Isolation of the screened interval water from the overlying stagnant casing water may be accomplished using low-flow minimal drawdown techniques. If the pump intake is located within the screened interval, most of the water pumped will be drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone. However, if the wells are not constructed and developed properly, zones other than those intended may be sampled. At some sites where geologic heterogeneities are sufficiently different within the screened interval, higher conductivity zones may be preferentially sampled. This is another reason to use shorter screened intervals, especially where high spatial resolution is a sampling objective.

B. Water Quality Indicator Parameters

It is recommended that water quality indicator parameters be used to determine purging needs prior to sample collection in each well. Stabilization of parameters such as pH, specific conductance, dissolved oxygen, oxidation-reduction potential, temperature and turbidity should be used to determine when formation water is accessed during purging. In general, the order of stabilization is pH, temperature, and specific conductance, followed by oxidation-reduction potential, dissolved oxygen and turbidity. Temperature and pH, while commonly used as purging indicators, are actually quite insensitive in distinguishing between formation water and stagnant casing water; nevertheless, these are important parameters for data interpretation purposes and should also be measured. Performance criteria for determination of stabilization should be based on water-level drawdown, pumping rate and equipment specifications for measuring indicator parameters. Instruments are available which utilize in-line flow cells to continuously measure the above parameters.

It is important to establish specific well stabilization criteria and then consistently follow the same methods thereafter, particularly with respect to drawdown, flow rate and sampling device. Generally, the time or purge volume required for parameter stabilization is independent of well depth or well volumes. Dependent variables are well diameter, sampling device, hydrogeochemistry, pump flow rate, and whether the devices are used in a portable or dedicated manner. If the sampling device is already in place (i.e., dedicated sampling systems), then the time and purge volume needed for stabilization is much shorter. Other advantages of dedicated equipment include less purge water for waste disposal, much less decontamination of equipment, less time spent in preparation of sampling as well as time in the field, and more consistency in the sampling approach which probably will translate into less variability in sampling results. The use of dedicated equipment is strongly recommended at wells which will undergo routine sampling over time.

If parameter stabilization criteria are too stringent, then minor oscillations in indicator parameters may cause purging operations to become unnecessarily protracted. It should also be noted that turbidity is a very conservative parameter in terms of stabilization. Turbidity is always the last parameter to stabilize. Excessive purge times are invariably related to the establishment of too stringent turbidity stabilization criteria. It should be noted that natural turbidity levels in ground water may exceed 10 nephelometric turbidity units (NTU).

C. Advantages and Disadvantages of Low-Flow (Minimum Drawdown) Purging

In general, the advantages of low-flow purging include:

- samples which are representative of the *mobile* load of contaminants present (dissolved and colloid-associated);
- minimal disturbance of the sampling point thereby minimizing sampling artifacts;
- less operator variability, greater operator control;

- reduced stress on the formation (minimal drawdown);
- less mixing of stagnant casing water with formation water;
- reduced need for filtration and, therefore, less time required for sampling;
- smaller purging volume which decreases waste disposal costs and sampling time;
- better sample consistency; reduced artificial sample variability.

Some disadvantages of low-flow purging are:

- higher initial capital costs,
- greater set-up time in the field,
- need to transport additional equipment to and from the site,
- increased training needs,
- resistance to change on the part of sampling practitioners,
- concern that new data will indicate a *change in conditions* and trigger an *action.*

IV. Low-Flow (Minimal Drawdown) Sampling Protocols

The following ground-water sampling procedure has evolved over many years of experience in ground-water sampling for organic and inorganic compound determinations and as such summarizes the authors' (and others) experiences to date (Barcelona et al., 1984, 1994; Barcelona and Helfrich, 1986; Puls and Barcelona, 1989; Puls et. al. 1990, 1992; Puls and Powell, 1992; Puls and Paul, 1995). High-quality chemical data collection is essential in ground-water monitoring and site characterization. The primary limitations to the collection of *representative* ground-water samples include: mixing of the stagnant casing and *fresh* screen waters during insertion of the sampling device or ground-water level measurement device; disturbance and resuspension of settled solids at the bottom of the well when using high pumping rates or raising and lowering a pump or bailer; introduction of atmospheric gases or degassing from the water during sample handling and transfer, or inappropriate use of vacuum sampling device, etc.

A. Sampling Recommendations

Water samples should not be taken immediately following well development. Sufficient time should be allowed for the ground-water flow regime in the vicinity of the monitoring well to stabilize and to approach chemical equilibrium with the well construction materials. This lag time will depend on site conditions and methods of installation but often exceeds one week.

Well purging is nearly always necessary to obtain samples of water flowing through the geologic formations in the screened interval. Rather than using a general but arbitrary guideline of purging three casing volumes prior to sampling, it is recommended that an in-line water quality measurement device (e.g., flow-through cell) be used to establish the stabilization time for several parameters (e.g. , pH, specific conductance, redox, dissolved oxygen, turbidity) on a well-specific basis. Data on pumping rate, drawdown, and volume required for parameter stabilization can be used as a guide for conducting subsequent sampling activities.

The following are recommendations to be considered before, during and after sampling:

- use low-flow rates (<0.5 L/min), during both purging and sampling to maintain minimal drawdown in the well;
- maximize tubing wall thickness, minimize tubing length;
- place the sampling device intake at the desired sampling point;
- minimize disturbances of the stagnant water column above the screened interval during water level measurement and sampling device insertion;
- make proper adjustments to stabilize the flow rate as soon as possible;
- monitor water quality indicators during purging;
- collect unfiltered samples to estimate contaminant loading and transport potential in the subsurface system.

B. Equipment Calibration

Prior to sampling, all sampling device and monitoring equipment should be calibrated according to manufacturer's recommendations and the site Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP). Calibration of pH should be performed with at least two buffers which bracket the expected range. Dissolved oxygen calibration must be corrected for local barometric pressure readings and elevation.

C. Water Level Measurement and Monitoring

It is recommended that a device be used which will least disturb the water surface in the casing. Well depth should be obtained from the well logs. Measuring to the bottom of the well casing will only cause resuspension of settled solids from the formation and require longer purging times for turbidity equilibration. Measure well depth after sampling is completed. The water level measurement should be taken from a permanent reference point which is surveyed relative to ground elevation.

D. Pump Type

The use of low-flow (e.g., 0.1-0.5 L/min) pumps is suggested for purging and sampling all types of analytes. All pumps have some limitation and these should be investigated with respect to application at a particular site. Bailers are inappropriate devices for low-flow sampling.

1) General Considerations

There are no unusual requirements for ground-water sampling devices when using low-flow, minimal drawdown techniques. The major concern is that the device give consistent results and minimal disturbance of the sample across a range of *low* flow rates (i.e., < 0.5 L/min). Clearly, pumping rates that cause minimal to no drawdown in one well could easily cause *significant* drawdown in another well finished in a less transmissive formation. In this sense, the pump should not cause undue pressure or temperature changes or physical disturbance on the water sample over a reasonable sampling range. Consistency in operation is critical to meet accuracy and precision goals.

2) Advantages and Disadvantages of Sampling Devices

A variety of sampling devices are available for low-flow (minimal drawdown) purging and sampling and include peristaltic pumps, bladder pumps, electrical submersible pumps, and gas-driven pumps. Devices which lend themselves to both dedication and consistent operation at definable low-flow rates are preferred. It is desirable that the pump be easily adjustable and operate reliably at these lower flow rates. The peristaltic pump is limited to shallow applications and can cause degassing resulting in alteration of pH, alkalinity, and some volatiles loss. Gas-driven pumps should be of a type that does not allow the gas to be in direct contact with the sampled fluid.

Clearly, bailers and other *grab* type samplers are ill-suited for low-flow sampling since they will cause repeated disturbance and mixing of *stagnant* water in the casing and the *dynamic* water in the screened interval. Similarly, the use of inertial lift foot-valve type samplers may cause too much disturbance at the point of sampling. Use of these devices also tends to introduce uncontrolled and unacceptable operator variability.

Summaries of advantages and disadvantages of various sampling devices are listed in Herzog et al. (1991), U. S. EPA (1992), Parker (1994) and Thurnblad (1994).

E. Pump Installation

Dedicated sampling devices (left in the well) capable of pumping and sampling are preferred over <u>any</u> other type of device. Any portable sampling device should be slowly and carefully lowered to the middle of the screened interval or slightly above the middle (e.g., 1-1.5 m below the top of a 3 m screen). This is to minimize excessive mixing of the stagnant water in the casing above the screen with the screened interval zone water, and to minimize resuspension of solids which will have collected at the bottom of the well. These two disturbance effects have been shown to directly affect the time required for purging. There also appears to be a direct correlation between size of portable sampling devices relative to the well bore and resulting purge volumes and times. The key is to minimize disturbance of water and solids in the well casing.

F. Filtration

Decisions to filter samples should be dictated by sampling objectives rather than as a *fix* for poor sampling practices, and field-filtering of certain constituents should not be the default. Consideration should be given as to what the application of field-filtration is trying to accomplish. For assessment of truly dissolved (as opposed to operationally *dissolved* [i.e., samples filtered with 0.45 µm filters]) concentrations of major ions and trace metals, 0.1 µm filters are recommended although 0.45 µm filters are normally used for most regulatory programs. Alkalinity samples must also be filtered if significant particulate calcium carbonate is suspected, since this material is likely to impact alkalinity titration results (although filtration itself may alter the CO_2 composition of the sample and, therefore, affect the results).

Although filtration may be appropriate, filtration of a sample may cause a number of unintended changes to occur (e.g. oxidation, aeration) possibly leading to filtration-induced artifacts during sample analysis and uncertainty in the results. Some of these unintended changes may be unavoidable but the factors leading to them must be recognized. Deleterious effects can be minimized by consistent application of certain filtration guidelines. Guidelines should address selection of filter type, media, pore size, etc. in order to identify and minimize potential sources of uncertainty when filtering samples.

In-line filtration is recommended because it provides better consistency through less sample handling, and minimizes sample exposure to the atmosphere. In-line filters are available in both disposable (barrel filters) and non-disposable (in-line filter holder, flat membrane filters) formats and various filter pore sizes (0.1-5.0 µm). Disposable filter cartridges have the advantage of greater sediment handling capacity when compared to traditional membrane filters. Filters must be pre-rinsed following manufacturer's recommendations. If there are no recommendations for rinsing, pass through a minimum of 1 L of ground water following purging and prior to sampling. Once filtration has begun, a filter cake may develop as particles larger than the pore size accumulate on the filter membrane. The result is that the effective pore diameter of the membrane is reduced and particles smaller than the stated pore size are excluded from the filtrate. Possible corrective measures include prefiltering (with larger pore size filters), minimizing particle loads to begin with, and reducing sample volume.

G. Monitoring of Water Level and Water Quality Indicator Parameters

Check water level periodically to monitor drawdown in the well as a guide to flow rate adjustment. The goal is minimal drawdown (<0.1 m) during purging. This goal may be difficult to achieve under some circumstances due to geologic heterogeneities within the screened interval, and may require adjustment based on site-specific conditions and personal experience. In-line water quality indicator parameters should be continuously monitored during purging. The water quality

indicator parameters monitored can include pH, redox potential, conductivity, dissolved oxygen (DO) and turbidity. The last three parameters are often most sensitive. Pumping rate, drawdown, and the time or volume required to obtain stabilization of parameter readings can be used as a future guide to purge the well. Measurements should be taken every three to five minutes if the above suggested rates are used. Stabilization is achieved after all parameters have stabilized for three successive readings. In lieu of measuring all five parameters, a minimum subset would include pH, conductivity, and turbidity or DO. Three successive readings should be within ± 0.1 for pH, ± 3% for conductivity, ± 10 mv for redox potential, and ± 10% for turbidity and DO. Stabilized purge indicator parameter trends are generally obvious and follow either an exponential or asymptotic change to stable values during purging. Dissolved oxygen and turbidity usually require the longest time for stabilization. The above stabilization guidelines are provided for rough estimates based on experience.

H. Sampling, Sample Containers, Preservation and Decontamination

Upon parameter stabilization, sampling can be initiated. If an in-line device is used to monitor water quality parameters, it should be disconnected or bypassed during sample collection. Sampling flow rate may remain at established purge rate or may be adjusted slightly to minimize aeration, bubble formation, turbulent filling of sample bottles, or loss of volatiles due to extended residence time in tubing. Typically, flow rates less than 0.5 L/min are appropriate. The same device should be used for sampling as was used for purging. Sampling should occur in a progression from least to most contaminated well, if this is known. Generally, volatile (e.g., solvents and fuel constituents) and gas sensitive (e.g., Fe^{2+}, CH_4, H_2S/HS^-, alkalinity) parameters should be sampled first. The sequence in which samples for most inorganic parameters are collected is immaterial unless filtered (dissolved) samples are desired. Filtering should be done last and in-line filters should be used as discussed above. During both well purging and sampling, proper protective clothing and equipment must be used based upon the type and level of contaminants present.

The appropriate sample container will be prepared in advance of actual sample collection for the analytes of interest and include sample preservative where necessary. Water samples should be collected directly into this container from the pump tubing.

Immediately after a sample bottle has been filled, it must be preserved as specified in the site (QAPP). Sample preservation requirements are based on the analyses being performed (use site QAPP, FSP, RCRA guidance document [U. S. EPA, 1992] or EPA SW-846 [U. S. EPA, 1982]). It may be advisable to add preservatives to sample bottles in a controlled setting prior to entering the field in order to reduce the chances of improperly preserving sample bottles or introducing field contaminants into a sample bottle while adding the preservatives.

The preservatives should be transferred from the chemical bottle to the sample container using a disposable polyethylene pipet and the disposable pipet should be used only once and then discarded.

After a sample container has been filled with ground water, a Teflon™ (or tin)-lined cap is screwed on tightly to prevent the container from leaking. A sample label is filled out as specified in the FSP. The samples should be stored inverted at 4°C.

Specific decontamination protocols for sampling devices are dependent to some extent on the type of device used and the type of contaminants encountered. Refer to the site QAPP and FSP for specific requirements.

I. Blanks

The following blanks should be collected:

(1) field blank: one field blank should be collected from each source water (distilled/deionized water) used for sampling equipment decontamination or for assisting well development procedures.

(2) equipment blank: one equipment blank should be taken prior to the commencement of field work, from each set of sampling equipment to be used for that day. Refer to site QAPP or FSP for specific requirements.

(3) trip blank: a trip blank is required to accompany each volatile sample shipment. These blanks are prepared in the laboratory by filling a 40-mL volatile organic analysis (VOA) bottle with distilled/deionized water.

V. Low-Permeability Formations and Fractured Rock

The overall sampling program goals or sampling objectives will drive how the sampling points are located, installed, and choice of sampling device. Likewise, site-specific hydrogeologic factors will affect these decisions. Sites with very low permeability formations or fractures causing discrete flow channels may require a unique monitoring approach. Unlike water supply wells, wells installed for ground-water quality assessment and restoration programs are often installed in low water-yielding settings (e.g., clays, silts). Alternative types of sampling points and sampling methods are often needed in these types of environments, because low-permeability settings may require extremely low-flow purging (<0.1 L/min) and may be technology-limited. Where devices are not readily available to pump at such low flow rates, the primary consideration is to avoid dewatering of

the well screen. This may require repeated recovery of the water during purging while leaving the pump in place within the well screen.

Use of low-flow techniques may be impractical in these settings, depending upon the water recharge rates. The sampler and the end-user of data collected from such wells need to understand the limitations of the data collected; i.e., a strong potential for underestimation of actual contaminant concentrations for volatile organics, potential false negatives for filtered metals and potential false positives for unfiltered metals. It is suggested that comparisons be made between samples recovered using low-flow purging techniques and samples recovered using passive sampling techniques (i.e., two sets of samples). Passive sample collection would essentially entail acquisition of the sample with no or very little purging using a dedicated sampling system installed within the screened interval or a passive sample collection device.

A. Low-Permeability Formations (<0.1 L/min recharge)

1. Low-Flow Purging and Sampling with Pumps

a. "portable or non-dedicated mode" - Lower the pump (one capable of pumping at <0.1 L/min) to mid-screen or slightly above and set in place for minimum of 48 hours (to lessen purge volume requirements). After 48 hours, use procedures listed in Part IV above regarding monitoring water quality parameters for stabilization, etc., but do not dewater the screen. If excessive drawdown and slow recovery is a problem, then alternate approaches such as those listed below may be better.

b. "dedicated mode" - Set the pump as above at least a week prior to sampling; that is, operate in a dedicated pump mode. With this approach significant reductions in purge volume should be realized. Water quality parameters should stabilize quite rapidly due to less disturbance of the sampling zone.

2. Passive Sample Collection

Passive sampling collection requires insertion of the device into the screened interval for a sufficient time period to allow flow and sample equilibration before extraction for analysis. Conceptually, the extraction of water from low yielding formations seems more akin to the collection of water from the unsaturated zone and passive sampling techniques may be more appropriate in terms of obtaining "representative" samples. Satisfying usual sample volume requirements is typically a problem with this approach and some latitude will be needed on the part of regulatory entities to achieve sampling objectives.

B. Fractured Rock

In fractured rock formations, a low-flow to zero purging approach using pumps in conjunction with packers to isolate the sampling zone in the borehole is suggested. Passive multi-layer sampling devices may also provide the most "representative" samples. It is imperative in these settings to identify flow paths or water-producing fractures prior to sampling using tools such as borehole flowmeters and/or other geophysical tools.

After identification of water-bearing fractures, install packer(s) and pump assembly for sample collection using low-flow sampling in "dedicated mode" or use a passive sampling device which can isolate the identified water-bearing fractures.

VI. Documentation

The usual practices for documenting the sampling event should be used for low-flow purging and sampling techniques. This should include, at a minimum: information on the conduct of purging operations (flow-rate, drawdown, water-quality parameter values, volumes extracted and times for measurements), field instrument calibration data, water sampling forms and chain of custody forms. See Figures 2 and 3 and "Ground Water Sampling Workshop -- A Workshop Summary" (U. S. EPA, 1995) for example forms and other documentation suggestions and information. This information coupled with laboratory analytical data and validation data are needed to judge the "useability" of the sampling data.

VII. Notice

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Figure 2. **Ground Water Sampling Log**

Project _____ **Site** _____ **Well No.** _____ **Date** _____
Well Depth _____ **Screen Length** _____ **Well Diameter** _____ **Casing Type** _____
Sampling Device _____ **Tubing type** _____ **Water Level** _____
Measuring Point _____ **Other Infor** _____

Sampling Personnel _____

Time	pH	Temp	Cond.	Dis.O_2	Turb.	[ ]Conc			Notes

Type of Samples Collected

_____

Information: 2 in = 617 ml/ft, 4 in = 2470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

Figure 3. **Ground Water Sampling Log** (with automatic data logging for most water quality parameters)

Project _____ **Site** _____ **Well No.** _____ **Date** _____
Well Depth _____ **Screen Length** _____ **Well Diameter** _____ **Casing Type** _____
Sampling Device _____ **Tubing type** _____ **Water Level** _____
Measuring Point _____ **Other Infor** _____

Sampling Personnel _____

Time	Pump Rate	Turbidity	Alkalinity	[ ] Conc	Notes

Type of Samples Collected

_____

Information: 2 in = 617 ml/ft, 4 in = 2470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

APPENDIX G-3
The Low Down on Low Flow

Site Remediation News
November 1997 (Vol 9 No 3) - Article 04

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The Low-Down on Low Flow

By: Greg Giles and Jeff Story
Bureau of Ground Water Pollution Abatement

In recent years there has been much discussion of alternative purging and sampling methods in the technical literature, particularly where low flow rates are used. These methods have been termed low-flow, low-stress, minimum-drawdown and micropurging, among others. These terms usually refer to the use of very low ground water extraction rates (pumping rates below 1 liter/minute) during well purging and sampling. Since this method is not addressed in the Department's Field Sampling Procedures Manual (1), this article has been written to discuss this procedure so that people who write and review low-flow sampling plans will be better able to assess when the use of this procedure is appropriate.

History and Significance

Regulators and the regulated community have been at odds over the issue of filtering water samples collected for metals analysis. The regulated community has argued that the incorporation of aquifer matrix material (i.e., silt & clay) into ground water samples result in the generation of ground water metals data that are biased high. Metals are naturally occurring and exist in all subsurface geologic material; the required acid preservation of water samples may release metals previously bound to the surface of aquifer material included in the water sample or dissolve some aquifer material altogether (e.g., metal oxides & hydroxides). Therefore, it is reasonable to assume that the incorporation of aquifer matrix material into water samples, which increases turbidity of the water samples, will result in higher metals concentrations.

The cause(s) of turbidity in a given ground water sample may be from any or all of the following:

1. Natural turbidity (i.e., mobile colloids) in the aquifer;
2. The well may have been improperly constructed.
   Considering the nature of the aquifer material the well is installed in, the screen slot size chosen for the well may be too large or the sandpack placed in the annular space around the well screen may be too coarse;
3. The well may have been improperly or inadequately developed;
4. The well may have been pumped at too high a flow rate during the purging or

sampling of the well. Anytime that a well is pumped at a rate that is higher than the well's recharge rate, or higher than the rate at which the well was previously developed at, sediment may be stirred up within the well casing or released from the aquifer into the well, resulting in the water becoming turbid; and,

5. The procedures used during well sampling may result in increased well turbidity. The sounding of wells with probes to determine total well depth may stir up sediment that has accumulated at the bottom of the well. The sediment will be pulled up the water column as the probe is reeled up to the surface. The contact of sampling equipment with the well casing or well screen may release material into the well, and the quick movement of sampling equipment within the well (e.g., bailers) may produce turbidity due to hydrostatic stresses between the well and the surrounding aquifer.

A 0.45-micron filter is the industry standard to filter water samples. Puls and Barcelona (2) concluded that the use of a 0.45-micron filter was not useful, appropriate or reproducible in providing information on metals mobility in ground water systems, nor was it appropriate for the determination of truly dissolved constituents in ground water. The argument that well samples should not be filtered for metals analyses is also supported by the Department's Field Sampling Procedures Manual (1) which states (on page 178) that the Department requires "metals analysis to be performed on **unfiltered** ground water samples pursuant to the requirements of the Safe Drinking Water Act and the Clean Water Act."

With the requirement that water samples analyzed for metals not be filtered, the technique of low-flow purging/ sampling appears to have originated as a means of reducing turbidity in ground water samples. As stated in the April 1996 EPA Ground Water Issue (3), "Sampling-induced turbidity problems can often be mitigated by using low-flow purging and sampling techniques."

While the principal goal of the low-flow sampling technique is the collection of representative ground water samples, one of the major benefits of this technique is the potential cost savings due to the generation of less purge water requiring storage, transportation and disposal. The Department has received an increasing number of requests to allow low-flow sampling, and the potential reduction in the amount of purge water generated appears to be largely responsible for the increase in such requests.

Low-Flow Procedures

The underlying principle of the low-flow technique is that at low pumping rates (less than 1 liter/minute with 0.1 to 0.5 liter/minute being typical), the ground water flow in the area of the sampling device intake approaches horizon-tal linearity (i.e., the ground water that is being drawn into the sampling device should be limited to the sandpack and aquifer in the immediate area of the sampling device intake). According to the EPA document (3) on page 5, low-flow "refers to the velocity with which water enters the pump intake and is imparted to the formation pore water in the immediate vicinity of the well screen....The objective is to pump at a rate that minimizes stress (drawdown) to the extent practical."

Where there is no (or minimal) drawdown during purging and sampling the well is recharged by the aquifer at the same rate the well is being pumped. Under low-flow sampling conditions, suspended solids (e.g., colloids) are considered to be mobile in the aquifer, representative of natural conditions, and not an artifact of sampling or well construction. For this reason, analytical results for metals testing using low-flow sampling are considered to be representative of the total mobile contaminant load in the aquifer (4). Thus, sampling for both "total" and "dissolved" metals is usually not needed.

Using the low-flow sampling technique, wells are purged and sampled at flow rates at or below 1 liter/minute. There is generally no required volume of water to purge from the well before collecting the ground water sample. Instead, the decision on when the ground water sample can be collected is based on the stabilization of ground water-quality parameters (e.g., temperature, pH, Eh, specific conductance, dissolved oxygen (DO) and turbidity). Accordingly, it is important that the stabilization parameters be measured accurately, and that the purging be conducted in such a manner that the sampling procedure does not affect the field parameter values (e.g., some submersible pumps generate a lot of heat when pumping at very low rates; this may cause the temperature reading to drift); sampling devices that operate under negative pressure (e.g., peristaltic pumps) cause degassing of the water which may cause drift in the pH and dissolved oxygen readings.

During conventional purging and sampling the sample can often represent an average of the entire screened interval/bedrock borehole. In contrast, low-flow sampling conceptually results in the collection of a sample drawn from a discrete interval in the well. As such, the collection of a ground water sample using low-flow techniques may be considered somewhat analogous to collecting discrete ground water samples using equipment such as "Geoprobe" and "Hydropunch" samplers and temporary well points which typically have short intakes.

Advantages

1. With respect to metals analysis, low-flow samples are typically considered to be representative of the total mobile contaminant load (i.e., dissolved and colloid-associated). This reduces the need for sample filtration. Samples collected using low-flow methods usually contain less turbidity.

2. Using low-flow procedures, the volume of water purged from the well may be significantly reduced. Costs associated with the storage, transport and disposal of the purge water may be reduced and the amount of time needed to purge the well may be reduced.

3. Because the same equipment is used for well purging and well sampling, less equipment may need to be used in the field.

4. Because the low-flow technique generates water samples obtained from very discrete zones, if the contaminant distribution in the section of the aquifer screened by the well is heterogeneous, the sample collected by low-flow procedures may show signifi-cantly higher contaminant concentrations than samples collected at higher flow rates (i.e., using traditional sampling methods).

5. The reduction in the amount of fine-grained material flowing into the well can increase well life and reduce the need for well re-development.

Disadvantages

1. Not all sampling equipment can be used for low-flow sampling. Pumps used for low-flow sampling should be variable in speed and designed to operate at very low pumping rates. Pumps should preferably operate under positive displacement.

2. Because the measurement of DO and Eh must be made before the ground water comes in contact with the atmosphere, a flow-through cell must be used to measure these parameters in the field.

3. The zone sampled within the well by low-flow methods is conceptually limited. If the contaminant distribution in the screened section of the aquifer is heterogeneous, which may be the case in most wells, the sample results obtained by low-flow sampling may be significantly biased low if the sampling device intake is not placed at the same depth as that of the highest contaminant concentration entering the well. Accordingly, for wells contaminated with DNAPL or LNAPL type contamina-tion, the sampling device intake depth could signifi-cantly affect the sampling results. For wells con-structed with long screens, vertical flow gradients within the well may cause mixing of ground water and the samples will not be depth-discrete.

4. The method requires higher initial capital costs and longer set-up time in the field.

Summary

EPA's issue paper (3) provides a very thorough evaluation of the method and its advantages and disadvan- tages. This paper is considered recommended reading by anyone involved in low-flow sampling.

At this time the Department does not have a formalized low-flow sampling procedure/policy in place. However, the Department is currently working to develop a formalized low-flow sampling guidance document. Currently, low-flow sampling can be approved only on a case-by-case basis until the Department develops appropriate guidance. A low-flow sampling plan must be provided to the Department for review and approval. Low-flow sampling plans should be as detailed as possible and take into consideration well construction, contaminant type and distribution in the aquifer, and local hydrogeology.

References

1. NJDEP. 1992. Field sampling procedures manual (FSPM).

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3. Puls, R.W. and M.J. Barcelona. April 1996. Ground water issue. Low-flow (minimal drawdown) ground water sampling procedures. EPA/540/S-95/504. Ada, Oklahoma, R.S. Kerr Lab.

4. The Nielsen Environmental Field School. Micropurge low-flow purging and sampling, Edison, New Jersey, May 22, 1997.

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Last revision: 15 January 1998

Appendix A: Standard Operating Guideline
Field Measurements of an Aqueous Sample Using a Portable Multiple-Parameter Meter

A.1 Introduction

This guideline describes the procedures that will typically be followed by Kennedy/Jenks Consultants personnel during field measurement of aqueous samples for chemistry parameters using a portable multiple-parameter meter in the state of New Jersey. ***This SOG assumes equipment will be rented from a New Jersey-certified laboratory, calibrations will be performed by Kennedy/Jenks personnel each day of use, and calibration records will be kept for each instrument rented and traceable by equipment serial number***. This SOG addresses methodologies for the calibration and analysis of the following water chemistry parameters:

- pH
- conductivity
- temperature
- dissolved oxygen
- turbidity

A.2 Equipment

- Horiba U-52 or U-53
- YSI 6820 or 6920
- LaMotte 2020we
- Laboratory wipes
- Deionized water (DI)
- Calibration solutions
- Glass thermometer with current NIST-certified calibration check documentation
- Sample container or flow through cell

A.3 Rental Equipment Documentation

This SOG assumes equipment will be rented from a New Jersey-certified laboratory. Kennedy/Jenks Consultants personnel should maintain calibration sample and analysis records on laboratory-rented equipment, traceable by instrument serial number, for a minimum of 5 years. The following information should be provided by the rental agency and kept in a central office file:

- Documentation for all prep calibrations performed (traceable by serial number)
- Date received, date opened, and expiration date for standards and solutions used in prep calibrations

- National Institute of Standards and Technology (NIST) certificate and applicable certificate(s) of analysis

- Certificates of analysis for reagents and solutions used to perform prep calibrations.

A.4 Calibration Procedure

The following Sections A.3.1 through A.3.5 present typical procedures for calibration of a Horiba U-52 multiple-parameter meter. Similar calibration steps should be followed for calibration of YSI 6820 or 6920 multiple-parameter meters. Consult the equipment manual, manufacturer, or rental agency for additional information and/or troubleshooting tips.

Readings taken and adjustments made during calibration and calibration checks should be recorded on standardized calibrations logs or in a bound field log book. Calibration logs should include the analyst's initials, date and time when calibration was completed, serial number(s) of meter(s), and lot numbers and expiration dates for calibration solutions.

A.4.1 pH

Prior to beginning calibration, clean the probe thoroughly with DI and pat dry with a clean towel.

With the power on press the unit's CAL key to set the calibration mode. Press the down arrow key to move the cursor to Manual Calibration, then press the ENTER key.

1. Move the cursor to pH, then press ENTER.

2. Set the number of calibration points then press ENTER. For multiple-parameter meters, a minimum of two point calibration will be conducted.

3. Fill the calibration cup with pH 4 buffer solution and place the probe into the cup. Allow to stand until a constant reading is observed. Record the pH reading and temperature displayed on the screen.

4. Press the UP/DOWN keys to set the value of the pH buffer (based on buffer value at the temperature of the buffer). See attached table for buffer values based on temperature.

5. Press ENTER to start the zero calibration. When the message "Cal complete. Press ENT to Span cal" appears – press ENTER. Buffered calibration values should be within ±0.05 pH units of the true value and recorded to 2 decimal places.

6. Remove the probe from the calibration cup and rinse it with DI water.

7. Fill the calibration cup with pH 10 buffer solution and place the probe into the cup. Allow to stand until a constant reading is observed. Record the pH reading and temperature displayed on the screen.

8. Press the UP/Down keys to set the value to the buffer value of pH buffer (based on buffer value at the temperature of the buffer). Press the ENTER key to start span calibration.

Buffered calibration values should be within ±0.05 pH units of the true value and recorded to 2 decimal places.

9. When the message “Cal complete. Press ENT to Span cal” appears – press ENTER.

10. Remove the probe from the calibration cup and rinse it with DI water.

11. Repeat Steps 3 through 9 for pH 7 solution if a three-point calibration is available.

12. When the message “Cal complete. Press ENT to Span cal” appears – press ENTER. Calibration is set and the unit returns to the manual cal screen.

Calibration Check

Calibration checks should be performed on the mid-point standard immediately after calibration is completed with an acceptance criterion of ±0.10 pH units of the true value (based on the buffer value at the temperature of the buffer). A calibration check should be performed once every three hours when the meter is in use longer than three hours after initial calibration.

1. Clean the probe thoroughly with DI water and pat dry with a clean towel.
2. Fill the calibration cup pH buffer solution 7 and place the probe into the cup. Allow to stand until a constant reading is observed. Record the pH reading and temperature displayed on the screen. Do NOT adjust the instrument.
3. Clean the probe thoroughly with DI water and pat dry with a clean towel.

If the three hour calibration check values are not within ±0.20 pH units of the pH buffered solution (compensating for temperature), and further pH measurements will be collected within the next three hours, recalibrate the meter followed by another standard check.

All solutions used for calibration will be discarded after each use.

A.4.2 Conductivity

Prior to beginning calibration, clean the probe thoroughly with DI and pat dry with a clean towel. Conductivity measurements should be recorded in milliSiemens per centimeter (mS/cm).

With the power on press the unit’s CAL key to set the calibration mode. Press the down arrow key to move the cursor to Manual Calibration, then press the ENTER key.

1. Move the cursor to COND.

2. Set the number of calibration points then press ENTER.

3. Use the UP/DOWN keys to set the value to 0.0.

4. Press ENTER to start zero calibration. When the message “Cal complete. Press ENT to Span cal” appears – press ENTER.

5. Use the MODE key to move the cursor to SPAN.

6. Fill the calibration cup with conductivity standard in the 1-10 range and place the probe into the calibration cup.

7. Use the UP/DOWN keys to set the value of the conductivity standard value.

8. Press ENTER to start the span calibration for this conductivity range. When the message "Cal complete. Press ENT to Span cal" appears – press ENTER.

9. Calibration is finished when the message "cal complete. ENT to manual cal menu" appears. Press the ENTER to return to the manual cal screen.

10. Wash the sensor probe 2-3 times with deionized water.

11. Perform a calibration check with a non-zero conductivity standard following calibration, while in measurement mode.

12. If calibration check values are not within ±1.0% conductivity units of the true conductivity value, recalibrate the meter followed by another standard check.

All solutions used for calibration will be discarded after use.

A.4.3 Temperature

The temperature probe on the meter will be calibrated by the rental company prior to use. All documentation associated with the calibration will be retained by Kennedy/Jenks. If there is further need for calibration of the temperature probe, see the following procedure.

Equipment used should be capable of measuring temperature in *at least* 0.50°C increments (the Horiba U-52 is capable of measuring temperature in 0.01°C increments).

With the power on press the unit's CAL key to set the calibration mode. Press the down arrow key to move the cursor to Manual Calibration, then press the ENTER key.

1. Fill a container with water. Submerge the sensor probe and a certified thermometer into the water.

2. If the temperature readings are within 0.50°C of each other no further calibration is required. If the temperature readings are greater than 0.50°C of each other proceed to step 3.

3. Move the up and down keys to set the calibration value to the temperature indicated on the certified thermometer.

4. Allow the measurement value on the meter to stabilized then press ENTER to start the calibration.

5. Calibration is finished when the message "Cal complete. CNT to measure." appears.

Each field meter will be tested against a NIST-certified thermometer. The NIST-certified thermometer will be graduated in at least 0.20°C increments.

A.4.4 Dissolved Oxygen

With the power on press the unit's CAL key to set the calibration mode. Press the down arrow key to move the cursor to Manual Calibration, then press the ENTER key.

1. Move the cursor to DO or % DO then press the ENTER key.

2. Set the number of calibration points then press the ENTER key.

3. Rinse the probe 2-3 times with deionized water then allow the probe to read against air or submerge the probe in air saturated water for a single point calibration.

4. When the message "Cal complete. Press ENT to Span cal" appears – press ENTER to set the zero value and start the span calibration for a two-point calibration.

5. Submerge the probe in the zero-oxygen standard solution (do not use the cal cup for DO calibration). Press the up and down keys to set the DO value to 0.00 mg/L and press ENT.

6. When the message "Cal complete. Press ENT to Span cal" appears – press ENTER to set the zero value and start the span calibration.

7. Remove the probe from the zero standard and rinse it with DI water

8. Calibration is finished when the message "cal complete. ENT to manual cal menu" appears. Press the ENTER to return to the manual cal screen.

9. Following calibration perform a calibration check with the zero-oxygen standard solution while in measurement mode.

10. If calibration check values are not within < 0.3 mg/L of the true value, recalibrate the meter followed by another standard check.

A.4.5 Turbidity on a multi-parameter meter

With the power on press the unit's CAL key to set the calibration mode. Press the down arrow key to move the cursor to Manual Calibration, then press the ENTER key.

1. Move the cursor to TURB then press the ENTER key. Fill the calibration cup with 0.0 NTU standard and place the cleaned probe into the calibration cup.

2. Press the up and down keys to set the reading to 0.0 then press ENTER to start the zero calibration. When the message "Cal complete. Press ENT to Span cal" appears – press ENTER to set the zero value and start the span calibration.

3. Remove the probe from the calibration cup and rinse it with DI water.

4. Fill the calibration cup with a second NTU standard.

5. Use the up and down keys to set the reading to the value of the calibration standard. Press ENTER to start the span calibration for this turbidity range.

6. Calibration is finished when the message “cal complete. ENT to manual cal menu” appears. Press the ENTER to return to the manual cal screen.

7. Following calibration perform a calibration check with a non-zero turbidity standard solution while in measurement mode.

8. If calibration check values are not within ±10.0% NTU of the true value, recalibrate the meter followed by another standard check

All solutions used for calibration will be discarded after use.

A.4.6 Turbidity on a stand-alone meter

With the power on press the unit’s MEASURE key to set the calibration mode. Press the down arrow key to move the cursor to Turbidity- With Blank, then press the ENTER key.

1. Rinse a clean tube three times with the blank (0.0 NTU Standard) and fill the tube to the fill line with the blank down the inside of the tube to avoid bubbles. Wipe the tube with a lint free cloth. Insert the tube in the meter and align the index line on the tube with the index arrow on the meter and close the lid.

2. Press ENTER to scan the blank. The screen will display Blank Done and then return to the Turbidity-With Blank Menu.

3. Rinse a clean tube or the same tube three times with the standard (a non-zero NTU) following the same instructions as Step 1. Press ENTER and once the screen displays a reading move the cursor to Calibrate and press ENTER.

4. Scroll up or down to the concentration of the standard and press ENTER. Press ENTER to Set Calibration. The meter is now ready to read a sample.

5. Following calibration perform a calibration check with a non-zero turbidity standard solution while in measurement mode.

6. If calibration check values are not within ±10.0% NTU of the true value, recalibrate the meter followed by another standard check

All solutions used for calibration will be discarded after use.

A.5 Measurement Procedure

Using a Sample Container

Place the sample in a clean straight sided polyethylene or glass container using a sufficient amount of sample to submerge the probe.

1. Rinse the probe with DI water to make sure it is clean.

2. Place the probe into the sample and gently agitate/stir the sample.

3. Use the SELECT Key to move the upper cursor to view each parameter

4. Allow the readings to stabilize, and then record each parameter reading indicated on the instrument display.

Using a Flow-Through Cell

1. Sample is analyzed in a flow through cell during low flow purging and sampling activity.

2. Rinse the probe with DI water to make sure it is clean.

3. Sample is mixed inside the flow through cell through continuous movement of source water through the flow through cell by means of a sampling pump.

4. Use the SELECT Key to move the upper cursor to view each parameter

5. Allow the readings to stabilize, and then record each parameter reading indicated on the instrument display.

Note: Proficiency testing (PT) samples should be measured and recorded as routine environmental samples on standardized calibration logs or bound field log book. If a standalone turbidity meter is used for PT samples it should be used occasionally for regular sample analysis throughout the PT cycle.

A.6 Data Management

All calibration and measurement data will be documented on standardized calibration logs and filed in the associated project file.

A.7 Waste Management

Disposal of calibration solutions will follow manufacturer instructions.

A.8 Quality Control

All samples are to be analyzed immediately (within 15 minutes of collection).

Appendix F

TNT Project Area Soil Reuse Plan

Kennedy Jenks

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TNT Project Area Soil Reuse Plan

March 2020

Prepared for

HERCULES

Ashland Hercules Research Center
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KJ Project No. 1540001*57

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1 NJDEP Sampling Frequency Table for Clean Fill

Section 1: Introduction

On behalf of Hercules LLC (Hercules), Kennedy Jenks Consultants, Inc. (KJ) prepared this *TNT Project Area Soil Reuse Plan* (Soil Reuse Plan) outlining the approach for the characterization and placement of clean and alternative fill material at the Hercules Kenvil Works Facility located in Kenvil, Morris County, New Jersey (the Facility; **Figure 1**). This Soil Reuse Plan supports the *TNT Project Area Soil Remedial Action Work Plan* (TNT RAWP) for the 2,4,6-trinitrotoluene (TNT) Project Area (TNT Project Area; Area of Concern), an approximately 80-acre area in the southwestern portion of the Facility (**Figure 2**).

The TNT RAWP outlines a remedy that employs physical soil processing and bioremediation in constructed treatment cells (bio cells) onsite to break down energetic source material present in TNT Project Area soil, and reuse of treated material from the bio cells as backfill in source area excavations. Section 2.3 provides additional details regarding the remedy.

1.1 Purpose and Objectives

This Soil Reuse Plan was prepared in accordance with the New Jersey Department of Environmental Protection's (NJDEP's) *Fill Material Guidance for SRP Sites* (Fill Material Guidance*)* to facilitate the import and placement of clean fill and reuse of treated material as alternative fill within the TNT Project Area to support remedial objectives and remain protective of human health and the environment. Specifically, the Soil Reuse Plan outlined herein:

- Evaluates use of alternative fill and imported clean fill within the context of the NJDEP Fill Material Guidance
- Outlines a plan to track placement of alternative fill material being treated in biocells and oversize material washed and segregated by the soil processing plant
- Presents reporting requirements and schedule

1.2 Organization

The remainder of this Soil Reuse Plan is organized as follows:

- Section 2, *Background*, provides a brief overview of the TNT Project Area history, physical setting and remedy.
- Section 3, *Clean Fill Requirements*, identifies the procedures required to support the use of offsite donor material.
- Section 4, *Alternative Fill Evaluation*, presents the proposed use of treated onsite source material and assesses compliance with NJDEP Fill Material Guidance.
- Section 5, *Tracking and Record Keeping*, outlines supporting documentation required for alternative and clean fill use.

Section 2: Background

2.1 Facility Description

The Facility occupies 1,059 acres along the Route 80 corridor and is located approximately 0.5 miles northwest of the center of Kenvil, in Morris County, New Jersey. Regionally, the Facility is approximately 40 miles west of New York City and 30 miles east of the Delaware Water Gap. The Facility is located in the New Jersey Highlands physiographic province of north-central New Jersey amidst the characteristic broad, elevated ridges separated by long, narrow valleys. The Facility is situated on a valley floor between two forested ridgelines oriented in a southwest to northeast direction. Beyond these forested ridgelines, the Facility is flanked by transit routes (I-80, New Jersey Transit railroad), state and county roads (Route 46, Berkshire Valley Road, Howard Boulevard), and a mixture of commercial and residential development.

The Facility began operation in 1871, initially manufacturing dynamite to support the regional iron ore mining industry. The Facility was operated by various companies until 1912, when Hercules became the sole owner. Throughout its history, the Facility manufactured propellants and explosive and energetic (E&E) constituents such as TNT, nitroglycerin (NG), pentaerythritol tetranitrate (PETN), smokeless powder, ammonium nitrate fuel oil (ANFO), and various specialty products (e.g., initiating materials, ingredients for medical applications, and materials for actuating devices) for military and commercial applications. Through the latter years of Facility operation, production focused mainly on smokeless powders. Alliant Tech Systems produced smokeless powder under a Facility lease agreement from 1995 to 1996. The Facility ceased operation in December 1996, and Hercules re-acquired control of the Facility on January 1, 1997.

2.2 TNT Project Area

The Facility produced TNT from 1917 until 1919, after which time the production structures remained dormant until demolition in the early 1970s. Site investigation and remedial investigation (SI/RI) activities identified TNT, intermediary manufacturing products (2,4-dinitrotoluene [2,4-DNT], 2,6-dinitrotoluene [2,6-DNT]) and degradation byproducts (2-amino-4,6-DNT [2ADNT], and 4-amino-2,6-DNT [4ADNT]) [1] in soil and groundwater within areas that historically supported TNT manufacturing.

Processing and movement of raw materials, intermediaries, and finished product through the TNT manufacturing line provided opportunities for the release of manufacturing-related constituents[2] to Facility soil, as did process upsets (e.g., fires, explosions). At room temperature, both TNT and DNT finished product occur as crystalline solids. When released to the ground during manufacturing process upsets, these materials were in a heated liquid form and capable of migrating short distances in soil before solidifying. Subsequent distribution, migration, and degradation has occurred over the last century, resulting in the presence of target constituents in soil and groundwater underlying the TNT Project Area. The presence of ADNTs[3] provides an

[1] For the purpose of the TNT RAWP and this Soil Reuse Plan, TNT, 2,4-DNT, 2,6-DNT, 2ADNT and 4ADNT are collectively referred to as “target constituents”.

[2] Target constituents represent the primary manufacturing-related constituents in the TNT Project Area. Lead-lined process vessels and piping were used in the TNT manufacturing process, and lead represents a secondary manufacturing-related constituent on the TNT Project Area.

[3] Collective term that includes 2-ADNT and 4-ADNT

indication that microbial (biological) degradation of TNT is naturally occurring in Facility soil and groundwater.

Consistent with the approach developed through the SI/RI process, this Soil Reuse Plan defines the area of concern (AOC) as a contiguous geographic area with common constituents of concern attributable to a discrete historical operation at the Facility. Specifically, the AOC is the TNT Project Area (**Figure 2**). This AOC contains the former TNT manufacturing line (38 unique structures) and associated drying, finishing, packing, and storage structures that supported TNT manufacturing operations.

The proposed remedy for this AOC achieves remedial action objectives for a contiguous geographic area with common constituents of concern attributable to a discrete historical operation at the Facility. For the purposes of administrative tracking, the TNT Project Area contains the former TNT operational area (AOC-11) and portions of the Dynamite (AOC-5), NG (AOC-9), and PETN (AOC-13) operational areas (as identified in the Case Inventory Document [CID] presented as Appendix I in Volume A of the Phase II Remedial Investigation Report [Phase II RIR] [Hercules, 2016]), and 108 unique features identified as individual AOCs during the SI (as identified in the AOC Tracking Table presented as Appendix H in Volume A of the Phase II RIR).

2.2.1 Geology & Hydrogeology

The TNT Project Area occupies approximately 80 acres that spans the eastern slope and terminus of the western ridge and a portion of the adjacent valley floor. Ground surface elevations range from 720 to 800 feet above mean sea level.

Soil types vary between the ridge and valley. Ridge soils are comprised of colluvium and weathered bedrock while valley floor soils are predominantly sand and gravel, with minimal to moderate silt and clay. Bedrock underlies the ridge at depths ranging from 10 to 50 feet, and dips to approximately 200 feet below ground surface (ft bgs) in the valley.

The unconfined upper valley fill aquifer underlies the TNT Project Area. Water table elevations generally follow ground surface topography, with depth to water on the ridge averaging 20 ft bgs tapering to within a few feet of ground surface on the valley floor.

2.2.2 Ecology & Land Use

Former operational structures have been demolished in the TNT Project Area. The area currently exists as vacant land in various states of vegetative succession, primarily grass field and shrublands, interspersed with remnant building remains (e.g., concrete rubble piles) and ground surface infrastructure (e.g., unimproved roads, drainage ditches).

The upper slope of the western ridge immediately west of the TNT Project Area is a mature hardwood forest with sparse understory, and formerly functioned as a buffer between the Facility and surrounding community. Howard Boulevard, commercial development, and an undeveloped steep, terraced ridge occur immediately west of the TNT Project Area. An expansive wetland mosaic punctuated with upland areas constructed to support former operational structures or transportation corridors (railbeds and roads) lies to the east of the TNT Project Area.

2.3 Project Description

The SI/RI characterized and delineated the nature and extent of Facility-related influences in the TNT Project Area, and identified the need for active remediation. A series of focused studies were conducted to select and design the remedy for the TNT Project Area, and refine the SI/RI delineation of TNT source mass in soil. The selected multi-phase remedy relies on soil processing and bioremediation to achieve remedial objectives.

2.3.1 Target Constituents of Concern

Remedial objectives will be achieved for target constituents within the TNT Project Area and a subset of secondary constituents retained as constituents of concern (COCs).

Target constituents include:

- TNT
- 2,6-DNT
- 4-ADNT
- 2,4-DNT
- 2-ADNT

The proposed remedy addresses the presence of target constituents (including crystalline solid TNT particles) in soil via a multi-phase process focused on degrading source mass in soil.

2.3.2 Remedy Overview

The initial phase of the proposed remedy involves physical processes beginning with the serial excavation of soil containing target constituent source mass from 16 delineated areas. Excavation areas are shown on **Figure 3**. The TNT Project Area Excavation, Blending, and Staging Plan (EBS Plan) identifies an excavation sequence and soil blending program that achieves a target TNT concentration of 2,000 milligrams per kilogram (mg/kg) in feed material going into the soil processing plant. The soil processing plant, using industry-standard mining and aggregate management processes and equipment, physically segregates native aggregate and reduces TNT particle grain size to increase the surface area to volume ratio of crystalline solids in the blended soil. Ultimately, the processing plant produces three process streams:

- Biofeed - particle sizes less than 2 millimeters (mm) in diameter, including target constituent source mass
- Coarse Oversize - 12.7mm to 50.8mm larger native aggregate free of crystalline TNT solids
- Fine Oversize - 2mm to 12.7mm oversize native aggregate free of crystalline TNT solids

The second phase of the proposed remedy involves enhanced ex-situ bioremediation of biofeed in a controlled monitored environment. Biofeed from the soil processing plant will be amended with DARAMEND OE®, slurried at approximately 20 percent solids, then pumped into the biocells. The amended biofeed slurry will gravity dewater in the biocells. Monitoring and management of the amended biofeed will be performed over the course of treatment to quantify the degradation of target constituents and maintain soil conditions amenable for biological breakdown.

Following a 10- to 12-month treatment cycle within the bio cells, the final phase of the proposed remedy includes the placement of the treated biofeed in the source excavation areas as

alternative fill where in-situ biodegradation will continue to address residual target constituent mass. DARAMEND OE® continues to support natural biodegradation for approximately 5 years, after which natural attenuation by native microbial communities will continue and serve as the final remedy for soil and groundwater.

This three-phase remedy of soil preparation, ex-situ enhanced bioremediation, and in-situ biodegradation will occur on an annual schedule over an estimated five cycles (or years) to process approximately 65,000 cy of material. Treated material will be re-used onsite as backfill in TNT Project Area excavations (i.e., alternative fill).

The TNT Project Area Soil Remediation – Process Confirmation Plan (PCSP), Appendix D of the TNT RAWP, provides a sampling program to document the continued decrease in target constituent concentrations in soil undergoing treatment in the bio cells, characterize processed (oversize) and treated material to facilitate reuse as backfill in TNT Project Area, and quantify residual target constituent mass in treated soil that will be used to backfill excavations where it will undergo additional biological degradation.

2.3.3 Secondary Constituents of Concern

A compliance evaluation conducted as part of the TNT RAWP identified the following secondary constituents as COCs:

- *E&E:* nitroglycerin, 1,3-dinitrobenzene, and nitrobenzene
- *Metals:* arsenic, copper, lead, mercury, and nickel

Secondary E&E constituents comingled with target constituents will be addressed via the proposed remedy. Portions of excavation areas containing metals at concentrations exceeding their NJDEP NRDCSRS will be segregated during processing and treatment, and returned to the excavation from which they were removed. Process confirmation and long-term monitoring sampling will assess the distribution of secondary COC metals following processing, and during both ex-situ and in-situ treatment. The need for additional remedial activities for metals COCs will be addressed once excavations are backfilled prior to initiating site restoration activities. The *TNT Project Area Soil Secondary Constituents of Concern Technical Memorandum* (Appendix C of the TNT RAWP) summarizes the compliance evaluation, calculates the extent of each secondary COC within the TNT Project Area, and identifies COCs within and outside of the anticipated excavation areas identified in the TNT RAWP.

2.3.4 Summary of Fill Materials

Treated biofeed will be used as alternative fill in excavation areas, with the exception of a subset of excavation areas that coincide with areas required for plant construction and equipment staging. These excavations (S, T, U, and V on **Figure 3**) will be backfilled with clean imported fill immediately following excavation.

Clean aggregate will also be imported to upgrade access routes and support plant construction.

Concrete rubble stockpiles in and proximate to excavation areas and other laydown/pad areas will be characterized and managed as part of a sitewide concrete characterization effort prior to implementation of the TNT Project Area remedy.

Section 3: Clean Fill

3.1 Clean Fill Uses

An estimated 4,500 cubic yards of clean fill material (soil) will be imported to backfill excavation areas S, T, U & V (**Figure 3**). Clean aggregate will also be imported to upgrade access routes and support plant construction. Types and volume of clean aggregate will be selected during the site civil design process and will comply with the Fill Material Guidance as outlined below. This process will ensure the types and concentrations of constituents and homogeneity in the proposed clean fill is understood prior to being used onsite.

3.2 Clean Fill Sampling

Donor material proposed for use as clean fill will be provided by the selected contractor performing the remedy in the TNT Project Area. Clean fill will meet geotechnical specifications outlined during the site civil design process and preferably include a clean fill certification demonstrating compliance with NJDEP regulations.

In the event that initial or supplemental sampling is required to demonstrate clean fill compliance, Hercules will follow the processed outlined in the Fill Material Guidance, as summarized below. The clean fill source will be evaluated through a review of the source history, operations and sampling and analysis strategy in accordance with the Fill Material Guidance and NJDEP's *Field Sampling Procedures Manual* (FSPM). Clean fill generated via blending of mulched, composted organic materials (e.g., grass clipping or leaves) or peat moss will be sampled following the blending process. Different concerns will be addressed in the evaluation, sampling, and analysis of each source type. Source locations may include in-state and out-of-state sources of potential clean fill.

Table 2 of the Fill Material Guidance (**Attachment 1**) summarizes sampling frequencies necessary to establish the characteristics of a potential clean fill source. In general, the default sampling will be used for a source site with little or no prior data, and the reduced sampling frequency will be used where there has been some prior assessment of the fill source (e.g., site review, prior sampling). Clean fill sources will be analyzed for Target Analyte List (TAL)/Target Compound List (TCL) and Extractable Petroleum Hydrocarbons (EPH). Additional analyses (e.g., pH, total organic carbon) may be conducted to assess geophysical compatibility.

Section 4: Alternative Fill Evaluation

The final phase of the TNT Project Area remedy utilizes in-situ biological degradation to address remaining target constituent concentrations in soil. Following the period of management in the biocells, treated biofeed (i.e., target constituent concentrations less than NRDCSRS) will be removed and used as alternative fill to backfill the source excavation areas. Approximately 53,500 cy of treated biofeed material will be placed as alternative fill. Alternative fill material will comply with the Fill Material Guidance as outlined below. This process will ensure the proposed alternative fill is thoroughly understood as to the types and concentrations of constituents and homogeneity**.**

4.1 AOC Data Evaluation

The TNT Project Area serves as both the donor and receiving AOC. Excavated material from the TNT Project Area (donor AOC) will be used as alternative fill following bioremediation in biocells to backfill excavation areas within the TNT Project Area (receiving AOC). The TNT Project Area is delineated and the physical properties, contaminants of concern (COCs) and their concentrations are well characterized.

Macroscale delineation of the TNT Project Area was completed as part of the SI/RI and refined delineation sampling, as outlined in the TRDWP (Hercules 2017), built upon the understanding of nature and extent of target constituents identified by the SI/RI with the purpose of more accurately defining the volume of soil requiring ex-situ treatment to remediate target constituents, and provide additional characterization data to support remedial planning (i.e., excavation planning, material handling, and regulatory compliance). Appendix B of the TNT RAWP presents the results of refined delineation sampling.

The TNT Project Area COCs are assessed as follows:

- *Primary COCs:* target constituents (TNT, 2,4-DNT, 2,6-DNT, 2ADNT, 4ADNT) that the proposed remedy is designed to remediate via biological degradation

- *Secondary/Comingled COCs:* constituents other than target constituents (nitroglycerin, 1,3-dinitrobenzene, nitrobenzene, arsenic, copper, lead, mercury and nickel) that also merit remediation per NJDEP's TRSR and *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (Attainment Guidance) (2012).

Ultimately the physical characteristics of the TNT Project Area receiving material will differ from that of the donor material. However, the soil preparation process is critical to the bioremediation remedy and includes physical preparation (grain size reduction, large aggregate removal) of the excavated source material with the single objective of concentrating target constituent source mass in a biologically-accessible form (high surface area to volume ratio) in the biofeed material. The treated biofeed material will be homogenous when placed as backfill into the source material excavation areas. The PCSP (Appendix D of the TNT RAWP) provides a sampling program to document the continued decrease in target constituent concentrations in soil undergoing treatment in the biocells and characterize processed (oversize) and treated material to facilitate use as backfill in TNT Project Area excavations. Excavation areas will be backfilled to grade with

a fluff factor to account for settling. Oversize materials (aggregate greater 2mm in diameter) will be sampled and analyzed to demonstrate the effectiveness of the washing procedure at removing soil containing target constituents that may be adhered to the aggregate. Once confirmed clean (i.e., COC concentrations less than NJDEP NRDCSRS), stockpiled material will be moved to a designated area (to be identified during site civil design) and staged for reuse.

4.2 Like on Like Evaluation

The TNT Project Area is the donor and receiving AOC and no new constituents in excess of NJDEP soil remediation standards will be placed in the AOC via alternative fill. Soil containing target constituents will be blended and processed to create biofeed. This level of processing allows tracking of soil at the batch level on an annual cycle (e.g., soil from excavation areas A, B, and C were processed in Year 1). The PCSP provides the necessary information to track characterized biofeed returned to excavation areas (e.g., material from Biocell Nos. 1 and 2 were used to backfill excavation area B). This will allow for process confirmation data from each biocell to serve as the baseline for tracking of long-term monitoring of ongoing degradation in-situ.

There are two secondary COCs (lead and arsenic) greater than NJDEP Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) located within a subset of proposed excavation areas (B, M, G, R) (**Figure 3**). These excavation areas will be managed in a separate biocell or a portion of a biocell by excavation area and placed back into the original excavation area. In addition, a subset of excavation areas (T, U & V) will be backfilled with clean imported fill to support plant construction and equipment staging for the duration of remedial activities within the TNT Project Area.

The tracking described above and concentration reduction inherent to the remedy demonstrate compliance with the like-on-like requirements. Backfilling a subset of excavations with clean fill also reduces the areal extent of the AOC.

4.3 75th Percentile Evaluation

As discussed earlier in Section 4, a subset of the excavation areas will be backfilled with clean fill to support construction of the process plant and associated structures. This approach also reduces the areal extent of the AOC and obviates the need to comply with the 75th percentile requirement per the Fill Material Guidance.

Nevertheless, greater than 95 percent reduction in target constituent mass is expected to occur during the ex-situ bioremediation phase of the remedy, with the remaining residual mass degraded in-situ over the subsequent 5 years. In-situ degradation will be monitored in accordance with a long-term monitoring plan.

The TNT Project Area remedial objectives focus on target constituents. The influences of remedy implementation on secondary COCs are expected to include:

- Concentration reductions to below NJDEP NRDCSRS of E&E secondary COCs via ex-situ bioremediation occurring in excavation areas

- Re-distribution of non-E&E secondary COCs (metals) below NRDCSRS occurring via the excavation, blending, and treatment processes

- Management of lead and arsenic above NRDCSRS in a subset of excavation areas will be managed in separate treatment cells to facilitate placement back in their original excavation areas

- No disturbance to secondary COCs above NRDCSRS in the TNT Project Area beyond excavation areas

Section 5: Tracking and Record Keeping

5.1 Reporting

Hercules will generate data throughout the soil processing and bioremediation components of the project. Annual reports will summarize and interpret data collected over the previous year in the context of remedial progress and attainment of remedial action objectives established in the TNT RAWP. Annual reports will be submitted to the LSRP and NJDEP and serve as the basis for annual project progress update meetings each spring.

Following the completion of ex-situ bioremediation activities (i.e., attainment of the NRDCSRS remedial action objective), Hercules will prepare a Remedial Action Report (RAR). In accordance with the Fill Material Guidance, the RAR will include documentation supporting the use of clean and alternative fill materials onsite.

5.1.1 Alternative Fill Requirements

Alternative Fill documentation will be included in the annual process monitoring reports and will:

- Present field observations and measurement data
- Provide volume and thickness including surveyed elevations of existing grade and top of alternative fill in excavation areas
- Document the decrease in target constituent concentrations over the treatment period in a biocell and identify which portion of the biocell was placed back into an excavation area for long term monitoring
- Present the confirmation sampling results the demonstrate attainment of the success criteria enabling use of the treated biofeed as backfill (i.e., target constituent concentrations less than NJDEP NRDCSRS)
- Document placement of secondary COCs above NRDCSRS (lead and arsenic) in separate treatment cells and constituent concentrations being placed back in the original excavation areas

5.1.2 Clean Fill Requirements

Clean fill documentation will include copies of fully executed bills of lading from the approved donor site for incoming shipments. Documentation will include the volume and thickness (with surveyed elevations of final subgrade and top of clean fill), analytical data demonstrating compliance with N.J.A.C. 7:26E-1.8 definition of clean fill, and documentation of areas where clean fill has been placed.

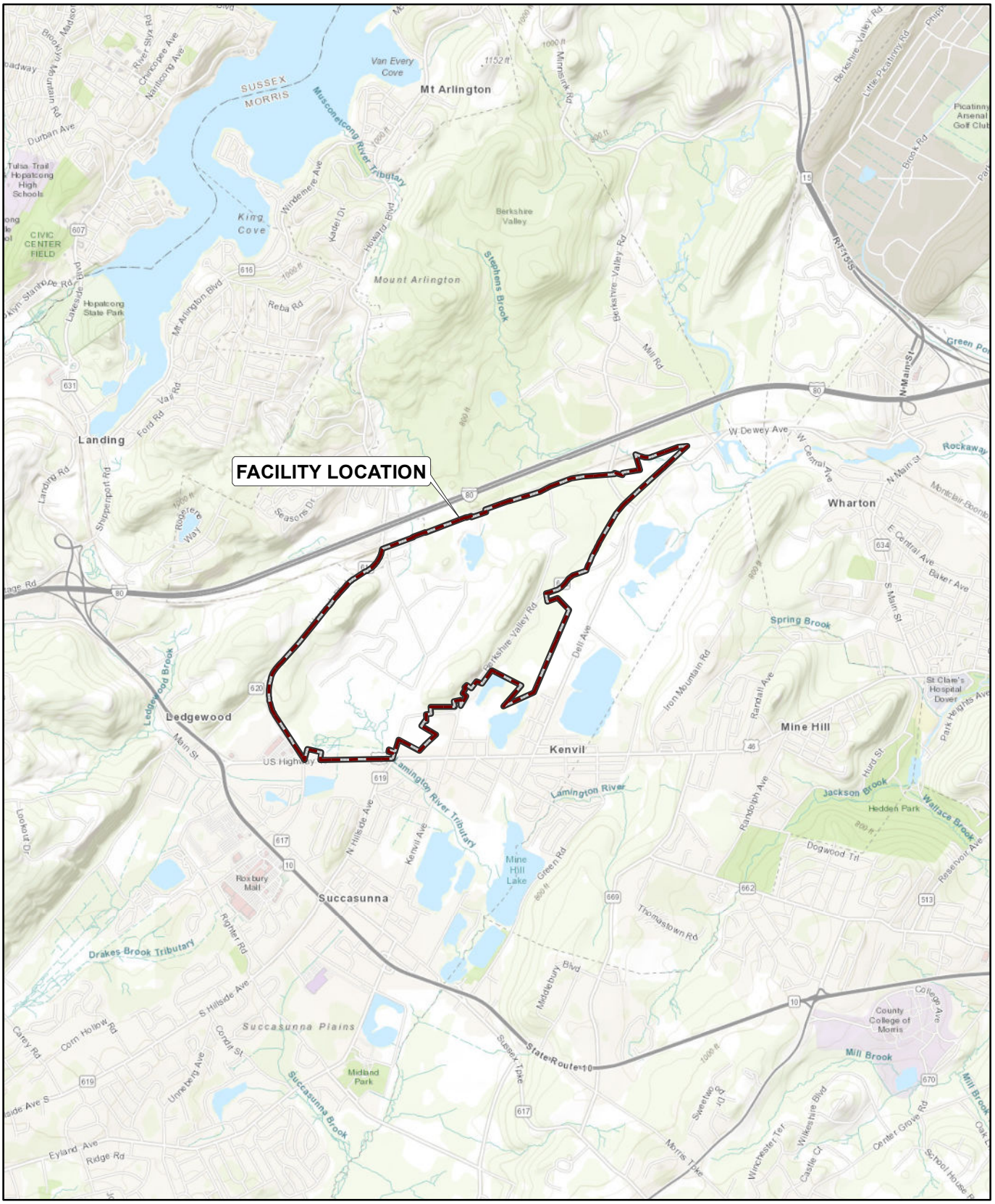
References

Hercules, Inc. 2016. Phase II Remedial Investigation Report. Hercules, Incorporated – Kenvil Works Facility. Kenvil, New Jersey. May.

Hercules, Inc. 2019. TNT Area Soil Process Confirmation Plan – Kenvil Works Facility. Kenvil, New Jersey. June.

Hercules, Inc. 2019. TNT Area Soil Remedial Action Work Plan. Hercules, Incorporated – Kenvil Works Facility. Kenvil, New Jersey. June.

NJDEP. 2015. Fill Material Guidance for SRP Sites. New Jersey Department of Environmental Protection, Site Remediation Program. Trenton, New Jersey. April.



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL,

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New Jersey

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

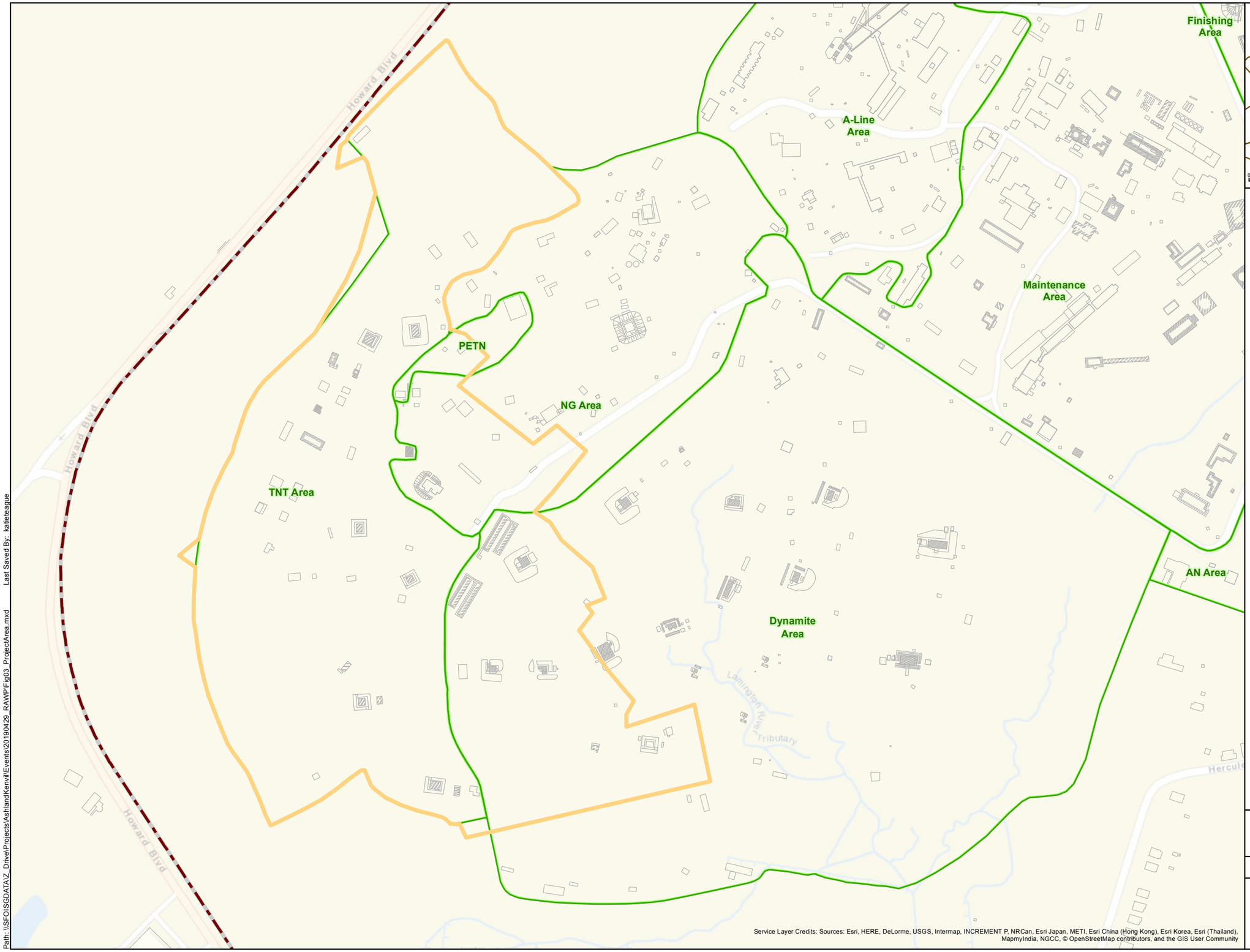
TNT AREA SOIL REMEDIAL ACTION WORK PLAN

FACILITY LOCATION MAP

HERCULES

Kennedy Jenks

FIGURE
1



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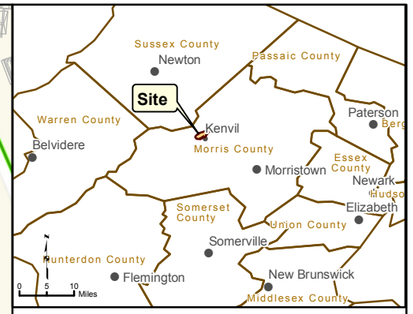

Index Map

Legend

- Site Boundary
- TNT Project Area Boundary
- Former Operational Area Boundary

Notes:
1. Basemap information from electronic file provided by Ashland, Inc. Titled: "Site Plan.dwg"

2. Operational areas digitized from MWH, Remedial Investigation Report, Hercules Incorporated Kenvil Works Facility, figure titled: "Sediment Sample Location Map", figure D-1.

N

0 100 200 400
Feet

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT AREA SOIL REMEDIAL ACTION WORK PLAN

TNT PROJECT AREA

HERCULES

KJ Kennedy Jenks

FIGURE
2

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Legend

- Excavation area
- Clean backfill excavation area
- TNT Project Area Boundary

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Feet

HERCULES INCORPORATED KENVIL WORKS FACILITY KENVIL, NEW JERSEY

TNT AREA SOIL REMEDIAL ACTION WORK PLAN

TNT PROJECT AREA

HERCULES

Kennedy Jenks

FIGURE

3

Attachment 1

NJDEP Sampling Frequency Table for Clean Fill

Sampling Frequency Guide for Clean Fill

Proposed Volume		**Default Sampling Scheme without justification**	**Reduced Sampling Scheme with justification**
(Cubic Yards)		(Samples)	(Samples)
0 to 20		1	1
20.1 to 40		2	2
40.1 to 60		3	2
60.1 to 80		4	2
80.1 to 100		5	2
100.1 to 200		6	3
200.1 to 300		7	3
300.1 to 400		8	4
400.1 to 500		9	4
500.1 to 600		10	5
600.1 to 700		11	5
700.1 to 800		12	6
800.1 to 900		13	6
900.1 to 1,000		14	7
1,000.1 to 2,000		15	8
2,000.1 to 3,000		16	9
3,000.1 to 4,000		17	10
4,000.1 to 5,000		18	11
5,000.1 to 6,000		19	12
6,000.1 to 7,000		20	13
7,000.1 to 8,000		21	14
8,000.1 to 9,000		22	15
9,000.1 to 10,000		23	16
10,000.1 to 11,000 *		24	17

*With volumes greater than 10,000 cubic yards, the sampling rate is 1 per additional 1,000 cubic yards. The sampling frequency may be reduced with appropriate justification and does not require Department pre-approval. This includes departure from the default or reduced sampling frequencies.

Appendix G

TNT Project Area Excavation. Blending, and Staging Plan Construction Drawings

NOTES:

1. BUILDING OUTLINES ILLUSTRATE THE LOCATION OF FORMER STRUCTURES IN THE TNT PROJECT AREA. ALL ABOVE GRADE STRUCTURES HAVE BEEN DEMOLISHED ALONG WITH VISIBLE ON-GRADE CONCRETE SLABS. IN PLACES, CONCRETE RUBBLE PILES REMAIN IN PROXIMITY TO THE LOCATION OF THE FORMER STRUCTURE.

0 200' 400'
1"=200'

PLAN
SCALE: 1" = 200'

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NO.	REVISION	DATE	BY

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

STATE OF NEW JERSEY
STEPHEN R. MONTAGNA
No. 35214
LICENSED PROFESSIONAL ENGINEER

DESIGNED BJR/DBB
DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

EXISTING CONDITIONS

FILE NAME 1540001.58-C-101.dwg
JOB NO. 1540001.58
DATE
SHEET C-101 OF -

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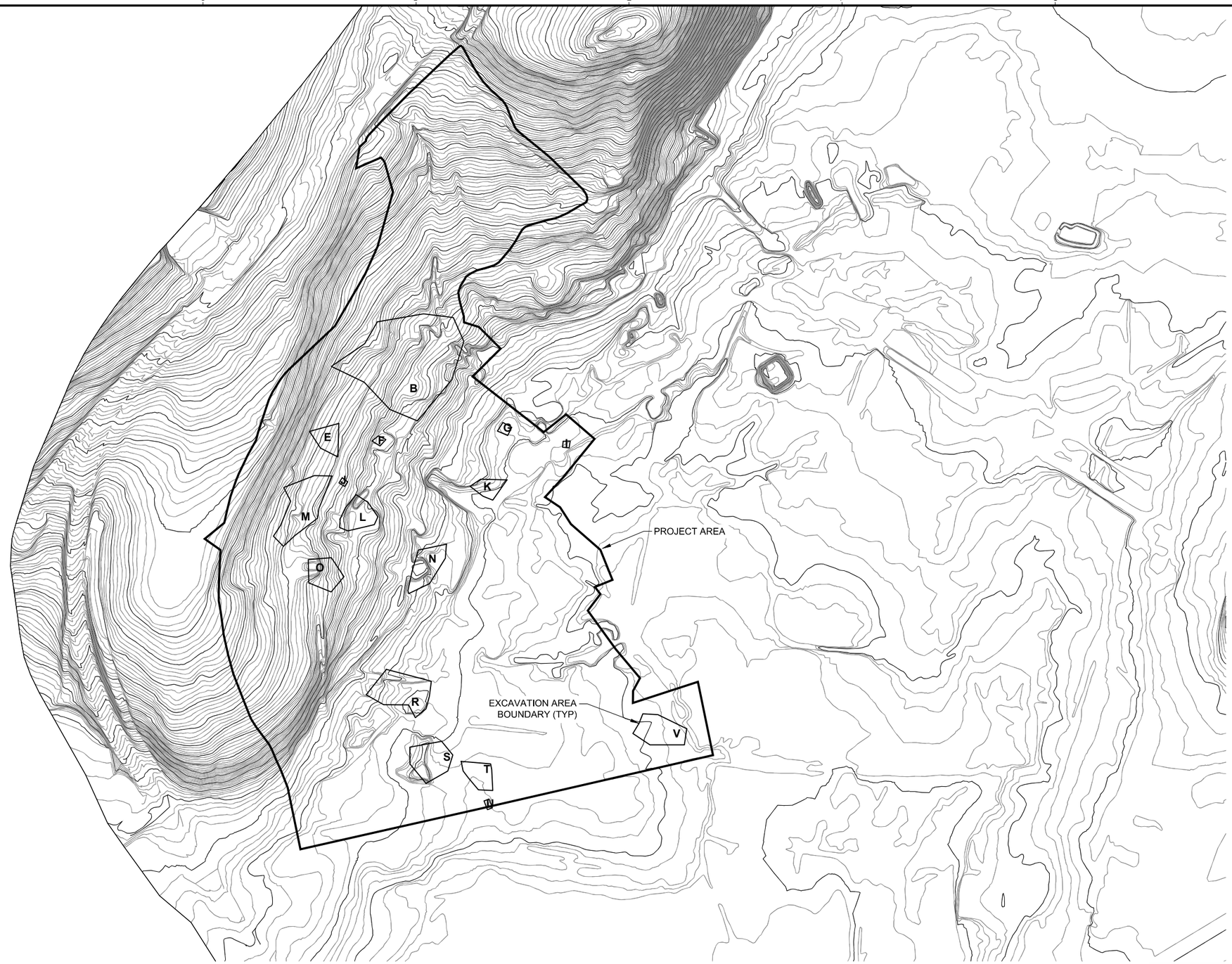

PLAN
SCALE: 1" = 200'

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NO.	REVISION	DATE	BY

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IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

STATE OF NEW JERSEY · STEPHEN R. MONTAGNA · No. 35214 · LICENSED PROFESSIONAL ENGINEER

DESIGNED BJR/DBB
DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

EXCAVATION AREA OVERVIEW

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JOB NO. 1540001.58
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Excavation Area	[Average TNT] (mg/kg)	Total Excavation Volume (CY)
B	1,076.70	33,165.19
E	3.17	2,376.30
F	0.13	147.41
G	0.54	54.07
I	1.13	25.19
J	107.94	50.37
K	24.58	701.48
L	62.27	3,592.89
M	1,968.99	6,710.37
N	378.97	3,994.81
O	12,412.45	2,468.89
R	943.02	6,162.22
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T	3,231.18	748.15
U	35.84	82.22
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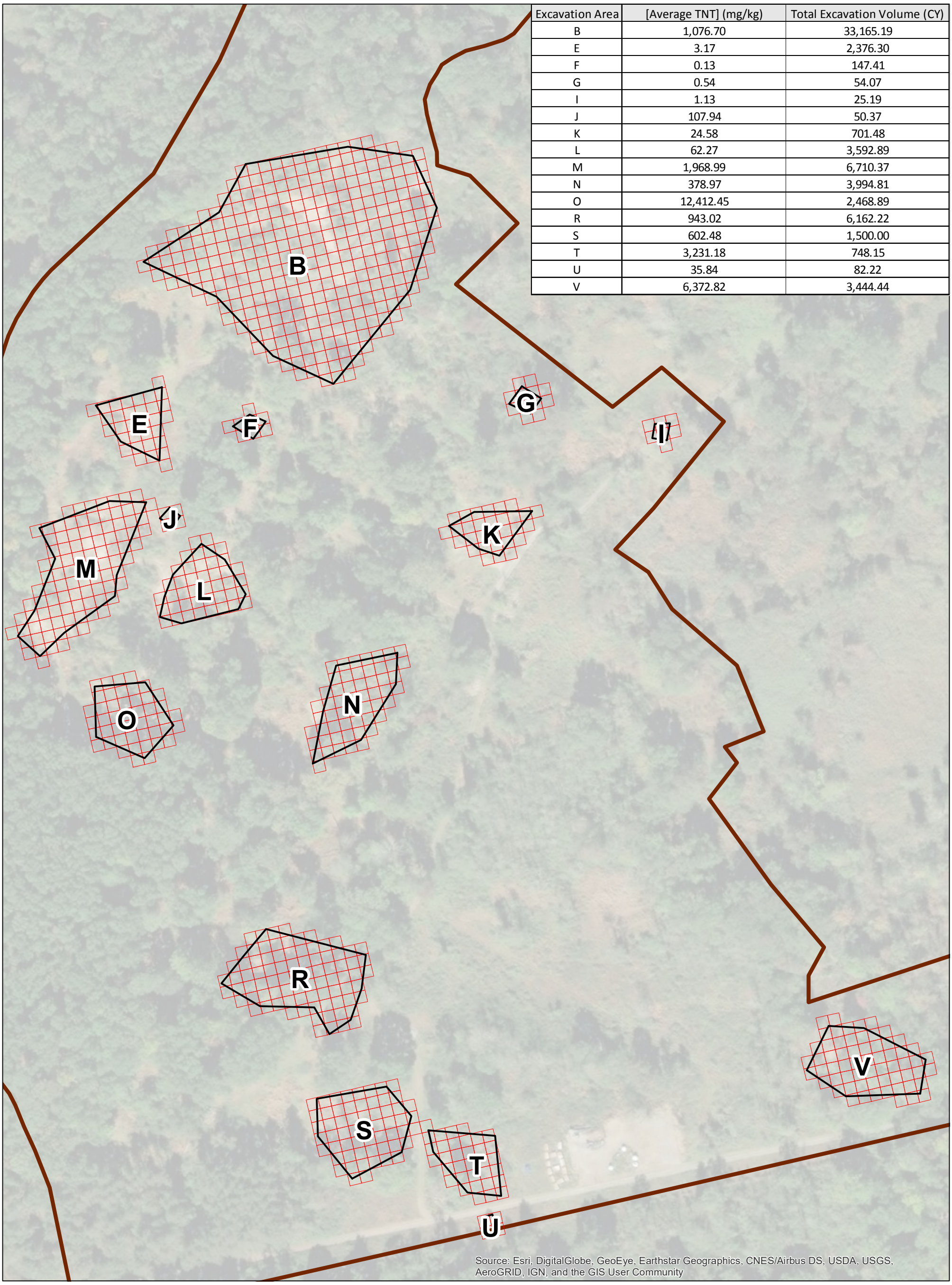

Legend

- Excavation Areas
- 20x20 ft. Excavation Grids
- TNT Project Area Boundary

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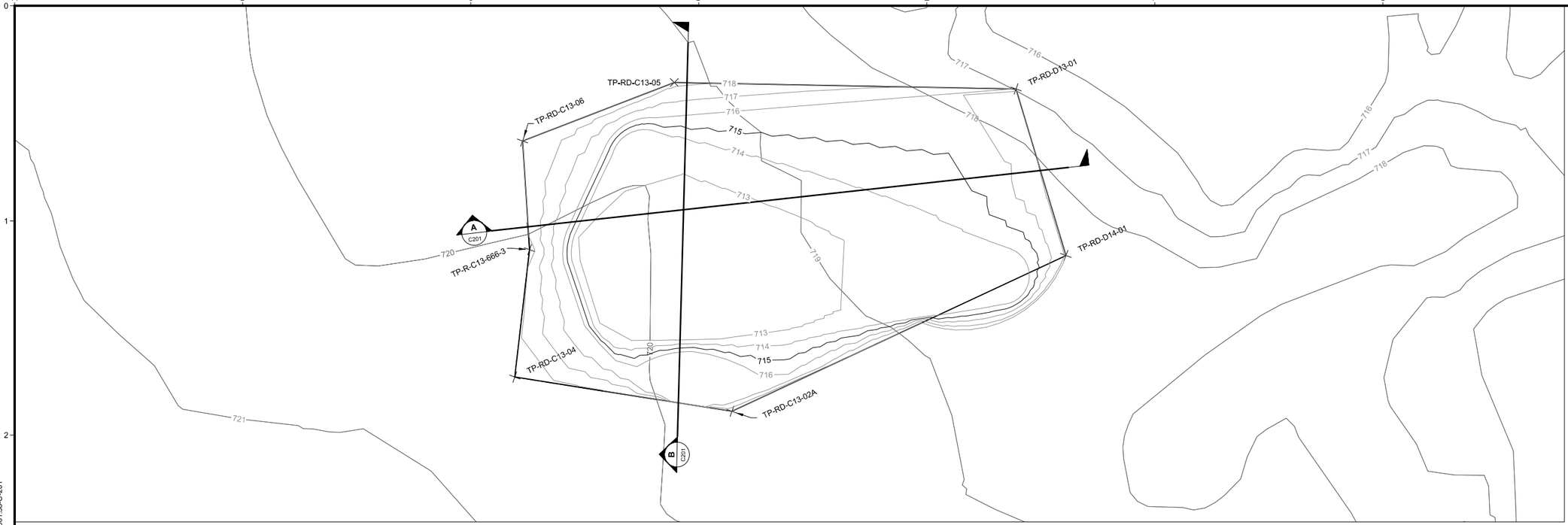
Feet

Kennedy Jenks

TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Overview

November 2019



PLAN
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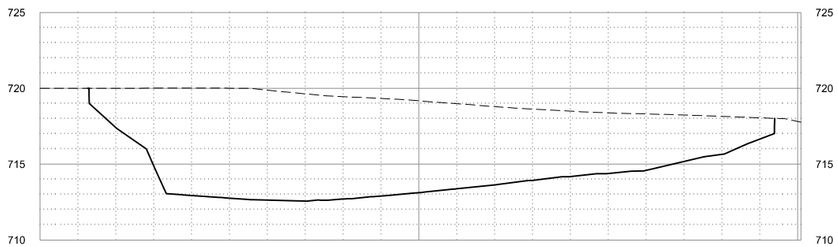
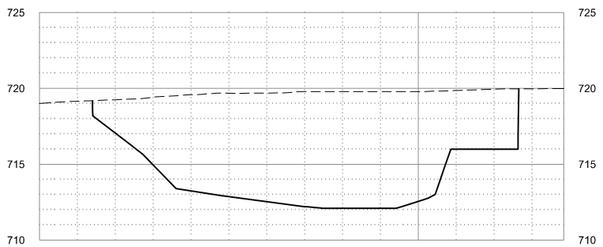


SECTION A-A'



SECTION B-B'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
V	3,687

SECTION
SCALE: 1" = 20'

0 20' 40'
1"=20'

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NO.	REVISION	DATE	BY

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

STATE OF NEW JERSEY · STEPHEN R. MONTAGNA · No. 35214 · LICENSED PROFESSIONAL ENGINEER

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DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA V EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-201.dwg
JOB NO. 1540001.58
DATE
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A1 **7156**
A2 **10097**
B1 **6646**
B2 **18261**
B3 **31951**
B4 **26426**
B5 **15744**
C1 **1543**
C2 **4297**
C3 **24021**
C4 **51871**
C5 **30753**
C6 **15499**
C7 **10753**
D1 **1041**
D2 **1865**
D3 **3278**
D4 **10431**
D5 **24289**
D6 **24895**
D7 **9384**
D8 **7315**
D9 **5327**
E1 **576**
E2 **1545**
E3 **4600**
E4 **7902**
E5 **11899**
E6 **7641**
E7 **842**
E8 **3159**
E9 **3675**
E10 **2423**
F1 **1784**
F2 **1823**
F3 **6474**
F4 **8116**
F5 **6527**
F6 **2230**
F7 **2742**
F8 **2872**
F9 **1493**
F10 **217**
G1 **1121**
G2 **2015**
G3 **4537**
G4 **4981**
G5 **3878**
G6 **2659**
G7 **1821**
G8 **1180**
G9 **714**
H1 **2022**
H2 **3242**
H3 **4038**
H4 **2870**
H5 **954**
H6 **619**
H7 **683**
I1 **968**
I2 **415**
I3 **168**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

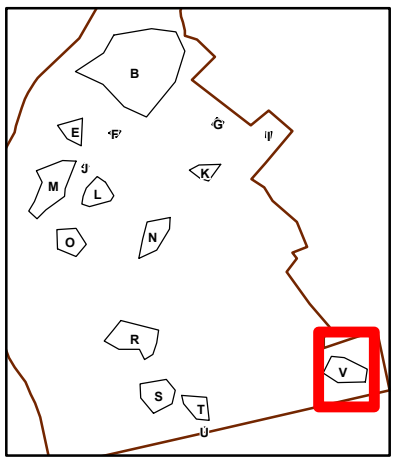
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area V
0-4' BGS

N

0 10 20 40
Feet

November 2019

A1 **5**
A2 **5**
B1 **5**
B2 **5**
B3 **5**
B4 **5**
B5 **5**
C1 **2**
C2 **6**
C3 **7**
C4 **5**
C5 **5**
C6 **5**
C7 **5**
D1 **2**
D2 **3**
D3 **17**
D4 **15**
D5 **5**
D6 **5**
D7 **5**
D8 **5**
D9 **5**
E1 **0**
E2 **2**
E3 **4**
E4 **8**
E5 **5**
E6 **5**
E7 **5**
E8 **5**
E9 **5**
E10 **5**
F1 **2**
F2 **3**
F3 **3**
F4 **3**
F5 **4**
F6 **4**
F7 **5**
F8 **5**
F9 **5**
F10 **5**
G1 **4**
G2 **3**
G3 **3**
G4 **4**
G5 **4**
G6 **4**
G7 **5**
G8 **4**
G9 **4**
H1 **4**
H2 **4**
H3 **4**
H4 **4**
H5 **4**
H6 **4**
H7 **4**
I1 **4**
I2 **4**
I3 **4**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

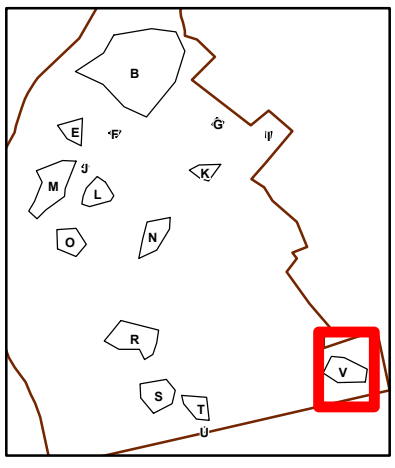
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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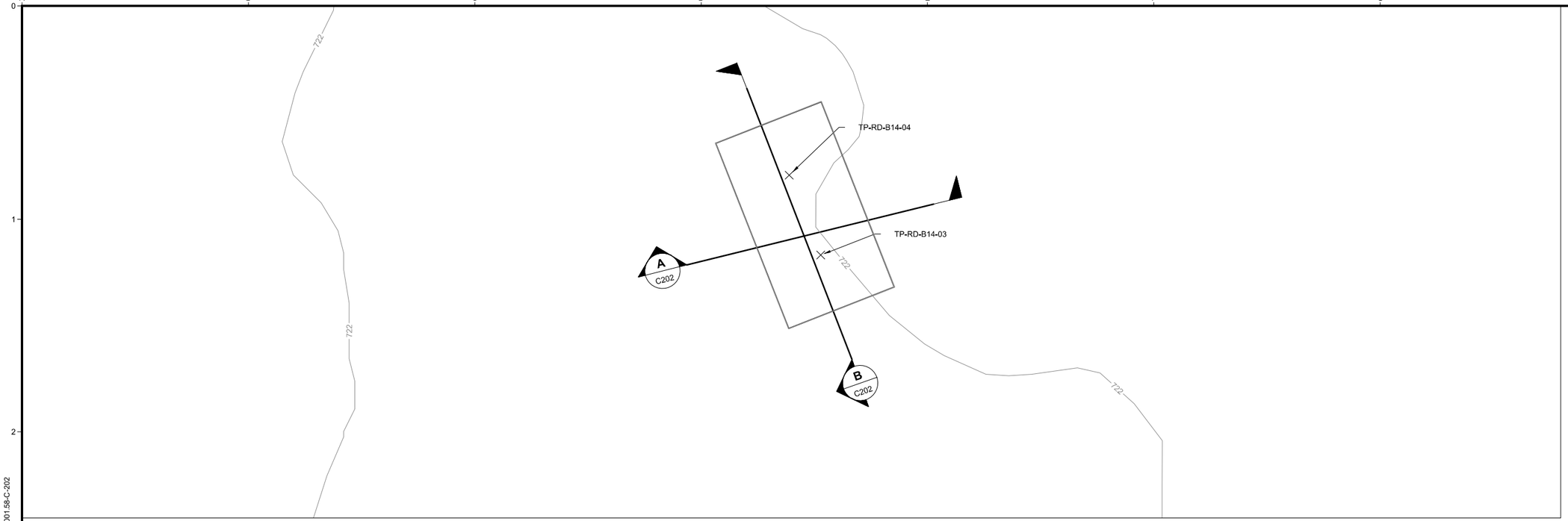
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area V
4-7' BGS

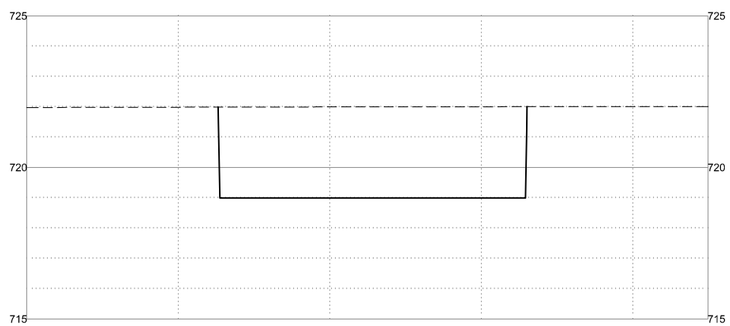
N

0 10 20 40
Feet

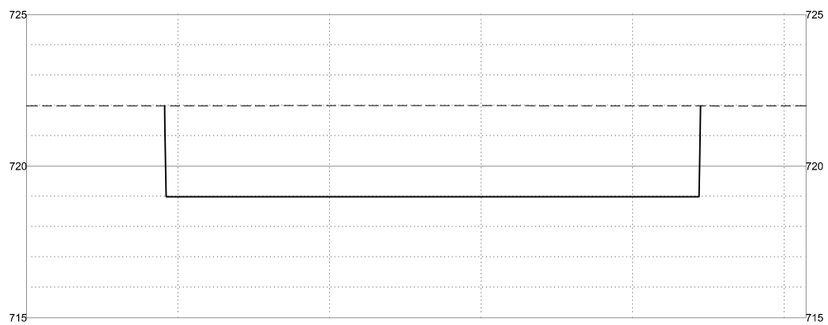
November 2019



PLAN
SCALE: 1" = 10'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 5'

NOTES:

1. EXCAVATION TARGETS THE BED OF A FORMER DRAINAGE DITCH. WIDTH OF EXCAVATION AS SHOWN IS CONSERVATIVE AND WILL BE MODIFIED BASED ON FIELD CONDITIONS TO ALIGN WITH TOP OF BANK.

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
U	99

0 5 10
1"=5'

0 10 20
1"=10'

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0 1"
0 25mm
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STATE OF NEW JERSEY
STEPHEN R. MONTAGNA
No. 35214
LICENSED PROFESSIONAL ENGINEER

DESIGNED BJR/DBB
DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA U EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-202.dwg
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A1
57

A2
59

B1
16

B2
12

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

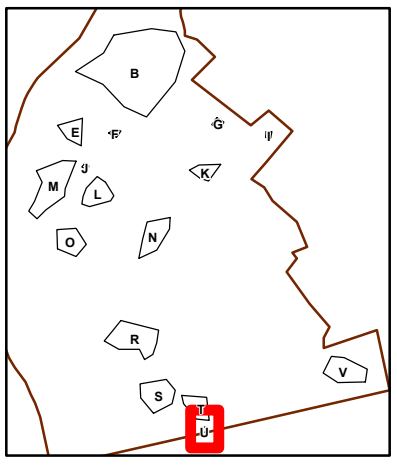
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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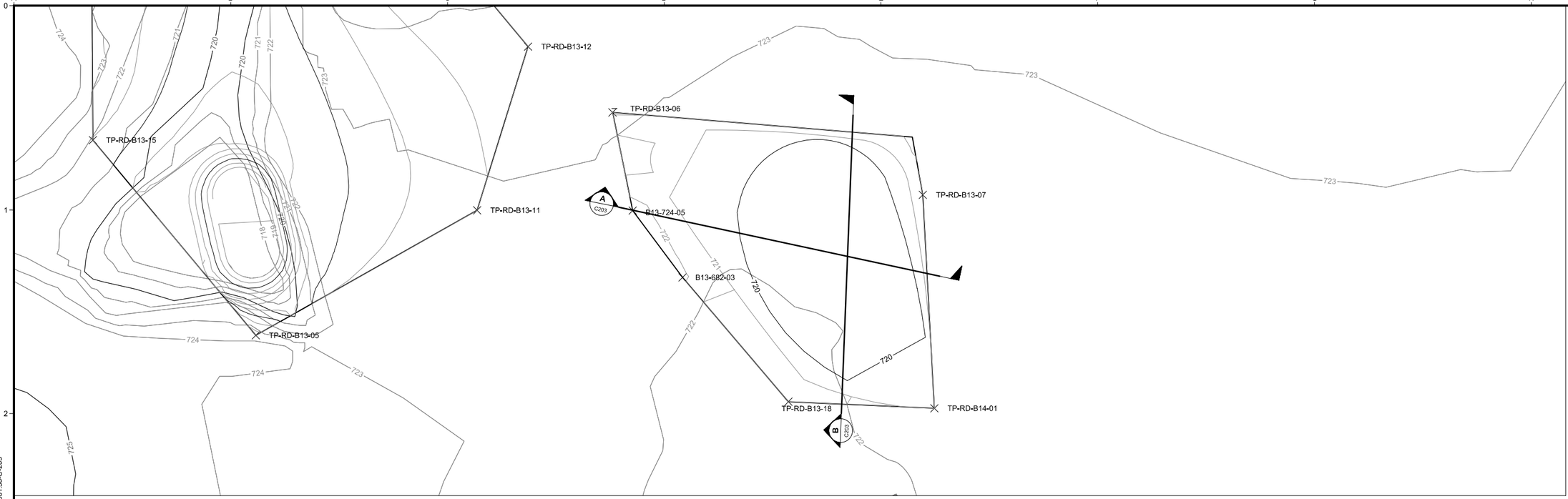
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area U
0-3' BGS

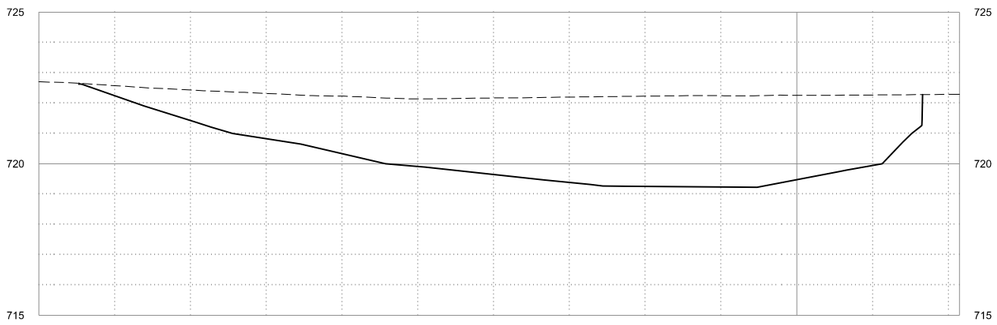
N

0 5 10 20
Feet

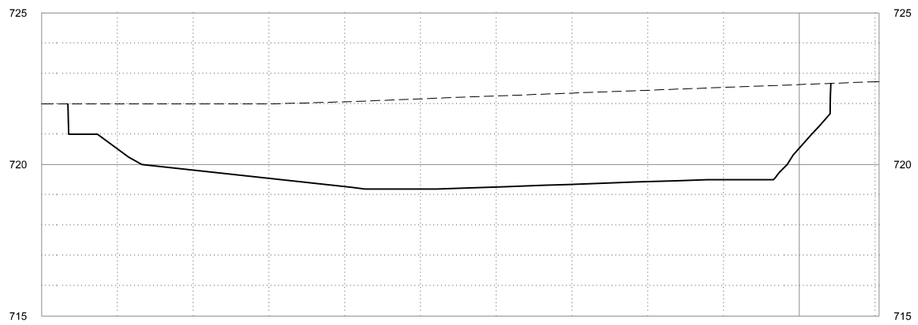
November 2019



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 10'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
T	868

0 10 20
1"=10'

0 20' 40'
1"=20'

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0 1"
0 25mm
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KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA T EXCAVATION
PLAN AND SECTION

FILE NAME 1540001.58-C-203.dwg
JOB NO. 1540001.58
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A1 **4245**						
B1 **21172**	B2 **17324**	B3 **7975**	B4 **3841**			
C1 **5488**	C2 **13451**	C3 **5289**	C4 **2485**	C5 **667**	C6 **818**	
D1 **3817**	D2 **4412**	D3 **1013**	D4 **701**	D5 **490**	D6 **303**	
	E1 **3922**	E2 **1952**	E3 **678**	E4 **373**	E5 **458**	
	F1 **2756**	F2 **1827**	F3 **982**	F4 **421**	F5 **530**	
		G1 **1390**	G2 **761**	G3 **426**	G4 **250**	
			H1 **618**	H2 **206**	H3 **98**	

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

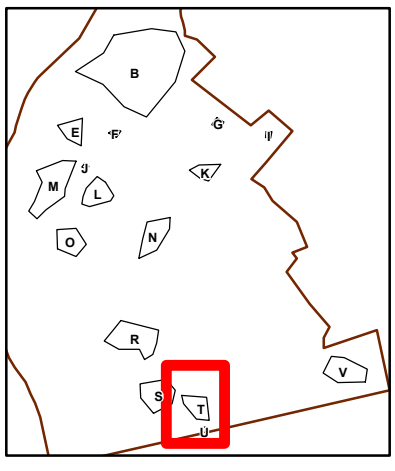
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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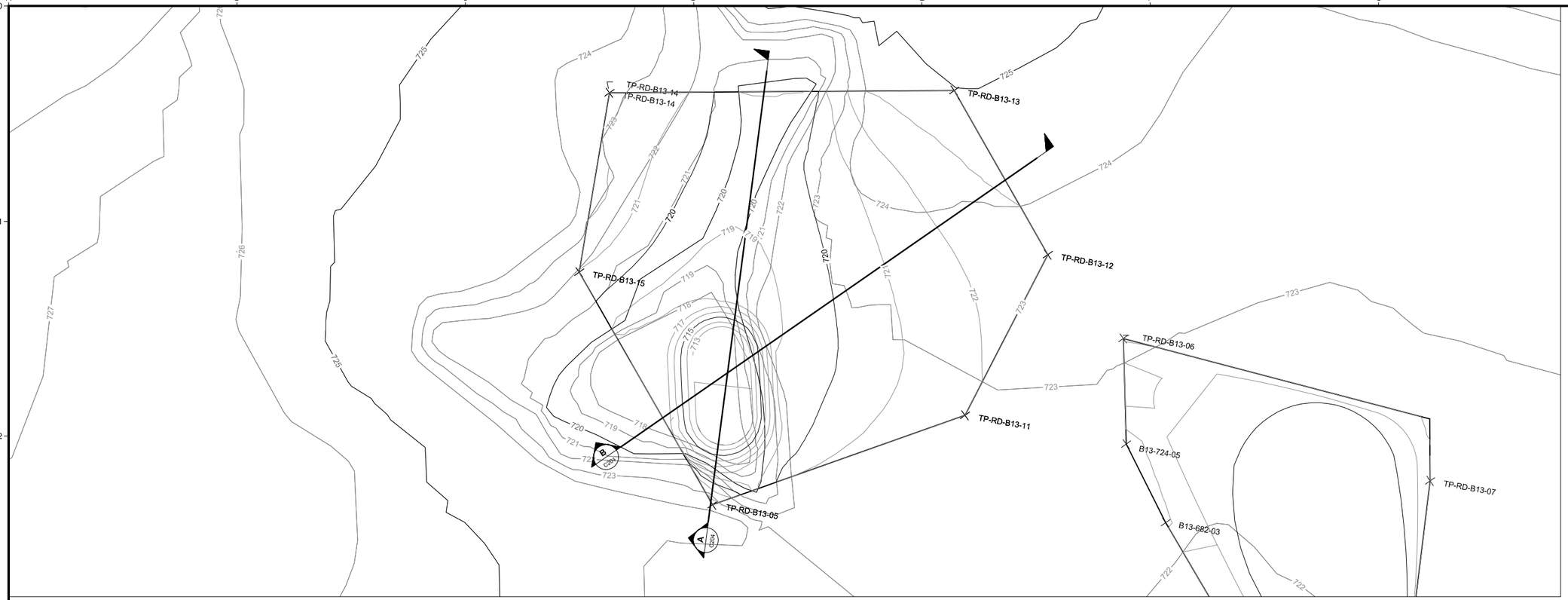
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area T
0-2' BGS

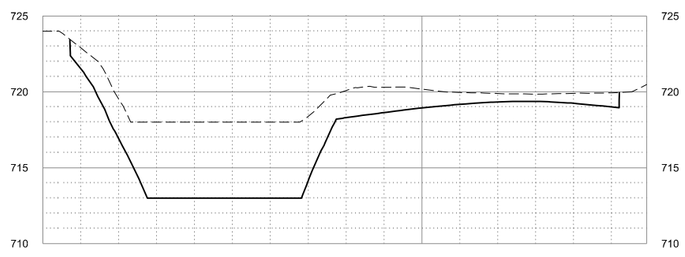
N

0 10 20 40
Feet

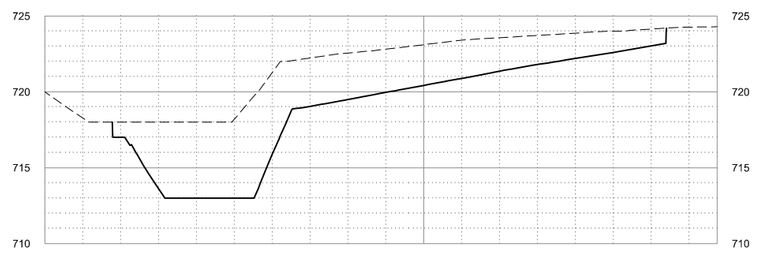
November 2019



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B"

SECTION
SCALE: 1" = 20'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
S	1,503

0 20' 40'
1"=20'

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TNT AREA EXCAVATION, BLENDING & STAGING PLAN

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AREA S EXCAVATION PLAN AND SECTION

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A1 **13**
A2 **13**
A3 **51**
A4 **64**
A5 **71**
A6 **42**
A7 **25**
A8 **116**
B1 **38**
B2 **48**
B3 **79**
B4 **99**
B5 **91**
B6 **60**
B7 **135**
B8 **163**
C1 **41**
C2 **94**
C3 **145**
C4 **171**
C5 **144**
C6 **284**
C7 **364**
C8 **126**
C9 **290**
D1 **27**
D2 **146**
D3 **273**
D4 **292**
D5 **217**
D6 **643**
D7 **575**
D8 **519**
D9 **307**
E1 **179**
E2 **361**
E3 **578**
E4 **548**
E5 **350**
E6 **522**
E7 **774**
E8 **1036**
E9 **1449**
F1 **583**
F2 **1000**
F3 **812**
F4 **545**
F5 **303**
F6 **424**
F7 **1136**
G1 **512**
G2 **738**
G3 **714**
G4 **577**
G5 **456**
G6 **368**
H1 **81**
H2 **455**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

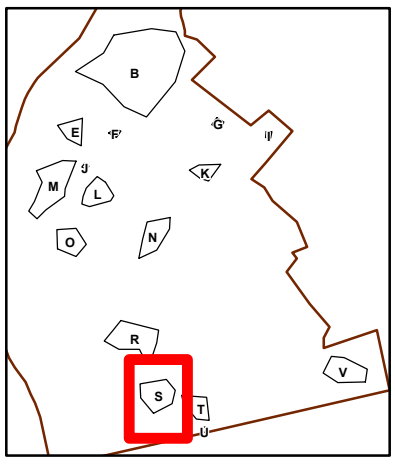
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

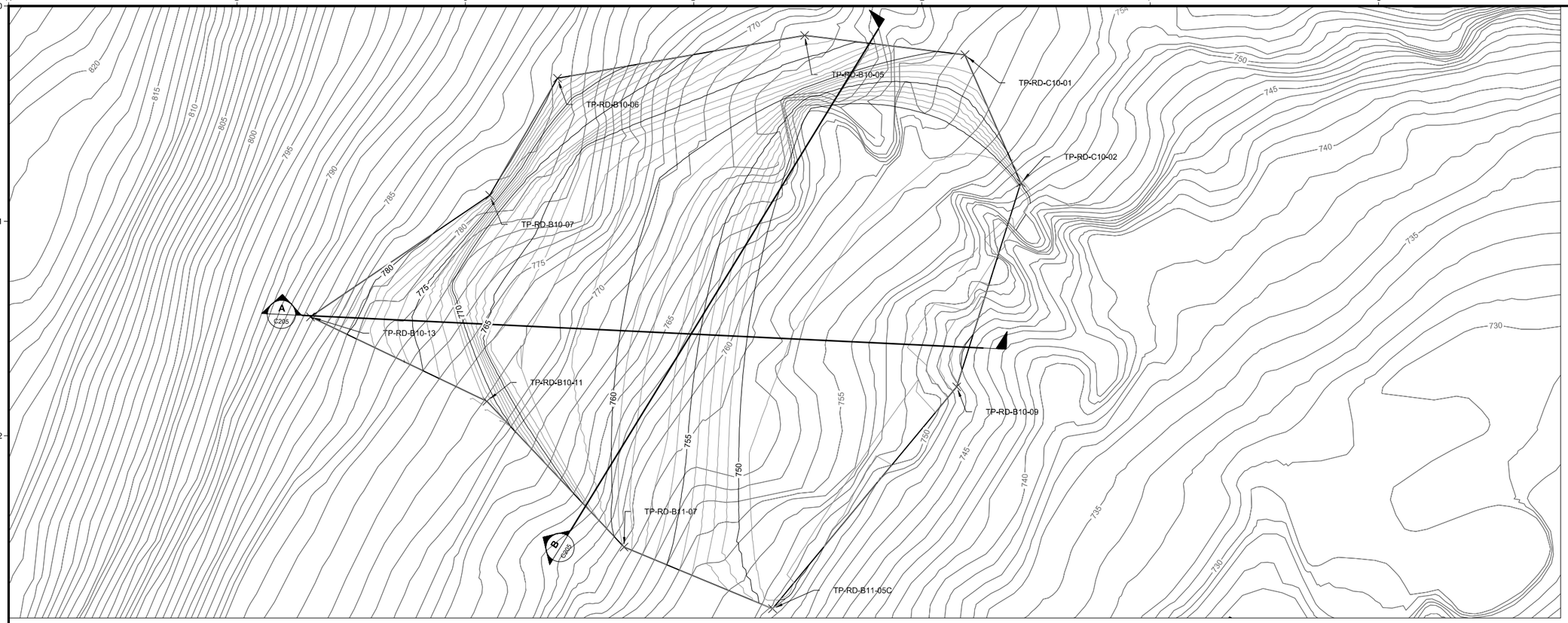
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area S
0-6' BGS

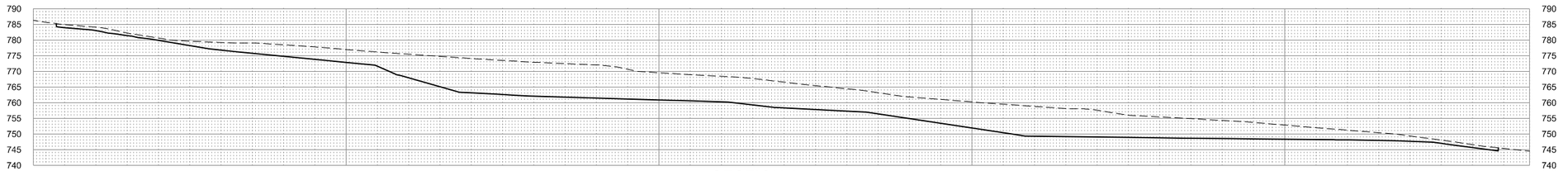
N

0 10 20 40
Feet

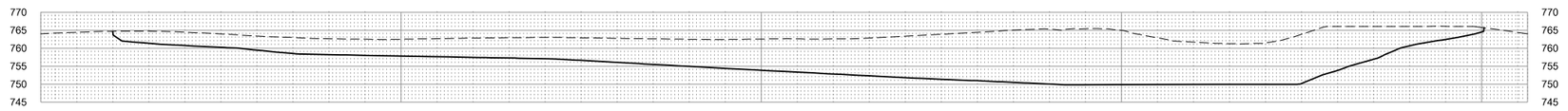
November 2019



PLAN
SCALE: 1" = 40'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 20'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
B	37,434

1"=40'

1"=20'

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KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
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Kennedy Jenks

AREA B EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-205.dwg
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												A1 140	A2 122	A3 333	A4 676	A5 941	A6 1055	A7 1043	A8 952	A9 795	A10 478	A11 494	A12 561		
											B1 314	B2 277	B3 182	B4 421	B5 879	B6 1227	B7 1257	B8 1151	B9 971	B10 821	B11 836	B12 1202	B13 632	B14 258	B15 129	
										C1 489	C2 539	C3 594	C4 540	C5 884	C6 1528	C7 1807	C8 1573	C9 1306	C10 942	C11 716	C12 936	C13 1527	C14 578	C15 160	C16 39	C17 101	C18 189
								D1 436	D2 357	D3 569	D4 968	D5 974	D6 704	D7 1177	D8 2787	D9 2943	D10 1828	D11 1232	D12 802	D13 451	D14 152	D15 299	D16 381	D17 199	D18 134	D19 181	D20 226
							E1 294	E2 392	E3 470	E4 491	E5 453	E6 569	E7 780	E8 1037	E9 1251	E10 2662	E11 5223	E12 2761	E13 1333	E14 1208	E15 812	E16 421	E17 287	E18 346	E19 306	E20 290	E21 274	E22 270	E23 294
						F1 30	F2 165	F3 289	F4 393	F5 503	F6 557	F7 543	F8 477	F9 439	F10 790	F11 1388	F12 2326	F13 3138	F14 1078	F15 683	F16 1049	F17 914	F18 593	F19 483	F20 439	F21 334	F22 329	F23 355	F24 341	F25 333
					G1 5	G2 22	G3 99	G4 235	G5 341	G6 470	G7 589	G8 536	G9 486	G10 521	G11 714	G12 1233	G13 1766	G14 1724	G15 1150	G16 1137	G17 1171	G18 1152	G19 847	G20 895	G21 839	G22 489	G23 445	G24 419	G25 351	G26 344
					H1 48	H2 86	H3 237	H4 337	H5 428	H6 505	H7 490	H8 456	H9 566	H10 767	H11 1032	H12 1296	H13 1407	H14 1402	H15 1185	H16 1176	H17 1216	H18 1230	H19 1556	H20 1482	H21 1384	H22 975	H23 798	H24 530	H25 345
					I1 145	I2 261	I3 299	I4 355	I5 439	I6 477	I7 416	I8 517	I9 665	I10 858	I11 1074	I12 1338	I13 1267	I14 1223	I15 1168	I16 1227	I17 1968	I18 2289	I19 2129	I20 2266	I21 1637	I22 1240	I23 692	I24 427	
				J1 227	J2 214	J3 267	J4 408	J5 401	J6 473	J7 636	J8 762	J9 1063	J10 1372	J11 1337	J12 1609	J13 1804	J14 2164	J15 3025	J16 3136	J17 3477	J18 3105	J19 2525	J20 1950	J21 982		
				K1 63	K2 119	K3 285	K4 379	K5 429	K6 525	K7 628	K8 924	K9 1297	K10 1475	K11 1709	K12 2196	K13 4178	K14 4995	K15 4446	K16 4772	K17 4060	K18 3207	K19 2153	K20 1659			
				L1 141	L2 262	L3 358	L4 432	L5 494	L6 706	L7 923	L8 1082	L9 1350	L10 1161	L11 1716	L12 4918	L13 6859	L14 5822	L15 6779	L16 5812	L17 4085	L18 2396					
				M1 218	M2 287	M3 334	M4 385	M5 443	M6 601	M7 763	M8 766	M9 1032	M10 1193	M11 1816	M12 4559	M13 4869	M14 5010	M15 8645	M16 6058	M17 2867	M18 1982					
				N1 270	N2 309	N3 360	N4 395	N5 471	N6 575	N7 467	N8 759	N9 1211	N10 1710	N11 2477	N12 1632	N13 2487	N14 4581	N15 2586	N16 699							
				O1 289	O2 308	O3 325	O4 418	O5 471	O6 396	O7 415	O8 865	O9 1253	O10 1184	O11 1554	O12 1739	O13 2178	O14 1140									
				P1 277	P2 284	P3 283	P4 273	P5 403	P6 426	P7 605	P8 755	P9 610	P10 436	P11 1293	P12 1601	P13 1707										
				Q1 253	Q2 228	Q3 210	Q4 256	Q5 341	Q6 339	Q7 522	Q8 555	Q9 606	Q10 1052	Q11 1291												
				R1 141	R2 152	R3 106	R4 148	R5 203	R6 186	R7 282	R8 642															
				S1 67	S2 60	S3 24	S4 12	S5 37	S6 186																	
				T1 16	T2 3	T3 23																				

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

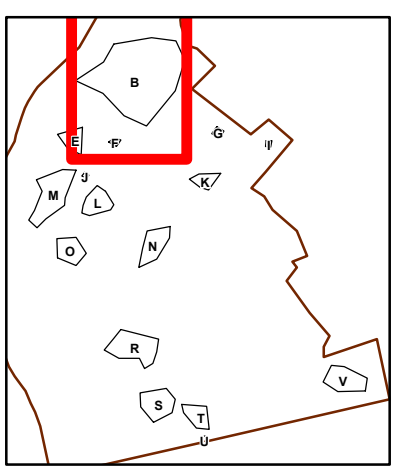
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area B
0-6' BGS

November 2019

N

0 10 20 40
Feet

													A1 0	A2 0	A3 4	A4 18	A5 21	A6 29	A7 36	A8 38	A9 39	A10 38	A11 36	A12 36
											B1 6	B2 3	B3 4	B4 8	B5 27	B6 32	B7 39	B8 44	B9 46	B10 45	B11 42	B12 39	B13 38	B14 35	B15 32
								C1 12	C2 11	C3 12	C4 14	C5 22	C6 39	C7 49	C8 54	C9 55	C10 52	C11 51	C12 46	C13 41	C14 40	C15 37	C16 32	C17 32	C18 29
					D1 12	D2 13	D3 15	D4 17	D5 20	D6 25	D7 40	D8 60	D9 65	D10 71	D11 67	D12 66	D13 59	D14 51	D15 43	D16 42	D17 38	D18 34	D19 32	D20 29
				E1 6	E2 6	E3 9	E4 12	E5 14	E6 17	E7 23	E8 33	E9 37	E10 58	E11 80	E12 84	E13 86	E14 76	E15 73	E16 64	E17 54	E18 50	E19 44	E20 38	E21 34	E22 33	E23 29
			F1 1	F2 2	F3 3	F4 5	F5 8	F6 11	F7 13	F8 18	F9 26	F10 40	F11 45	F12 68	F13 90	F14 93	F15 94	F16 82	F17 76	F18 66	F19 54	F20 46	F21 44	F22 38	F23 33	F24 32	F25 29
		G1 0	G2 0	G3 2	G4 4	G5 5	G6 7	G7 10	G8 11	G9 15	G10 26	G11 29	G12 42	G13 64	G14 74	G15 89	G16 91	G17 80	G18 73	G19 64	G20 53	G21 45	G22 43	G23 37	G24 32	G25 31	G26 28
			H1 1	H2 2	H3 4	H4 4	H5 6	H6 9	H7 9	H8 13	H9 24	H10 27	H11 39	H12 58	H13 76	H14 77	H15 80	H16 72	H17 69	H18 61	H19 50	H20 47	H21 42	H22 36	H23 34	H24 31	H25 27
				I1 3	I2 3	I3 4	I4 4	I5 6	I6 7	I7 11	I8 18	I9 23	I10 33	I11 48	I12 62	I13 63	I14 66	I15 61	I16 59	I17 54	I18 45	I19 43	I20 39	I21 34	I22 31	I23 29	I24 25
					J1 3	J2 2	J3 2	J4 3	J5 8	J6 15	J7 16	J8 24	J9 37	J10 41	J11 47	J12 53	J13 50	J14 49	J15 46	J16 41	J17 38	J18 35	J19 31	J20 27	J21 26
						K1 1	K2 1	K3 2	K4 6	K5 12	K6 13	K7 18	K8 28	K9 29	K10 35	K11 40	K12 40	K13 41	K14 39	K15 36	K16 34	K17 31	K18 28	K19 26	K20 25
							L1 1	L2 2	L3 4	L4 9	L5 10	L6 13	L7 19	L8 21	L9 26	L10 31	L11 33	L12 32	L13 32	L14 30	L15 29	L16 28	L17 25	L18 24
								M1 2	M2 2	M3 4	M4 5	M5 6	M6 9	M7 13	M8 15	M9 19	M10 24	M11 26	M12 26	M13 26	M14 26	M15 25	M16 24	M17 22	M18 21
									N1 3	N2 4	N3 4	N4 4	N5 5	N6 9	N7 10	N8 14	N9 18	N10 19	N11 21	N12 22	N13 21	N14 22	N15 21	N16 19
										O1 3	O2 1	O3 1	O4 2	O5 6	O6 7	O7 10	O8 15	O9 15	O10 17	O11 19	O12 18	O13 18	O14 18	
											P1 2	P2 1	P3 0	P4 1	P5 5	P6 6	P7 9	P8 12	P9 13	P10 15	P11 16	P12 16	P13 16	
												Q1 2	Q2 1	Q3 2	Q4 3	Q5 5	Q6 8	Q7 10	Q8 11	Q9 12	Q10 13	Q11 13		
													R1 2	R2 3	R3 5	R4 5	R5 7	R6 9	R7 10	R8 11				
														S1 4	S2 5	S3 6	S4 7	S5 8	S6 9					
																T1 6	T2 7	T3 8						

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

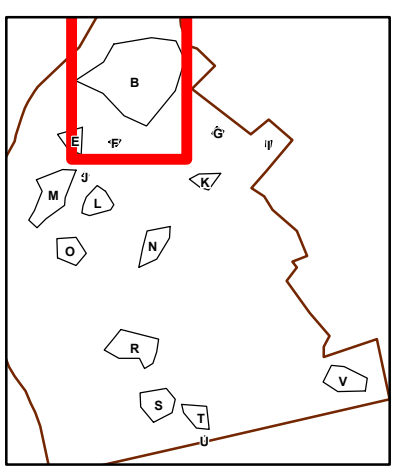
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

N

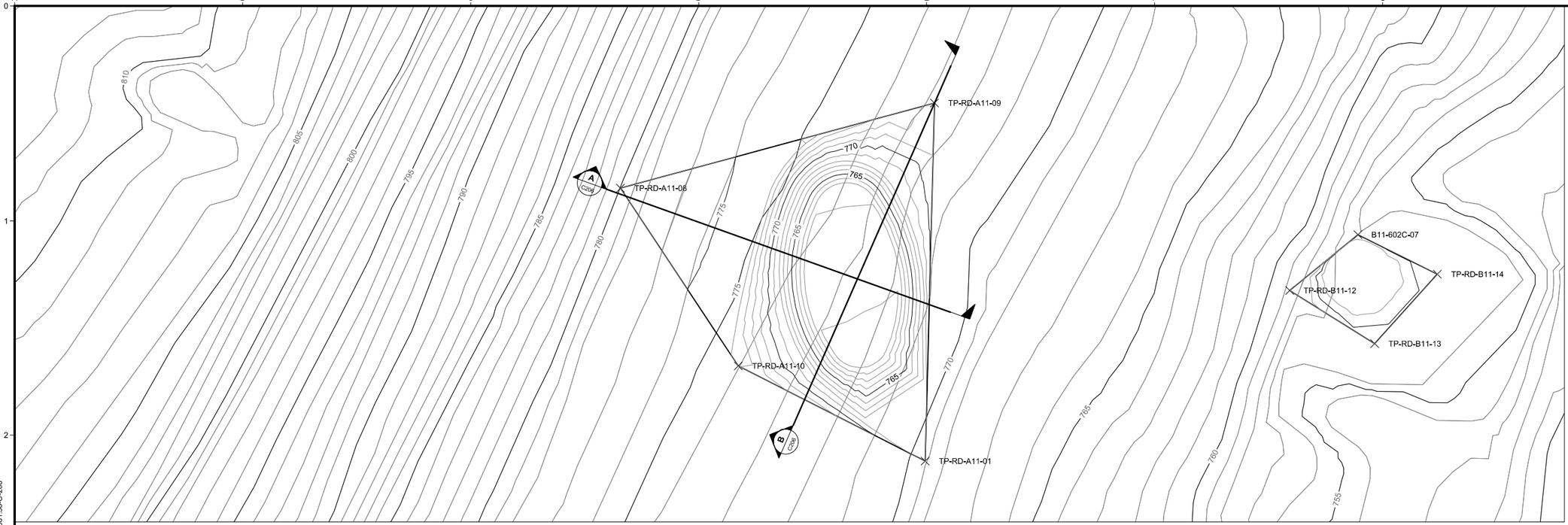
0 10 20 40

Feet

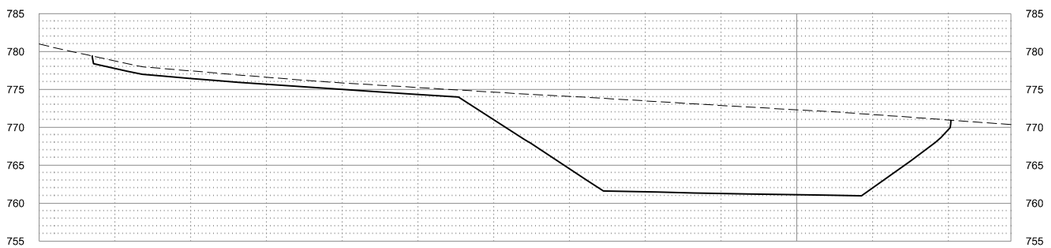
Excavation Area B
6-10' BGS

November 2019

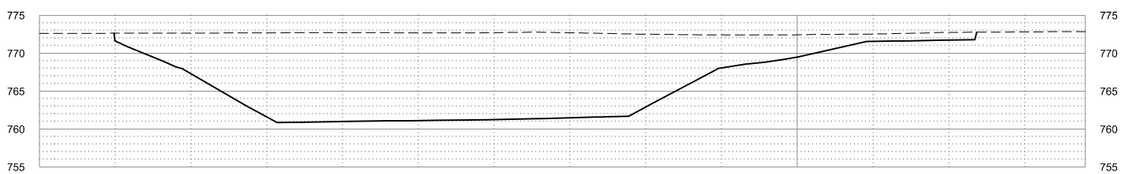
| | | |



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 10'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
E	1,969

0 10 20
1"=10'

0 20' 40'
1"=20'

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SCALES
0 1"
0 25mm
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STATE OF NEW JERSEY · STEPHEN R. MONTAGNA · No. 35214 · LICENSED PROFESSIONAL ENGINEER

DESIGNED BJR/DBB
DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA E EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-206.dwg
JOB NO. 1540001.58
DATE
SHEET C-206 OF -

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A1
1.469667

B1
0.205

B2
0.131667

B3
0.191

B4
0.241667

B5
0.280333

B6
0.233333

B7
0.153333

C1
0.272

C2
0.221333

C3
0.256667

C4
0.355333

C5
0.307667

C6
0.200333

D1
0.285667

D2
0.196333

D3
0.231333

D4
0.275333

D5
0.272333

D6
0.225

E1
0.133333

E2
0.194

E3
0.240667

E4
0.227667

F1
0.147333

F2
0.181333

F3
0.214

F4
0.193667

G1
0.168

G2
0.144

G3
0.138333

H1
0.134333

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

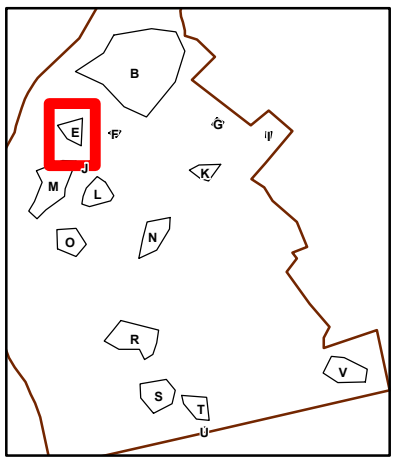
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area E
0-6' BGS

N

0 10 20 40
Feet

November 2019

A1
1.079667

B1
1.125

B2
1.087333

B3
1.231667

B4
1.154333

B5
2.094

B6
1.106

B7
1.082667

C1
1.228333

C2
1.259667

C3
2.098667

C4
2.131333

C5
2.097

C6
1.127

D1
1.270333

D2
2.187667

D3
2.164667

D4
2.147667

D5
2.135333

D6
2.088667

E1
43.499333

E2
43.558

E3
43.577667

E4
43.547

F1
21.884333

F2
43.515333

F3
43.546667

F4
43.613

G1
0.243333

G2
0.201

G3
0.248667

H1
0.193667

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

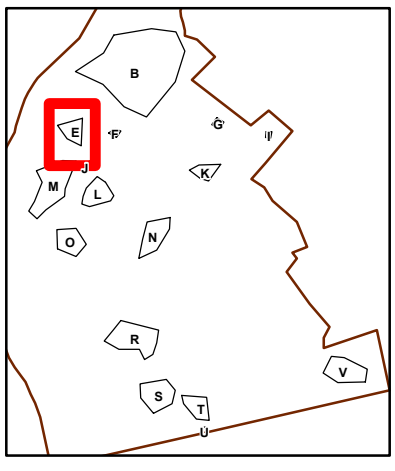
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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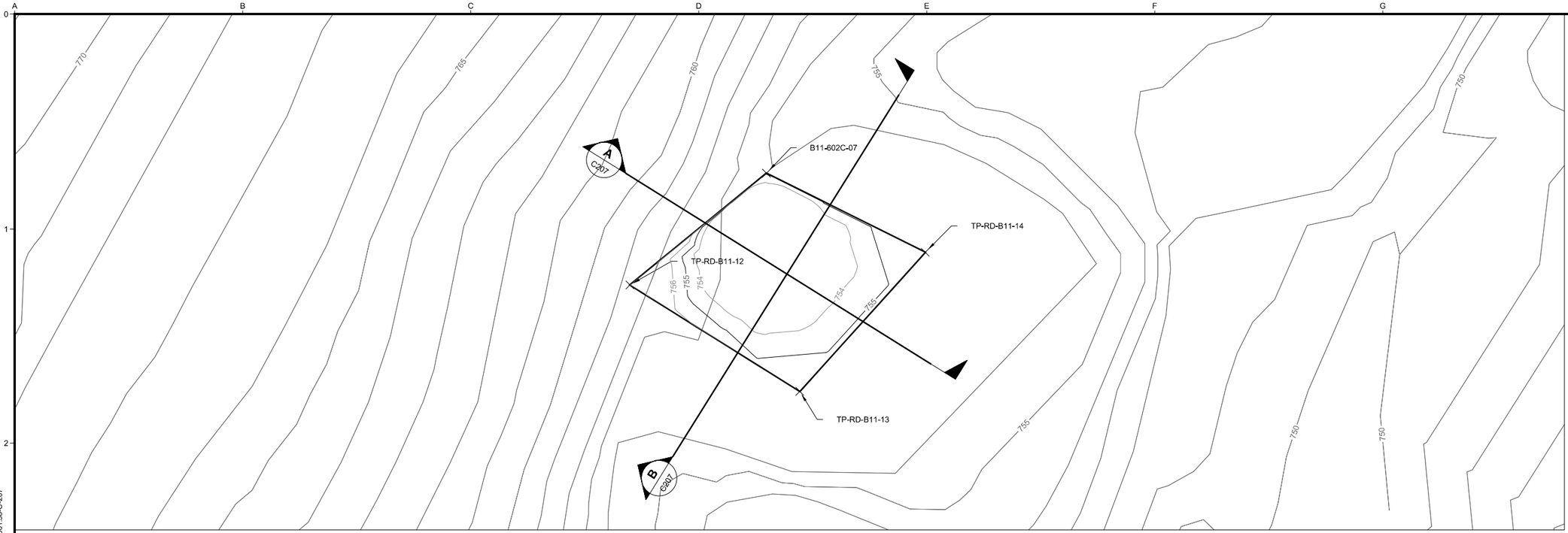
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area E
6-12' BGS

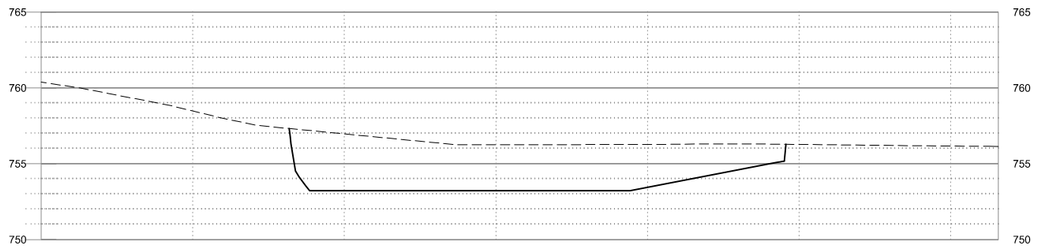
N

0 10 20 40
Feet

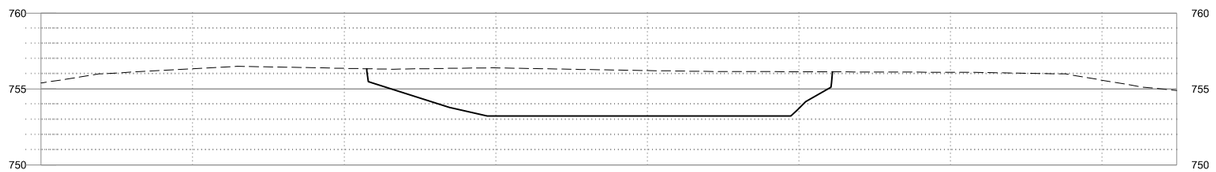
November 2019



PLAN
SCALE: 1" = 10'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 5'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
F	111

0 5 10
1"=5'

0 10' 20'
1"=10'

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SCALES
0 1"
0 25mm
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STATE OF NEW JERSEY · STEPHEN R. MONTAGNA · No. 35214 · LICENSED PROFESSIONAL ENGINEER

DESIGNED BJR/DBB
DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA F EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-207.dwg
JOB NO. 1540001.58
DATE
SHEET C-207 OF -

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A1
0.1215

B1
0.1115

B2
0.1115

B3
0.1205

B4
0.1395

C1
0.1185

C2
0.125

C3
0.1475

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

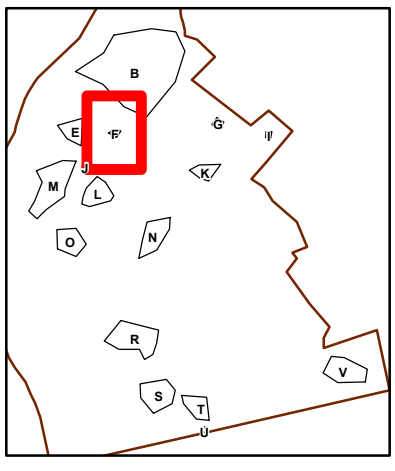
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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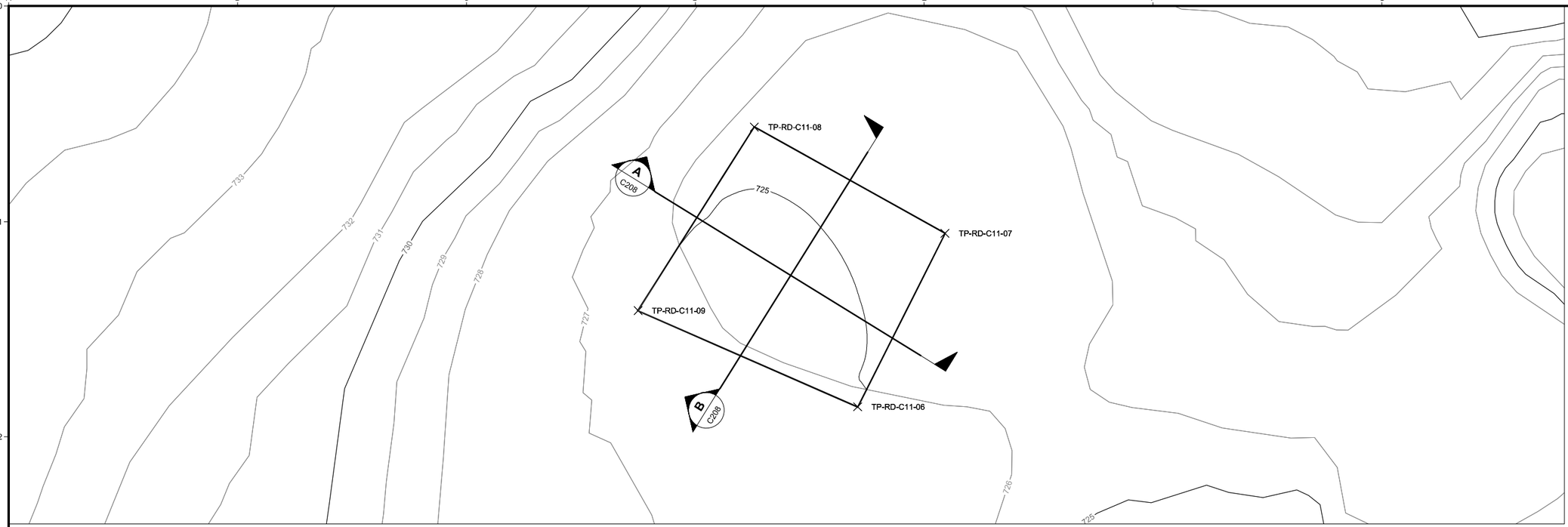
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area F
0-4' BGS

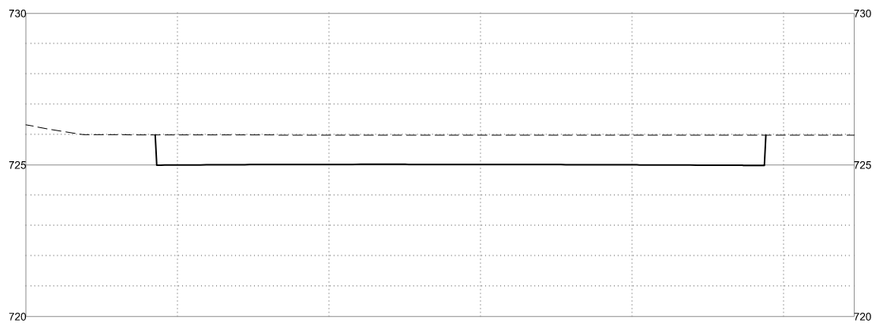
November 2019

N

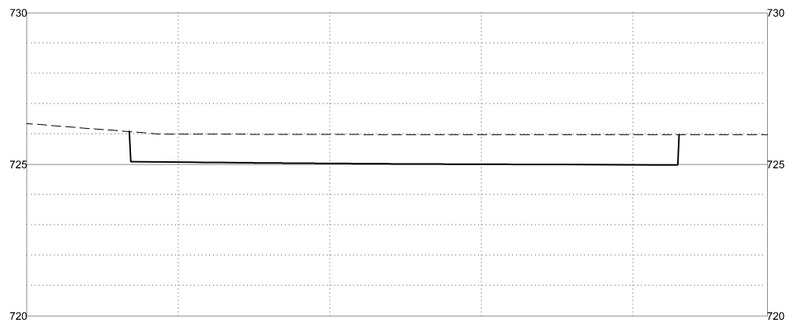
0 10 20 40
Feet



PLAN
SCALE: 1" = 10'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 5'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
G	65

0 5 10
1"=5'

0 10' 20'
1"=10'

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SCALES
0 1"
0 25mm
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DESIGNED BJR/DBB
DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA G EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-208.dwg
JOB NO. 1540001.58
DATE
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A1
0.476

A2
0.459

B1
0.257

B2
0.461

B3
0.44

B4
0.337

C1
0.266

C2
0.68

C3
0.659

C4
0.388

D1
0.971

D2
1.106

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

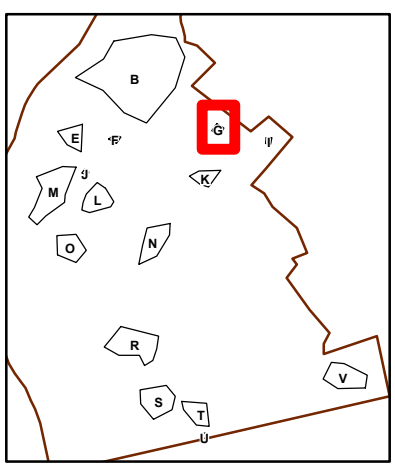
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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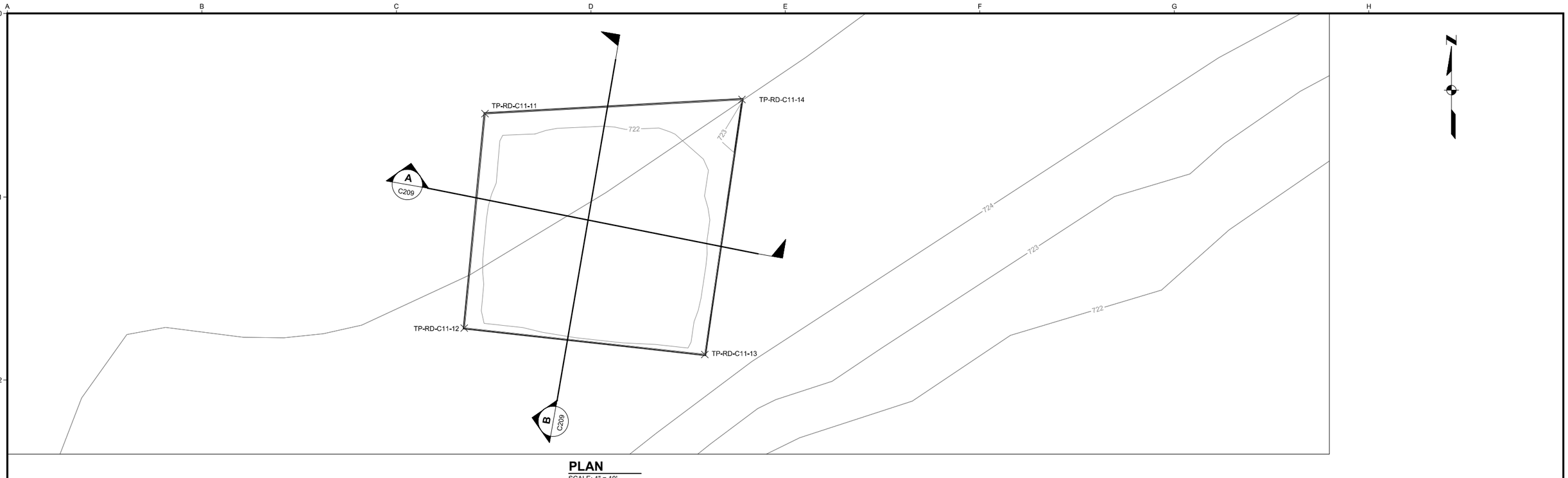
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area G
0-2' BGS

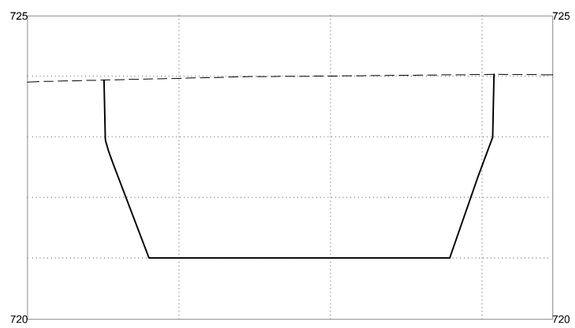
November 2019

N

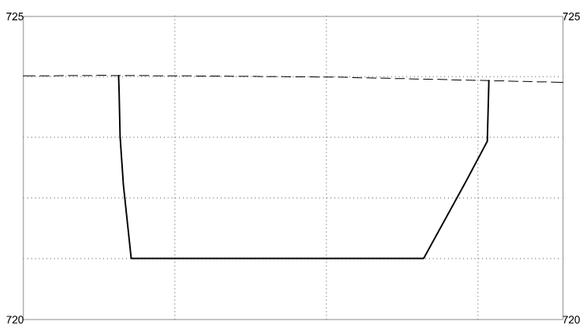
0 5 10 20
Feet



PLAN
SCALE: 1" = 10'



SECTION A-A'



SECTION B-B'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
I	72

SECTION
SCALE: 1" = 5'

0 5 10
1"=5'

0 10 20
1"=10'

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NO.	REVISION	DATE	BY

SCALES
0 1"
0 25mm
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DESIGNED BJR/DBB
DRAWN HCS
CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA I EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-209.dwg
JOB NO. 1540001.58
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A1
0.4835

A2
0.584

A3
0.4575

B1
0.6055

B2
1.2315

B3
0.529

C1
0.507

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

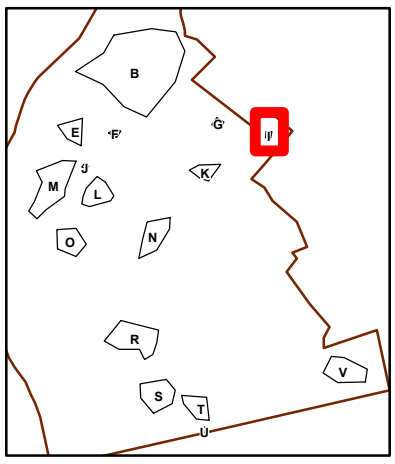
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

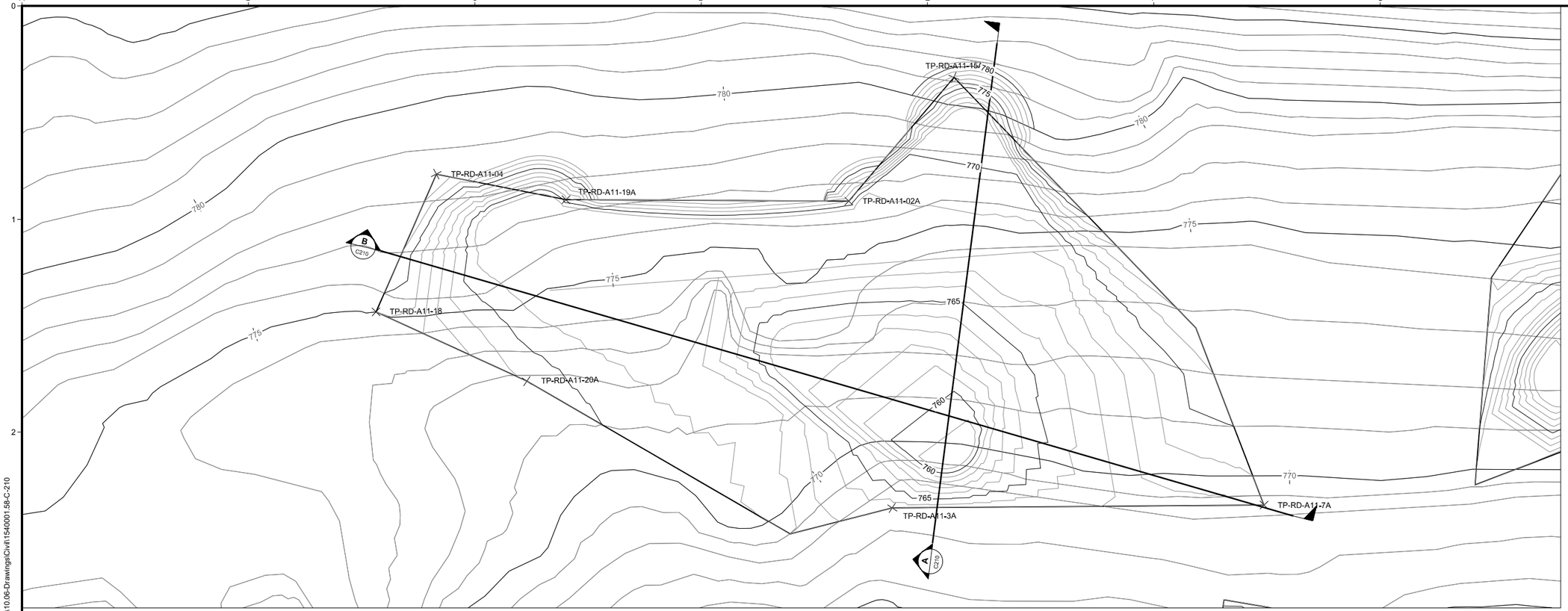
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area I
0-4' BGS

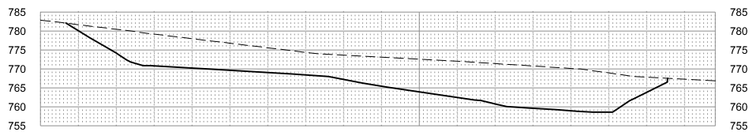
N

0 5 10 20
Feet

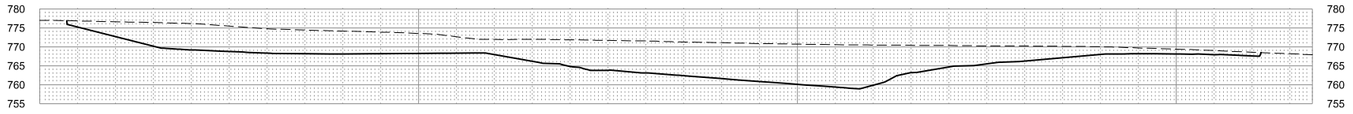
November 2019



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 20'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
M	7,235

0 20' 40'
1"=20'

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SCALES
0 1"
0 25mm
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KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA M EXCAVATION PLAN AND SECTION

FILE NAME 1540001.58-C-210.dwg
JOB NO. 1540001.58
DATE
SHEET C-210 OF -

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A1 **221**
A2 **656**
A3 **780**
A4 **257**
A5 **352**
A6 **7**
A7 **5**
B1 **17**
B2 **22**
B3 **49**
B4 **681**
B5 **979**
B6 **676**
B7 **466**
B8 **877**
B9 **876**
B10 **363**
B11 **73**
C1 **357**
C2 **735**
C3 **1232**
C4 **825**
C5 **971**
C6 **1432**
C7 **1959**
C8 **1536**
C9 **1017**
D1 **264**
D2 **872**
D3 **1978**
D4 **1574**
D5 **5178**
D6 **4656**
D7 **4163**
D8 **2888**
D9 **1081**
E1 **80**
E2 **278**
E3 **1545**
E4 **2813**
E5 **4865**
E6 **15142**
E7 **13483**
E8 **8057**
E9 **4553**
F1 **183**
F2 **960**
F3 **1845**
F4 **2406**
F5 **5886**
F6 **15704**
F7 **18428**
F8 **8194**
G1 **118**
G2 **191**
G3 **1090**
G4 **1787**
G5 **2296**
G6 **4147**
G7 **6894**
G8 **1435**
H1 **36**
H2 **102**
H3 **154**
H4 **456**
H5 **797**
H6 **1254**
H7 **3584**
H8 **3616**
H9 **2517**
I1 **96**
I2 **41**
I3 **63**
I4 **122**
I5 **137**
I6 **483**
I7 **688**
I8 **2271**
I9 **2761**
J1 **34**
J2 **78**
J3 **273**
J4 **131**
J5 **99**
J6 **78**
J7 **293**
J8 **1031**
J9 **1583**
K1 **45**
K2 **107**
K3 **70**
K4 **17**
K5 **17**
K6 **29**
L1 **27**
L2 **8**
L3 **32**
L4 **23**
M1 **28**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

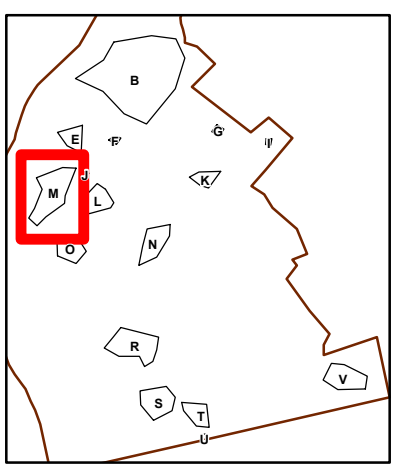
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area M
0-6' BGS

N

0 10 20 40
Feet

November 2019

A1
A2
A3
A4
A5
A6
A7
B1 **4**
B2 **3**
B3 **3**
B4 **4**
B5 **4**
B6 **3**
B7 **2**
B8
B9
B10
B11
C1 **3**
C2 **4**
C3 **5**
C4 **6**
C5 **4**
C6 **2**
C7
C8
C9
D1 **5**
D2 **6**
D3 **8**
D4 **8**
D5 **8**
D6 **6**
D7
D8
D9
E1 **6**
E2 **7**
E3 **9**
E4 **13**
E5 **12**
E6 **8**
E7 **7**
E8
E9
F1 **6**
F2 **7**
F3 **10**
F4 **21**
F5 **16**
F6 **10**
F7 **9**
F8
G1 **7**
G2 **7**
G3 **7**
G4 **6**
G5 **7**
G6 **12**
G7 **7**
G8 **6**
H1 **6**
H2 **7**
H3 **7**
H4 **5**
H5 **4**
H6
H7
H8
H9
I1 **7**
I2 **7**
I3 **6**
I4 **7**
I5 **4**
I6 **3**
I7
I8
I9
J1 **4**
J2 **9**
J3 **11**
J4 **11**
J5 **6**
J6 **5**
J7
J8
J9
K1 **6**
K2 **8**
K3 **8**
K4 **3**
K5 **3**
K6
L1 **4**
L2 **4**
L3 **5**
L4
M1

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

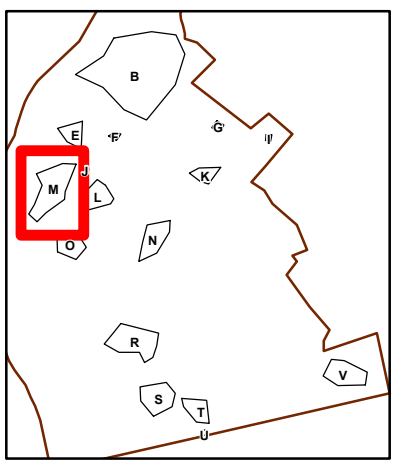
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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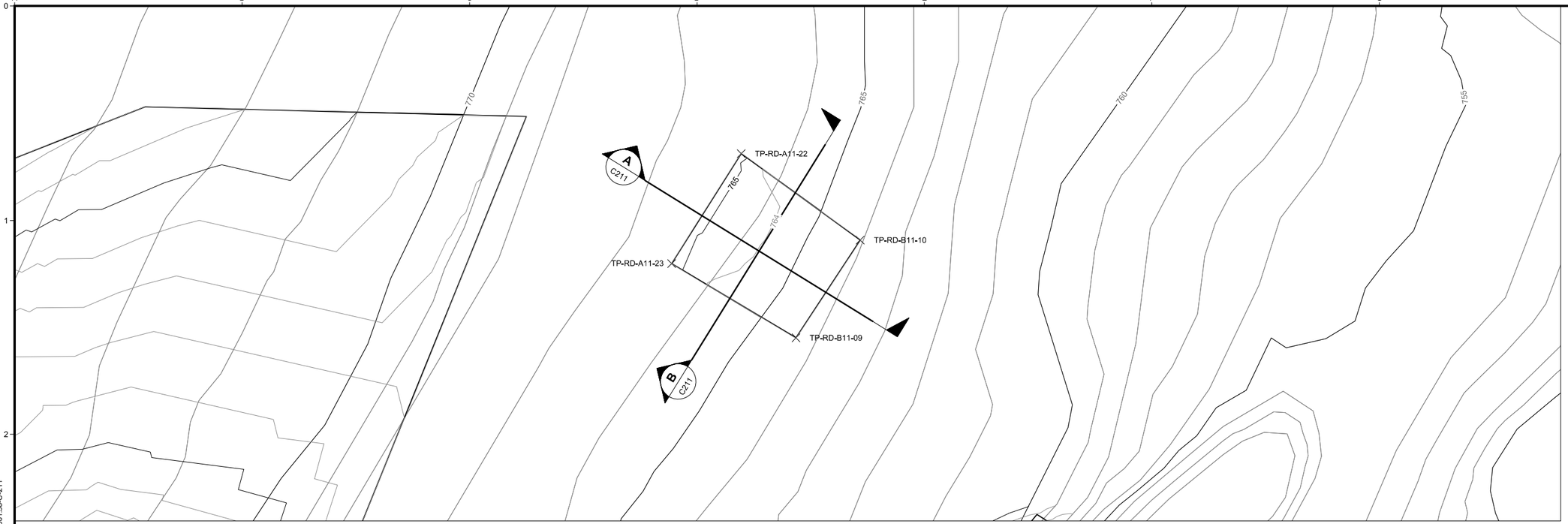
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area M
6-12' BGS

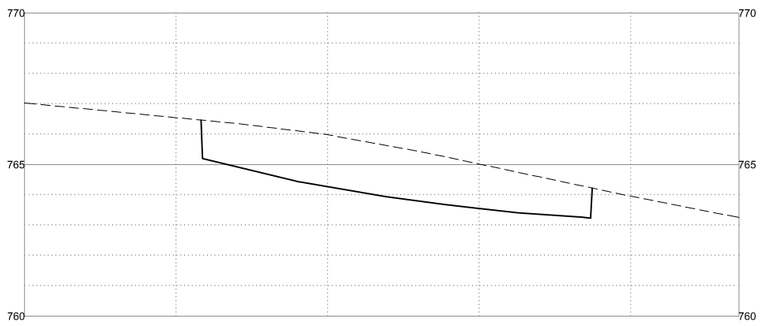
N

0 10 20 40
Feet

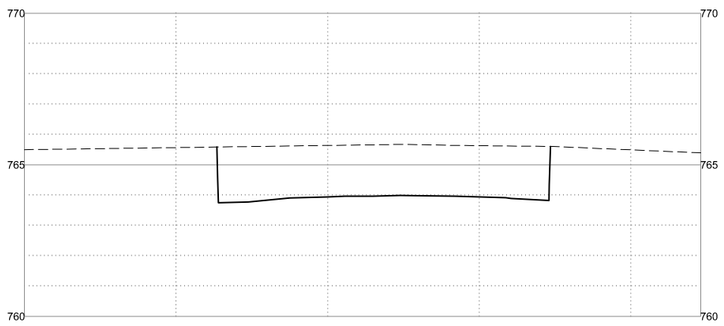
November 2019



PLAN
SCALE: 1" = 10'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 5'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
J	39

0 5 10
1"=5'

0 10 20
1"=10'

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SCALES
0 1"
0 25mm
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CHECKED	SRM

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KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA J EXCAVATION PLAN AND SECTION

FILE NAME	1540001.58-C-211.dwg
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A1
0.192

A2
0.164

B1
431.24

B2
0.171

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

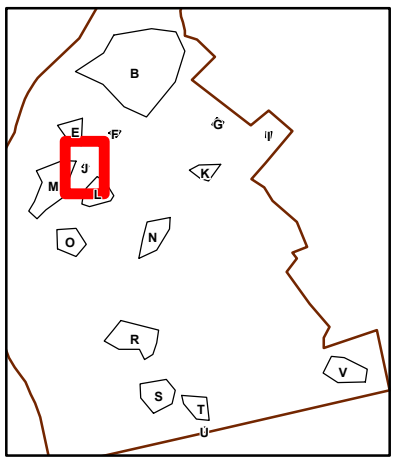
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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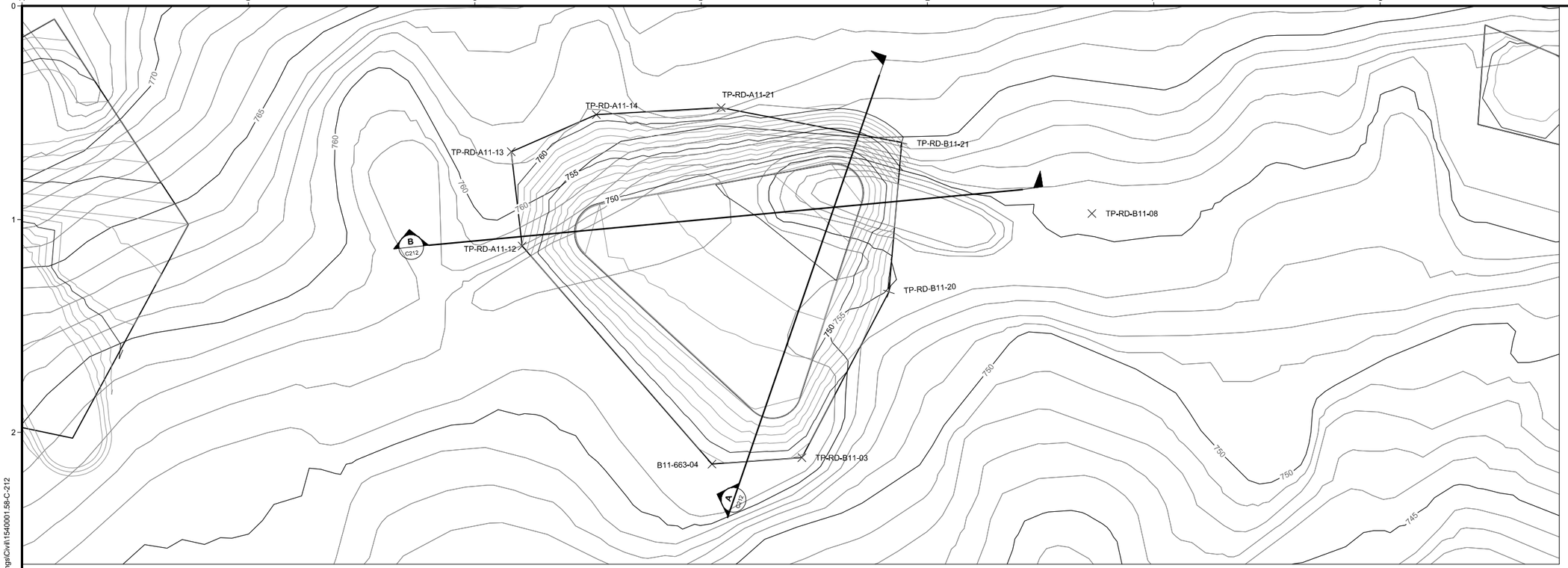
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area J
0-2' BGS

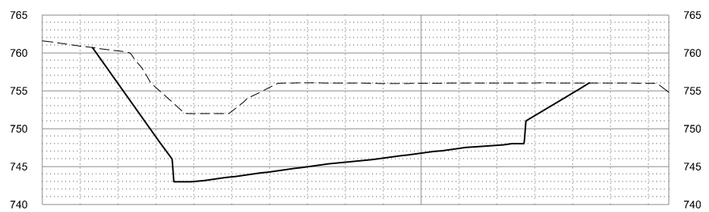
November 2019

N

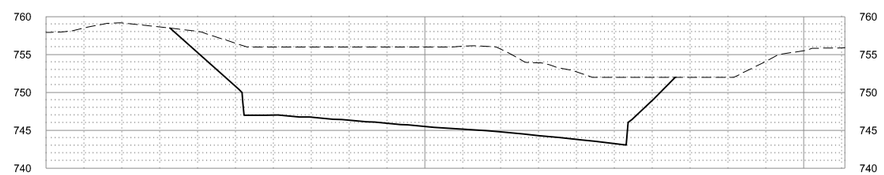
0 5 10 20
Feet



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 20'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
L	3,521

0 20' 40'
1"=20'

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0 1"
0 25mm
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KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA L EXCAVATION PLAN AND SECTION

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JOB NO. 1540001.58
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A1
1

A2
3

B1
6

B2
5

B3
5

B4
4

C1
10

C2
30

C3
12

C4
12

C5
7

D1
40

D2
25

D3
51

D4
45

D5
18

D6
6

D7
18

E1
126

E2
57

E3
146

E4
93

E5
80

E6
38

E7
47

E8
39

F1
125

F2
294

F3
593

F4
117

F5
101

F6
93

F7
101

F8
27

G1
177

G2
307

G3
420

G4
167

G5
117

G6
105

G7
81

G8
42

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

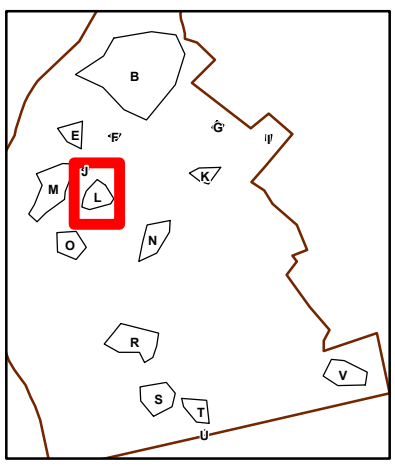
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area L
0-6' BGS

November 2019

N

0 5 10 20
Feet

A1 **6**
A2 **5**
B1 **5**
B2 **9**
B3 **8**
B4 **5**
C1 **3**
C2 **4**
C3 **14**
C4 **10**
C5 **9**
D1 **2**
D2 **3**
D3 **4**
D4 **9**
D5 **8**
D6 **7**
D7 **5**
E1 **2**
E2 **3**
E3 **4**
E4 **4**
E5 **5**
E6 **5**
E7 **4**
E8 **3**
F1 **3**
F2 **6**
F3 **12**
F4 **4**
F5 **4**
F6 **3**
F7 **3**
F8 **1**
G1 **5**
G2 **9**
G3 **11**
G4 **5**
G5 **3**
G6 **3**
G7 **2**
G8 **1**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

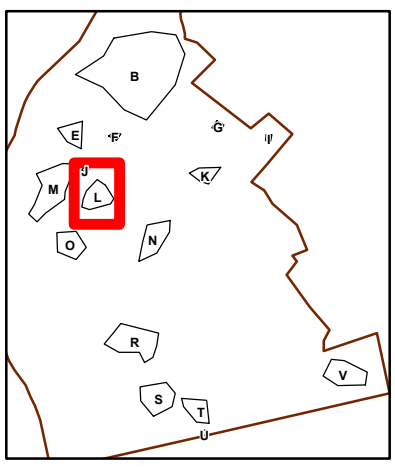
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

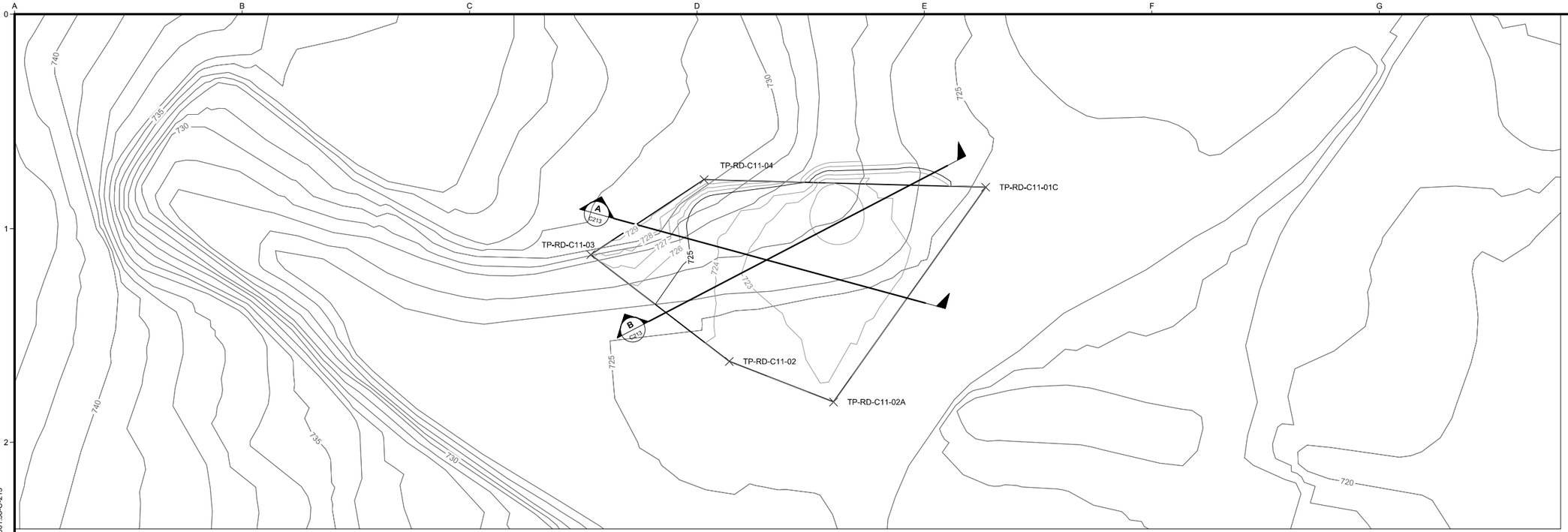
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area L
6-10' BGS

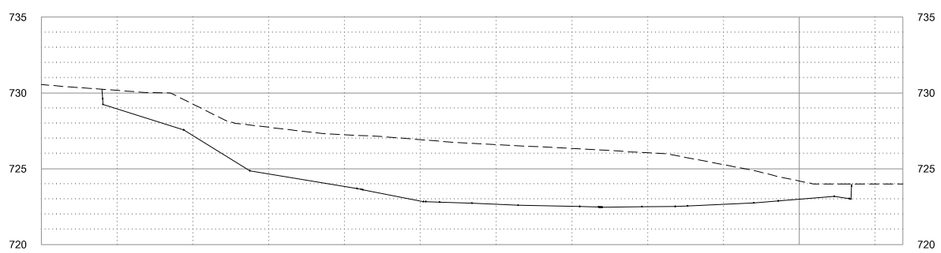
November 2019

N

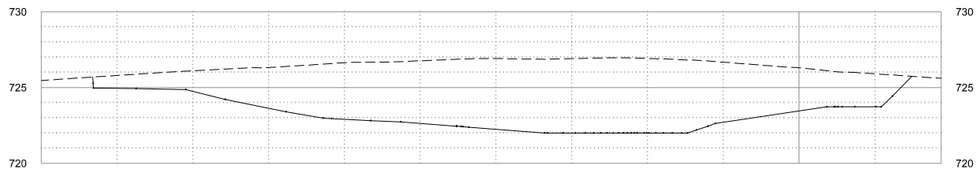
0 5 10 20
Feet



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
K	756

SECTION
SCALE: 1" = 10'

0 10 20
1"=10'

0 20' 40'
1"=20'

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NO.	REVISION	DATE	BY

SCALES
0 1"
0 25mm
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STATE OF NEW JERSEY · STEPHEN R. MONTAGNA · No. 35214 · LICENSED PROFESSIONAL ENGINEER

DESIGNED BJR/DBB
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CHECKED SRM

HERCULES LLC - KENVIL WORKS FACILITY
KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA K EXCAVATION PLAN AND SECTION

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A1
9

A2
14

A3
23

A4
35

A5
70

A6
33

B1
6

B2
11

B3
25

B4
36

B5
61

B6
92

B7
8

B8
4

B9
2

C1
14

C2
16

C3
24

C4
35

C5
41

C6
21

C7
11

D1
5

D2
8

D3
12

D4
20

D5
17

E1
7

E2
3

E3
5

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

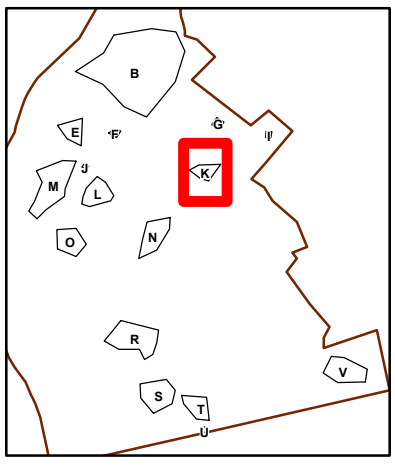
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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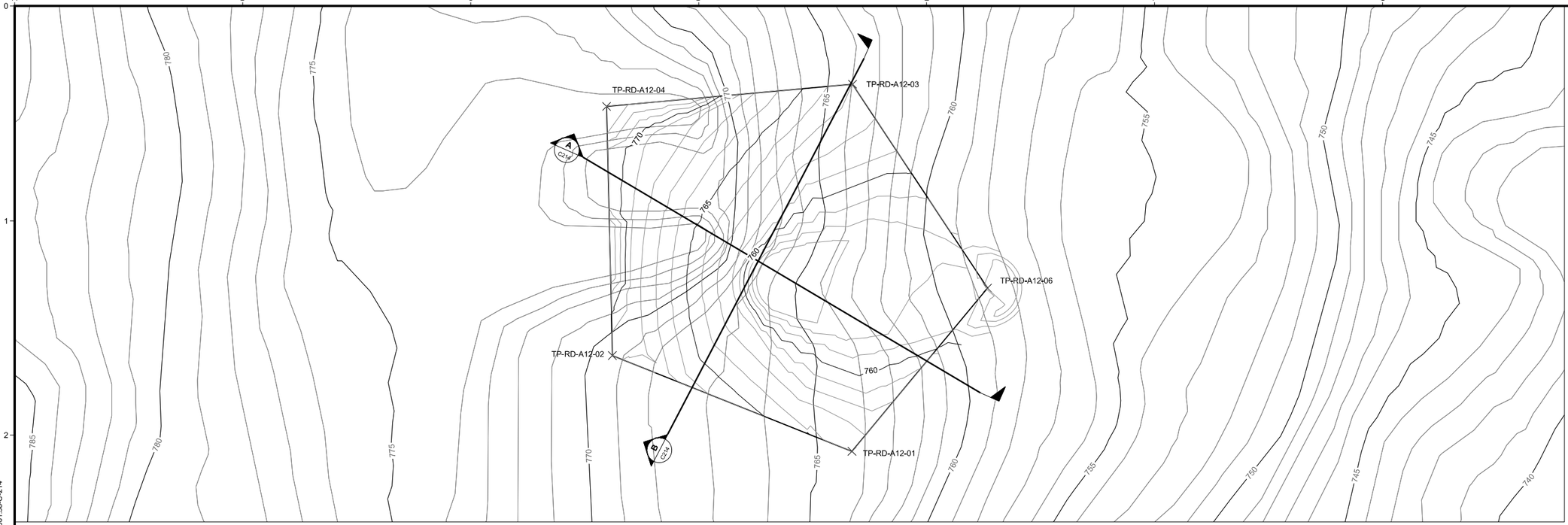
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area K
0-4' BGS

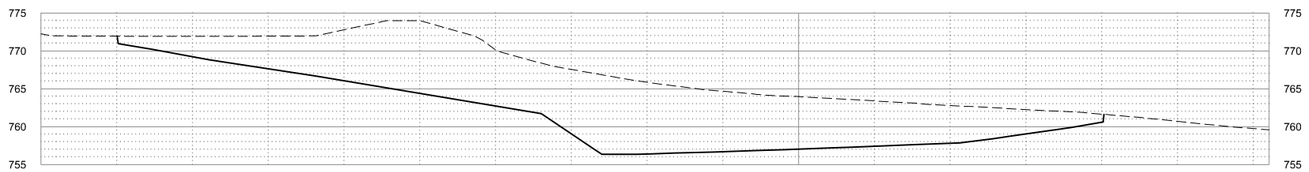
November 2019

N

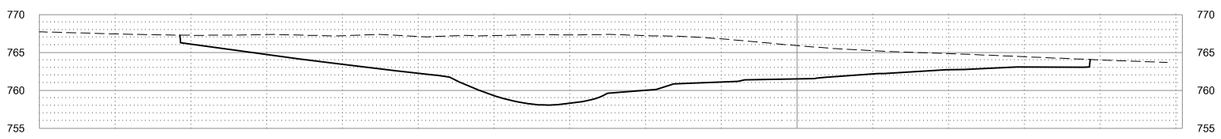
0 5 10 20
Feet



PLAN
SCALE: 1" = 20'



ALIGN A-A'



ALIGN B-B'

SECTION
SCALE: 1" = 10'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
O	2,335

0 10 20
1"=10'

0 20' 40'
1"=20'

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0 25mm
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KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA O EXCAVATION
PLAN AND SECTION

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A1 **834**
A2 **4320**
A3 **5386**
A4 **3656**
B1 **4923**
B2 **8062**
B3 **8308**
B4 **5246**
B5 **1021**
C1 **6434**
C2 **9250**
C3 **14717**
C4 **16695**
C5 **10037**
C6 **5618**
C7 **5048**
D1 **5471**
D2 **11882**
D3 **24699**
D4 **42081**
D5 **23797**
D6 **11236**
D7 **6950**
E1 **1409**
E2 **10852**
E3 **30664**
E4 **59804**
E5 **39607**
E6 **10997**
E7 **6696**
E8 **4220**
F1 **2282**
F2 **8287**
F3 **22661**
F4 **33946**
F5 **25033**
F6 **12694**
F7 **5655**
F8 **3201**
G1 **12954**
G2 **11783**
G3 **8125**
G4 **8794**
G5 **6996**
H1 **3032**
H2 **1433**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

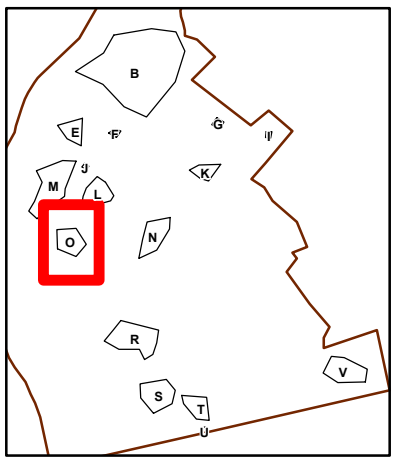
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area O
0-6' BGS

N

0 10 20 40
Feet

November 2019

A1 **5**
A2 **4**
A3 **3**
A4 **2**
B1 **5**
B2 **4**
B3 **4**
B4 **2**
B5 **0**
C1 **5**
C2 **5**
C3 **6**
C4 **5**
C5 **3**
C6 **2**
C7 **2**
D1 **5**
D2 **6**
D3 **7**
D4 **8**
D5 **6**
D6 **4**
D7 **3**
E1 **5**
E2 **6**
E3 **7**
E4 **8**
E5 **8**
E6 **5**
E7 **3**
E8 **2**
F1 **5**
F2 **5**
F3 **6**
F4 **6**
F5 **5**
F6 **4**
F7 **3**
F8 **2**
G1 **3**
G2 **2**
G3 **2**
G4 **2**
G5 **2**
H1 **1**
H2 **0**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

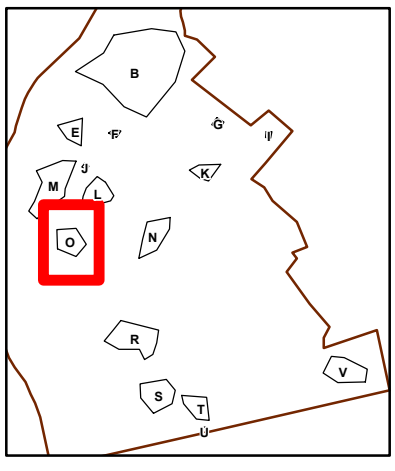
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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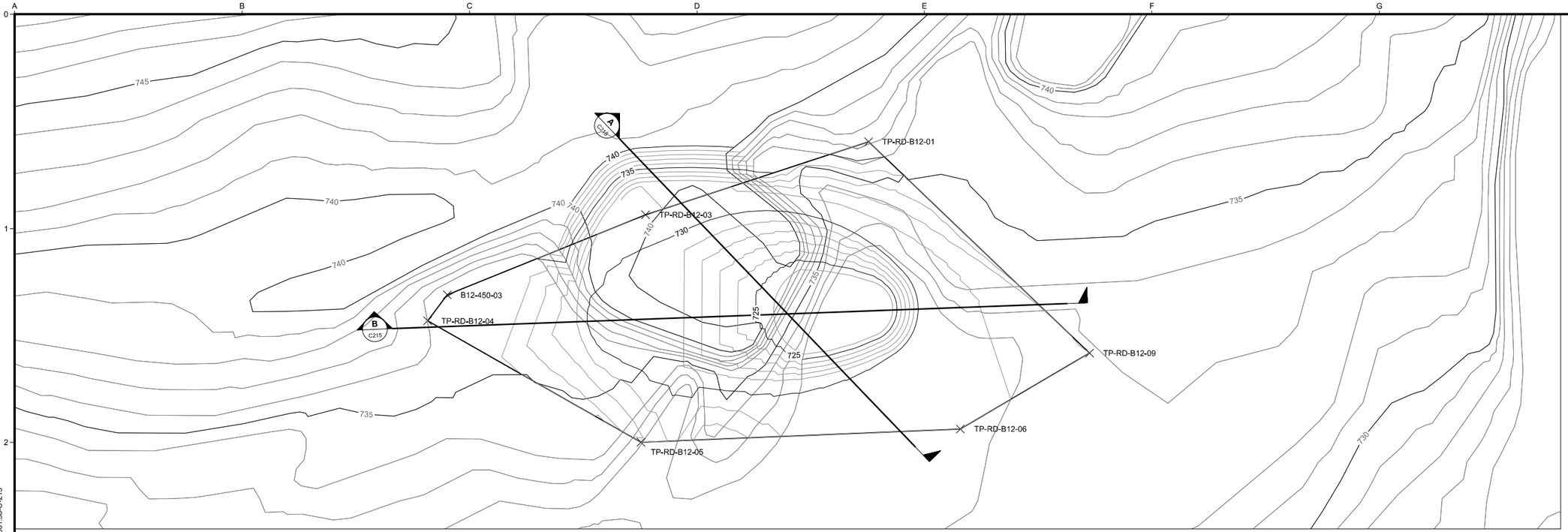
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area O
6-10' BGS

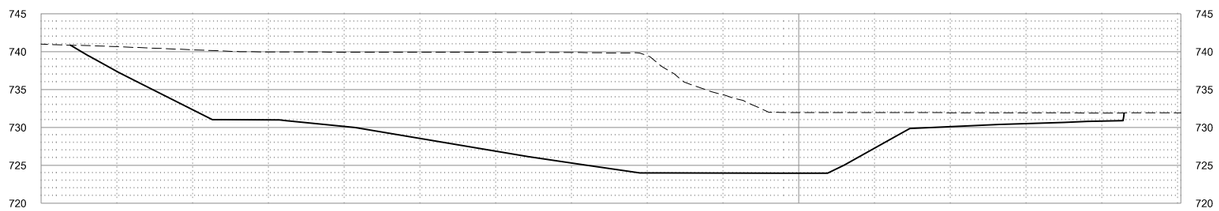
November 2019

N

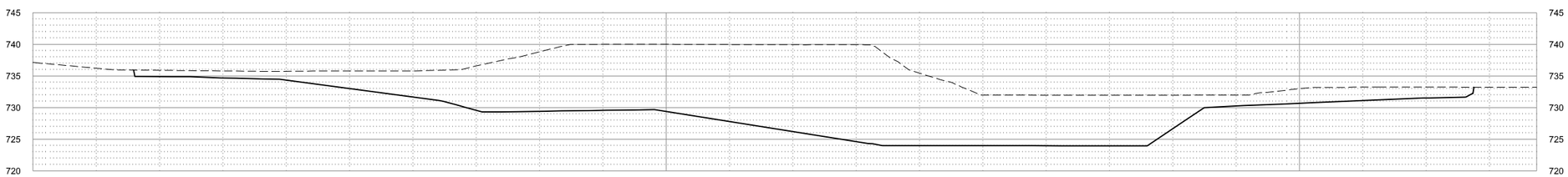
0 10 20 40
Feet



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B'

SECTION
SCALE: 1" = 20'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
N	3,896

0 20' 40'
1"=20'

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No. 35214
LICENSED PROFESSIONAL ENGINEER

DESIGNED BJR/DBB
DRAWN HCS
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KENVIL, ROXBURY TOWNSHIP, MORRIS COUNTY, NEW JERSEY
TNT AREA EXCAVATION, BLENDING & STAGING PLAN

Kennedy Jenks

AREA N EXCAVATION PLAN AND SECTION

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A1 **99**
A2 **132**
A3 **380**
A4 **384**
A5 **262**
A6 **78**
A7 **23**
B1 **415**
B2 **430**
B3 **630**
B4 **549**
B5 **295**
B6 **121**
B7 **75**
C1 **1159**
C2 **1112**
C3 **762**
C4 **871**
C5 **694**
C6 **272**
C7 **83**
D1 **991**
D2 **2135**
D3 **1734**
D4 **310**
D5 **564**
D6 **656**
D7 **266**
D8 **51**
E1 **1361**
E2 **3118**
E3 **3464**
E4 **1188**
E5 **590**
E6 **599**
E7 **409**
F1 **635**
F2 **1186**
F3 **2070**
F4 **2101**
F5 **1104**
F6 **731**
F7 **622**
G1 **494**
G2 **842**
G3 **1057**
G4 **698**
G5 **347**
G6 **423**
H1 **116**
H2 **361**
H3 **579**
H4 **364**
H5 **102**
I1 **77**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

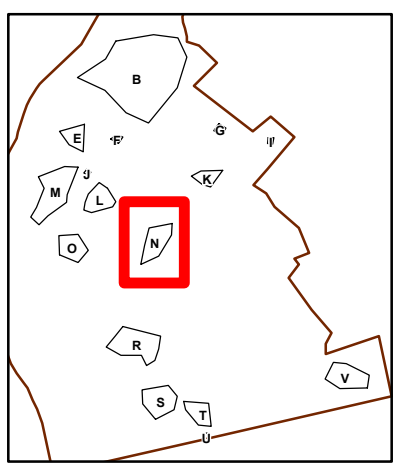
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area N
0-6' BGS

N

0 10 20 40
Feet

November 2019

A1 **1.784**
A2 **1.323**
A3 **1.239**
A4 **1.058**
A5 **1.012**
A6 **1.0225**
A7 **1.0235**
B1 **1.678**
B2 **1.1895**
B3 **1.0475**
B4 **0.901**
B5 **0.9095**
B6 **0.947**
B7 **0.988**
C1 **1.913**
C2 **1.502**
C3 **0.959**
C4 **0.7435**
C5 **0.7**
C6 **0.7635**
C7 **0.8415**
D1 **2.0295**
D2 **2.1445**
D3 **1.6595**
D4 **0.5165**
D5 **0.5425**
D6 **0.5865**
D7 **0.6405**
D8 **0.728**
E1 **2.1975**
E2 **3.479**
E3 **3.0725**
E4 **0.7835**
E5 **0.705**
E6 **0.6445**
E7 **0.6615**
F1 **2.1765**
F2 **4.5135**
F3 **5.383**
F4 **4.13**
F5 **1.6275**
F6 **1.35**
F7 **0.999**
G1 **2.2865**
G2 **2.773**
G3 **5.0245**
G4 **3.324**
G5 **1.965**
G6 **1.237**
H1 **1.1495**
H2 **1.6185**
H3 **3.0315**
H4 **1.766**
H5 **0.3555**
I1 **0.526**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

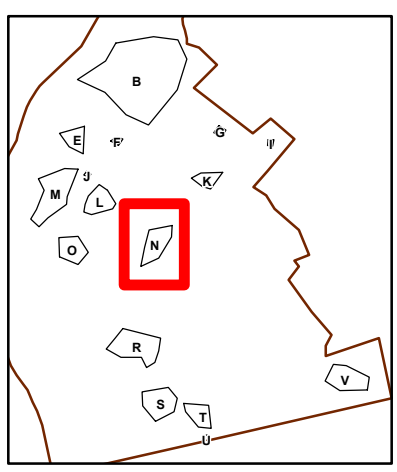
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



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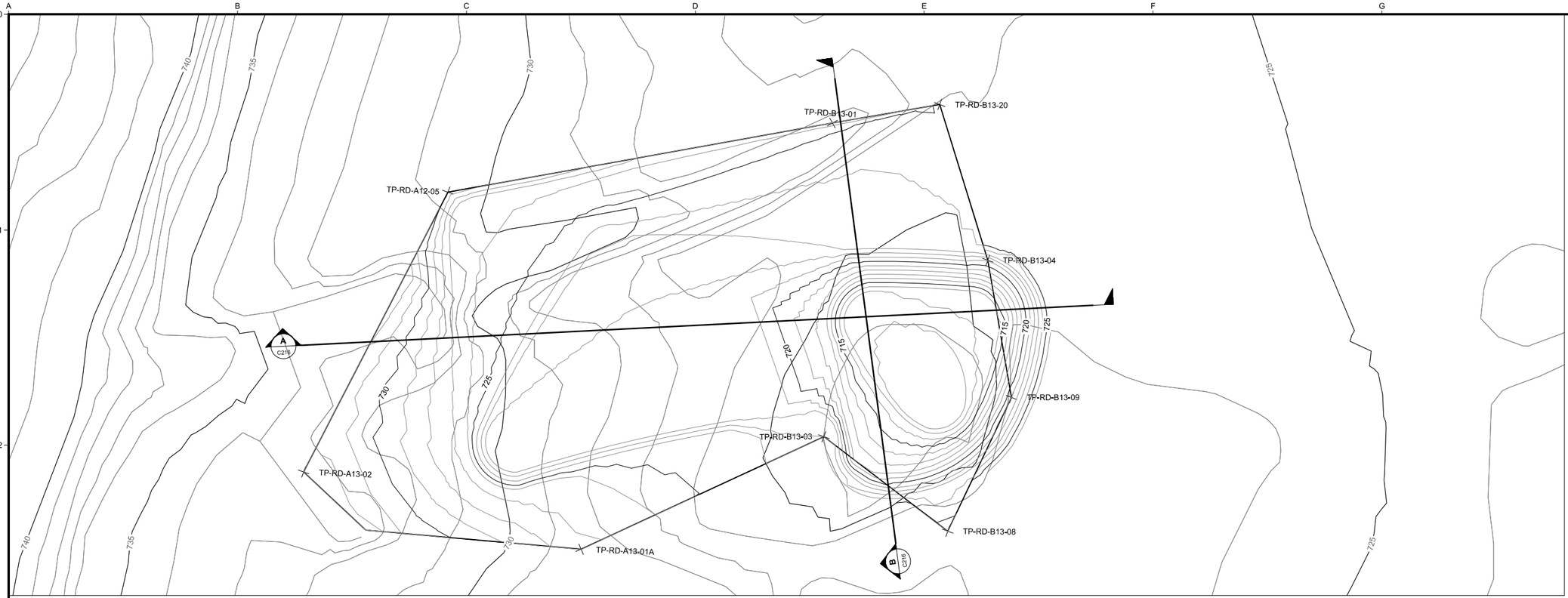
TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area N
6-10' BGS

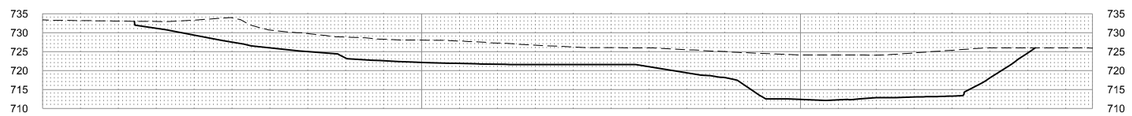
N

0 10 20 40
Feet

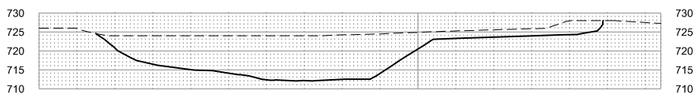
November 2019



PLAN
SCALE: 1" = 20'



SECTION A-A'



SECTION B-B'

ESTIMATED EXCAVATION QUANTITIES	
AREA	BCY
R	6,016

SECTION
SCALE: 1" = 20'

0 20' 40'
1"=20'

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TNT AREA EXCAVATION, BLENDING & STAGING PLAN

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AREA R EXCAVATION PLAN AND SECTION

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A1 **97**
A2 **85**
A3 **56**
A4 **102**
B1 **88**
B2 **67**
B3 **307**
B4 **189**
B5 **133**
B6 **312**
B7 **521**
C1 **29**
C2 **68**
C3 **207**
C4 **523**
C5 **239**
C6 **51**
C7 **255**
C8 **536**
C9 **900**
C10 **913**
D1 **8**
D2 **45**
D3 **68**
D4 **127**
D5 **118**
D6 **34**
D7 **41**
D8 **188**
D9 **573**
D10 **1075**
D11 **1505**
D12 **2565**
D13 **3089**
E1 **18**
E2 **47**
E3 **62**
E4 **70**
E5 **87**
E6 **68**
E7 **81**
E8 **345**
E9 **288**
E10 **363**
E11 **3386**
E12 **4689**
E13 **3790**
F1 **45**
F2 **44**
F3 **47**
F4 **80**
F5 **92**
F6 **85**
F7 **270**
F8 **310**
F9 **435**
F10 **1233**
F11 **1650**
F12 **1800**
G1 **15**
G2 **19**
G3 **68**
G4 **64**
G5 **54**
G6 **50**
G7 **250**
G8 **360**
G9 **715**
G10 **427**
H1 **56**
H2 **45**
H3 **32**
H4 **206**
H5 **406**
H6 **788**
H7 **603**
I1 **61**
I2 **136**
I3 **252**
I4 **215**
J1 **40**
J2 **47**
J3 **119**
J4 **142**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

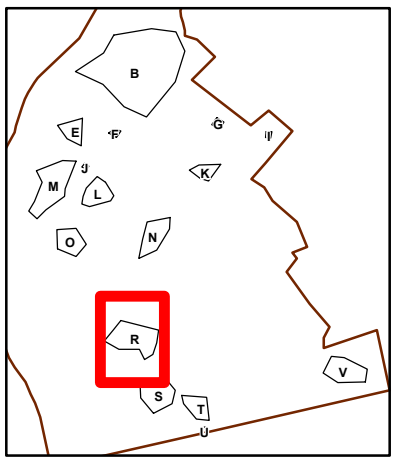
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area R
0-6' BGS

N

0 10 20 40
Feet

November 2019

A1 **6**
A2 **1**
A3 **1**
A4 **6**
B1 **7**
B2 **7**
B3 **5**
B4 **5**
B5 **8**
B6 **14**
B7 **15**
C1 **7**
C2 **8**
C3 **10**
C4 **9**
C5 **9**
C6 **4**
C7 **13**
C8 **16**
C9 **19**
C10 **9**
D1 **3**
D2 **8**
D3 **9**
D4 **12**
D5 **11**
D6 **10**
D7 **3**
D8 **18**
D9 **20**
D10 **14**
D11 **3**
D12 **1**
D13 **10**
E1 **6**
E2 **7**
E3 **9**
E4 **12**
E5 **14**
E6 **16**
E7 **17**
E8 **25**
E9 **17**
E10 **11**
E11 **14**
E12 **14**
E13 **15**
F1 **8**
F2 **7**
F3 **9**
F4 **12**
F5 **19**
F6 **28**
F7 **39**
F8 **28**
F9 **24**
F10 **33**
F11 **29**
F12 **20**
G1 **3**
G2 **3**
G3 **17**
G4 **20**
G5 **27**
G6 **36**
G7 **49**
G8 **140**
G9 **34**
G10 **21**
H1 **18**
H2 **16**
H3 **14**
H4 **24**
H5 **90**
H6 **12**
H7 **11**
I1 **8**
I2 **2**
I3 **21**
I4 **13**
J1 **8**
J2 **6**
J3 **7**
J4 **3**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

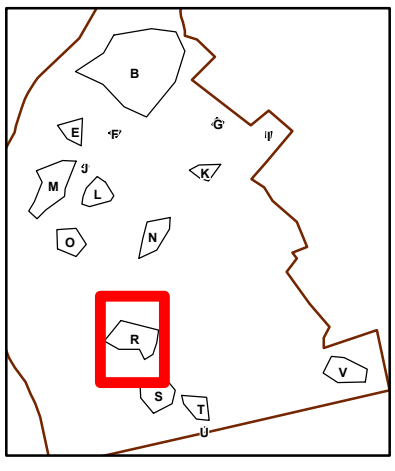
Legend

20x20 ft. Excavation Grids

TNT Project Area Boundary

C1
10

Cell Name
Average Concentration (mg/kg)



Kennedy Jenks

TNT Bioremediation - Excavation Planning
Hercules LLC Kenvil Works Facility
Morris County, New Jersey

Excavation Area R
6-12' BGS

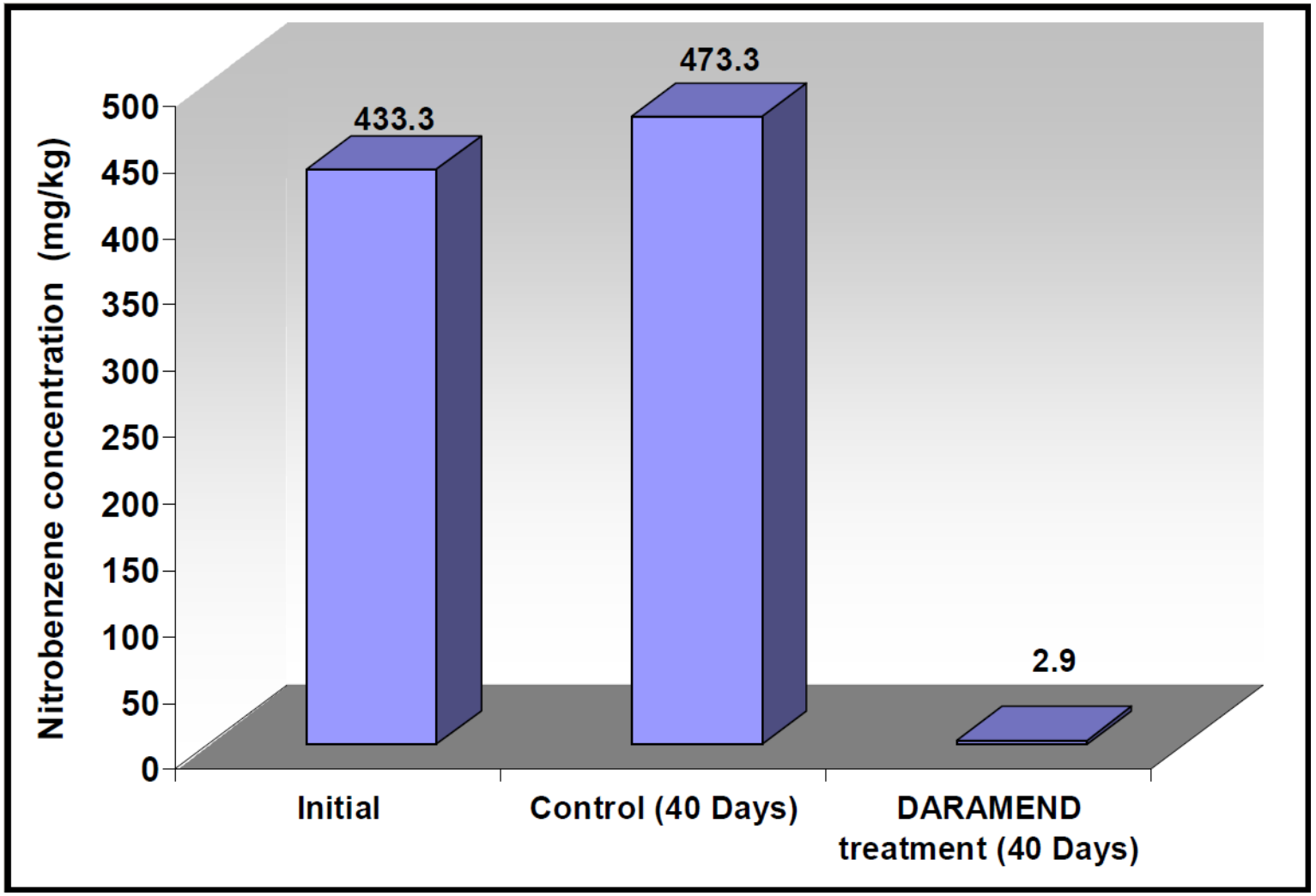
November 2019

N

0 10 20 40
Feet

Appendix H

Technical Performance Information – PeroxyChem's DARAMEND OE® and EHC®



Nitrobenzene Degradation via DARAMEND OE

Data graph provided by PeroxyChem (2019), excerpted from presentation titled *Influence of DARAMEND® on Nitrobenzene in Soil after 40 Days of Treatment*

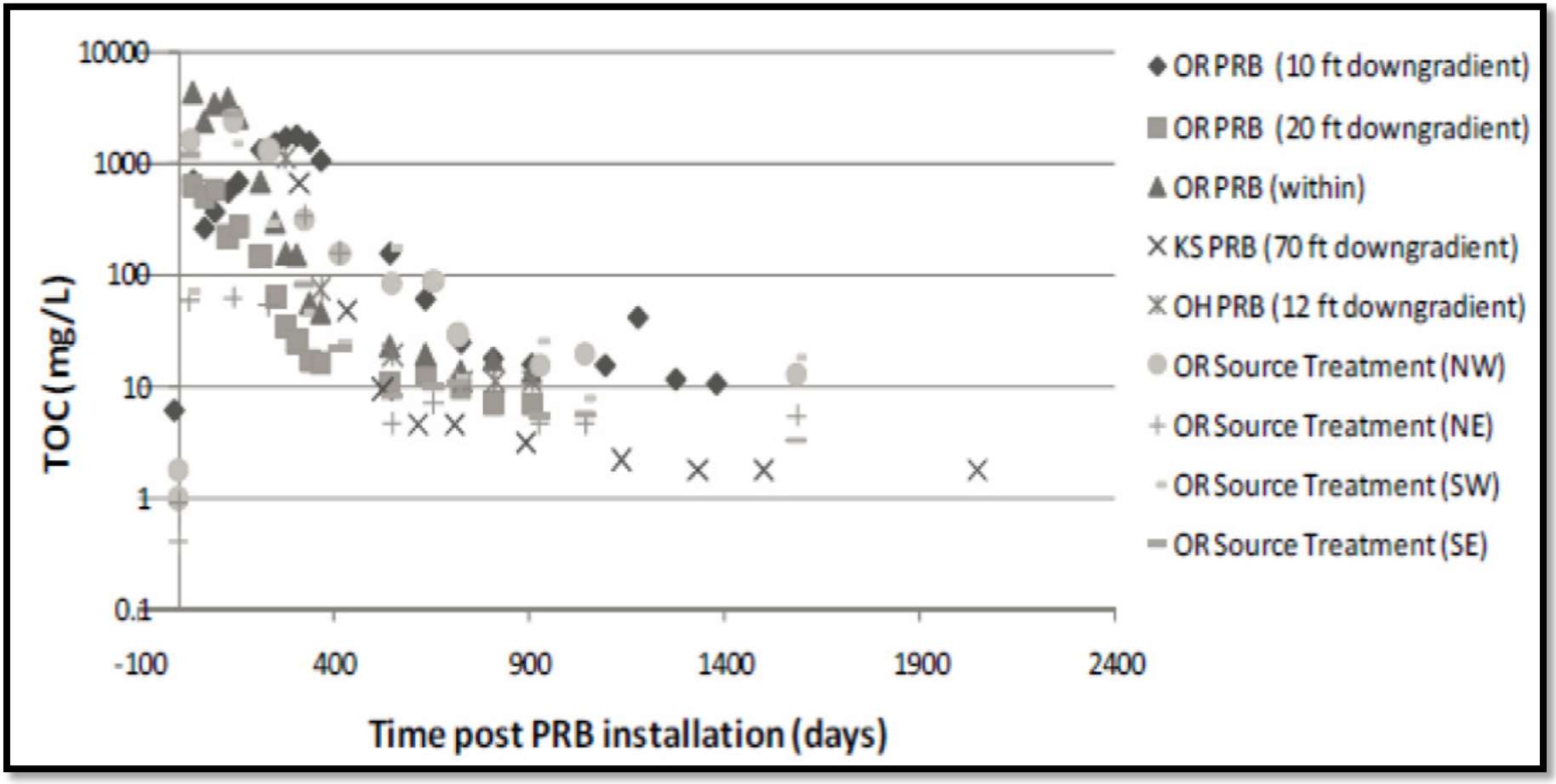
Table 1. Influence of DARAMEND treatment on nitroglycerin concentrations in soil from Expro

TREATMENT	NITROGLYCERIN CONCENTRATION (mg/kg)		
Time	Initial	14 days	56 days
CONTROL	538	877	275
PROTOCOL 1	538	< 10 [1]	< 5 [2]
PROTOCOL 2	538	< 10 [1]	< 5 [2]
PROTOCOL 3	538	< 10 [1]	< 5 [2]

Values from the 14-day analysis were single, composite samples from each treatment.
All other values are averages of triplicate samples.
1. Detection Limit was 10 mg/kg.
2. Detection Limit was 5 mg/kg.

Nitroglycerin Degradation via DARAMEND OE

Data provided by PeroxyChem (2019)



Organic Carbon Persistence Following EHC* Injection

*EHC is DARAMEND ground to a finer particle size to enable subsurface injection in a slurried form. Organic carbon substrates in DARAMEND expected to persist for similar (or longer) timeframe.

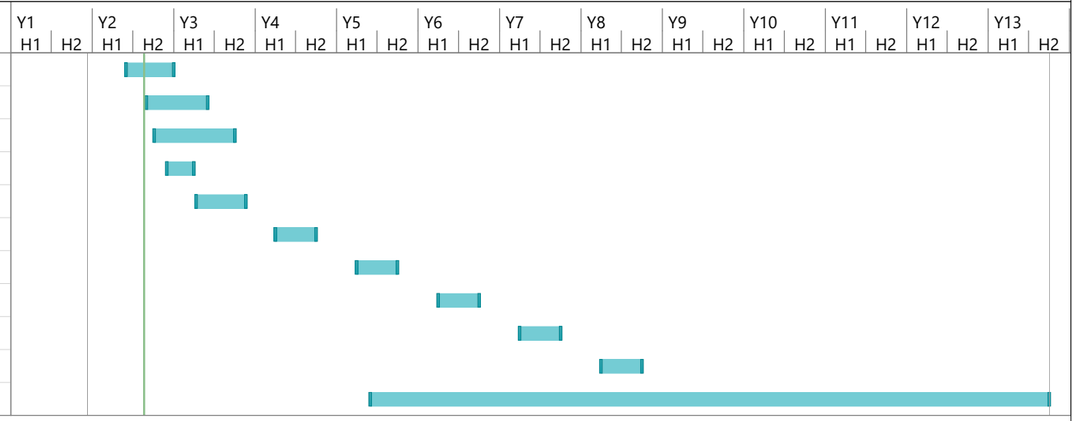
Data graph provided by PeroxyChem (2019).

Appendix I

Project Implementation Timeline

Appendix I - Project Implementation Timeline
TNT Project Area Soil Remedial Action Work Plan
Hercules LLC - Kenvil Works Facility

ID	Task Mode	Task Name	Duration	Start	Finish
1		Final Engineering Design	154 days	Mon 6/1/20	Thu 12/31/20
2		Regulatory Approvals/Permitting	197 days	Mon 8/31/20	Tue 6/1/21
3		Plant Construction	260 days	Mon 10/5/20	Fri 10/1/21
4		Bidding and Contracting	87 days	Tue 12/1/20	Wed 3/31/21
5		Site Preparation	161 days	Sun 4/11/21	Fri 11/19/21
6		Year 1 Operations (2 Bio Cells)	131 days	Fri 4/1/22	Fri 9/30/22
7		Year 2 Operations (5 Bio Cells)	132 days	Sat 4/1/23	Sat 9/30/23
8		Year 3 Operations (5 Bio Cells)	132 days	Mon 4/1/24	Tue 10/1/24
9		Year 4 Operations (5 Bio Cells)	132 days	Tue 4/1/25	Wed 10/1/25
10		Year 5 Operations (5 Bio Cells)	132 days	Wed 4/1/26	Thu 10/1/26
11		Long-Term Monitoring	2175 days	Thu 6/1/23	Wed 10/1/31



Project: Appendix J - Project Im
Date: Fri 8/21/20

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Appendix J

Waste Determination

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CASE MANAGEMENT
401 East State Street
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PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. McCABE
Commissioner

August 4, 2020

Edward D. Meeks, Remediation Project Manager
Hercules Research Center
500 Hercules Road, Building 8145
Wilmington, DE 19808

RE: RCRA Hazardous Waste Classification Request
TNT Bioremediation Remedial Action
Hercules LLC – Kenvil Works Facility
100 Howard Blvd., Roxbury Township
SRP PI # 000741
EPA ID No. (NJD002156925)

Hercules – Kenvil Works Listed K Waste Contained In/Out Determination Letter

Dear Mr. Meeks,

The New Jersey Department of Environmental Protection (Department) has completed a review of the RCRA Hazardous Waste Classification Request (dated July 1, 2020), submitted by Hercules LLC pursuant to: The Site Remediation Reform Act (N.J.S.A. 58:10C-1 et seq.), the Administrative Requirements for the Remediation of Contaminated Sites (N.J.A.C. 7:26C), the Technical Requirements for Site Remediation at N.J.A.C. 7:26E, and 40 CFR Part 261 as incorporated by reference in the Hazardous Waste Regulations at N.J.A.C. 7:26G Subchapter 5 – Hazardous Wastes from Specific Sources.

As identified in the referenced submission, Hercules manufactured 2,4,6-trinitrotoluene (TNT) at the Facility from 1917 to 1919. Site investigation and remedial investigation activities identified TNT and related breakdown products (2,4-dinitrotoluene and 2,6-dinitrotoluene [DNTs], and 2-amino-4,6-DNT and 4-amino-2,6-DNT [ADNTs], hereafter collectively referred to as "target constituents"), in soil and groundwater. TNT encountered during site reconnaissance and investigation is represented as solid crystalline material and is not associated with either pink/red water.

To address the target constituents, Hercules developed a remedy to address TNT source mass in soil and mitigate ongoing mass transfer to groundwater. The multi-phase remedy relies on physical grain size segregation to concentrate target constituent mass in the fine soil fraction and ex-situ bioremediation to degrade target constituent mass over a short period of time (~3 months)

to achieve NJDEP non-residential direct contact soil remediation standards. The treated material will be returned to the excavation where ongoing degradation will further reduce residual target constituent concentrations to meet NJDEP's impact to groundwater standards. Natural attenuation is occurring in groundwater, and absent a soil source, target constituent concentration reductions in groundwater are expected.

Hercules has evaluated the soil and water material streams associated with the proposed remedy in the context of RCRA waste regulations and USEPA regulatory interpretations (included as Exhibit A in the submission) and noted the following:

SOIL

- Soil containing target constituents do not represent a listed hazardous waste, as the soil does not meet the definition of any explosive manufacturing K-listing codes, and target constituents are not present as commercial chemical products and, therefore, do not meet the definition of a U-listed waste.
- Soil to be excavated exhibits an average (inverse distance weighted) TNT concentration of approximately 1,800 milligrams per kilogram (mg/kg). At these concentrations, the soil does not possess the reactivity characteristic per the RCRA definition established at 40 CFR 261.23. Soils containing more than 12 percent (120,000 mg/kg) secondary explosive (such as TNT) by weight can propagate a detonation (i.e., meet the definition of reactive). Maximum TNT concentrations identified in Facility soil do not exceed this threshold. Representative soil samples collected from known source areas were analyzed for RCRA Characteristics and did not exhibit the reactivity characteristic.
- SI/RI analytical data in project area soil samples were screened to identify constituents with concentrations unlikely to exceed a regulatory level (Maximum Concentrations of Contaminants for the Toxicity Characteristic, as presented in 40 CFR 261.24). Screening identified 2,4-DNT and lead at concentrations requiring Toxicity Characteristic Leachate Procedure (TCLP) analysis to support waste characterization. Thirteen representative composite samples, each consisting of 5 discrete samples and representing 100 cubic yards of material (20 cubic yards per discrete grab), from the areas of highest target constituent and lead concentrations analyzed via the TCLP identified lead at one location at a leachate concentration exceeding the regulatory level. Soil from this area will be managed separately during TNT Bioremediation project implementation (e.g., offsite disposal as a D008 characteristic hazardous waste).

The Department agrees that based on the information provided, soil excavated in association with the TNT bioremediation project, other than those previously characterized as a D008 hazardous waste, would not be regulated as a listed or other characteristic hazardous waste.

WATER

- Process water used during TNT bioremediation activities will originate from potable water wells, and is not associated with former TNT manufacturing operations.
- Bioremediation process water recirculated between the soil processing plant, bio cells, and water storage basins would not be considered a regulated waste stream until water use ceased at the conclusion of the remediation project.

- Based on the definition of K047 waste provided in the Federal Register, which incorporates the definition provided in the May 1980 background document (EPA 1980) via reference with the waste code adoption, the process water would not constitute a K047 waste because it was not associated with the production and formulation of TNT and TNT containing formulations and products.
- Based on the definition of K111 waste provided in the Federal Register, the bioremediation process water would not constitute a K111 waste because it was not a product wastewater generated during the production of DNT via the nitration of toluene.

The Department agrees that based on the information provided, the process water would not be a listed hazardous waste. Analysis of the bioremediation process water waste stream for RCRA Characteristics would be appropriate to assess whether it represents a regulated hazardous waste based on the reactivity or toxicity characteristic(s) when managed to disposal.

The Department agrees with the findings and recommendations in the subject submission and has determined that the RCRA Hazardous Waste Classification Request (dated July 1, 2020), is in compliance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E and other applicable requirements. The Department hereby approves the RCRA Hazardous Waste Classification Request (dated July 1, 2020), effective the date of this letter.

If you have any questions regarding this correspondence, please feel free to reach me by phone at (609) 984-4079, or email at *Marianna.Cosentino@dep.nj.gov*.

Sincerely,

Marianna Cosentino
RCRA Remediation Coordinator
Bureau of Case Management

cc: Zafar Billah, DEP – DS&HW
Nidal Azzam, EPA – RCRA Section
Stephen Maybury, NJDEP - BCM

Attachments

Attachment 1

Technical Memorandum – Evaluation of Alternatives for Separation of TNT from Soil

ARCADIS U.S., Inc.
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www.arcadis-us.com

ENVIRONMENT

Mr. Edward D. Meeks
Ashland Incorporated
Ashland Hercules Research Center
500 Hercules Road
Building 8139/7
Wilmington, DE 19808-1599

Subject:
Technical Memorandum – Evaluation of Alternatives for Separation of TNT from Soil
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Date:
February 22, 2013

Contact:
Scott Larew

Phone:
609.860.0590 x247

Email:
Scott.Larew@
Arcadis-us.com

Our ref:
NJ004000.NJ63

Dear Mr. Meeks:

On behalf of Hercules Incorporated (Hercules), ARCADIS prepared this technical memorandum to evaluate technical approaches for separation of 2,4,6-trinitrotoluene (TNT) particles from soil and recommend a path forward for the development and application of the chosen technology at the former Hercules Kenvil Works Facility (the site) located in Kenvil, Morris County, New Jersey.

Introduction

The site manufactured components of explosives and energetic (E&E) for more than 100 years. During this time, operational process failures (e.g., fires, explosions, spills) resulted in the release of E&E compounds to soil. Erosion and other natural process have mobilized E&E constituents into other environmental media at the site (e.g., groundwater).

Through the site investigation process, Hercules has developed a conceptual site model that defines the magnitude and extent of E&E impacts, specifically TNT and its associated breakdown products (dinitrotoluenes [DNTs] and amino-DNTs). Residual solid-phase TNT in surface and shallow subsurface soil in former operational areas of the site serves as an ongoing source to groundwater. The biodegradation of TNT and its breakdown products in groundwater is being studied at the site, and the results indicate that natural biodegradation will be sufficient to address groundwater impacts attributable to TNT and its breakdown products, contingent upon the removal of the source material in unsaturated soil that leaches to groundwater. Residual TNT

material in a solid crystalline form exists in site soils across a range of grain sizes, from masonry brick-sized chunks to fine particles similar to sand and silt. These source materials need to be segregated and removed from the soil matrix to eliminate the TNT mass in soil that represents an ongoing source to groundwater. Removal of the mass, particularly the particles with a low surface area to volume ratio, will effectively reduce the duration over which biodegradation will need to occur to meet applicable groundwater quality remediation goals.

As such, the primary treatment objectives for technologies being considered are:

- Remove solid-phase TNT mass (e.g. nodules) from overburden soils
- Provide clean soil fractions suitable for on-site backfill at reasonable cost of implementation
- Prepare remaining soil fractions for further treatment via biodegradation (if necessary)

Identification and Evaluation of Alternatives

Soil remediation technologies vary widely in technical approach and remediation endpoint. A survey of publically-available literature, case studies and regulatory documents was used to identify remedial technologies potentially applicable to TNT and the site setting. Attachment 1 presents a list of citations and sources used to develop the list of technologies and support the evaluation.

The survey identified the following technology types and approaches for consideration:

- Excavation and Offsite Disposal
- In-situ Stabilization
- Ex-situ Thermal Treatment
- Ex-situ Composting (Biofarming)
- Ex-situ Physical and Density Separation

Attachment 2 provides a matrix that evaluates each technology type in the categories listed above: The table below summarizes the results of the evaluation. In some cases, the approaches evaluated represent categories that may encompass multiple remedial technologies. Where applicable, the differences among individual technologies are noted in the matrix (Attachment 2).

The following table summarizes the technologies evaluated.

Technology	Effectiveness	Implementability	Cost	Comments
Excavation & Disposal	H	M-H	H	Traditional technique, costly, material may require additional treatment (i.e., stabilization) to meet disposal facility acceptance requirements
Stabilization\ Solidification	L-M	L-M	M	Stabilization of TNT difficult, bulking process increases disposal volumes, potential impacts to soil bio/geochemistry and biodegradation processes
Thermal Treatment	M	M	H	Costly, requires physical manipulations to size feed material, difficulty treating moist soils (e.g., red water lagoon area)
Composting	L	H-M	H-M	Ineffective for solid-phase crystalline TNT
Physical and Density Separation	H	H	M	Minimizes volume of material disposed of offsite, high production rate, low operating costs, flexible endpoint compliments biodegradation work completed to date

L – Low, M – Moderate, H – High

Conclusions

Based on the matrix evaluation, ex-situ Physical and Density Separation provides a scalable, cost-effective solution that meets the primary treatment objectives stated above.

The remainder of this memorandum outlines a conceptual approach to removing TNT from soil using Physical and Density Separation processes.

Physical Separation Conceptual Approach

The overall objective of the Physical and Density Separation process will be to remove TNT mass (primarily in the crystalline solid phase) from soil to meet at a minimum NJDEP industrial standards for TNT and other secondary contaminants such that unsaturated overburden soils do not continue to influence dissolved phase TNT concentrations in groundwater.

The Physical and Density Separation process would achieve the following:

- Remove solid-phase TNT mass (e.g. nodules) from overburden soils including gravel, sand and silt with particle size greater than 0.040 millimeters (mm)

- Isolate fine soil fraction less than 0.040 mm, and prepare for further treatment via biodegradation (if necessary)

A treatment process achieving these goals will generate a number of residual product streams, including oversized material (>2.4 mm), sand (2.4 mm down to 0.040 mm), filter cake (fine material less than 0.040 mm), and TNT concentrate. Typical removal efficiencies associated with this treatment technology yield near-complete removal of TNT from the oversized and sand fractions, and once optimized, may achieve NJDEP regulatory standards for TNT-related constituents in the filter cake material as well. Under these circumstances, treated soil fractions would be homogenized and returned to the excavations as backfill. The TNT concentrate would require offsite destruction (i.e., incineration). In the event that the filter cake fraction does not meet applicable regulatory standards, multiple secondary options exist. These options include, but are not limited to, blending with larger grain size residual product streams to reduce mass TNT per unit volume and created acceptable backfill material, short-duration biofarming onsite to achieve additional reductions in TNT concentrations, or offsite disposal.

Understanding that the DuPont/Georgia Tech research team has shown that natural biodegradation will address residual leachable TNT concentrations, coordination with this research team will be required to identify what particle size and/or residual TNT concentration in soil will be treatable via natural biodegradation over the target timeframe.

The following section presents a conceptual plan outlining the components and a process train associated with a Physical and Density Separation approach to removing TNT from site soil.

Physical and Density Separation Processes

A conceptual process flow diagram for Physical and Density Separation Process is provided as Attachment 3. The Physical and Density Separation Process is a closed-loop, water-based process consisting of a combination of physical processes including wet screening, fines separation, density separation, flotation and dewatering. Details of the process will be determined in the proposed treatability study.

Technical and Feasibility Considerations

During a December 2012 site visit, Hercules provided an overview of the source areas, site infrastructure, and conceptual timeline for remedial action implementation. Based on the information obtained at this site visit and during subsequent discussions with Hercules regarding the physical separation approach, the following observations related to the technical feasibility of implementing such a remedy onsite were made.

- Source areas readily accessible and target material is shallow
- Site provides infrastructure appropriate for onsite treatment plant construction and operation
- Physical characteristics of site soil and TNT nodules are amenable to physical and density separation processes
- Estimated source material volume results in competitive estimated per ton treatment costs
- Cooperative agreement with DuPont and Georgia Tech offers other opportunities to adapt treatment technology to other sites, further reducing the per ton cost of treatment

Coordination with DuPont and Georgia Tech Remedial Research

The biodegradation work being done by DuPont and Georgia Tech indicated that the success of biodegradation is dependent on concentrations and size of TNT particles.

The optimum remediation approach using any combination of Physical and Density Separation treatment and biotreatment for the filter cake as a complete treatment train will be explored and coordinated with DuPont and Georgia Tech.

Treatability Study Plan

A treatability study is recommended to prove out and develop the conceptual approach presented herein. The testing would serve as a bench-scale proof of concept and identify where scaling factors are needed to design an implementation-scale treatment process.

The scope and objectives of the treatability study would be presented in a treatability study plan. The plan would include a field sampling plan, outlining the procedures for collecting representative materials from across the source areas defined onsite in proportional quantities. The study plan would also include project elements such as identifying quantities of material that trigger shipping/handling/management requirements, and listing how the study activities will comply with applicable federal, state and local regulations governing the transport and processing of material containing listed E&E constituents.

The study plan would detail the different separation techniques used in the laboratory to process the material collected in the field and separate it into the various process streams outlined in the Attachment 3. Bench-scale tests would identify effective processes, and those that may need to be refined as part of scaling the design up to full scale. Laboratory testing requirements, parameters, methods and frequencies will be established in the study plan, such that the TNT removal efficiency and constituent concentrations in each process stream can be identified. In addition, the bench-scale testing will generate sufficient quantities of each process stream (e.g., > 0.040 mm, <0.040 mm, TNT concentrate) to enable appropriate biodegradation testing by DuPont and Georgia Tech, and characterization for those parameters needed for transportation and disposal of the TNT concentrate.

Given the innate link between the bench-scale testing associated with the physical separation and the biodegradation work that DuPont and Georgia Tech are conducting, frequent communication between the two project teams will be required as separation techniques and processes are refined and the results of laboratory testing are evaluated.

Summary

An evaluation of potential remedial technologies capable of removing solid TNT mass from soil identified a physical and density driven separation process as the most appropriate based on the scalability, flexibility and adaptability of the processes used to separate the materials, and the ability to minimize the volume of material requiring offsite disposal (incineration of the TNT concentrate).

A conceptual process flow diagram was developed to illustrate the various techniques and processes used to separate the heterogeneous source material into a number of homogenous process streams from which TNT material would be removed. Removal efficiency from material down the 0.040 mm would result in material able to be used as backfill onsite. Proof of concept testing and refinement would identify the removal efficiency and TNT concentration remaining in the material less than 0.040 mm in size, and identify the most efficient and effective treatment method to reach appropriate performance standards.

Overall, the information compiled to date indicates that process-specific and site-specific conditions are well-suited for the conceptual approach outlined above and that the capabilities of this technology meet, and in many cases exceed, the preliminary performance standards discussed with Hercules. Based on the information contained herein, the ARCADIS and ART Engineering LLC (ART) team recommend the development of a treatability study plan and initiating discussions with the DuPont and Georgia Tech research team.

ARCADIS and ART appreciate the opportunity to support Hercules on this project and look forward to working together through the development and implementation of this remedy.

Sincerely,

ARCADIS U.S., Inc.

Scott Larew
Project Manager

Copies:
Jay Reid – ARCADIS
David Liles – ARCADIS
Carl Seward – ART
Erik Groenendijk – ART

ATTACHMENT 1. References
Former Hercules – Kenvil Works Facility
Kenvil, New Jersey

Channel, M. 1996. *Solidification/Stabilization of Metals and Explosives in Soils*. Prepared for the United States Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS. WES Technical Report EL-96-4.

Craig, H. and W. Sisk. 1994. *The Composting Alternative to Incineration of Explosives Contaminated Soils*. EPA 542-N-94-008. November 1994.

Dermont G., M. Bergeron, G. Mercier, M. Richer-Lafleche. 2008. *Soil washing for metal removal: a review of physical/chemical technologies and field applications*. J Hazard Mater. 2008 Mar 21;152(1):1-31. Epub 2007 Oct 22.

Funk, S.B., D.J. Roberts, D.L. Crawford, and R.L. Crawford. 1993. *Initial-Phase Optimization for Bioremediation of Munition Compound-Contaminated Soils*. Applied and Environmental Microbiology. July 1993, Vol. 59, No. 7 p. 2171-2177.

Ghosh, U., R.G. Luthy. Undated. *Microscale Characterization of the Location and Association of TNT in Soils*. Stanford University – Department of Civil and Environmental Engineering. Funded by United States Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.

Hansen, Lance D., S.L. Larson, J.L. Davis, J.M. Cullinane, C.C. Nestler, and D.R. Felt. 2003. *Lime Treatment of 2,4,6-Trinitrotoluene Contaminated Soils: Proof of Concept Study*. United States Army Corps of Engineers – Engineer Research and Development Center. ERDC/EL TR-03-15. September 2003.

Lenke, H., J. Warrelmann, G. Daun, K. Hund, U. Sieglen, U. Walter, and H-J Knackmuss. 1998. *Biological Treatment of TNT-Contaminated Soil. 2. Biologically Induced Immobilization of the Contaminants and Full-Scale Application*. Environ. Sci. Technol. 1998, 32, 1964-1971.

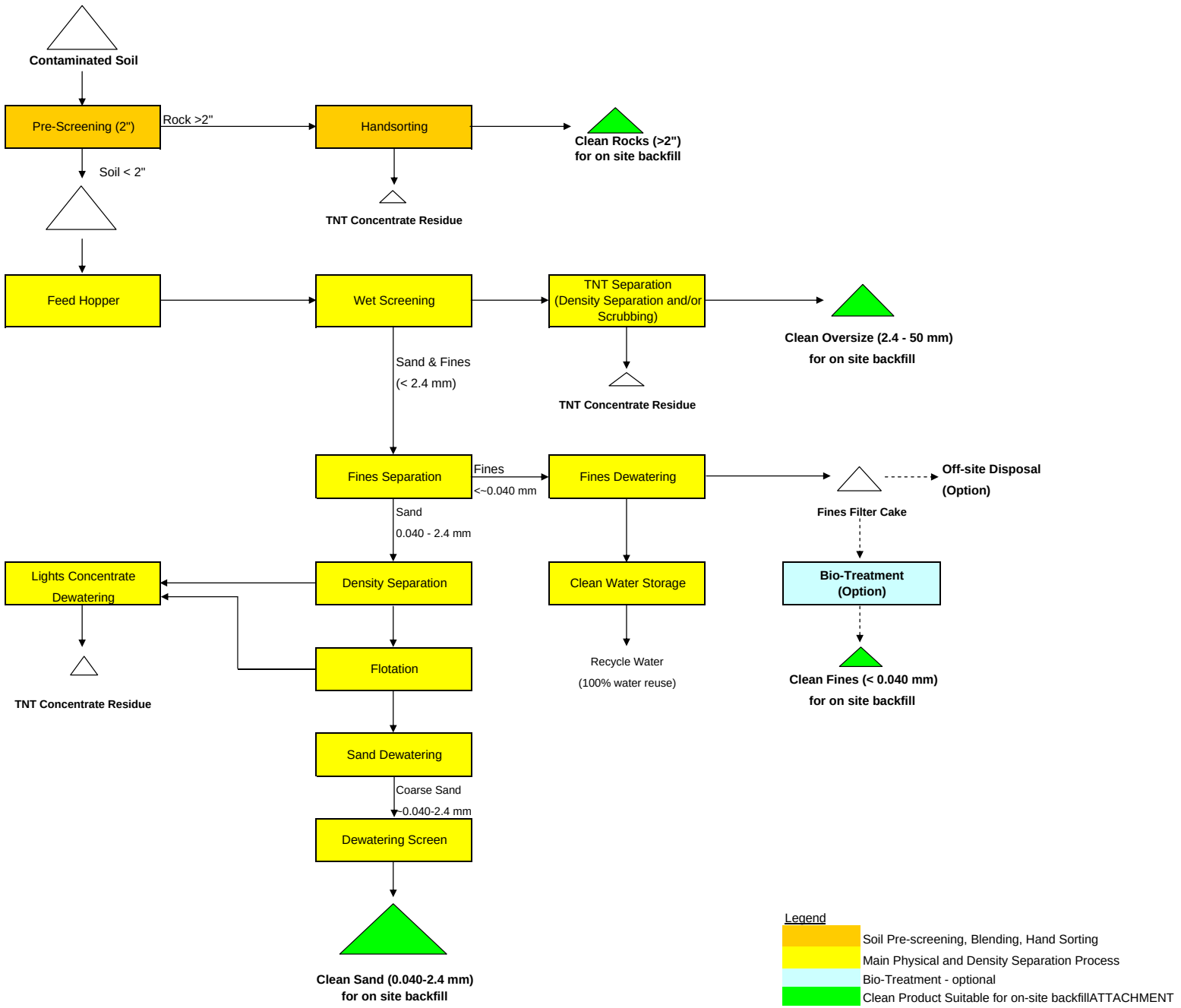
Van Deuren, Julie; T. Lloyd, S. Chhetry, R. Liou and J. Peck. 2002. *Remediation Technologies Screening Matrix and Reference Guide, Version 4.0.* SFIM-AEC-ET-CR-97053. Federal Remediation Technology Roundtable. January 2002.

ATTACHMENT 2. Remedial Alternative Screening
Former Hercules - Kenvil Works Facility
Kevil, New Jersey

Remedial Technology	Technology Overview	Effectiveness Evaluation		Implementability Evaluation		Relative Cost Evaluation		Site-Specific Pros & Cons
Excavation and Offsite Disposal	Mechanical removal of soil matrix and associated constituents to a target depth and extent. Excavations would be backfilled with certified clean fill material. Excavated material would be transported via truck to an appropriately licensed offsite disposal facility, or an offsite recycling facility for treatment and reuse by accepting facility.	High	- Permanently reduces the mobility, toxicity, and volume of constituents in soil by removing them from the site - Backfill material permeability can be selected to match biodegradation test environment conditions - Effective at addressing both solid-phase and residual product in soil	Moderate-High	- Excavation utilizes standard construction equipment and methods - Landfilling is a proven and accepted disposal technology - Transportation requires DOT profile - Additional measures (e.g. stabilization or pre-treatment) may be required to meet disposal facility acceptance criteria.	High	- Moderate to high capital costs depending on depth and volume - Disposal costs are dictated by volume and waste classification results (i.e., hazardous or non-hazardous) - Additional expenditures associated with testing and procurement of backfill material - Additional costs associated with any pre-treatment necessary to meet facility acceptance criteria.	PRO: - Complete contaminant removal, eliminates need to rely on percolation and biodegradation to treat TNT and breakdown products in soil in excavated areas CON: - Backfill permeability and geochemistry may alter the subsurface conditions and impact biodegradation processes. - Results in clean surface interval only, residual material at depth left in place and still requires deed restriction
Stabilization/Solidification	In-situ blending of one or more stabilizing agents with the impacted overburden soil to form a monolithic structure that negates or minimizes contaminant leachability and eliminates receptor contact. Ex-situ stabilization commonly used to stabilize soils containing E&E constituents, used in conjunction with traditional disposal techniques	Low-Moderate	- Permanently reduces the mobility and toxicity of constituents in soil - E&E compounds may be difficult to immobilize via standard ISS methods, requires amendment to mixture (Channel 1996). - Variations include amending soil with lime to raise pH to 11 or greater and rapidly degrade TNT in-situ (Hansen et al. 2003) to address dissolved/sorbed fractions	Low-Moderate	- May be difficult to implement because of infrastructure - Existing debris may require additional activities or preclude stabilization in all areas, ex-situ pre-treatment may be required	Moderate	- High capital cost associated with in-situ mixing - Additional costs associated with management and disposal of excess/off-spec material - Process scalable, low-cost bench-scale testing used to develop process in lieu of field pilot testing - Ex-situ stabilization only costs (ex-situ) ~$70 (excl. disposal) to $200 (incl. disposal) per cubic yard (cy) (Channel 1996, Van Deuren et al. 2002)	PRO: - Complete contaminant removal, eliminates need to rely on percolation and biodegradation to treat TNT and breakdown products in soil in excavated areas - Results in material volume increase ranging from 20 to 100 percent depending on stabilizing agents used; material may be suitable for use as fill elsewhere onsite CON: - Creates an impermeable monolithic feature in areas where surface-water infiltration/percolation facilitates biodegradation of TNT in groundwater - Results in material volume increase ranging from 20 to 100 percent depending on stabilizing agents used; offsite disposal or additional - Alternative in-situ treatment (i.e., liming) would alter soil geochemistry and likely impact
Ex-Situ Thermal Treatment (Incineration)	Mechanical excavation of soil matrix and associated constituents to a target depth and extent. Excavated material stockpiled and incinerated in an incinerator plant constructed onsite. Combustible materials (e.g., organic compounds) destroyed via incineration. Remaining mineral soil and inorganic material available for reuse.	Moderate	- Permanently reduces the mobility, toxicity, and volume of certain constituents in soil via thermal destruction - Effective at reducing organic constituent concentrations (i.e., E&E, PAHs) - Ineffective for treatment of inorganic constituents (i.e., metals) - Effective at addressing both solid-phase and residual product in soil - Treated material can be reused onsite	Moderate	- Standard technology that is readily available, limited number of USEPA-approved portable incinerators - Air discharge permitting required, permit conditions may limit effectiveness and/or efficiency - Limitations associated with material feed size and handling requirements, may require pre-treatment - Transportation to offsite incinerator vs. mobilization of portable incinerator to site	High	- High capital and operating and maintenance costs associated with fuel and equipment - $800 to $2,500 per cy (Channel 1996, Van Deuren et al. 2002)	PRO: - Space available onsite for construction of treatment plant - Enables reuse of treated material as backfill onsite CON: - Soil from Red Water Lagoon area will have high moisture content, increasing thermal input needed to dry the material then consume the organics - consume time and resources (fuel) incinerating large crystalline TNT nodules, effective treatment may require physical manipulation of source material to segregate by particle size - availability of fuel, site serviced by natural gas?
Ex-Situ Composting (Biofarming)	Mechanical excavation of soil matrix and associated constituents. Material stockpiled in windrows. Relies on natural breakdown of constituents by biotic (e.g., microorganism metabolism) and abiotic (e.g., photodegradation) processes. Active treatment of piles (e.g., aeration, watering) required to facilitate breakdown processes.	Low	- Permanently reduces the mobility, toxicity, and volume of constituents in soil - Degradation process creates contaminant daughter/breakdown products - Effective at reducing sorbed and dissolved phase organic constituent concentrations - Ineffective for treatment of large solid phase particles with low surface area to volume ratios	High - Moderate	- Proven technology for target constituents - Requires pretreatment (i.e., removal of large particles) - Requires large areas of open space	High - Moderate	- Costs commensurate with amount of pre-treatment and/or soil handling required - Procurement costs associated with selected amendment (alfalfa, wood chips, etc.) - Potential cost associated with handling/disposal of excess material, composting increases material volume by 50-100% (Craig and Sisk 1994) - Approximately $350 to $500 per cy (Channel 1996, Van Deuren et al. 2002)	PRO: - Space available onsite for stockpiling and manipulation - Enables reuse of treated material as backfill onsite CON: - Ineffective/time consuming for treatment of crystalline TNT nodules - effective treatment may require physical manipulation of source material to segregate by particle size - Relies on amendments that increase final volume of treatment material, excess material remains following backfilling - Toxicity of concentrated TNT (i.e., solid nodules) may inhibit microorganism activity (Ghosh and Luthy)
Ex-Situ Physical Separation (Soil Washing)	Mechanical excavation of soil matrix and associated constituents. Material sorted, sized and separated by physical manipulations in a plant constructed onsite. Based on proven mineral process and mining technologies. Relies on differences in physical material properties (e.g., density, grain size) to separate and concentrate TNT mass from soil fraction. Treated soil available for reuse (some fractions may require additional treatment), TNT concentrate disposed of offsite via incineration.	High	- Permanently reduces the mobility, toxicity, and volume of TNT in soil by removing it from the site. - Treated soil fractions can be reused. - Requires additional steps to address concentrated TNT (e.g., incineration, disposal)	High	- Technology frequently used and commercially available - Requires treatability testing to optimize effectiveness and process details - High production rate compared to other ex-situ treatment options (i.e., thermal)	Moderate	- Moderate capital costs, low operating costs (Dermont et al.) - Process scalable, low-cost bench-scale testing used to develop process in lieu of field pilot testing - $50 to $150 per cy (Van Deuren et al. 2002)	PRO: - Space available onsite for stockpiling and treatment plant - fast remedy, high production rate (~50 tons per hour) - Enables reuse of treated material as backfill onsite - Volume reduction technology, concentrates TNT to minimize volume of material requiring incineration/disposal - Similar processes would be required to pre-treat site soils ex-situ in conjunction with other remedies evaluated - complimentary to the bioremediation approach for sorbed and dissolved phase constituents CON: - Volume reduction technology, certain process streams (e.g., filter cake, wash water) may require additional treatment of residual and dissolve phase constituents.

ATTACHMENT 3 - Conceptual Full-Scale Physical and Density Separation Soil Processing Block Flow Diagram
Former Hercules - Kenvil Works Facility
Kenvil, New Jersey

ARCADIS / ART Engineering LLC
January 2013



Attachment 2

TNT Soil Separation Treatability Study Report

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Subject:
TNT Soil Separation Treatability Study Report
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

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November 21, 2013

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Mr. Meeks:

On behalf of Hercules Incorporated (Hercules), the ART Engineering LLC (ART) and ARCADIS team prepared the attached *Soil Separation Treatability Study Report* (the report) presenting the results of the treatability testing conducted between June and October 2013. The treatability study evaluated the feasibility of separating 2,4,6-trinitrotoluene (TNT) from soil at the former Hercules Kenvil Works Facility located in Kenvil, Morris County, New Jersey (the site). Consistent with the *Treatability Study Work Plan* (ART and ARCADIS 2013a), testing focused on multiple physical separation processes to develop a treatment process capable of achieving an 85 percent TNT mass removal target.

Following the completion of Round 1 testing outlined in the *Treatability Study Work Plan* (ART and ARCADIS 2013a), the ART and ARCADIS team proposed supplemental study of treated soil using oxidation to further reduce target constituent (TNT and 2,4-dinitrotoluene [DNT]) concentrations in an effort to meet the New Jersey Department of Environmental Protection's (NJDEP's) Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS). The scope and objectives of the oxidation study were outlined in an August 23, 2013 scope of work.

The attached report presents the results of both the physical separation testing as well as the supplemental oxidation testing. In brief, the report indicates the following:

- Physical separation is an effective method of separating solid phase TNT from site soil

- Separation efficiency for sand and coarser fractions exceeds the 85 percent target

- Oxidation treatment of sand and fines fractions achieves target constituent concentrations at or less than NRDCSRS

Individual treatment processes tested and selected to achieve these results balanced effectiveness and scalability to the field (e.g., operational costs, reliability, and production rate). For instance, where two techniques or processes were effective at achieving the target, the chosen option was the one that would most efficiently achieve similar results at full scale.

Based on the findings of the treatability testing, the report recommends three options for full-scale treatment. Each of the three options relies on the physical separation treatment process developed during treatability testing and achieves the 85 percent removal objective. Options 2 and 3 build upon the end result of Option 1 to attain target constituent levels at or below the NRDCSRS for certain fractions via oxidation.

These options include:

- Option 1: Physical Separation, including oversize grinding and sand treatment using attritioning and flotation

- Option 2: Option 1 with Chemical Oxidation of Sand Fraction

- Option 3: Option 1 with Chemical Oxidation of Sand and Fines Fractions

The physical separation process generates five material streams: 1. Coarse Debris, 2. Coarse Oversize, 3. Sand, 4. Fines, 5. Flotation Concentrate, and 6. Process Water.

Following physical separation, Coarse Debris and Coarse Oversize will be stockpiled for reuse as clean fill material onsite; the flotation concentrate will be sent offsite for incineration/disposal; and the Sand, Fines and Process Water will require additional treatment and/or disposal. Oxidation treatment addresses residual TNT in the Sand fraction (Option 2) and Sand and Fines fractions (Option 3). Collectively, the Sand and Fines fractions will make up approximately 90 percent of the processed material.

Estimated implementation costs associated with each option are summarized in the table below.

Estimated Costs*	Option 1	Option 2	Option 3
Capital Cost	1.8M	2.5M	2.7M
Operating Cost	3.5M	6.0M	6.5M
Total Cost	5.3M	8.5M	9.2M
Treatment Endpoints	98% TNT mass removal from Coarse Oversize and Sand fractions	Coarse Oversize and Sand fractions meet NJDEP NRDCSRS	Coarse Oversize, Sand and Fines fractions meet NJDEP NRDCSRS
Additional Treatment Required	Sand and Fines fractions	Fines fraction	None

Notes:

* - Development of planning-level cost require additional engineering and design work

Excludes additional treatment costs (i.e., Sand and Fines fractions)

Excludes disposal costs (i.e., Flotation Concentrate, Process Water)

Option-specific assumptions provided in Section 4 of the report

A secondary objective of the treatability study involved evaluating the incremental cost associated with achieving the NJDEP NRDCSRS once the 85 percent TNT mass removal had been achieved. The estimates above do not include disposal costs for material streams that do not meet the NJDEP NRDCSRS, thus the deltas between costs for each option above need to consider the fractions requiring offsite disposal. ARCADIS will work with Ashland to generate disposal estimates and refine the incremental costs between the options presented above.

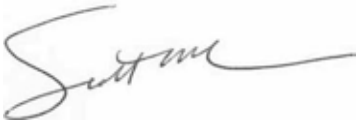
As indicated in the *Technical Memorandum – Evaluation of Alternatives for Separation of TNT from Soil* (ARCADIS 2013), bioremediation may provide an alternate means of achieving more stringent objectives for both the Sand and Fines fractions once the 85 percent mass removal target has been met. This alternative may also provide a means of recycling Process Water from the physical separation process to avoid treatment and disposal costs. The incremental costs associated with this option will be evaluated following implementation of a bioremediation pilot study.

Finally, field observations during the treatability test field sampling indicated that the TNT concentration contours developed to support delineation during the remedial investigation may overestimate the areal extent of TNT impacts at concentrations greater than NRDCSRS (i.e., requiring treatment). In conjunction with the continued development of the technical approach outlined above, ARCADIS will prepare a sampling plan to refine the extent of TNT impacts and develop an excavation plan and associated soil volumes requiring treatment. This information will inform the engineering of the treatment plant and estimation of associated operational costs.

ARCADIS and ART appreciate the opportunity to support Hercules on this project and look forward to working together through the continued development and implementation of this remedy.

Sincerely,

ARCADIS U.S., Inc.



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Enclosure:
Soil Separation Treatability Study Report

References:
ARCADIS 2013. *Technical Memorandum – Evaluation of Alternatives for Separation of TNT from Soil*. Letter report to Ed Meeks dated February 22, 2013.

ART and ARCADIS 2013a. *TNT Soil Separation Treatability Study Work Plan.* Letter report to Ed Meeks dated May 15, 2013.

SOIL SEPARATION TREATABILITY STUDY REPORT

Former Hercules Kenvil Works Facility, Kenvil, Roxbury Township, Morris County, NJ

Prepared for:

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November 2013

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SOIL SEPARATION TREATABILITY STUDY REPORT

FORMER HERCULES KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

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EXECUTIVE SUMMARY

ART Engineering, LLC (ART) in joint effort with ARCADIS US, Inc. (ARCADIS), the “Team”, performed a Soil Separation Treatability Study evaluating the feasibility and effectiveness of physical separation techniques for removal of solid-phase, crystalline 2,4,6-trinitrotoluene (TNT) from TNT-impacted soils at the Former Hercules Kenvil Works Facility, Kenvil, New Jersey (the “Site”). Extensive soil characterization, physical separation and chemical oxidation treatment testing was performed. The Team has come to the following major conclusions regarding the soil treatment aspect of this project:

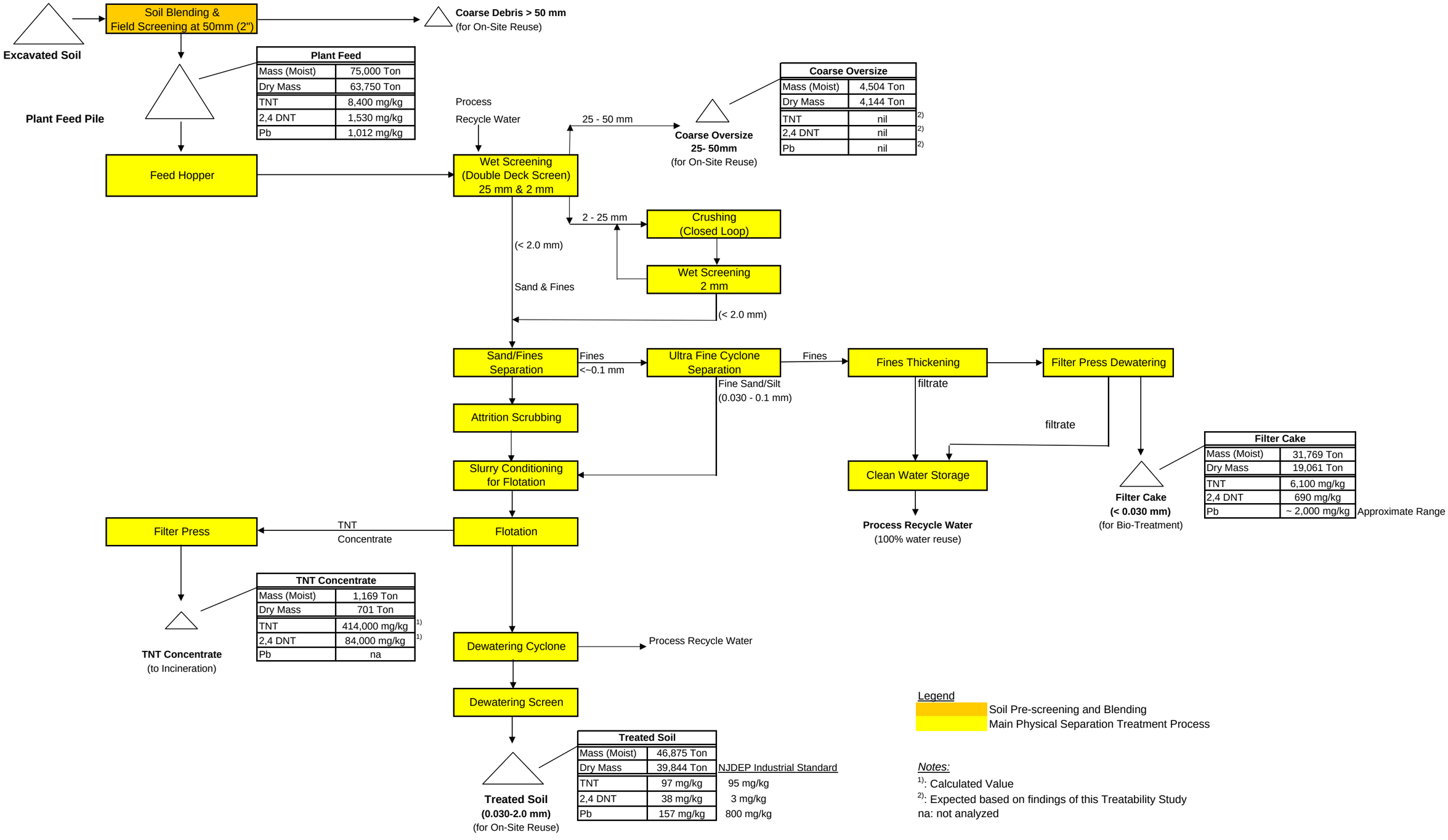
- Soil separation technology for this project is a viable technology
- Based on the results of this study, three options of soil treatment process flow diagrams are presented for consideration:
    1. Option 1- Physical Separation only with oversize grinding and sand treatment using attritioning and flotation
    2. Option 2- Like Option 1 with Chemical Oxidation of Sand Fraction
    3. Option 3- Like Option 1 with Chemical Oxidation of Sand and Fines

Schematic Process Flow Diagrams (PFD) for each of the proposed treatment options are included as part of this executive summary as Figures A, B and C. Each of the PFD diagrams include the projected product tonnages, volume reductions and projected concentrations of TNT, DNT and Pb in various products.

The proposed Physical Separation process includes the following steps: wet screening, grinding of the oversize fraction to be processed as sand, attrition scrubbing of the sand to break down TNT particles within the sand fraction; removal of TNT particles from the combined sand & ground oversize fraction using froth flotation, final sand dewatering, fines dewatering and water recycling. These processes support each of the three options above. In Options 2 and 3, an oxidation step is added to the end of the process train for target treatment media (i.e., sand or sand/fines fractions).

For a full-scale plant, a feed rate on the order of 35 tph is anticipated for Plant Option 1. For plant Options 2 and 3, the production rate may be reduced to about 20 - 25 tph and operating and reagent cost would increase.

Figure A: Full Scale Soil Treatment Schematic Block Flow Diagram - Physical Separation only (Option 1)



Legend

Soil Pre-screening and Blending

Main Physical Separation Treatment Process

Notes:

1): Calculated Value

2): Expected based on findings of this Treatability Study

na: not analyzed

Figure B: Full Scale Soil Treatment Schematic Block Flow Diagram - Physical Separation with Oxidation of Sand (Option 2)

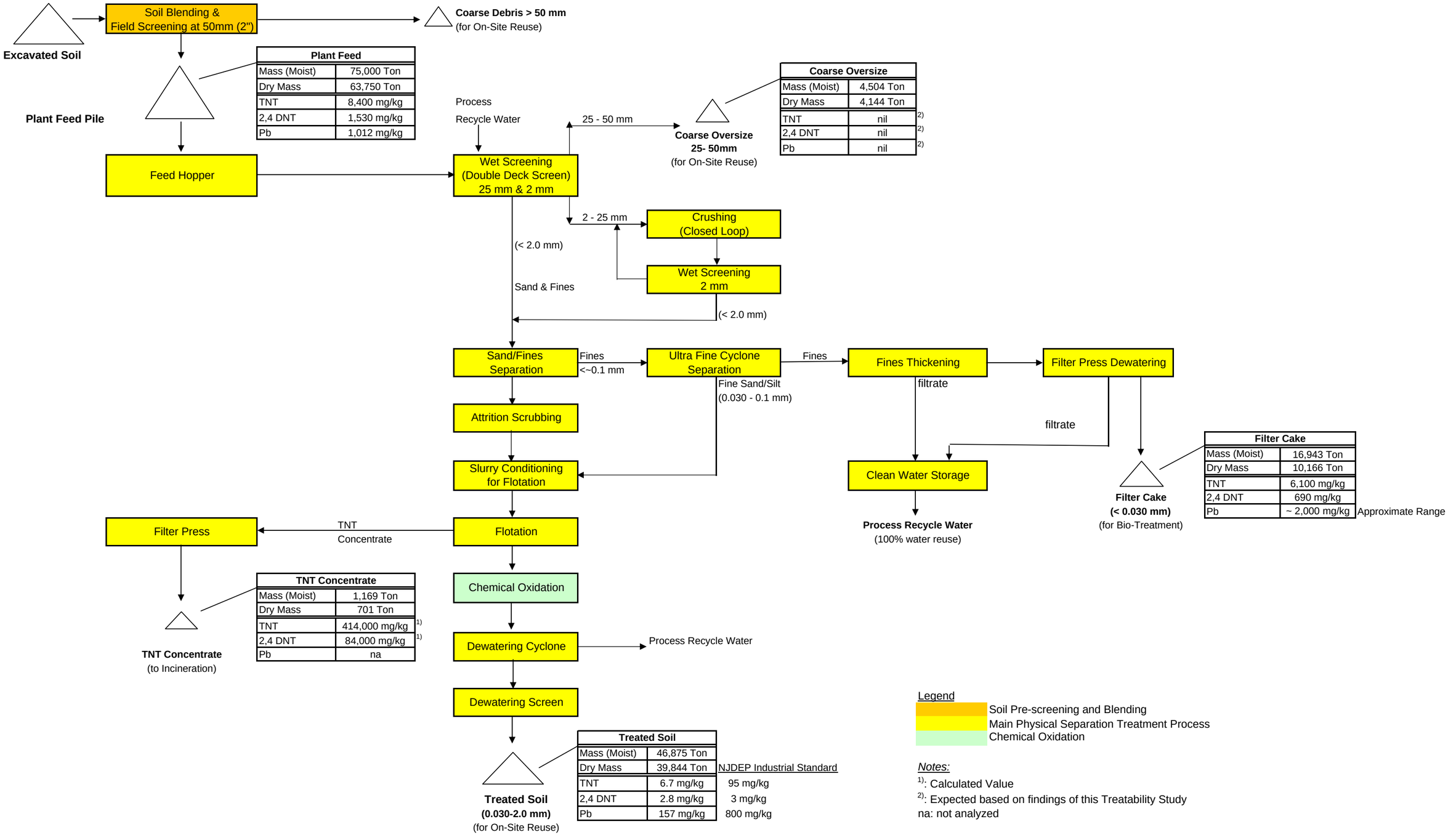
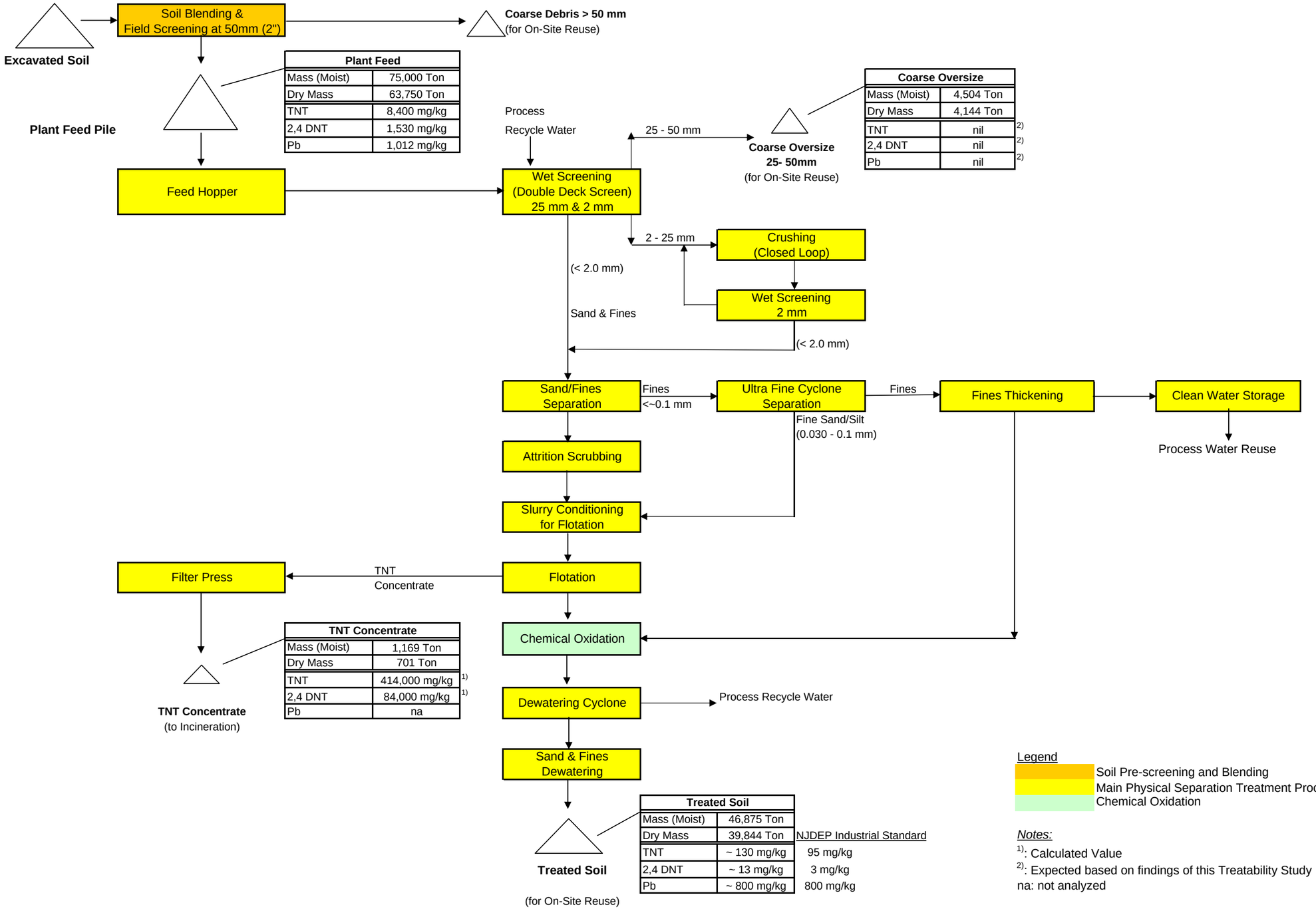


Figure C: Full Scale Soil Treatment Schematic Block Flow Diagram - Physical Separation and Oxidation of Sand and Fines (Option 3)



1.0 INTRODUCTION

1.1 BACKGROUND

This Soil Separation Treatability Study evaluates the feasibility and effectiveness of physical separation techniques for removal of solid-phase, crystalline 2,4,6-trinitrotoluene (TNT) from TNT-impacted soils at the Former Hercules Kenvil Works Facility, Kenvil, New Jersey (the "Site"). Full-scale treatment will target impacted areas within the former TNT Area in the southwestern corner of the site (Figure 1). Based on physical and chemical characterization data collected during the site investigation/remedial investigation, four primary areas within the TNT area have been identified to support the treatability study. Figure 1 illustrates these areas.

This study was performed in general accordance with the approved "TNT Soil Separation Treatability Study Work Plan", Hercules' Former Kenvil Works Facility, prepared by ART/ARCADIS, May 2013. In addition to testing of physical separation techniques for removal of solid-phase TNT, chemical oxidation was also tested for destruction of residual TNT and 2,4 DNT (DNT) compounds to meet NJDEP Non-Residential, Direct Contact Soil Remediation Standard.

The primary objectives of this treatability study were to:

- Assess soil variability
- Identify the range of achievable volume reductions (total volume of clean material vs. impacted residuals)
- Demonstrate a TNT mass removal efficiency of at least 85 percent
- Support development of a full-scale design
- Develop conceptual, full-scale soil treatment process configuration
- Estimate full-scale treatment costs, including incremental costs for removal efficiencies greater than 85 percent

The secondary objectives were:

- Evaluate the ability to meet the New Jersey Department of Environmental Protection (NJDEP) Non-Residential, Direct Contact Soil Remediation Standards (NRDCSRS) for TNT and other target constituents (e.g., 2,4-dinitrotoluene [DNT], lead) in treated soil
- Prepare fines fraction for characterization and bio-treatment testing
- Identify the need for supplemental optimization studies (if required)

The remainder of this report presents the results of the Soil Separation Treatability Study, conclusions and recommendations, and a conceptual approach for full-scale treatment are presented in this report.

1.2 STUDY ORGANIZATION

This Soil Separation Treatability Study was performed in separate rounds of testing, as follows:

Round 1A: Soil Characterization and Basic Separation
Round 1B: Sand and Oversize Treatment Testing
Round 2: Process Optimization Testing
Round 3: Process Simulation and Chemical Oxidation

After performance of each round of testing, samples were shipped to Lancaster Laboratories, Lancaster, PA. A review of analytical results from the previous round of testing informed the scope of the next round of testing. Results, findings and decision criteria used to adjust the technical approach based on testing results are discussed in this report.

Tables, figures and appendices are cited throughout the text. Photo documentation of the study is provided in Appendix A. Raw data sheets are provided in Appendix B. Analytical reports are provided in Appendix C.

2.0 FIELD SAMPLE COLLECTION

A review of physical and chemical characterization data collected during the site investigation/remedial investigation identified four primary areas within the TNT area where TNT concentration contours denoted soil with TNT concentrations exceeding the NJDEP Non-Residential, Direct Contact Soil Remediation Standard (NJDEP - NRDCSRS). Field sampling to generate soil for the treatability study focused on these four areas.

Field sample collection was performed on June 11 and 12, 2013. A total of eight (8) test pits at four different locations were excavated using a small excavator. The presence and relative concentration of TNT-impacted soil at each test pit location was assessed in the field visually (e.g., visible chunks of TNT) and an EXPRAY test kit. Coordinates of each test pit location were recorded using differential GPS. Test pit locations are shown in **Figure 1.**

At Locations 1 and 2, three test pits were excavated at each location for a total of six test pits. Samples were collected from each of the six test pits. At Location 3, TNT chunk were visible on the soil surface and soil lithology was generally consistent across the area. As such, only one test pit was excavated from a representative location at Location 3. Location 4 included two smaller, discrete areas; a shallow lagoon and the location of a former filter house pipeline failure. The shallow lagoon was flooded with approximately one foot of standing water. No particulate TNT was observed at either location, however, positive identification of TNT was made using the EXPRAY test kit. Due to limited excavator access and presence of water, a sample of submerged soil/sediment was collected using a hand held shovel.

Approximately 50 to 60 lbs. of representative soil was collected from each test pit. A schematic diagram for the sample collection program and preparation of composite samples at each Location is provided in **Figures 2, 3 and 4**. The soil collected from each test pit was screened in the field to remove coarse materials greater than 2 inches in diameter. The weights of resulting fractions of material greater than 2 inches diameter and less than 2 inches were determined in the field using a portable scale. The soil fraction greater than 2 inches was excluded from the soil sample collected for purpose of this study. The weights recorded during field screening at 2 inches are included in Appendix B.

Each of the composite samples were sampled for initial TNT analysis prior to shipment. Once the results of the initial analysis were available, the composite samples were transported to the ARCADIS Laboratory in Durham, North Carolina. This transport was performed as a dedicated transport performed by an ARCADIS technician. Residual sample material which was not used to prepare the composite samples, was archived at the Kenvil site for potential shipment to ARCADIS Laboratory, in case additional sample material was required for the study. The four composite samples were received in good order at the ARCADIS laboratory on June 21, 2013.

3.0 SOIL SEPARATION TREATABILITY STUDY

3.1 Round 1 Testing

Round 1 testing included the initial homogenization and pre-screening of each of the four composite soil samples, chemical analysis, determination of the soil particle size distribution, performance of a basic separation of the soils into various size fractions and chemical analysis of these fractions. A schematic representation of Round 1 testing is provided in **Figure 5.**

In the course of Round 1 Testing, a fast turnaround semi-quantitative field method was developed using EXPRAY TNT detection spray. This method consisted of extracting 5 gram of soil with 5 grams of acetone. After a few minutes of extraction time, the acetone extract was decanted, and two drops of the acetone extract were put on a Whatman filter. After 10 to 15 seconds wait, a light spray of EXPRAY was applied to the Whatman filter. The intensity of the color after EXPRAY could be compared to a standard color chart prepared from acetone extracts with known TNT levels. The standard color chart was prepared fresh on a daily basis. This method has proved to be very useful in guiding the treatability study and has been used throughout the performance of the study.

3.1.1 Initial Analysis and Particle Size Analysis (Round 1A)

Results of the soil particle size analysis for the four composite samples are presented in **Table 1** and **Table 2**. The results indicate following ranges in particle size distribution:

Oversize (2.0 - 50mm):	27% - 46%
Sand (0.038 - 2.0 mm):	54% - 76%
Fines (<0.038 mm):	6% - 29%

Initial analysis on untreated composite samples indicated TNT concentrations ranged from 4,200 mg/kg TNT to 28,000 mg/kg TNT (**Table 3**). Levels of 2,4 DNT (DNT) ranged from 33 to 2,400 mg/kg DNT.

The concentration of Lead ranged from 198 to 1,580 mg/kg. Lead was below NJDEP Non-Residential, Direct Contact Soil Remediation Standard of 800 mg/kg in all composites except for Composite 2. The extent of Lead contamination in TNT impacted soils needs to be better defined in relationship to impacted soils volume in each area to understand the impact of this parameter on full-scale remediation.

3.1.2 Basic Separation (Round 1A)

For each soil composite, approximately 10 lbs. of soil was separated into various size fractions as follows:

- Oversize (25 - 50 mm)
- Oversize (12.5 - 25 mm)
- Fine Oversize (2.0 - 12.5 mm)
- Sand after hydraulic separation (~0.038 - 2.0 mm)
- Fines (< ~0.038 mm)

Each of the soil fractions was analyzed for TNT, DNT and Lead **(Table 3)**. Contact wash water was analyzed for dissolved TNT and DNT **(Table 4).**

The results indicate that TNT and DNT are present in all soil size fractions less than 25 mm. The presence of crystalline particulate TNT was noted in Composites 1, 2 and 3. The results indicate that a “simple” particle size separation process will not be effective in producing clean soil fractions. Instead, the treatment process will need to address removal of TNT particles from each size fraction.

3.1.3 Rationale for Preparation of Combined Composite Sample C1 & C2 for Plant Process Design Basis

When considering the representativeness of the four composites related to the total volume of TNT impacted soils to be treated, Composite 1 (C1) and Composite 2 (C2) are believed to represent the majority of TNT impacted soils requiring treatment at the Site. Both Composite 1 and

Composite 2 were prepared from material collected from three test pits each. Composite 3 (C3) was collected from a small localized area from one single test pit and is believed to represent only a small volume of total soils. Composite 4 (C4) was collected from two local drainage areas which are believed to represent a small volume of total impacted soils.

Therefore, a "site representative" combined composite was prepared by combining equal weights of C1 and C2. This combined composite "C1 & C2" was used in all following rounds of testing performed as part of this study for determining the process design. The small amount of soils represented by Composite 3 and Composite 4 can be blended into the main plant feed during full-scale remediation for processing and do not affect process design.

The particle size distribution for the composite sample was determined directly on the composite sample and compared to calculated average particle size distribution **(Tables 5 & 6)**; there is a good agreement between the calculated and measured results. **Table 7** presents the calculated expected contaminant levels in various soil separation products for the Composite C1 & C2.

3.1.4 Oversize Treatment Testing – Combined Composite C1 & C2 (Round 1B)

For treatment of the oversize soil fractions (2 – 25 mm), two techniques were considered: 1) Density Separation, and 2) Attrition Grinding. Attrition grinding would be the preferred technique for full-scale implementation as this technique is easier to implement operationally at full-scale and can be implemented at a lower cost as compared to density separation. Therefore, this treatability study focused on the use of attrition grinding. Attrition grinding involves the use of mild attritioning in a grinding mill for the purpose of selectively breaking down the TNT particles to finer particle size, while not affecting the hard native rock/gravel. Following the attrition grinding, the broken down TNT particles could then be removed by physical separation.

Three tests were performed as follows: 1) Autogenous grinding without special grinding media added; 2) Grinding with 5/8" dense alumina ceramic grinding media; and 3) Grinding with 9.5 mm steel grinding media. A schematic representation of the testing program is presented in **Figure 6**. The results of the tests are presented in **Tables 8 & 9.**

The results indicate that each of the three attrition grinding tests were not aggressive enough to breakdown the TNT particles. TNT levels in each of the oversize fraction after attrition grinding ranged from several hundred to around a thousand milligram per kilogram (mg/kg). It was concluded that for the attrition grinding to be effective treatment, the grinding has to be more aggressive. More aggressive grinding was tested in the Process Optimization Testing performed in Round 2.

3.1.5 Sand Treatment Testing (Round 1B)

For the removal of TNT from the sand after hydraulic separation, the following physical treatment techniques were evaluated:

- density separation
- attrition scrubbing
- attrition grinding
- froth flotation

All treatment techniques proposed for evaluation in this study are directly scalable to commercially available techniques that can be incorporated into a full-scale production plant for the Site.

The following facts were considered in the initial selection of the treatment techniques:

- TNT has lower density (s.g. 1.65 g/cm^3) compared to the soil grains (s.g. ~2.6 g/cm^3)
- TNT occurs predominantly in form of discrete particles
- TNT particles are weakly hydrophobic and might be amenable to removal via froth flotation; this technique is based on the use of

dispersed air to float TNT particles to the surface to be removed by skimming of a froth

A summary of the sand treatment testing program is provided in **Figure 7**.

Density separation was tested first and was not found to be effective in separating TNT particles from the sand fraction (Ref. Photos - Appendix A). It appears that the density difference between TNT particles and soil grains is not large enough to effectively separate the TNT particles based on density difference.

Results for treatment of the sand fraction using Attrition Scrubbing, Attrition Grinding and Flotation, are presented in **Table 10**. The results indicate that the best results were achieved when using aggressive scrubbing or attrition grinding, each in combination with flotation. As aggressive scrubbing is easier and more economical to implement at large scale, as compared to attrition grinding, aggressive scrubbing in combination with flotation is the preferred treatment approach. Through combination of attrition grinding and flotation, the total concentration of TNT in the sand fraction after hydraulic separation was reduced from 8,200 mg/kg TNT to 110 mg/kg. For the sand fraction, a contaminant mass removal efficiency achieved was on the order of 98% for TNT, 96% for DNT and 65% for Lead.

3.1.6 Round 1 Testing – Discussion of Findings

The results of Round 1 tests were promising in removing the bulk of the TNT mass from the soil matrix through use of physical separation, attrition scrubbing and removal (separation) of particulate TNT using froth flotation. Density Separation for removal of crystalline TNT particles from the sand fraction was tested, but found to be ineffective. It appears that the density difference is not a large enough difference to effectively separate the TNT particles based on density difference.

Considering that density separation was not effective, and the fact that the crystalline TNT particles are softer as compared to the native rock, the process optimization testing in Round 2 focused on the use of methods which would selectively breakdown the crystalline TNT with subsequent removal of TNT particles via froth flotation.

3.2 Round 2 Testing

The purpose of Round 2 Testing was to perform additional process optimization testing of selected process treatment steps. These treatment steps tested in Round 2 include: selective grinding of oversize, attrition scrubbing of the sand, and subsequent removal of TNT particulates after attrition scrubbing via froth flotation. In Round 2 testing, two different process optimization runs (Run A and Run B) were performed (**Figures 8 & 9**). The main difference between testing Run A and Run B was how the oversize fraction 2.0 - 25 mm was processed.

In Run A (**Figure 8**) the oversize fraction (2.0 - 25 mm) was ground with a mixture of 3/8" and 5/8" steel grinding balls and analyzed for particle size distribution and TNT/DNT levels in each fraction. In Run A, the ground oversize was not processed together with the native sand size material.

In Run B (**Figure 9**) the oversize fraction (2.0 - 25 mm) was ground with 1" and 1¼" steel grinding balls with the objective of achieving the most aggressive grinding of the oversize fraction. The sand size material resulting from oversize grinding was then combined with the native sand size material for processing through attrition scrubbing and flotation.

For both runs, the resulting particle size distribution and TNT concentration as function of particle size after oversize grinding was determined. A comparison of the results of the oversize grinding is provided in **Table 11**. Results of analysis of various soil fractions and mass balance for both runs are provided in **Table 12** and **Figures 8 and 9**.

3.2.1 Round 2 Testing – Discussion of Findings

The results of Round 2 Testing indicate that grinding of the oversize fraction and processing the ground oversize with the native sand size material is effective treatment. Depending on the acceptable levels of residual TNT/DNT in the oversize fraction, partial grinding as opposed to complete grinding of the oversize may be acceptable. However, to achieve the highest removal efficiency for TNT/DNT, complete grinding of the oversize fraction 2.0 - 25 mm and processing the ground oversize fraction 2.0 - 25 mm with the native sand size material is recommended.

For Run A, the final sand after scrubbing and flotation contained on the order of 130 mg/kg TNT and 58 mg/kg DNT (**Table 12**). The results of Run A compare well with results of Round 1 testing (**Table 10, Sample ID C12-Sand-FL2**) performed under similar conditions as Run A. This suggests a good reproducibility of experimental results.

For Run B, the final sand after scrubbing contained 85 mg/kg TNT and 40 mg/kg DNT. The concentration of TNT and DNT are slightly lower as compared to Run A, which suggests that the inclusion of the ground oversize provides a slight benefit to lowering the residual TNT/DNT levels in the final sand product.

Based on the results of Run A and Run B, it was decided to perform a Process Simulation with complete grinding of the oversize fraction to 100% passing 2 mm to be processed with the sand.

3.3 Round 3 Testing

A schematic diagram for the Process Simulation is provided in **Figure 10**. This program was designed to include and simulate all basic processing steps in the soil treatment process. In Round 2 testing, it was concluded that selective grinding is not sufficiently effective to breakdown the crystalline TNT in the oversize fraction. Therefore, for the Process Simulation, it was decided to grind all oversize material (2.0 - 25mm) to “sand size” material less than 2.0 mm to be processed along with the “native” sand size material. To accomplish this aggressive grinding, large 1” and 1.25” size steel grinding balls were used. After each grinding cycle, the ground material was screened at 2 mm and material

coarser than 2 mm was ground again until 100% of the oversize material passed 2 mm. The ground oversize passing 2 mm was then subjected to hydraulic separation to separate the secondary fines created in the grinding process. The ground oversize after hydraulic separation was then combined with the “native” sand after hydraulic separation. The ground oversize fines were combined with the “native” fines from primary hydraulic separation.

For each of the steps in the Process Simulation, the mass of each fraction was tracked on a dry-weight basis such that a mass balance could be prepared. As an additional task, chemical oxidation testing of sand and fines products generated from the Process Simulation was performed.

3.3.1 Process Simulation Testing Results

A mass balance and analytical results for the Process Simulation Testing are provided in **Table 13** and **Figure 10.** The results indicate that processing the ground oversize with the native sand size material is effective treatment. The final concentration levels of TNT and DNT in the treated sand were 97 mg/kg TNT and 38 mg/kg DNT respectively. These results are consistent with the results achieved during Round 2 testing. The mass balance on dry-weight basis is as follows:

Oversize Product (25 - 50 mm):	6.5%
Sand Product (0.020 - 2.0 mm):	62.5%
Fines Product (<0.020 mm):	29.9%
Flotation Concentrate:	1.1%
Total	100.0%

3.3.2 Sand and Fines Chemical Oxidation Testing

The primary evaluation objectives of testing chemical oxidation as an add-on treatment process were to:

1) Demonstrate reductions in TNT and DNT mass in the sand and fines fractions

2) Evaluate potential to achieve post-oxidation TNT and DNT concentrations in sand and fines fractions at or below the NJDEP NRDCSRS[1].

A series of chemical oxidation tests were performed on the sand and fines fractions produced as part of the Process Simulation (**Figure 10**). Tests were performed to simulate a stirred slurry reactor. Oxidation tests were performed on "sand only", "fines only" and a combination of "sand and fines". Results of the oxidation tests are presented in **Tables 14 through 19.**

The results indicate that the NJDEP treatment goal of less than 95 mg/kg TNT and less than 3 mg/kg DNT can be met through oxidation of the sand fraction (Sample ID: C1C-SAOX2). For the fines fraction (Sample ID: C1C-FIOX3), a reduction of total mass of TNT and DNT of greater than 97% was achieved. However, for the fines fraction, the NJDEP Non-Residential, Direct Contact Soil Remediation Standard of 3 mg/kg for DNT could not be attained. The benefits of potential use of Chemical Oxidation are:

- Achieves NJDEP Non-Residential, Direct Contact Soil Remediation Standard for sand product
- Removes 97% of the TNT/DNT mass from the fines fraction
- May enhance biological activity following oxidization and reduce timeline for bio-treatment

Additional laboratory study of Chemical Oxidation is required to optimize process design parameters (i.e. temperature, residence time, reagent consumption).

[1] Evaluation focused on DNT, as DNT concentrations were one order of magnitude greater than the NJDEP NRDCSRS prior to treatment (38mg/kg vs. 3mg/kg), while TNT was only slightly above the NJDEP NRDCSRS (97mg/kg vs. 95mg/kg).

4.0 FULL-SCALE SOIL TREATMENT PROCESS CONCEPTUAL APPROACH

4.1 Treatment Options

Three options of soil treatment process flow diagram are proposed for consideration as follows:

Option 1- Physical Separation only with oversize grinding and sand treatment using attritioning and flotation
Option 2- Like Option 1 with Chemical Oxidation of Sand Fraction
Option 3- Like Option 1 with Chemical Oxidation of Sand and Fines

Schematic process flow diagrams for each of the three proposed options and a calculated mass balance for "Process IN" and "Products OUT" are provided in **Figures 11, 12 and 13** and **Table 20**. A brief summary of each of the options is provided below:

Option 1 - Physical Separation only with oversize grinding and sand treatment using attritioning and flotation

The proposed soil treatment process will include the following steps: wet screening, crushing of the oversize fraction 2.0 - 25 mm to less than 2.0 mm to be processed combined with the sand, attrition scrubbing to breakdown the larger TNT particles, froth flotation to remove (float) the TNT particles from the sand slurry, sand dewatering, fines dewatering and water recycling. The projected volume reduction and process product quality for this option is presented in **Figure 11**. This option removes greater than 98% of total TNT mass from the sand and oversize fractions.

The capital cost of this plant option is estimated at about $1,800,000. Site preparation, mobilization, assembly and start-up are estimated at $350,000. Operating costs are estimated at $42/ton based on 75,000 project tons process on two ten-hour shifts per day for 5 days per week at a processing rate of 35 tons per hour.

Capital cost includes: the physical plant, pre-fitted in Florida, initial and detail engineering, fabrications and procurement, FOB Florida. This effort is estimated to require from 18 to 20 weeks. The initial engineering would be required to determine more precise cost. This effort, which is included in the capital cost, would be in the range of $65,000 and require about 8 weeks.

Site preparation, mobilization, assembly and start-up includes: shipping, receiving, off-loading, assembly, plant area preparation, electrical, plant shakedown, labor and ART management. Assembly of the plant usually requires 3 weeks. Other aspects of site preparation can be on-going as weather permits.

Operating cost includes: labor, ART management, reagents, power, water, plant feeding, excavation, backfilling. Production processing of 75,000 tons is estimated to require about 22 weeks.

Option 2 - Physical Separation with Chemical Oxidation of Sand Fraction

The proposed soil treatment process will include the same steps as for Option 1, with the addition of chemical oxidation treatment for the sand fraction. The chemical oxidation of the sand fraction will achieve a concentration of TNT and DNT below NJDEP Non-Residential, Direct Contact Soil Remediation Standard. The projected volume reduction and process product quality for this treatment option are presented in **Figure 12**.

The capital cost of this plant option is estimated at $2,500,000 (-5% +20%): site preparation, mobilization, assembly and start-up estimated at $350,000; operating costs are estimated at $75/ton based on 75,000 project tons process on two ten-hour shifts per day for 5 days per week at a rate of 25 tons per hour.

Capital cost includes: the physical plant, pre-fitted in Florida, initial and detail engineering, fabrications and procurement, FOB Florida. This

effort is estimated to require from 18 to 20 weeks. The initial engineering would be required to determine the final cost. This effort (included in the capital cost) would be in the range of $110,000 (oxidation optimization testing is required) and require about 10 weeks.

Site preparation, mobilization, assembly and start-up include: shipping, receiving, off-loading, assembly, plant area preparation, electrical, plant shakedown, labor and ART management. Assembly of the plant usually requires 3 weeks. Other aspects of site preparation can be on-going as weather permits.

Operating cost includes: labor, ART management, reagents, power, water, plant feeding, excavation, backfilling. Production processing of 75,000 tons is estimated to require about 30 weeks.

Option 3 - Physical Separation with Chemical Oxidation of Sand & Fines Fraction

The proposed soil treatment process will include the same steps as for Option 2, with the difference that the fines fraction (<0.030 mm) is combined with the sand fraction prior to oxidation. The projected volume reduction and projected process product quality for this treatment option are presented in **Figure 13**. In this approach, one clean soil product will be produced.

The capital and operating cost of this plant option is estimated 5% to 10% higher than the Plant Option 2.

4.2 Plant Feed Preparation

For consistent operation of the soil treatment process, preparation of a consistent site-wide blended plant feed is required. An excavation staging and blending plan is developed prior to actual field excavation. The field implementation is performed in manageable volumes following the overall plan. For example, from one to two days of plant feed are blended at a time.

This blended feed should be consistent in terms of soil particle size, contaminant levels similar to site-wide average. In the first step of the process, soils will be pre-screened at 2” to remove coarse debris. In this pre-screening step, the soils are also blended and homogenized to provide a consistent blended feed. After pre-screening and blending, the soil is staged as feed for soil treatment processing.

The plant will be operated for 8 to 10 hours per day on a single shift, or 16 hours per day on a two-shift basis, or as operating hours allow in compliance with local governing regulations. The plant would be designed with 100% closed-loop water reuse (no normal water discharge required).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions and Recommendations based on the results of this study are as follows:

- Physical Separation treatment is a viable treatment technology for TNT impacted soils at the Site. Greater than 98% of the TNT mass was removed from the sand fraction through use of water-based Physical Separation Treatment process.
- Froth Flotation (a technique widely used in mineral processing industry) was effective in removing TNT particles from the sand slurry. Density separation was tested, but not found to be effective in removing the TNT particles from either sand or oversize fractions. The density difference between TNT (specific gravity 1.8 gr/cc) and soil particles (specific gravity 2.6 gr/cc) was found to be too small to achieve a good separation.
- Grinding of the oversize to “sand size” particles and combination of the ground oversize with the sand fraction was proven to be effective treatment.
- Chemical oxidation at elevated temperature was effective in oxidizing residual TNT and DNT from sand and fines fractions; for the sand fraction TNT and DNT could be reduced to below NJDEP Non-Residential, Direct Contact Soil Remediation Standard
- Based on the results of this study, three options of soil treatment process flow diagram are proposed:

  Option 1 - Physical Separation only with oversize grinding and sand treatment using attritioning and flotation

  Option 2 - Option 1 with Chemical Oxidation of the Sand Fraction

  Option 3 - Option 2 with Chemical Oxidation of the Sand and Fines
- Combination of Physical Separation Treatment followed by natural enhanced bio-degradation is another possible treatment option. A small-scale pilot testing is suggested to generate sufficient treated soil products to evaluate combination of physical separation treatment and bio-degradation treatment.
- The design parameters of the oversize crushing, optimization of flotation contact time (kinetics) will be determined as part of the Engineering Phase.

Tables

Table 1: Soil Particle Size Distribution [1] - Round 1

Fraction	Mass Distribution on Dry Weight Basis (%)			
	Composite C1	Composite C2	Composite C3	Composite C4
25 - 50 mm	5.0%	8.1%	0.9%	0.8%
12.5 - 25 mm	5.8%	9.7%	6.5%	11.8%
4.75-12.5 mm	10.3%	9.4%	10.4%	22.1%
2.0-4.75 mm	9.2%	9.8%	9.0%	11.2%
1.0-2.0 mm	6.7%	8.9%	8.6%	9.3%
0.5-1.0 mm	9.8%	10.8%	12.0%	12.7%
0.25-0.5 mm	8.5%	10.0%	12.7%	13.3%
0.125-0.25 mm	6.5%	7.6%	7.6%	8.0%
0.075-0.125mm	4.0%	3.0%	3.0%	2.5%
0.038-0.075 mm	5.6%	4.5%	5.6%	2.0%
<0.038 mm (fines)	28.7%	18.2%	23.6%	6.3%
Total	100.0%	100.0%	100.0%	100.0%

Notes:
[1]: Particle size distribution determined via wet sieving; material retained on each sieve was collected, dried and weighed

Table 2: Consolidated Soil Product Distributions (Calculated)

Fraction	Mass Distribution on Dry Weight Basis (%)			
	Composite C1	Composite C2	Composite C3	Composite C4
Coarse Oversize (25 - 50 mm)	5.0%	8.1%	0.9%	0.8%
Fine Oversize (2.0 - 25 mm)	25.3%	28.9%	26.0%	45.1%
Sand Fraction (0.038 - 2.0 mm)	41.1%	44.8%	49.5%	47.8%
Fines Fraction (< 0.038 mm)	28.7%	18.2%	23.6%	6.3%
Total	100.0%	100.0%	100.0%	100.0%

Table 3: Concentration of TNT, 2,4 DNT and Lead in Soil Separation Products - Round 1

	Composite C1				Composite C2				Composite C3				Composite C4			
	Mass Distribution [1] (%)	TNT Conc. (mg/kg)	2,4 DNT Conc. (mg/kg)	Pb Conc. (mg/kg)	Mass Distribution [1] (%)	TNT Conc. (mg/kg)	2,4 DNT Conc. (mg/kg)	Pb Conc. (mg/kg)	Mass Distribution [1] (%)	TNT Conc. (mg/kg)	2,4 DNT Conc. (mg/kg)	Pb Conc. (mg/kg)	Mass Distribution [1] (%)	TNT Conc. (mg/kg)	2,4 DNT Conc. (mg/kg)	Pb Conc. (mg/kg)
Initial Soil Analysis (Soil Fraction < 12.5 mm)																
Initial Soil Analysis - Field Sample		4,900		-		11,000		-		5,000		-		3,800		-
Initial Sample collected at Treatability Study Laboratory after soil homogenization and sieving at 12.5 mm		4,800	660	444		12,000	2,400	1,580		28,000	39	198		4,200	33	410
Soil Separation Products																
Soil Fraction 25-50 mm	5.0%	no visual TNT/DNT [2]		-	8.1%	no visual TNT/DNT [2]		-	0.9%	no visual TNT/DNT [2]		-	0.8%	no visual TNT/DNT [2]		-
Soil Fraction 12.5-25 mm	5.8%	1,037 [2]	-	-	9.7%	no visual TNT/DNT [2]		-	6.5%	3,583 [3]	-	-	11.8%	no visual TNT/DNT [2]		-
Soil Fraction 2.0-12.5 mm	19.5%	7,300	630	-	19.1%	9,400	400	-	19.4%	70,000	40	-	33.3%	1,600	5.5	-
Sand after Hydraulic Separation	41.1%	5,300	490	-	44.8%	7,600	2,200	-	49.5%	22,000	44	-	47.8%	4,700	27	-
Fines after Hydraulic Separation	28.7%	5,300	330	-	18.2%	11,000	1,700	-	23.6%	17,000	43	-	6.3%	22,000	190	-
Total	100.0%				100.0%				100.0%				100.0%			
Sand Size Fractions																
Sand fraction 0.5-2.0 mm	16.5%	1,800	410	-	19.7%	2,300	480	-	20.7%	26,000	15	-	22.0%	290	9	-
Sand fraction 0.038-0.5 mm	41.1%	5,600	240	-	44.8%	16,000	3,500	-	49.5%	18,000	38	-	47.8%	3,400	26	-

Notes:

all results on dry-weight-basis

[1]: mass distribution based on particle size distribution analysis (Ref. Table 1)

[2]: visual observation based on handsorting

[3]: calculated estimated value based on handsorting and gravimetric analysis

- : Not Determined

Conc.: Concentration

Table 4: Wash Water Analysis Results - Round 1

Analytical Parameter	Wash Water Analysis (mg/L)				Maximum Solubility in Water at Room Temperature (~ 21°C) (mg/L)
	Composite 1 C1-W	Composite 2 C2-W	Composite 3 C3-W	Composite 4 C4-W	
4-Amino-2,6-Dinitrotoluene	N.D.	N.D.	1.7	0.42	
2-Amino-4,6-Dinitrotoluene	0.78	0.99	1.4	0.63	
1,2-Dinitrobenzene	N.D.	N.D.	N.D.	N.D.	
1,3-Dinitrobenzene	0.023	0.044	0.011	0.061	
1,4-Dinitrobenzene	N.D.	N.D.	N.D.	N.D.	
2,4-Dinitrotoluene	35	62	2.1	1.3	185 (Ref. 1)
2,6-Dinitrotoluene	N.D.	N.D.	N.D.	N.D.	
HMX	N.D.	N.D.	N.D.	N.D.	
Nitrobenzene	N.D.	N.D.	N.D.	N.D.	
Nitroglycerin	N.D.	N.D.	N.D.	N.D.	
1-Nitronaphthalene	0.0095	0.021	0.012	0.005	
2-Nitrotoluene	N.D.	N.D.	N.D.	N.D.	
3-Nitrotoluene	N.D.	N.D.	N.D.	N.D.	
4-Nitrotoluene	N.D.	N.D.	N.D.	N.D.	
PETN	N.D.	N.D.	N.D.	N.D.	
RDX	N.D.	N.D.	N.D.	N.D.	
Tetryl	N.D.	N.D.	N.D.	N.D.	
1,3,5-Trinitrobenzene	0.072	0.110	N.D.	0.048	
2,4,6-Trinitrotoluene (TNT)	61	73	77	74	115 (Ref. 1)

Notes:

Highlighed compounds indicate main constituents of concern

N.D. Not Detected

Ref.1): Literature Reference: *Phase Partitioning of TNT and DNT in Soils, Sandia National Laboratories, February 2001*

Table 5: Soil Particle Size Distribution - Combined Composite C1 & C2 - Round 1

Fraction	Mass Distribution on Dry Weight Basis (%)	
	Composite C1 & C2 - Calculated Average	Composite C1 & C2 Combined
25 - 50 mm	6.5%	6.5%
12.5 - 25 mm	7.8%	7.8%
4.75-12.5 mm	9.8%	7.8%
2.0-4.75 mm	9.5%	9.4%
1.0-2.0 mm	7.8%	9.5%
0.5-1.0 mm	10.3%	10.1%
0.25-0.5 mm	9.2%	10.0%
0.125-0.25 mm	7.1%	7.8%
0.075-0.125mm	3.5%	3.9%
0.038-0.075 mm	5.1%	6.0%
0.020-0.038 mm	23.5%	3.9%
<0.020 mm (fines)		17.2%
Total	100.0%	100.0%

Table 6: Consolidated Soil Product Distribution Combined Composite C1 & C2 (Calculated) - Round 1

Fraction	Mass Distribution on Dry Weight Basis (%)	
	Composite C1 & C2 Average	Composite C1 & C2 Combined
Coarse Oversize (25-50 mm)	6.5%	6.5%
Fine Oversize (2.0-25 mm)	27.1%	25.0%
Sand Fraction (0.038-2.0 mm)	42.9%	47.4%
Fines Fraction (<0.038 mm)	23.5%	21.1%
Total	100.0%	100.0%

Table 7: Average Calculated Particle Size Distribution and Contaminant Levels for Combined Composite C1 & C2 - Round 1

	Composite C1				Composite C2				Combined Composite C1 & C2 Calculated Average			
	Mass Distribution (%)	**TNT Conc. (mg/kg)**	**2,4 DNT Conc. (mg/kg)**	**Pb Conc. (mg/kg)**	**Mass Distribution (%)**	**TNT Conc. (mg/kg)**	**2,4 DNT Conc. (mg/kg)**	**Pb Conc. (mg/kg)**	**Mass Distribution (%)**	**TNT Conc. (mg/kg)**	**2,4 DNT Conc. (mg/kg)**	**Pb Conc. (mg/kg)**
Initial Soil Analysis (Soil Fraction < 12.5 mm)												
Sample collected after soil homogenization at Treatability Laboratory		4,800	660	444		12,000	2,400	1,580		8,400	1,530	1,012
Soil Separation Products												
Soil Fraction 25-50 mm	5.0%	no visual TNT/DNT [1]		-	8.1%	no visual TNT/DNT [1]		-	6.5%	no visual TNT/DNT [1]		-
Soil Fraction 12.5-25 mm	5.8%	1,037 [2]	-	-	9.7%	no visual TNT/DNT [1]		-	7.8%	519	-	-
Soil Fraction 2.0-12.5 mm	19.5%	7,300	630	-	19.1%	9,400	400	-	17.2%	8,350	515	-
Sand after Hydraulic Separation	41.1%	5,300	490	-	44.8%	7,600	2,200	-	47.4%	6,450	1,345	558
Fines after Hydraulic Separation	28.7%	5,300	330	-	18.2%	11,000	1,700	-	21.1%	8,150	1,015	2,140
Total	100.0%				100.0%				100.0%			

Notes:

all results on dry-weight-basis

[1]: visual observation based on handsorting

-: not determined

Conc.: Concentration

Table 8: Oversize Treatment Results after 4 min. Grinding with 5/8" dense Alumina Ceramic Grinding Media - Round 1

Fraction	Mass Distribution on Dry Weight Basis (%)	TNT Concentration (mg/kg)	DNT Concentration (mg/kg)	Lead Concentration (mg/kg)	Notes
4.75-12.5 mm	44.4%	950	-	-	TNT Concentration estimated by handsorting TNT Particles
2.4-4.75 mm	22.5%	~ 1,000	-	-	TNT Concentration Estimated by Expray Analysis
2.0-2.4 mm	3.9%	~ 1,000	-	-	TNT Concentration Estimated by Expray Analysis
< 2.0 mm	29.3%	~ 8,000	-	-	TNT Concentration Estimated by Expray Analysis
Total	100.0%				

Notes
- : not analyzed

Table 9: Oversize Treatment Results after 2 min. Grinding with 9.5 mm Steel Grinding Media - Round 1

Fraction	Mass Distribution on Dry Weight Basis (%)	TNT Concentration (mg/kg)	2,4 DNT Concentration (mg/kg)	Lead Concentration (mg/kg)	Notes
4.75-12.5 mm	44.1%	354	-	-	TNT Concentration estimated by handsorting TNT Particles
4.0-4.75 mm	8.3%	1,300	64	294	Analysis by Lancaster
2.4-4.0 mm	25.7%	830	72	230	Analysis by Lancaster
2.0-2.4 mm	7.1%	570	120	233	Analysis by Lancaster
< 2.0 mm (Sand)	10.6%	4,800	930	-	Analysis by Lancaster
< 2.0 mm (Fines)	4.3%	13,000	2,800	-	Analysis by Lancaster
Total	100.0%				

Notes
- : not analyzed

Table 10: Combined Composite C1&C2 - Sand after Hydraulic Separation, Attrition Scrubbing/Grinding and Flotation - Round 1

Description		TNT Concentration (mg/kg)	2,4 DNT Concentration (mg/kg)	Lead Concentration (mg/kg)
C12 Composite -Soil Fraction < 12.5mm prior to Treatment		**8,400**	**1,530**	**1,012**
C12 Sand after Hydraulic Separation		**8,200**	**1,700**	**558**
C12 Sand FL1 - Sand after Hydraulic Separation, Scrubbing + Flotation		**190**	**54**	**197**
	Sand Fraction 1.0-2.0 mm	65	23	-
	Sand Fraction 0.5-1.0 mm	360	36	-
	Sand Fraction 0.038-0.5 mm	93	34	-
C12 Sand FL2 - Sand after Hydraulic Separation, Aggressive Scrubbing + Flotation		**110**	**58**	**194**
	Sand Fraction 1.0-2.0 mm	49	23	-
	Sand Fraction 0.5-1.0 mm	38	19	-
	Sand Fraction 0.038-0.5 mm	67	19	-
C12 Sand FL3 - Sand after Hydraulic Separation, Attrition Grinding + Flotation		**120**	**49**	**197**
	Sand Fraction 1.0-2.0 mm	27	11	-
	Sand Fraction 0.5-1.0 mm	40	14	-
	Sand Fraction 0.038-0.5 mm	72	35	-
NJDEP Non-Residential, Direct Contact Soil Remediation Standard		95	3	800

Notes:
all results on dry-weight-basis
[1)]: visual observation based on handsorting
-: not determined
Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

Table 11: Composite C1&C2 Oversize Grinding Results Run A & Run B - Round 2

Size Fraction	Oversize Grinding with mixture of 3/8" and 5/8" Steel Balls - 8 min Grinding Time			Oversize Grinding with mixture of 1" and 1 1/4" Steel Balls - 6 min Grinding Time		
	Mass Distribution after Grinding on dry Weight Basis (%)	TNT Concentration (mg/kg)	2,4 DNT Concentration (mg/kg)	Mass Distribution after Grinding on dry Weight Basis (%)	TNT Concentration (mg/kg)	2,4 DNT Concentration (mg/kg)
>12.5 mm	25.7%	no visual TNT	no visual DNT	21.8%	no visual TNT	no visual DNT
4.75-12.5 mm	21.8%	370	19	9.4%	100	30
4.0-4.75 mm	4.7%	200	22	1.0%		
2.4-4.0 mm	7.8%	51	22	1.8%	140	73
2.0-2.4 mm	2.3%	61	23	0.6%		
0.038-2.0 mm	24.8%	6,500	650	55.6%	4,900	300
<0.038 mm (fines)	12.9%	7,400	240	9.7%	9,100	230
Total	100.0%			100.0%		
NJDEP Non-Residential Direct Contact Soil Remediation Standard		95	3		95	3

Table 12: Combined Composite C1&C2 - Sand after Hydraulic Separation, Oversize Grinding, Attrition Scrubbing and Flotation - Round 2

Description	Mass Distribution (%)	TNT Concentration (mg/kg)	2,4 DNT Concentration (mg/kg)	Lead Concentration (mg/kg)
Optimization Testing - Test Run A (Oversize after Grinding not Combined with Sand)				
C12 Composite -Soil Fraction < 12.5mm prior to Treatment		**8,400**	**1,530**	**1,012**
Sand after Hydraulic Separation		**8,800**	**1,500**	**-**
Sand after Hydraulic Separation, Scrubbing + Flotation	**100%**	**130**	**58**	
Sand Fraction 1.0-2.0 mm	6.6%	55	28	-
Sand Fraction 0.5-1.0 mm	29.9%	110	42	-
Sand Fraction 0.020-0.5 mm	61.9%	36	18	-
Fines Fraction <0.020 mm (misplacement)	1.6%	**-**	**-**	-
Calculated Sand Fraction 0.020 - 2.0 mm (without fines misplacement)		60	26	-
Optimization Testing - Test Run B (Oversize after Grinding Combined with Sand)				
C12 Composite -Soil Fraction < 12.5mm prior to Treatment		**8,400**	**1,530**	**1,012**
Combined Sand after Hydraulic Separation and Oversize Grinding		**7,600**	**1,000**	**-**
Sand after Hydraulic Separation, Oversize Grinding, Attrition Scrubbing + Flotation	**100%**	**85**	**40**	**157**
Sand Fraction 1.0-2.0 mm	5.0%	68	17	-
Sand Fraction 0.5-1.0 mm	28.5%	58	16	-
Sand Fraction 0.020-0.5 mm	64.7%	42	17	-
Fines Fraction <0.020 mm (misplacement)	1.8%	-	-	-
Calculated Sand Fraction 0.020 - 2.0 mm (without fines misplacement)		48	17	-
NJDEP Non-Residential, Direct Contact Soil Remediation Standard		95	3	800

Notes

-: Not Analyzed

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

Table 13: Combined Composite C1&C2 Process Simulation and Oxidation - Round 3

Description		Mass Distribution (%)	TNT Concentration (mg/kg)	2,4 DNT Concentration (mg/kg)	Lead Concentration (mg/kg)
Soil Fractions prior to Treatment					
	Oversize Fraction 25 - 50 mm	6.5%	no visual TNT/DNT	no visual TNT/DNT	-
	Oversize Fraction 12.5 - 25 mm	7.8%	519	-	-
	Soil Fraction < 12.5 mm	85.7%	8,400	1,530	1,012
	Total	100.0%			
Intermediate Products (prior to Oxidation)					
	Sand after Hydraulic Separation (including Ground Oversize)	**68.1%**	6,200	1,100	-
	Sand after Hydraulic Separation, Scrubbing + Flotation Treatment	62.5%	97	38	-
	Combined Fines	29.9%	6,100	690	-
Treated Soil Products (After Oxidation)					
	Oversize Fraction 25 - 50 mm	6.5%	no visual TNT/DNT	no visual TNT/DNT	-
	Sand after Oxidation	62.5%	6.7	2.8	-
	Fines after Oxidation	29.9%	81	18	-
	Flotation Concentrate	1.1%	414,000 [1)]	84,200 [1)]	-
	Total	100.0%			
NJDEP Non-Residential, Direct Contact Soil Remediation Standard			**95**	**3**	**800**

Notes

-: Not Analyzed

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

1): Back-calculated Values

Table 14: Results Chemical Oxidation Sand Fraction - Round 3

Analyte	Concentration (mg/kg) [1]								NJDEP Industrial Reference Standard (mg/kg)
	Before Oxidation			Sand After Oxidation					
	Untreated Soil <12.5 mm	Sand After Hydraulic Separation	Sand After Attrition Scrubbing and Flotation (Before Oxidation)	Test#1 90 Minutes T = 20C Standard Reagent Standard pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	Test#3 90 Minutes T = 55C Standard Reagent Low pH	Test#4 90 Minutes T = 55C Low Reagent Standard pH	Test#5 45 Minutes T = 55C Low Reagent High pH	
		C12C-SAC	C12C-SAC-FL	C12C-SAOX1	C12C-SAOX2	C12C-SAOX3	C12C-SAOX4	C12C-SAOX5	
4-Amino-2,6-Dinitrotoluene	-	-	-	0.39	0.23	-	0.49	-	
2-Amino-4,6-Dinitrotoluene	-	-	1.8	0.68	0.33	-	0.88	-	
1,2-Dinitrobenzene	-	-	-	-	-	-	-	-	
1,3-Dinitrobenzene	-	-	-	-	-	-	0.28	-	
1,4-Dinitrobenzene	-	-	-	-	-	-	-	-	
2,4-Dinitrotoluene	1,530	1,100	38	7.5	2.8	3.0	9.7	4.6	3
2,6-Dinitrotoluene	-	-	-	-	-	-	-	-	
HMX	-	-	-	-	-	-	-	-	
Nitrobenzene	-	-	-	-	-	-	-	-	
Nitroglycerin	-	-	-	-	-	-	-	-	
1-Nitronaphthalene	-	-	-	-	-	-	-	-	
2-Nitrotoluene	-	-	-	-	-	-	-	-	
3-Nitrotoluene	-	-	-	-	-	-	-	-	
4-Nitrotoluene	-	-	-	-	-	-	-	-	
PETN	-	-	-	-	-	-	-	-	
RDX	-	-	-	-	-	-	-	-	
Tetryl	-	-	-	-	-	-	-	-	
1,3,5-Trinitrobenzene	-	-	-	1.1	-	-	-	1.8	
2,4,6-Trinitrotoluene (TNT)	8,400	6,200	97	22	6.7	9.3	22	9.9	95

Notes:

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 8 Parts Water (~15% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

-: not detected

Table 14a: Results Chemical Oxidation Sand Fraction - Effect Temperature - Round 3

Analyte	Concentration (mg/kg) [1)]			NJDEP Industrial Reference Standard (mg/kg)
	Sand After Flotation (Before Oxidation)	Test#1 90 Minutes T = 20C Standard Reagent Standard pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	
	C12C-SAC-FL	C12C-SAOX1	C12C-SAOX2	
4-Amino-2,6-Dinitrotoluene	-	0.39	0.23	
2-Amino-4,6-Dinitrotoluene	1.8	0.68	0.33	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	-	-	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	38	7.5	2.8	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	-	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	1.1	-	
2,4,6-Trinitrotoluene (TNT)	97	22	6.7	95

BEST

Notes:

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

1): All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 8 Parts Water (~15% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

-: not detected

Table 14b: Results Chemical Oxidation Sand Fraction - Effect pH - Round 3

Analyte	Concentration (mg/kg) [1)]			NJDEP Industrial Reference Standard
	Sand After Flotation (Before Oxidation)	Test#3 90 Minutes T = 55C Standard Reagent Low pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	
	C12C-SAC-FL	C12C-SAOX3	C12C-SAOX2	
4-Amino-2,6-Dinitrotoluene	-	-	0.23	
2-Amino-4,6-Dinitrotoluene	1.8	-	0.33	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	-	-	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	38	3.0	2.8	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	-	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	-	-	
2,4,6-Trinitrotoluene (TNT)	97	9.3	6.7	95

BEST

Notes:

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1)]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 8 Parts Water (~15% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

-: not detected

Table 14c: Results Chemical Oxidation Sand Fraction - Effect Time - Round 3

Analyte	Concentration (mg/kg) [1)]			NJDEP Industrial Reference Standard (mg/kg)
	Sand After Flotation (Before Oxidation)	Test#5 45 Minutes T = 55C Low Reagent High pH	Test#4 90 Minutes T = 55C Low Reagent Standard pH	
	C12C-SAC-FL	C12C-SAOX5	C12C-SAOX4	
4-Amino-2,6-Dinitrotoluene	-	-	0.49	
2-Amino-4,6-Dinitrotoluene	1.8	-	0.88	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	-	0.28	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	38	4.6	9.7	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	-	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	1.8	-	
2,4,6-Trinitrotoluene (TNT)	97	9.9	22	95

Notes: **BEST**

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1)]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 8 Parts Water (~15% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

-: not detected

Table 14d: Results Chemical Oxidation Sand Fraction - Effect Reagent Dosage - Round 3

Analyte	Concentration (mg/kg) [1)]			NJDEP Industrial Reference Standard (mg/kg)
	Sand After Flotation (Before Oxidation)	Test#4 90 Minutes T = 55C Low Reagent Standard pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	
	C12C-SAC-FL	C12C-SAOX4	C12C-SAOX2	
4-Amino-2,6-Dinitrotoluene	-	0.49	0.23	
2-Amino-4,6-Dinitrotoluene	1.8	0.88	0.33	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	0.28	-	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	38	9.7	2.8	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	-	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	-	-	
2,4,6-Trinitrotoluene (TNT)	97	22	6.7	95

Notes:

BEST

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1)]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 8 Parts Water (~15% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

-: not detected

Table 15: Results Contact Water Analysis after Sand Oxidation - Round 3

Analyte	Concentration (mg/L)				
	Test#1 90 Minutes T = 20C Standard Reagent Standard pH	**Test#2 90 Minutes T = 55C Standard Reagent Standard pH**	**Test#3 90 Minutes T = 55C Standard Reagent Low pH**	**Test#4 90 Minutes T = 55C Low Reagent Standard pH**	**Test#5 45 Minutes T = 55C Low Reagent High pH**
	C12C-SAOX1W	**C12C-SAOX2W**	**C12C-SAOX3W**	**C12C-SAOX4W**	**C12C-SAOX5W**
4-Amino-2,6-Dinitrotoluene	0.028	0.048	0.038	0.046	0.076
2-Amino-4,6-Dinitrotoluene	0.0098	0.020	0.018	0.018	0.026
1,2-Dinitrobenzene	-	-	-	-	-
1,3-Dinitrobenzene	0.00022	0.00072	0.00063	0.00067	0.00017
1,4-Dinitrobenzene	-	-	-	-	-
2,4-Dinitrotoluene	0.086	0.034	0.041	0.025	0.047
2,6-Dinitrotoluene	-	-	-	-	-
HMX	-	-	-	-	-
Nitrobenzene	-	-	-	-	-
Nitroglycerin	-	-	-	-	-
1-Nitronaphthalene	-	-	-	-	-
2-Nitrotoluene	-	-	-	-	-
3-Nitrotoluene	-	-	-	-	-
4-Nitrotoluene	-	-	-	-	-
PETN	-	-	-	-	-
RDX	-	-	-	-	-
Tetryl	-	-	-	-	-
1,3,5-Trinitrobenzene	0.038	0.028	0.012	0.025	0.13
2,4,6-Trinitrotoluene (TNT)	0.69	0.0017	0.009	-	0.047

Notes:

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 8 Parts Water (~15% solids by weight)
At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction
na: not analyzed
-: not detected

Table 16: Results Chemical Oxidation Fines Fraction - Round 3

Analyte	Concentration (mg/kg) [1]							NJDEP Industrial Reference Standard (mg/kg)
	Before Oxidation		Fines After Oxidation					
	Untreated Soil <12.5 mm	Combined Fines (Before Oxidation)	Test#1 90 Minutes T = 20C Standard Reagent Standard pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	Test#3 90 Minutes T = 55C Standard Reagent Low pH	Test#4 90 Minutes T = 55C High Reagent Standard pH	Test#5 45 Minutes T = 55C Standard Reagent High pH	
		C12C-FIC	C12C-FIOX1	C12C-FIOX2	C12C-FIOX3	C12C-FIOX4	C12C-FIOX5	
4-Amino-2,6-Dinitrotoluene	-	-	-	16	10	10	21	
2-Amino-4,6-Dinitrotoluene	-	-	-	9.3	7.8	8.0	9.2	
1,2-Dinitrobenzene	-	-	-	-	-	-	-	
1,3-Dinitrobenzene	-	-	-	-	-	-	-	
1,4-Dinitrobenzene	-	-	-	-	-	-	-	
2,4-Dinitrotoluene	1,530	690	170	18	18	19	24	3
2,6-Dinitrotoluene	-	-	-	-	-	-	-	
HMX	-	-	-	-	-	-	-	
Nitrobenzene	-	-	-	-	-	-	-	
Nitroglycerin	-	-	-	-	-	-	-	
1-Nitronaphthalene	-	-	-	-	-	-	12	
2-Nitrotoluene	-	-	-	-	-	-	-	
3-Nitrotoluene	-	-	-	-	-	-	-	
4-Nitrotoluene	-	-	-	-	-	-	-	
PETN	-	-	-	-	-	-	-	
RDX	-	-	-	-	-	-	-	
Tetryl	-	-	-	-	-	-	-	
1,3,5-Trinitrobenzene	-	-	-	110	80	87	81	
2,4,6-Trinitrotoluene (TNT)	8,400	6,100	4,200	130	81	- [2]	250	95
Moisture (%)		36.6	37.1	36.9	34.8	36.1	38.8	

BEST

Notes:

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1]: All Results reported on Dry Weight Basis

[2]: Analytical result for TNT reported as "not detected" while other constituents are present as similar levels as TNT for Test#4 is not considered representative.

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 10 Parts Water (~10% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

na: not analyzed

-: not detected

Table 16a: Results Chemical Oxidation Fines Fraction - Effect Temperature - Round 3

Analyte	Concentration (mg/kg) [1)]			NJDEP Industrial Reference Standard (mg/kg)
	Combined Fines (Before Oxidation)	Test#1 90 Minutes T = 20C Standard Reagent Standard pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	
	C12C-FIC	C12C-FIOX1	C12C-FIOX2	
4-Amino-2,6-Dinitrotoluene	-	-	16	
2-Amino-4,6-Dinitrotoluene	-	-	9.3	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	-	-	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	690	170	18	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	-	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	-	110	
2,4,6-Trinitrotoluene (TNT)	6,100	4,200	130	95
Moisture (%)	36.6	37.1	36.9	

Notes:

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1)]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 10 Parts Water (~10% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

na: not analyzed

-: not detected

Table 16b: Results Chemical Oxidation Fines Fraction - Effect pH - Round 3

Analyte	Concentration (mg/kg) [1)]			NJDEP Industrial Reference Standard (mg/kg)
	Combined Fines (Before Oxidation)	Test#3 90 Minutes T = 55C Standard Reagent Low pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	
	C12C-FIC	C12C-FIOX3	C12C-FIOX2	
4-Amino-2,6-Dinitrotoluene	-	10	16	
2-Amino-4,6-Dinitrotoluene	-	7.8	9.3	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	-	-	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	690	18	18	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	-	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	80	110	
2,4,6-Trinitrotoluene (TNT)	6,100	81	130	95
Moisture (%)	36.6	34.8	36.9	

Notes: **BEST**

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1)]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 10 Parts Water (~10% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

na: not analyzed

-: not detected

Table 16c: Results Chemical Oxidation Fines Fraction - Effect Time - Round 3

Analyte	Concentration (mg/kg) [1)]			NJDEP Industrial Reference Standard (mg/kg)
	Combined Fines (Before Oxidation)	Test#5 45 Minutes T = 55C Standard Reagent Standard pH	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	
	C12C-FIC	C12C-FIOX5	C12C-FIOX2	
4-Amino-2,6-Dinitrotoluene	-	21	16	
2-Amino-4,6-Dinitrotoluene	-	9.2	9.3	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	-	-	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	690	24	18	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	12	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	81	110	
2,4,6-Trinitrotoluene (TNT)	6,100	250	130	95
Moisture (%)	36.6	38.8	36.9	

Notes:

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1)]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 10 Parts Water (~10% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

na: not analyzed

-: not detected

Table 16d: Results Chemical Oxidation Fines Fraction - Effect Reagent Dosage - Round 3

Analyte	Concentration (mg/kg) [1]			NJDEP Industrial Reference Standard (mg/kg)
	Combined Fines (Before Oxidation)	Test#2 90 Minutes T = 55C Standard Reagent Standard pH	Test#4 90 Minutes T = 55C High Reagent Standard pH	
	C12C-FIC	C12C-FIOX2	C12C-FIOX4	
4-Amino-2,6-Dinitrotoluene	-	16	10	
2-Amino-4,6-Dinitrotoluene	-	9.3	8.0	
1,2-Dinitrobenzene	-	-	-	
1,3-Dinitrobenzene	-	-	-	
1,4-Dinitrobenzene	-	-	-	
2,4-Dinitrotoluene	690	18	19	3
2,6-Dinitrotoluene	-	-	-	
HMX	-	-	-	
Nitrobenzene	-	-	-	
Nitroglycerin	-	-	-	
1-Nitronaphthalene	-	-	-	
2-Nitrotoluene	-	-	-	
3-Nitrotoluene	-	-	-	
4-Nitrotoluene	-	-	-	
PETN	-	-	-	
RDX	-	-	-	
Tetryl	-	-	-	
1,3,5-Trinitrobenzene	-	110	87	
2,4,6-Trinitrotoluene (TNT)	6,100	130	- [2]	95
Moisture (%)	36.6	36.9	36.1	

Notes:

Values below NJDEP Non-Residential, Direct Contact Soil Remediation Standard

[1]: All Results reported on Dry Weight Basis

[2]: Analytical result for TNT reported as "not detected" while other constituents are present as similar levels as results for Test#2; therefore the analytical result reported for TNT for Test#4 is not considered representative.

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 10 Parts Water (~10% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

na: not analyzed

-: not detected

Table 17: Results Contact Water Analysis after Fines Oxidation - Round 3

Analyte	Concentration (mg/L)				
	Test#1 90 Minutes T = 20C Standard Reagent Standard pH	**Test#2 90 Minutes T = 55C Standard Reagent Standard pH**	**Test#3 90 Minutes T = 55C Standard Reagent Low pH**	**Test#4 90 Minutes T = 55C High Reagent Standard pH**	**Test#5 45 Minutes T = 55C Standard Reagent Standard pH**
	C12C-FIOX1W	**C12C-FIOX2W**	**C12C-FIOX3W**	**C12C-FIOX4W**	**C12C-FIOX5W**
4-Amino-2,6-Dinitrotoluene	na	0.89	0.56	0.46	2.4
2-Amino-4,6-Dinitrotoluene	na	0.33	0.26	0.24	0.63
1,2-Dinitrobenzene	na	-	-	-	-
1,3-Dinitrobenzene	na	0.010	0.0052	0.0051	-
1,4-Dinitrobenzene	na	-	-	-	-
2,4-Dinitrotoluene	na	0.53	0.47	0.41	2.2 [1)]
2,6-Dinitrotoluene	na	-	-	-	-
HMX	na	-	-	-	-
Nitrobenzene	na	-	-	-	-
Nitroglycerin	na	-	-	-	-
1-Nitronaphthalene	na	-	-	-	-
2-Nitrotoluene	na	-	-	-	-
3-Nitrotoluene	na	-	-	-	-
4-Nitrotoluene	na	-	-	-	-
PETN	na	-	-	-	-
RDX	na	-	-	-	-
Tetryl	na	-	-	-	-
1,3,5-Trinitrobenzene	na	5.6 [1)]	3.5 [1)]	3.7 [1)]	4.6 [1)]
2,4,6-Trinitrotoluene (TNT)	na	11 [1)]	8.5 [1)]	7.0 [1)]	33 [1)]

Notes: **BEST**

[1)] High Residual Concentration in Contact Water Suggests Reaction is Incomplete due to Insufficient Reagent Dosage and/or Limited Contact Time

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 10 Parts Water (~10% solids by weight)

At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

na: not analyzed - no contact water sample could be obtained due to poor flocculation

-: not detected

Table 18: Results Chemical Oxidation Combined Sand & Fines Fraction - Round 3

Analyte	Concentration (mg/kg) [1]				NJDEP Industrial Reference Standard (mg/kg)
	Sand & Fines Combination Before Oxidation (Calculated Value)	Test#1 45 Minutes T = 55C Standard Reagent Standard pH [2]	Test#2 90 Minutes T = 55C Standard Reagent Standard pH [2]	Test#3 45 Minutes T = 55C Standard Reagent Standard pH [3]	
		C12C-OX6	C12C-OX7	C12C-OX8	
4-Amino-2,6-Dinitrotoluene	-	8.1	10	-	
2-Amino-4,6-Dinitrotoluene	-	4.3	6.2	-	
1,2-Dinitrobenzene	-	-	-	-	
1,3-Dinitrobenzene	-	-	-	-	
1,4-Dinitrobenzene	-	-	-	-	
2,4-Dinitrotoluene	249	13	19	16	3
2,6-Dinitrotoluene	-	-	-	-	
HMX	-	-	-	-	
Nitrobenzene	-	-	-	-	
Nitroglycerin	-	-	-	-	
1-Nitronaphthalene	-	-	-	-	
2-Nitrotoluene	-	-	-	-	
3-Nitrotoluene	-	-	-	-	
4-Nitrotoluene	-	-	-	-	
PETN	-	-	-	-	
RDX	-	-	-	-	
Tetryl	-	-	-	-	
1,3,5-Trinitrobenzene	-	58	57	51	
2,4,6-Trinitrotoluene (TNT)	2,040	130	140	460	95
Moisture (%)		21.7	28.8	18.8	

Notes:

[1]: All Results reported on Dry Weight Basis

Approximate Water to Solids ratio for oxidation tests: 1 Part Solids to 3 Parts Water (~25% solids by weight)

[2] At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

[3] At the end of specified contact time, the pH of soil slurry was not raised to stop oxidation reaction

na: not analyzed

-: not detected

Table 19: Results Contact Water Analysis after Combined Sand & Fines Oxidation - Round 3

Analyte	Concentration (mg/L)		
	Test#1 45 Minutes T = 55C Standard Reagent Standard pH [2)]	**Test#2 90 Minutes T = 55C Standard Reagent Standard pH [2)]**	**Test#3 45 Minutes T = 55C Standard Reagent Standard pH [3)]**
	C12C-OX6W	**C12C-OX7W**	**C12C-OX8W**
4-Amino-2,6-Dinitrotoluene	1.8	1.8	0.17
2-Amino-4,6-Dinitrotoluene	0.61	0.71	0.075
1,2-Dinitrobenzene	-	-	-
1,3-Dinitrobenzene	0.029	0.031	-
1,4-Dinitrobenzene	-	-	-
2,4-Dinitrotoluene	2.1 [1)]	2.4 [1)]	-
2,6-Dinitrotoluene	-	-	-
HMX	-	-	-
Nitrobenzene	-	-	-
Nitroglycerin	-	-	-
1-Nitronaphthalene	-	-	-
2-Nitrotoluene	-	-	-
3-Nitrotoluene	-	-	-
4-Nitrotoluene	-	-	-
PETN	-	-	-
RDX	-	-	-
Tetryl	-	-	-
1,3,5-Trinitrobenzene	5.5 [1)]	3.3 [1)]	11 [1)]
2,4,6-Trinitrotoluene (TNT)	21 [1)]	9.7 [1)]	44 [1)]

Notes:

[1)] High Residual Concentration in Contact Water Suggests Reaction is Incomplete due to Insufficient Reagent Dosage and/or Limited Contact Time

[2)] At the end of specified contact time, the pH of soil slurry was raised to pH = 10.2 to stop oxidation reaction

[3)] At the end of specified contact time, the pH of soil slurry was not raised to stop oxidation reaction

na: not analyzed

-: not detected

Table 20: Projected Soil Treatment Product Mass Balance based on Treatability Study Composite 1 & 2

		Moist Weight	% Moisture [1)]	Dry Weight	Mass Distribution on Dry Weight Basis
		(Ton)		(Ton)	**(%)**
Total TNT Impacted Soil for Treatment (estimate)		75,000	15%	63,750	100.0%
Soil Treatment Products					
Sand Product (for Reuse)					
Oversize Product (25 -25 mm)		4,504	8%	4,144	6.5%
Sand Product (~ 0.030-2.0 mm)		46,875	15%	39,844	62.5%
	Total Clean	**51,379**			**69.0%**
Filter Cake (for Bio)					
Filter Cake (< ~0.030 mm)		31,769	40%	19,061	29.9%
	Total Filter Cake (for Bio)	**31,769**			**29.9%**
TNT Concentrate Residue					
Flotation Concentrate		1,169	40%	701	1.1%
	Total Residue	**1,169**			**1.1%**

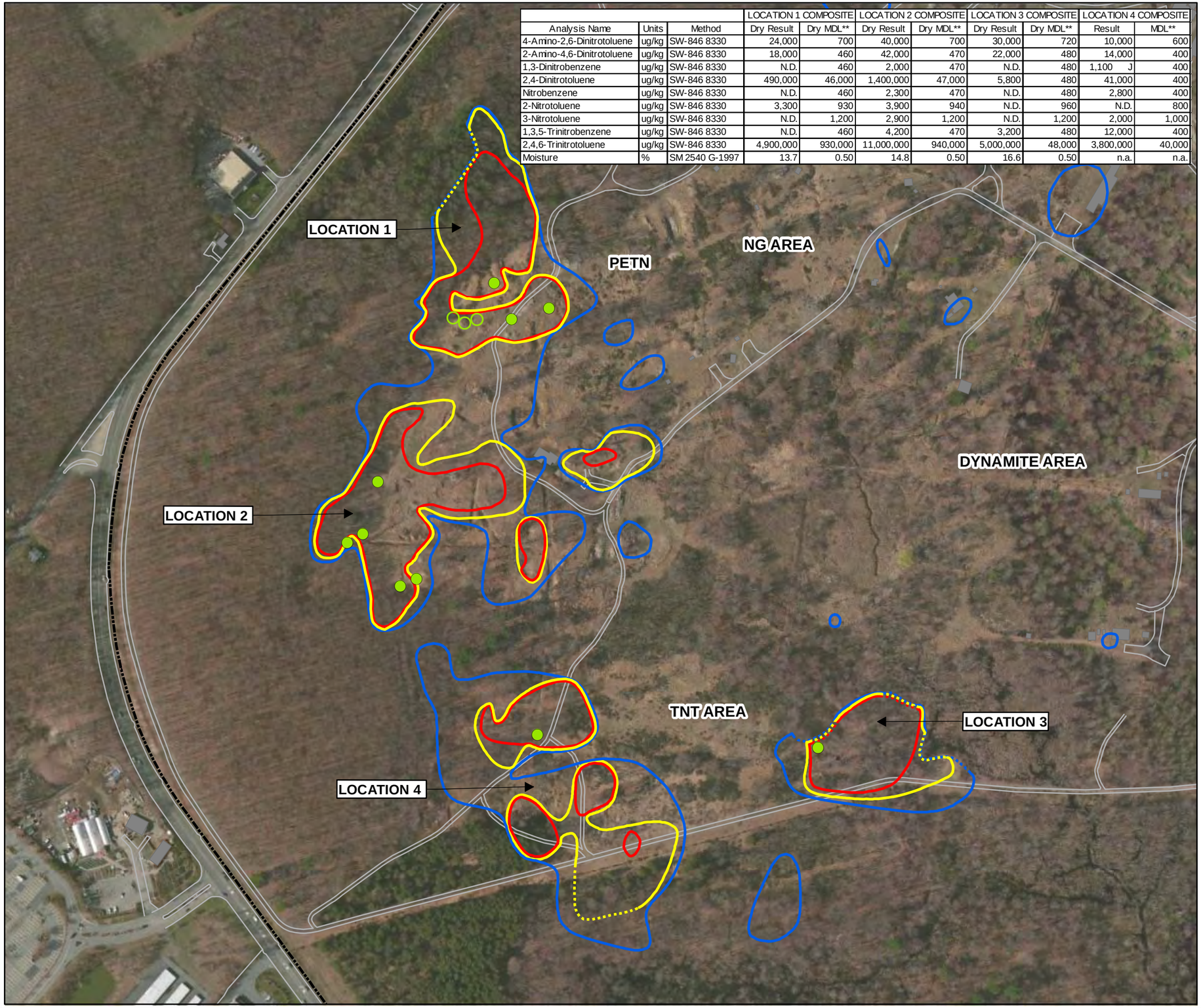
Note:

[1)]: Estimated Moisture Contents

Figures

DRAFT

			LOCATION 1 COMPOSITE		LOCATION 2 COMPOSITE		LOCATION 3 COMPOSITE		LOCATION 4 COMPOSITE	
Analysis Name	Units	Method	Dry Result	Dry MDL**	Dry Result	Dry MDL**	Dry Result	Dry MDL**	Result	MDL**
4-Amino-2,6-Dinitrotoluene	ug/kg	SW-846 8330	24,000	700	40,000	700	30,000	720	10,000	600
2-Amino-4,6-Dinitrotoluene	ug/kg	SW-846 8330	18,000	460	42,000	470	22,000	480	14,000	400
1,3-Dinitrobenzene	ug/kg	SW-846 8330	N.D.	460	2,000	470	N.D.	480	1,100 J	400
2,4-Dinitrotoluene	ug/kg	SW-846 8330	490,000	46,000	1,400,000	47,000	5,800	480	41,000	400
Nitrobenzene	ug/kg	SW-846 8330	N.D.	460	2,300	470	N.D.	480	2,800	400
2-Nitrotoluene	ug/kg	SW-846 8330	3,300	930	3,900	940	N.D.	960	N.D.	800
3-Nitrotoluene	ug/kg	SW-846 8330	N.D.	1,200	2,900	1,200	N.D.	1,200	2,000	1,000
1,3,5-Trinitrobenzene	ug/kg	SW-846 8330	N.D.	460	4,200	470	3,200	480	12,000	400
2,4,6-Trinitrotoluene	ug/kg	SW-846 8330	4,900,000	930,000	11,000,000	940,000	5,000,000	48,000	3,800,000	40,000
Moisture	%	SM 2540 G-1997	13.7	0.50	14.8	0.50	16.6	0.50	n.a.	n.a.



LEGEND:
- NEGATIVE EXPRAY TEST FOR TNT
- POSITIVE EXPRAY TEST FOR TNT
- AREAL EXTENT EXCEEDING IGWSCC
- AREAL EXTENT EXCEEDING NRDCSCC
- AREAL EXTENT EXCEEDING RDCSCC
- INFERRED AREAL EXTENT EXCEEDING IGWSCC
- INFERRED AREAL EXTENT EXCEEDING NRDCSCC
- INFERRED AREAL EXTENT EXCEEDING RDCSCC
- ROAD
- SITE BOUNDARY
- FORMER BUILDINGS

0 300 600 Feet

GRAPHIC SCALE

NOTES:
1. 2011 IMAGERY PROVIDED BY ESRI IMAGE SERVICE.
2. BASEMAP INFORMATION FROM ELECTRONIC FILE PROVIDED BY ASHLAND, INC. TITLED: "SITE PLAN.DWG"
3. ug/kg = MICROGRAMS PER KILOGRAM
4. ONLY DETECTED CONSTITUENTS PRESENTED IN TABLE.

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT SOIL TREATABILITY STUDY WORK PLAN

TEST PIT SAMPLING TARGET AREAS

ARCADIS

FIGURE
1

City: SYR Div/Group: SED Created By: J.RAPP Last Saved By: jrapp
Ashland-Kenvil, NJ (NJ003000.NJ62.00008)
Q:\Ashland\Kenvil_NJ\TNT_TreatabilityStudy\WorkPlan\mxd\ExpRay\Results.mxd 6/28/2013 2:18:07 PM

Figure 2: Composite Sample Collection Schematic - Location 1, Composite 1

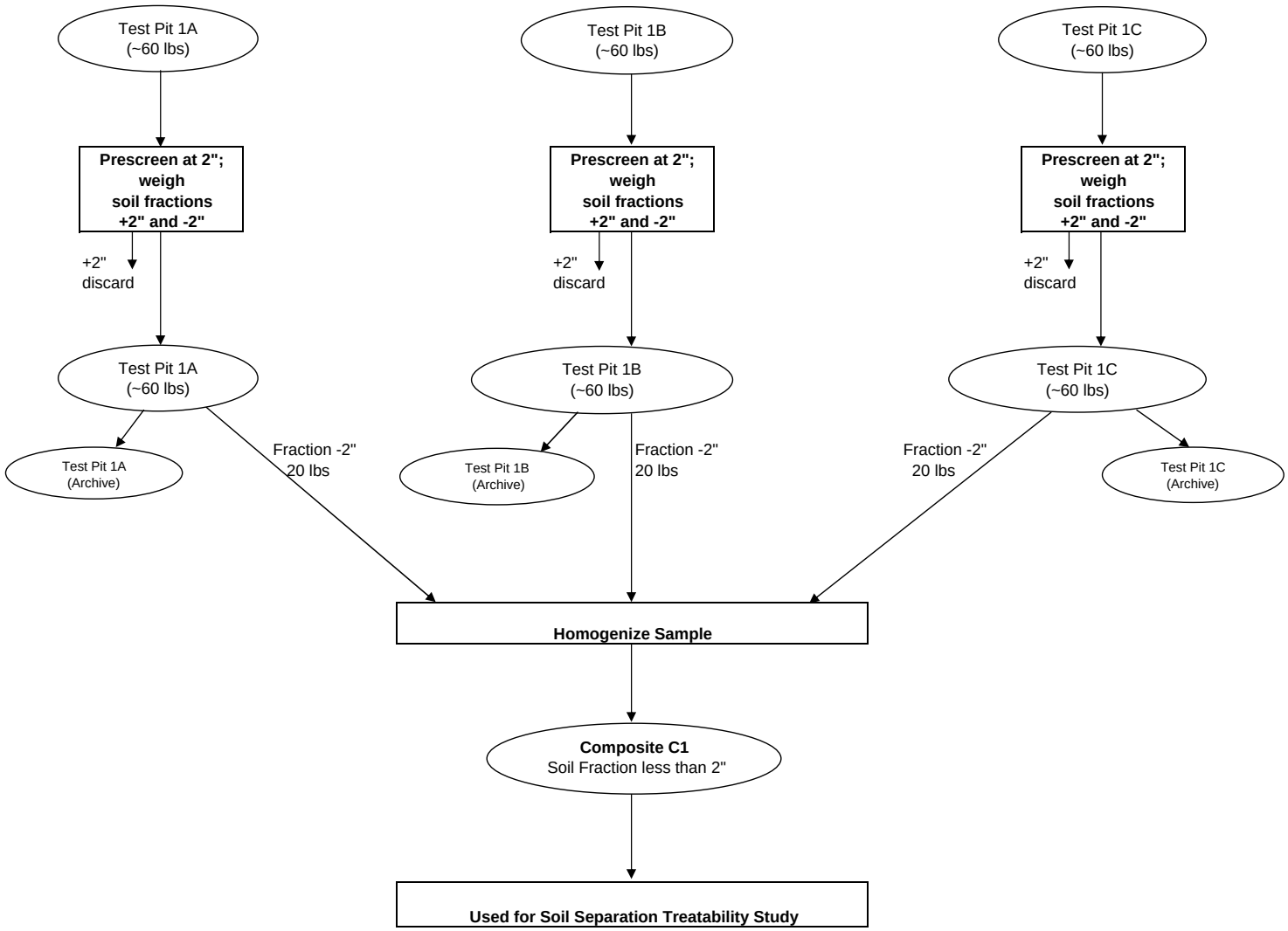


Figure 3: Composite Sample Collection Schematic - Location 2, Composite 2

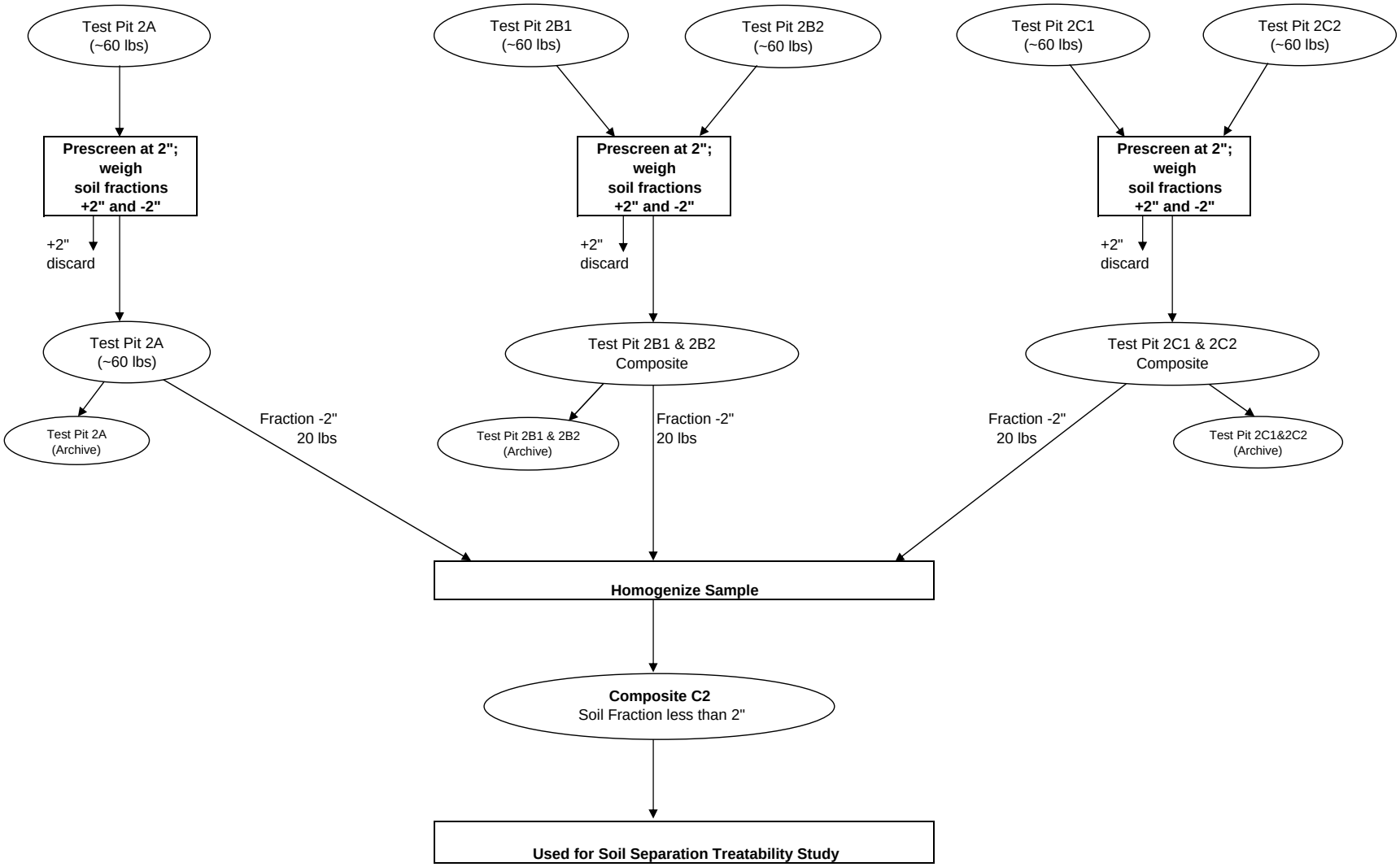


Figure 4: Composite Sample Collection Schematic - Locations 3 and 4 , Composites 3 and 4

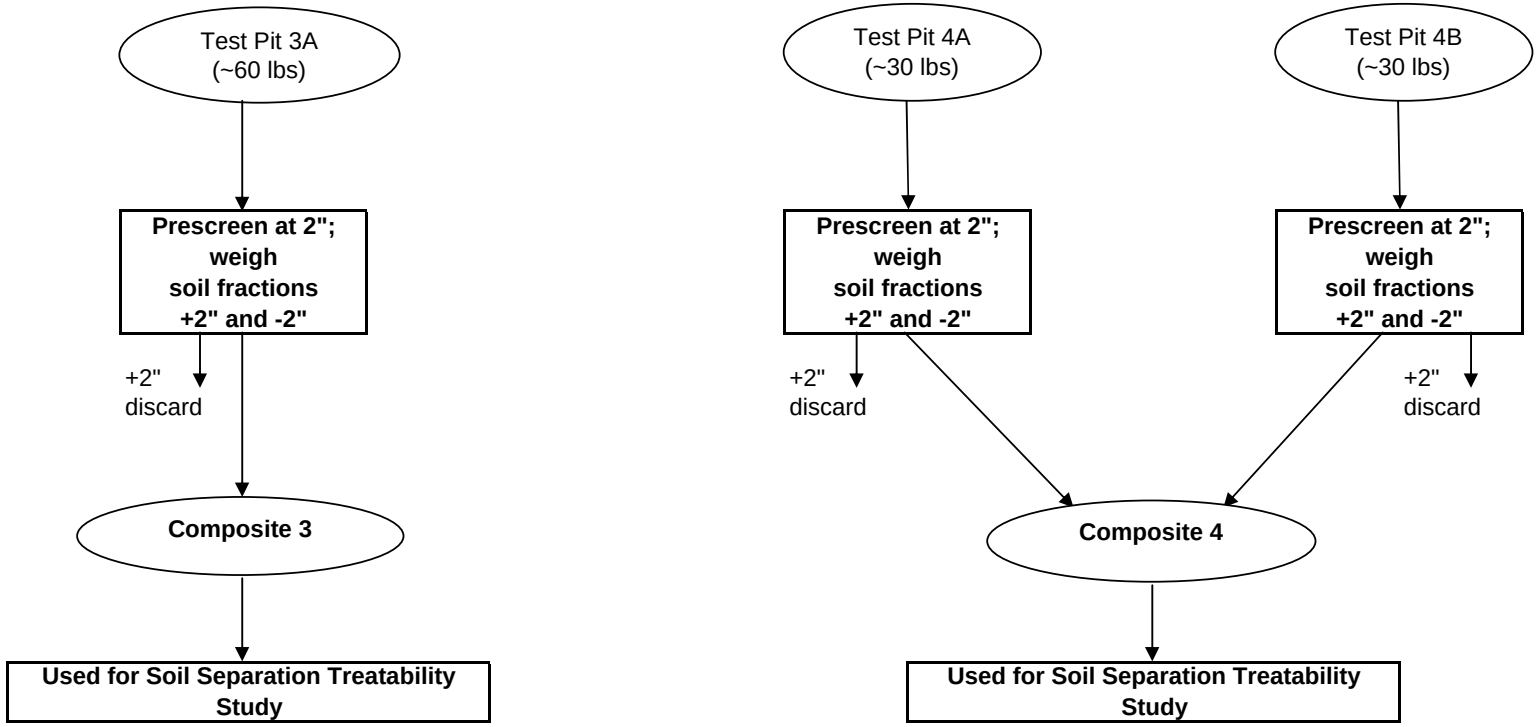
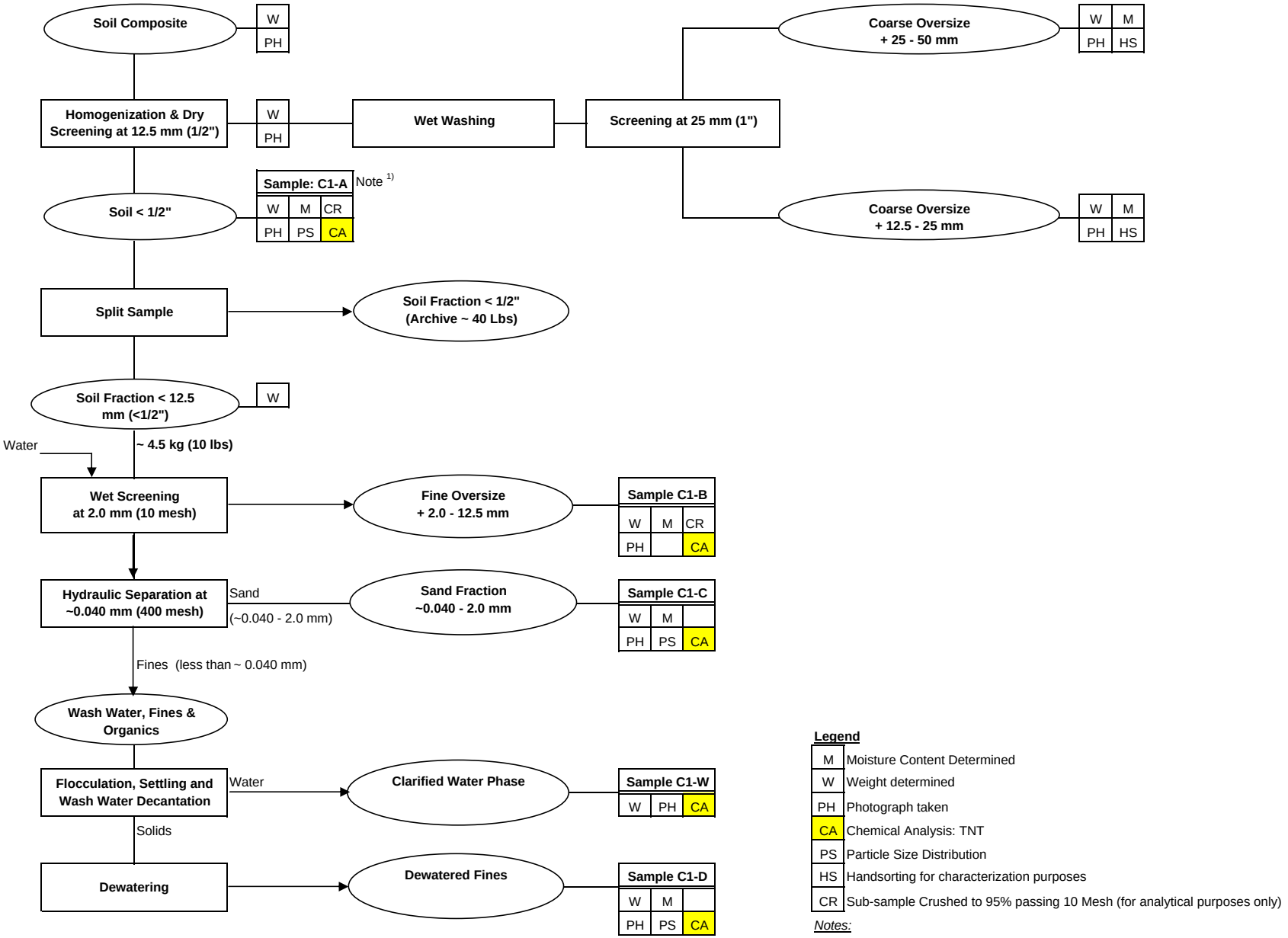


Figure 5: Basic Separation Testing Schematic Round 1A - Composites C1, C2, C3 and C4



Legend

M	Moisture Content Determined
W	Weight determined
PH	Photograph taken
CA	Chemical Analysis: TNT
PS	Particle Size Distribution
HS	Handsorting for characterization purposes
CR	Sub-sample Crushed to 95% passing 10 Mesh (for analytical purposes only)

Notes:

1): Sample Code System Example: C1-A: Composite C1, Sample A

Figure 6: Oversize Treatment Testing Schematic Combined Composite C1 & C2- Round 1B

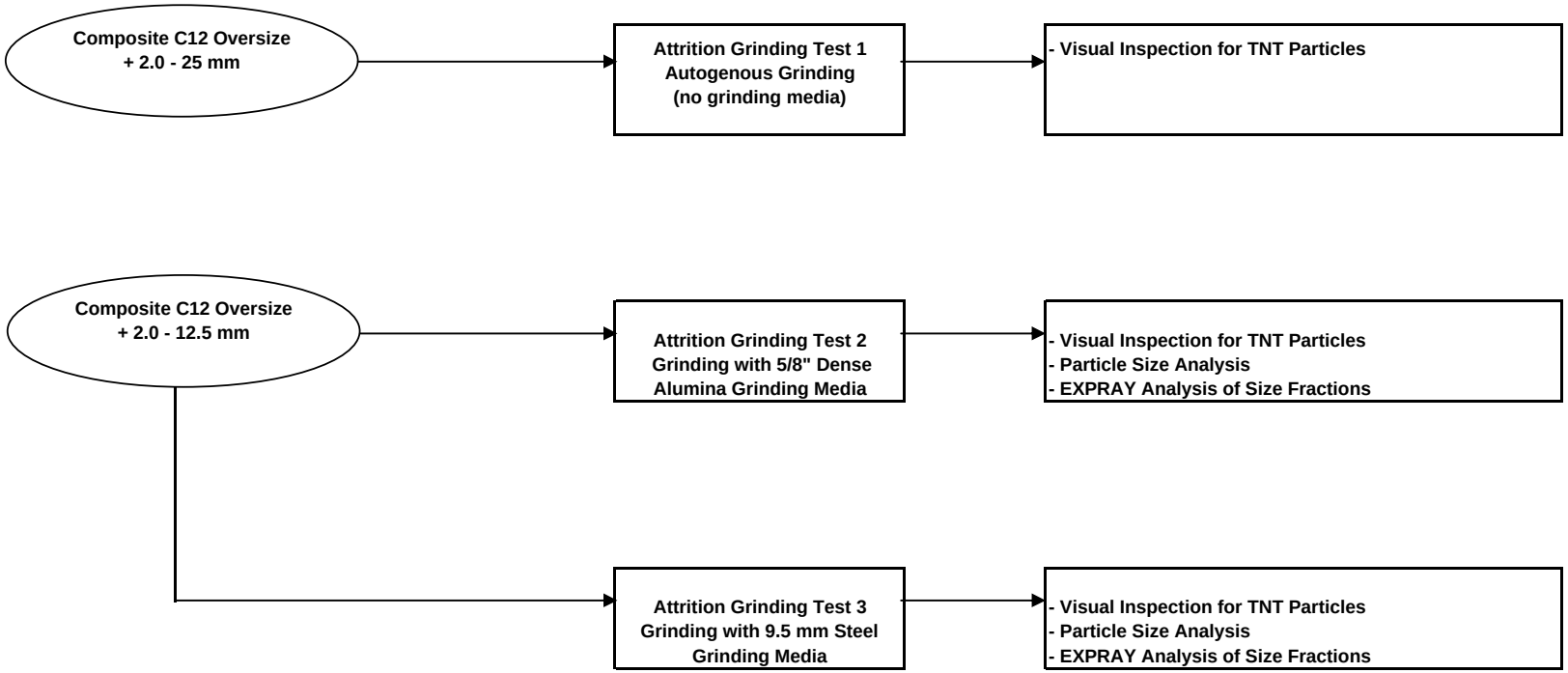


Figure 7: Sand Treatment Testing Schematic Combined Composite C1 & C2 - Round 1B

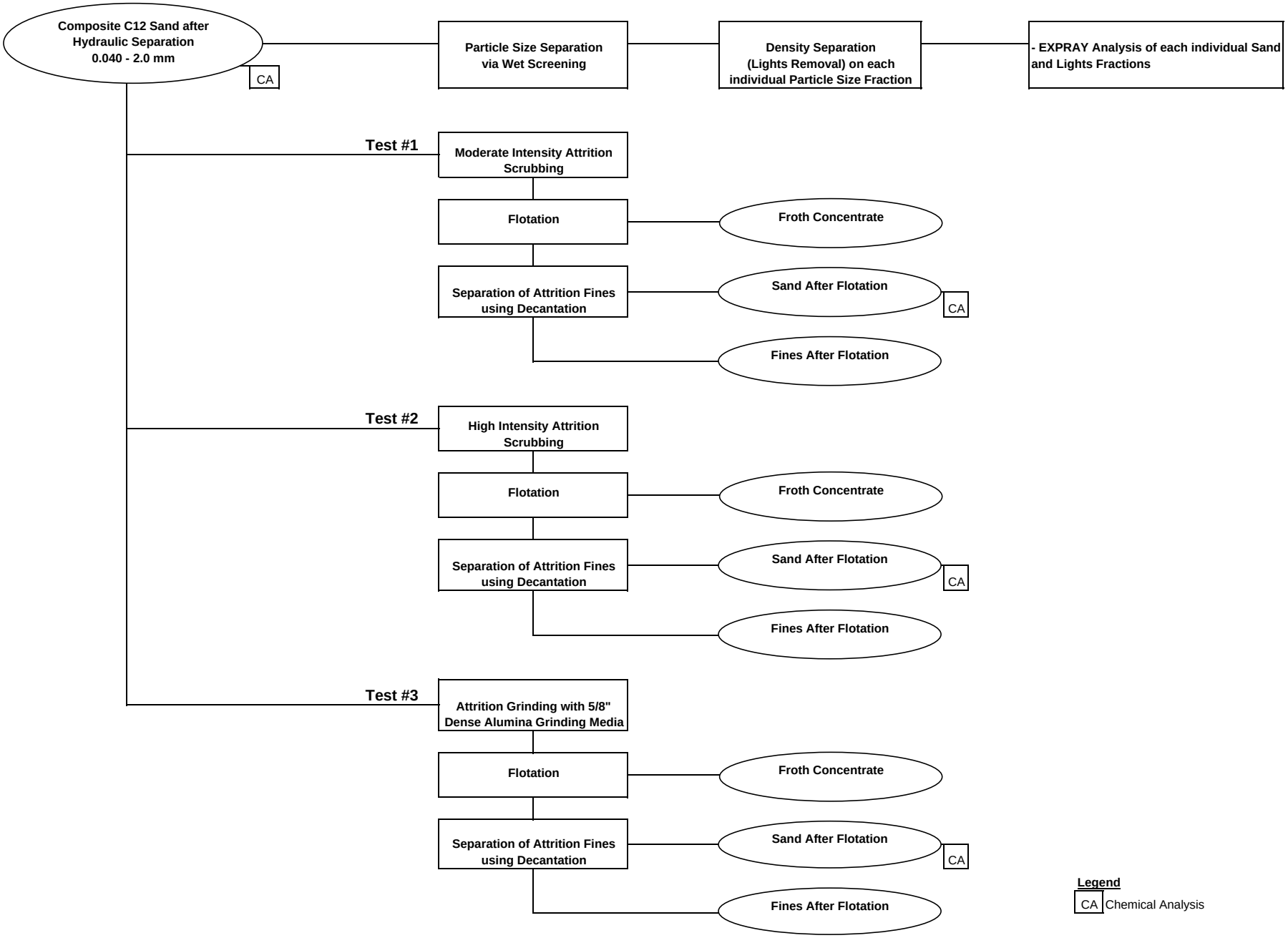


Figure 8: Process Optimization Testing Run A (Oversize after Grinding not Treated combined with Sand) - Round 2

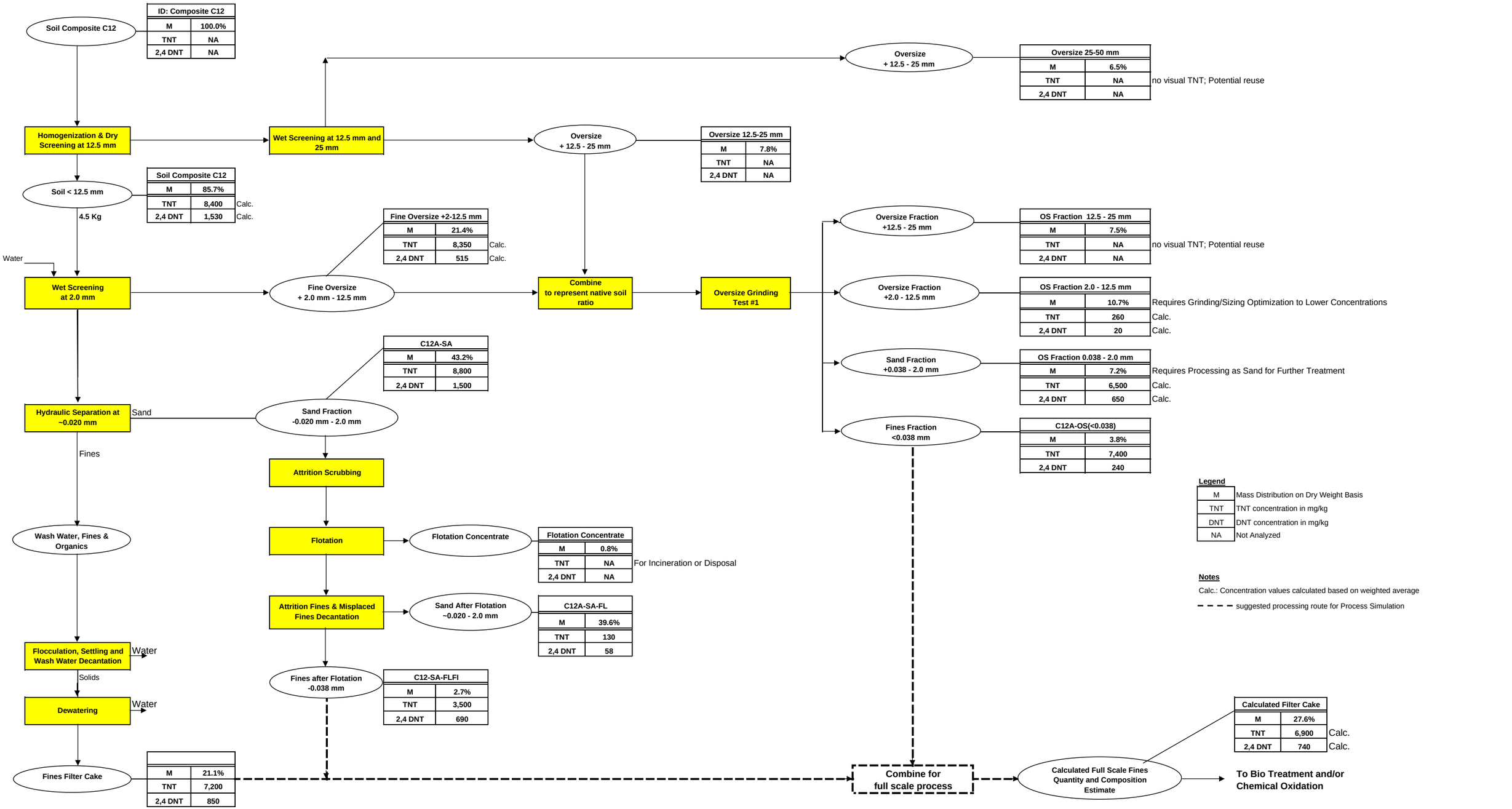


Figure 9: Process Optimization Testing Run B (Oversize after Grinding Treated combined with Sand) - Round 2

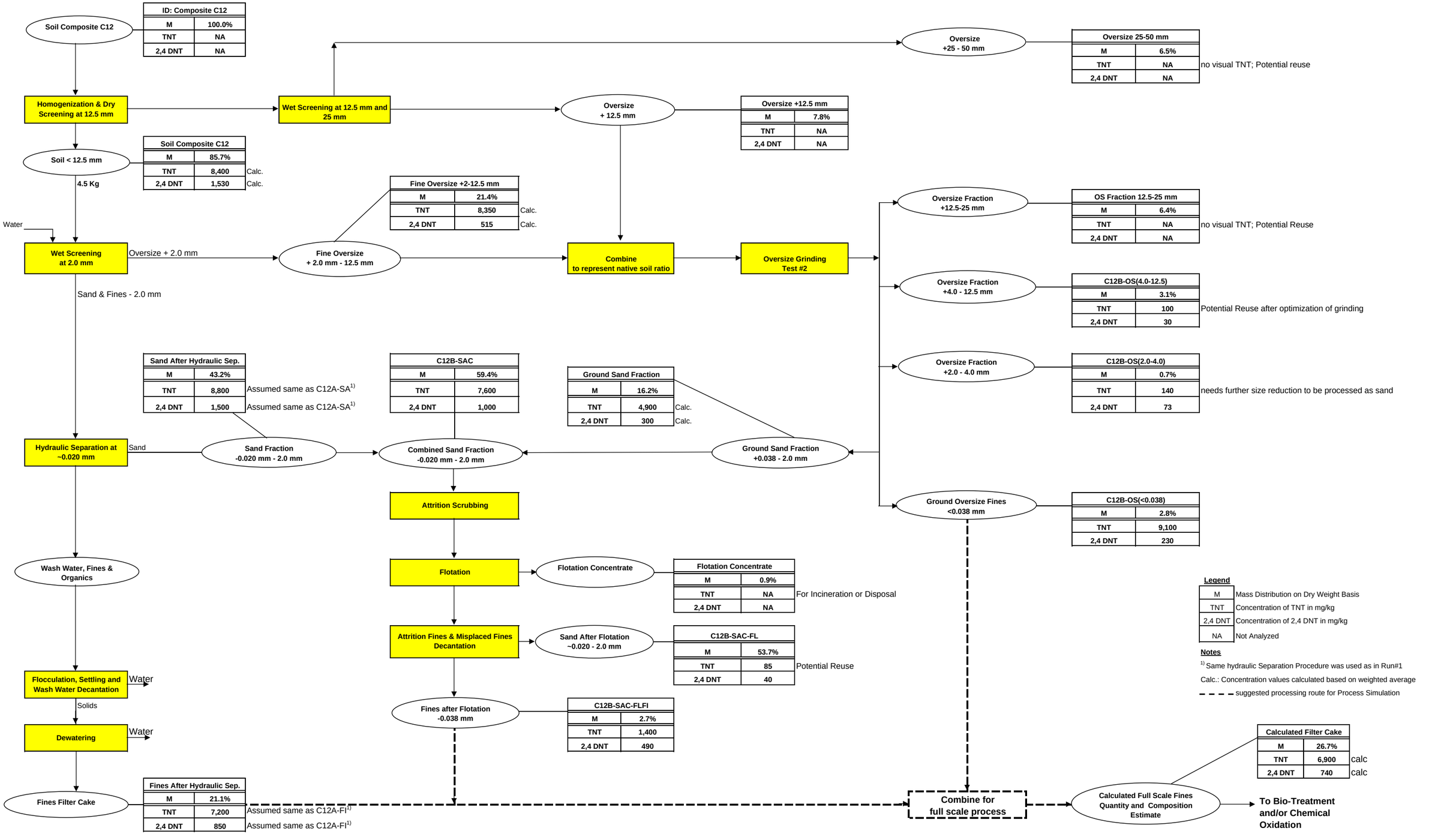


Figure 10: Process Simulation and Oxidation Testing - Round 3

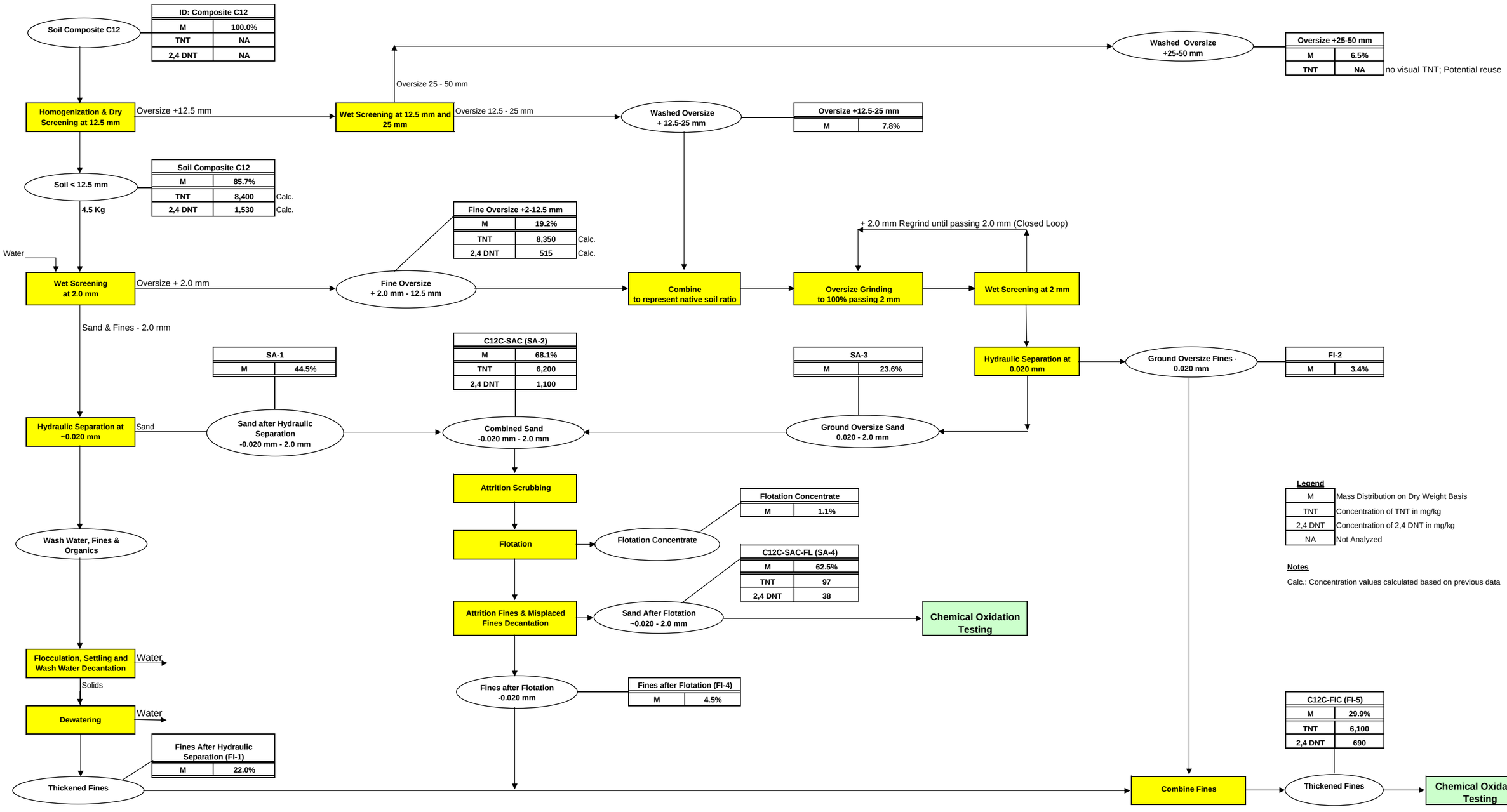


Figure 11: Full Scale Soil Treatment Schematic Block Flow Diagram - Physical Separation only (Option 1)

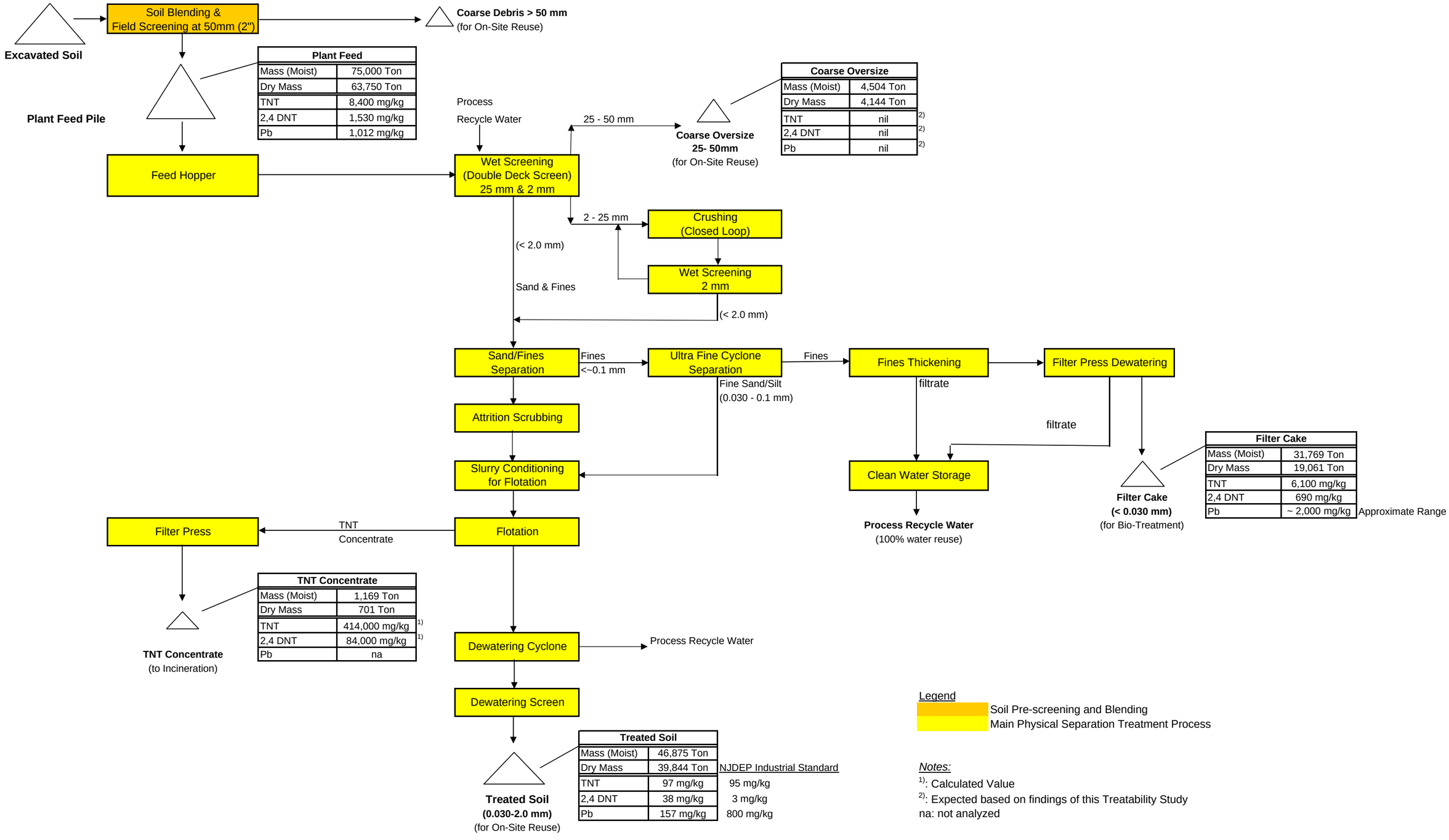


Figure 12: Full Scale Soil Treatment Schematic Block Flow Diagram - Physical Separation with Oxidation of Sand (Option 2)

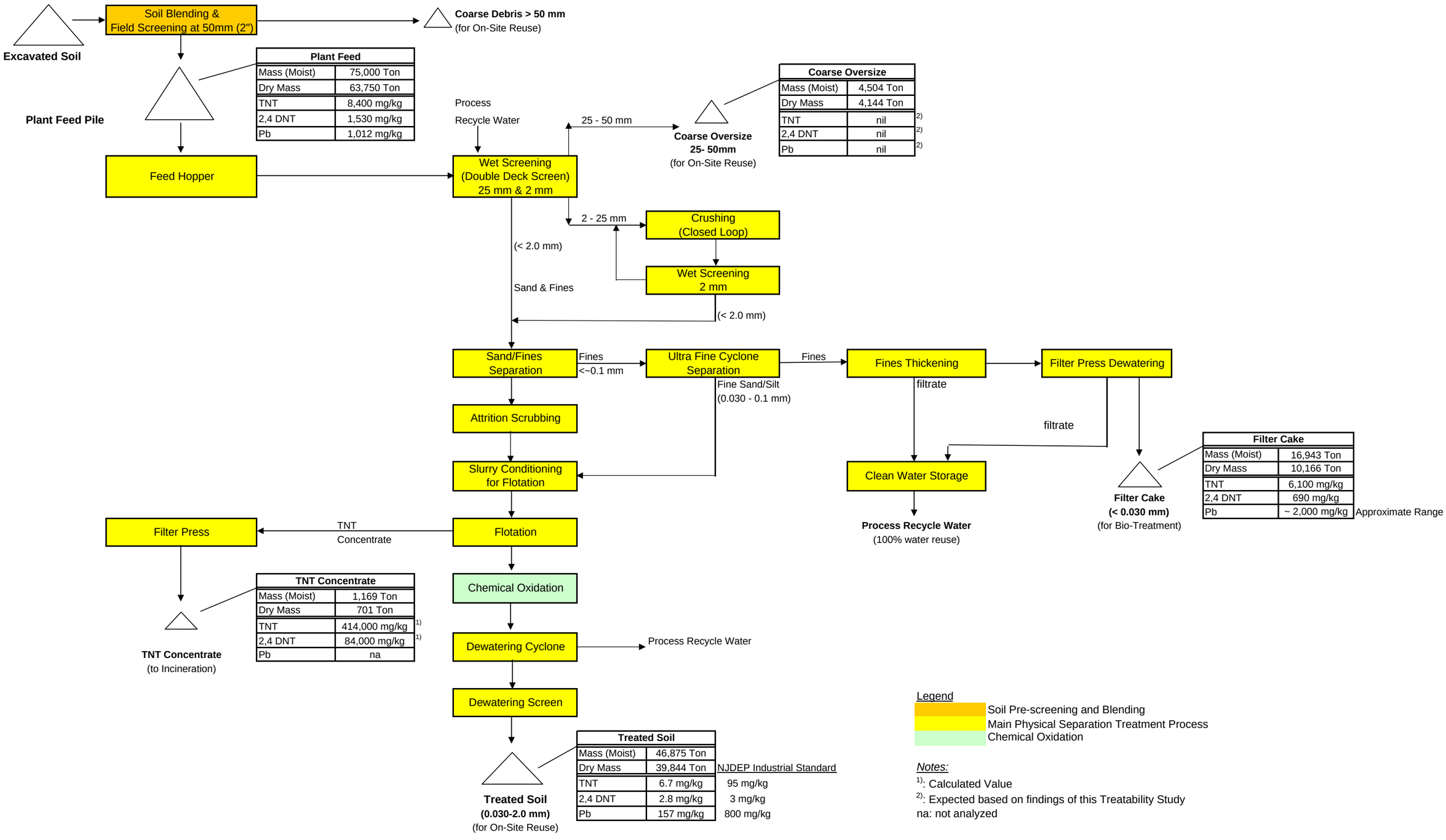
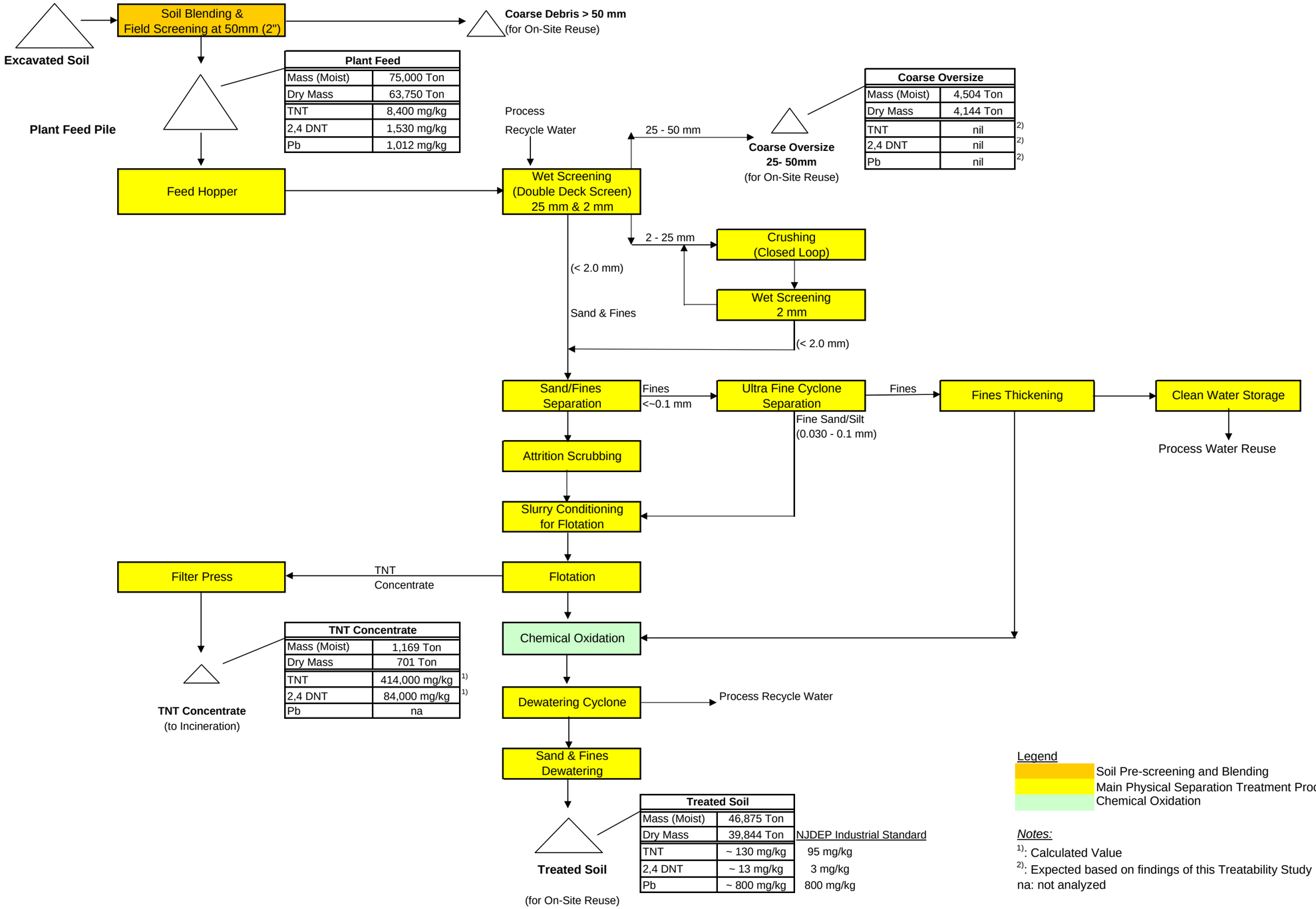


Figure 13: Full Scale Soil Treatment Schematic Block Flow Diagram - Physical Separation and Oxidation of Sand and Fines (Option 3)



Appendix A

Photos

Photos – Round 1 Testing

Initial Soil Homogenization and Dry Screening at 25 mm (1”)

C1 Composite – Soil Fraction less than 50 mm (< 2”)

C1 – Soil Fraction minus 12.5 mm (- 1/2”) after dry sieving at 12.5 mm

C1 – Soil Fraction 12.5–50 mm after dry sieving

C1 – Soil Fraction 12.5–50 mm after Water Washing

C2 Composite – Soil Fraction less than 50 mm (< 2”)

C1 – Soil Fraction minus 12.5 mm (- 1/2”) after dry sieving at 12.5 mm

C2 –Soil Fraction 12.5–50 mm after dry sieving

C2 – Soil Fraction 12.5–50 mm after Water Washing

C3 Composite – Soil Fraction less than 50 mm (< 2”)

C3 – Soil Fraction minus 12.5 mm (- 1/2”) after dry sieving at 12.5 mm

C3 –Soil Fraction 12.5–50 mm after dry sieving

C3 – Soil Fraction 12.5–50 mm after Water Washing

C4 Composite – Soil Fraction less than 50 mm (< 2”)

C4 – Soil Fraction minus 12.5 mm (- 1/2”) after dry sieving at 12.5 mm

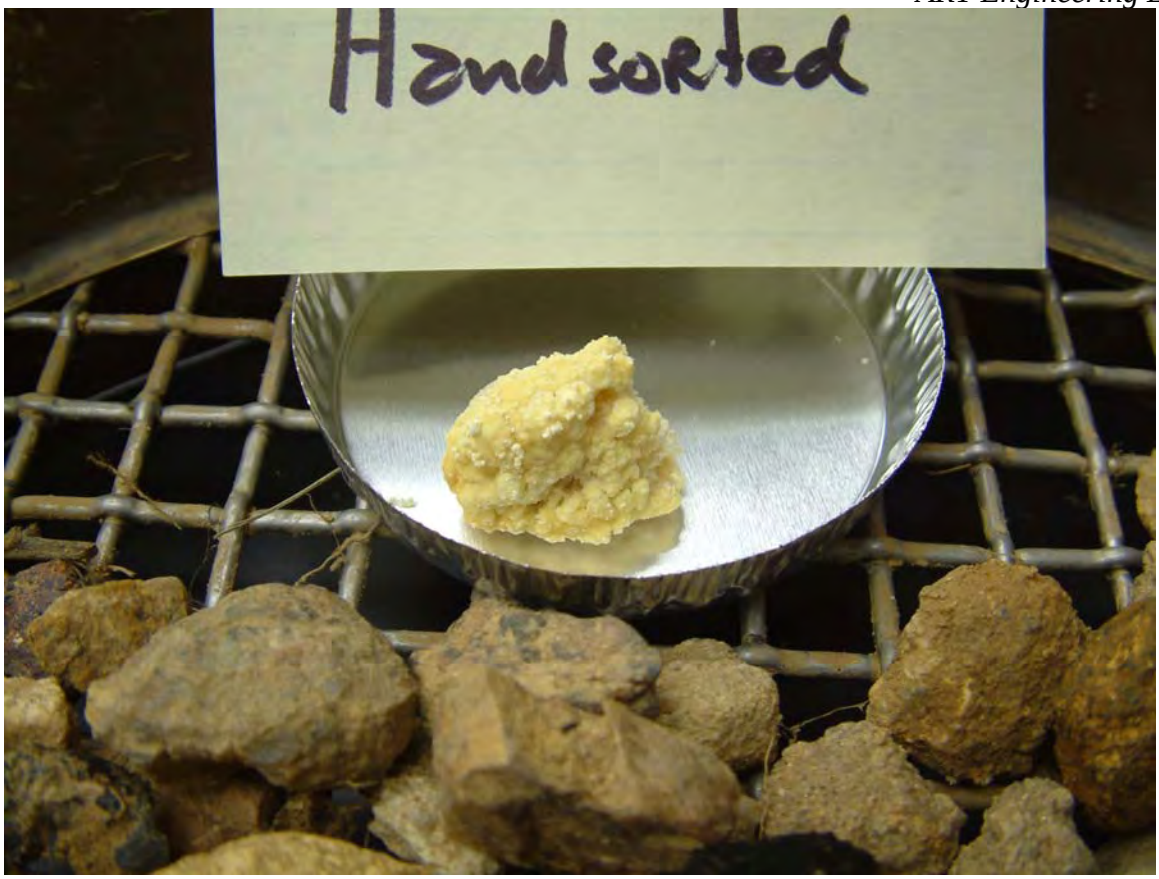
C4 –Soil Fraction 12.5–50 mm after dry sieving

C4 – Soil Fraction 12.5–50 mm after Water Washing

Composites C1 through C4
Wet Screening and Hydraulic Separation

C1 – Soil Fraction 25 – 50 mm (1”–2”)

C1 – Soil Fraction 12.5–25 mm (1/2”–1”)
Handsorted TNT Particle separated in Aluminum Dish



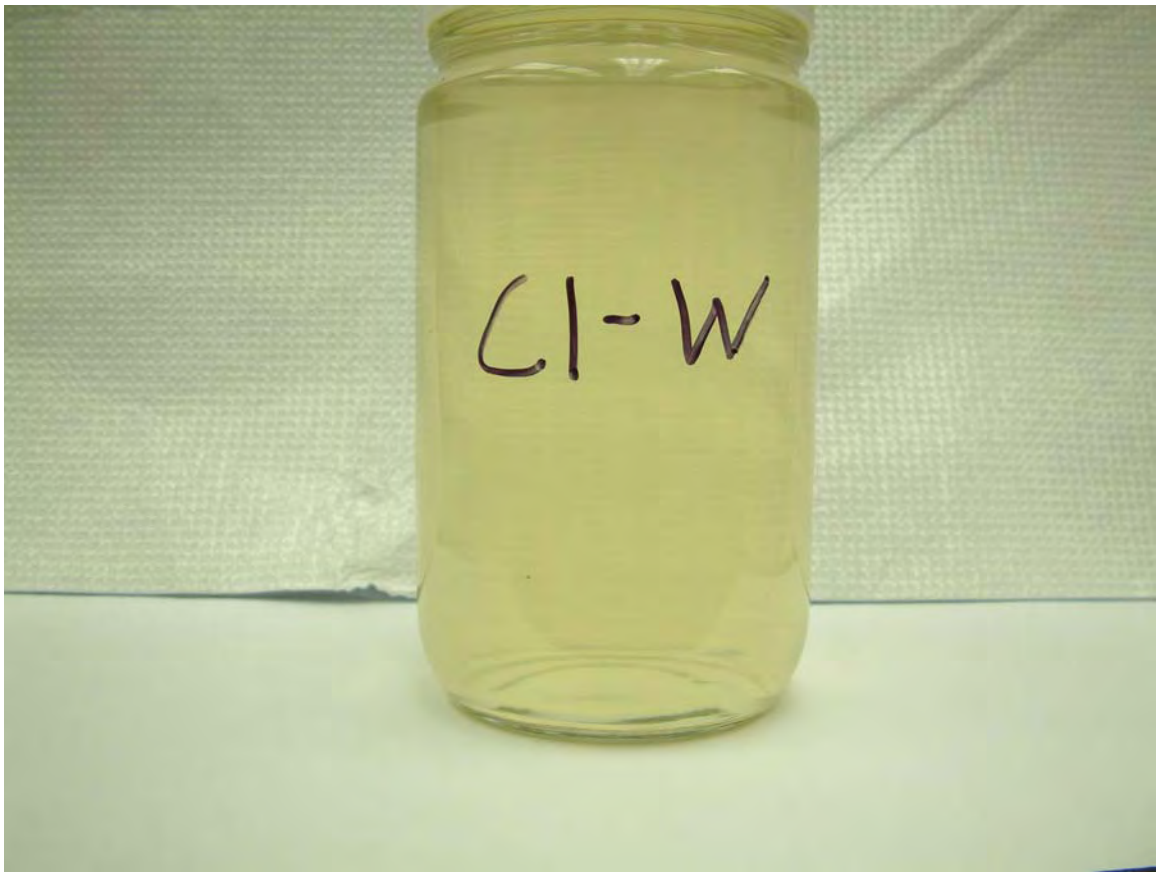
C1 – Soil Fraction 12.5–25 mm - Handsorted TNT Particle Detail

C1 - TNT Particle Fragment after Hot Water Contact – Molten TNT has Settled at the bottom of the Aluminum Pan

C1 – Oversize Product 2.0 – 12.5 mm after Wet Screening

C1 – Sand Product after Hydraulic Separation

C1 – Simulated Dewatered Filter Cake



C1 – Wash Water

C2 – Soil Fraction 25 – 50mm (1”- 2”)

C2 – Soil Fraction 12.5 – 25 mm (1/2”–1”)

C2 – Oversize Product 2.0 – 12.5 mm after Wet Screening

C2 – Sand Product after Hydraulic Separation

C2 – Simulated Dewatered Filter Cake

C2 – Wash Water

C3 – Soil Fraction 25 – 50mm (1”- 2”)

C3 – Soil Fraction 12.5 – 25 mm (1/2”–1”)
Handsorted TNT Particles separated in Aluminum Dish

C3 - Soil Fraction 12.5 – 25 mm - Handsorted TNT Particles Detail

C3 – Oversize Product 2.0 – 12.5 mm after Wet Screening

C3 – Sand Product after Hydraulic Separation

C3 – Simulated Dewatered Filter Cake

C3 – Wash Water

C4 – Soil Fraction 25 – 50mm (1”- 2”)

C4 – Soil Fraction 12.5 – 25 mm (1/2”–1”)

C4 – Oversize Product 2.0 – 12.5 mm after Wet Screening

C4 – Sand Product after Hydraulic Separation

C4 – Simulated Dewatered Filter Cake

C4 – Wash Water

Composite C1 through C4
Particle Size Fractions

Composite C1 – Particle Size Distribution for Soil Fraction minus 12.5 mm
Top (L to R): Fractions 4.75–12.5 mm, 2.0–4.75 mm, 1.0–2.0 mm, 0.5–1.0 mm
Middle (L to R): Fractions 0.25–0.5 mm, 0.125–0.25 mm, 0.075–0.125 mm, 0.038–0.075 mm
Bottom: Fraction minus 0.038 mm

C1 – Soil Fraction 4.75–12.5 mm detail

C1 – Soil Fraction 2.0–4.75 mm detail

C1 – Soil Fraction 1.0–2.0 mm detail

C1 – Soil Fraction 0.5–1.0 mm detail

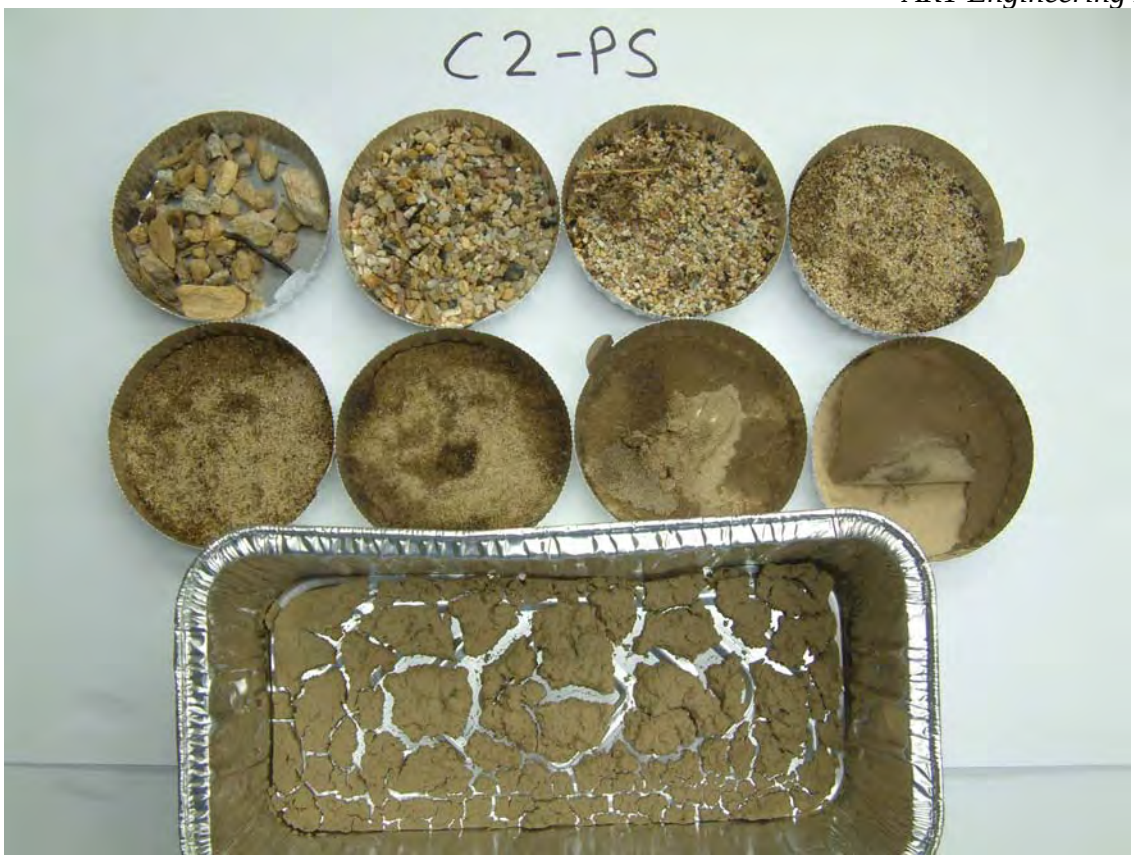
C1 – Soil Fraction 0.25–0.5 mm detail

C1 – Soil Fraction 0.125–0.25 mm detail

C1 – Soil Fraction 0.075–0.125 mm detail

C1 – Soil Fraction 0.038–0.075 mm detail

C1 – Soil Fraction minus 0.038mm detail



Composite C2 – Particle Size Distribution for Soil Fraction minus 12.5 mm
Top (L to R): Fractions 4.75–12.5 mm, 2.0–4.75 mm, 1.0–2.0 mm, 0.5–1.0 mm
Middle (L to R): Fractions 0.25–0.5 mm, 0.125–0.25 mm, 0.075–0.125 mm, 0.038–0.075 mm
Bottom: Fraction minus 0.038 mm

C2 – Soil Fraction 4.75–12.5 mm detail

C2 – Soil Fraction 2.0–4.75 mm detail

C2 – Soil Fraction 1.0–2.0 mm detail

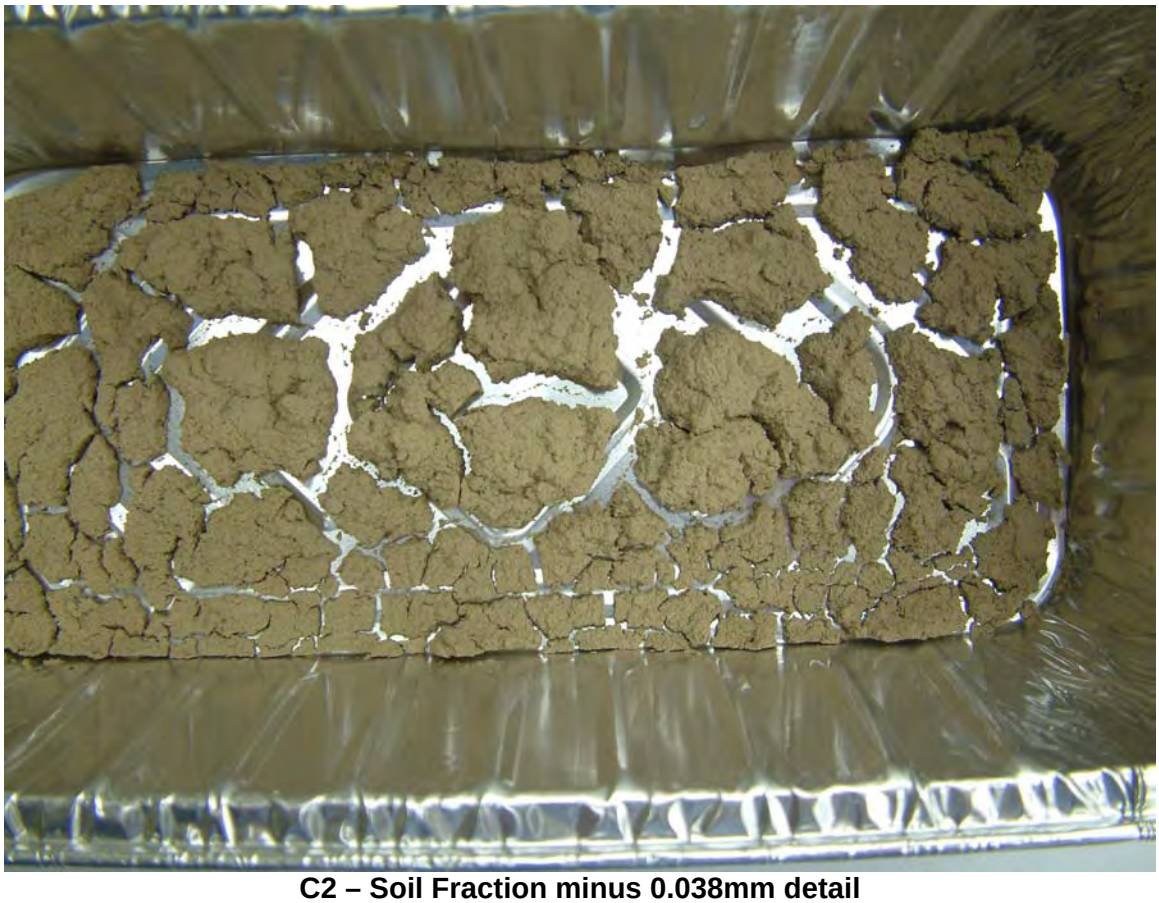
C2 – Soil Fraction 0.5–1.0 mm detail

C2 – Soil Fraction 0.25–0.5 mm detail

C2 – Soil Fraction 0.125–0.25 mm detail

C2 – Soil Fraction 0.075–0.125 mm detail

C2 – Soil Fraction 0.038–0.075 mm detail



C2 – Soil Fraction minus 0.038mm detail

Composite C3 – Particle Size Distribution for Soil Fraction minus 12.5 mm
Top (L to R): Fractions 4.75–12.5 mm, 2.0–4.75 mm, 1.0–2.0 mm, 0.5–1.0 mm
Middle (L to R): Fractions 0.25–0.5 mm, 0.125–0.25 mm, 0.075–0.125 mm, 0.038–0.075 mm
Bottom: Fraction minus 0.038 mm

C3 – Soil Fraction 4.75–12.5 mm detail

C3 – Soil Fraction 2.0–4.75 mm detail

C3 – Soil Fraction 1.0–2.0 mm detail

C3 – Soil Fraction 0.5–1.0 mm detail

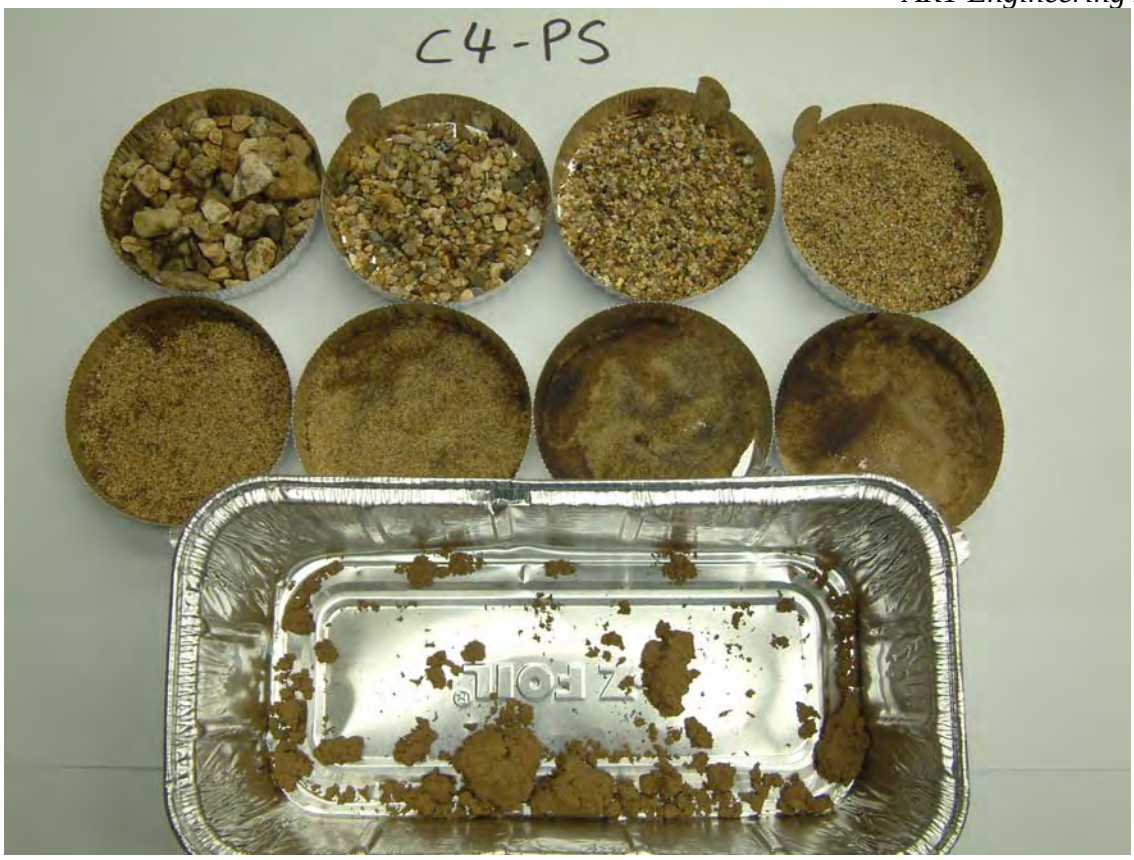
C3 – Soil Fraction 0.25–0.5 mm detail

C3 – Soil Fraction 0.125–0.25 mm detail

C3 – Soil Fraction 0.075–0.125 mm detail

C3 – Soil Fraction 0.038–0.075 mm detail

C3 – Soil Fraction minus 0.038mm detail



Composite C4 – Particle Size Distribution for Soil Fraction minus 12.5 mm
Top (L to R): Fractions 4.75–12.5 mm, 2.0–4.75 mm, 1.0–2.0 mm, 0.5–1.0 mm
Middle (L to R): Fractions 0.25–0.5 mm, 0.125–0.25 mm, 0.075–0.125 mm, 0.038–0.075 mm
Bottom: Fraction minus 0.038 mm

C4 – Soil Fraction 4.75–12.5 mm detail

C4 – Soil Fraction 2.0–4.75 mm detail

C4 – Soil Fraction 1.0–2.0 mm detail

C4 – Soil Fraction 0.5–1.0 mm detail

C4 – Soil Fraction 0.25–0.5 mm detail

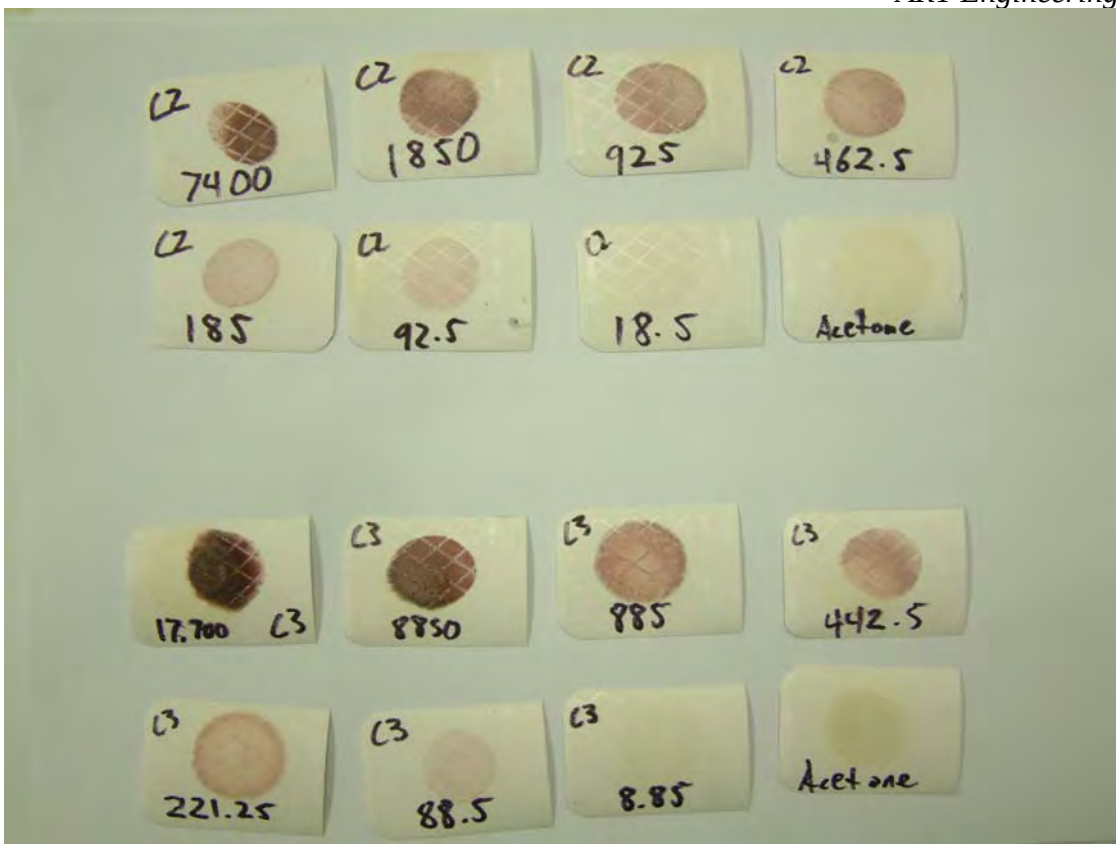
C4 – Soil Fraction 0.125–0.25 mm detail

C4 – Soil Fraction 0.075–0.125 mm detail

C4 – Soil Fraction 0.038–0.075 mm detail

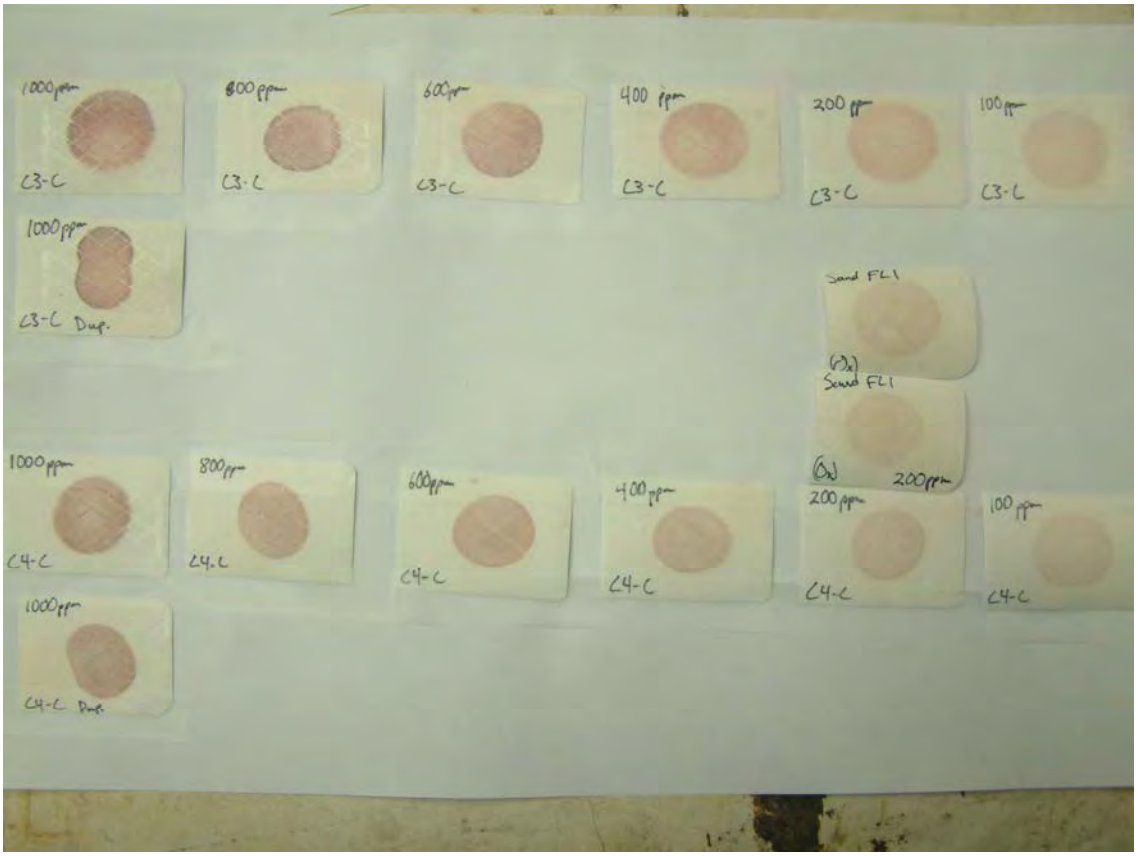
C4 – Soil Fraction minus 0.038mm detail

Development of Fast Turnaround TNT Concentration Screening Method using Expray



Composite C2 & C3 – Laboratory Expray Results of Soil Samples extracted with Acetone (Dilutions are prepared from acetone extracts of soil samples with known TNT concentration; all values in ppm TNT)

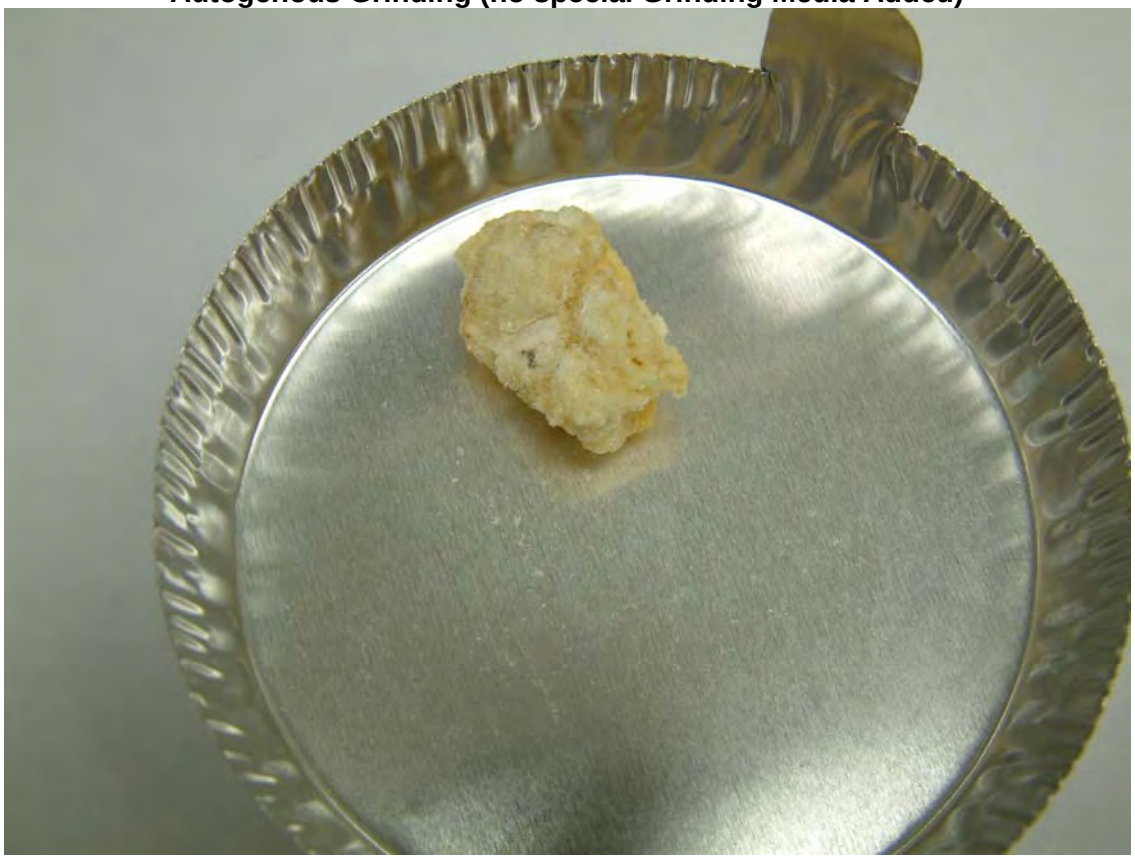
Composite C2 & C3 – Color Comparison of Expray Results using Acetone as Solvent (Dilutions are prepared from acetone extracts of soil samples with known TNT concentration; all values in ppm TNT)



Expray Standardized Color Comparison Chart

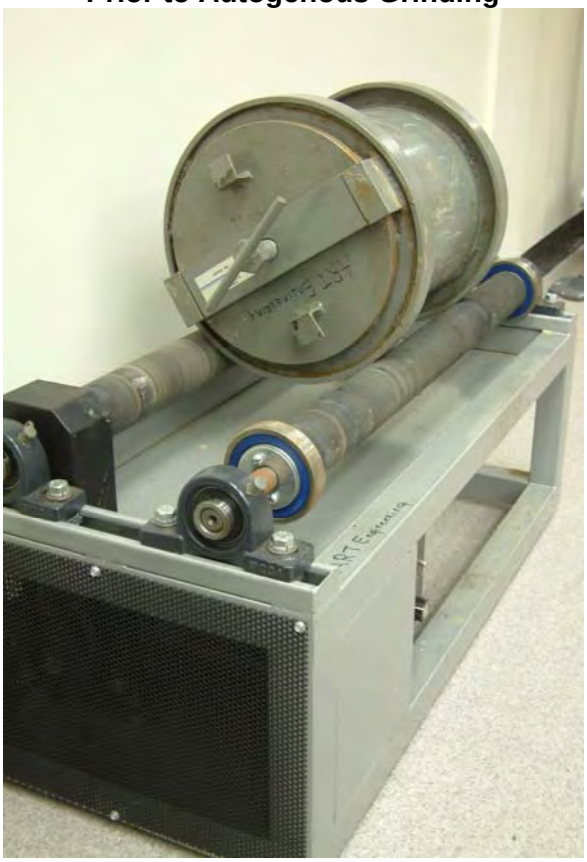
Oversize Grinding Tests 1, 2 and 3

Oversize Grinding Test 1: Oversize Fraction 2.0 – 25 mm Prior to Autogenous Grinding (no special Grinding Media Added)



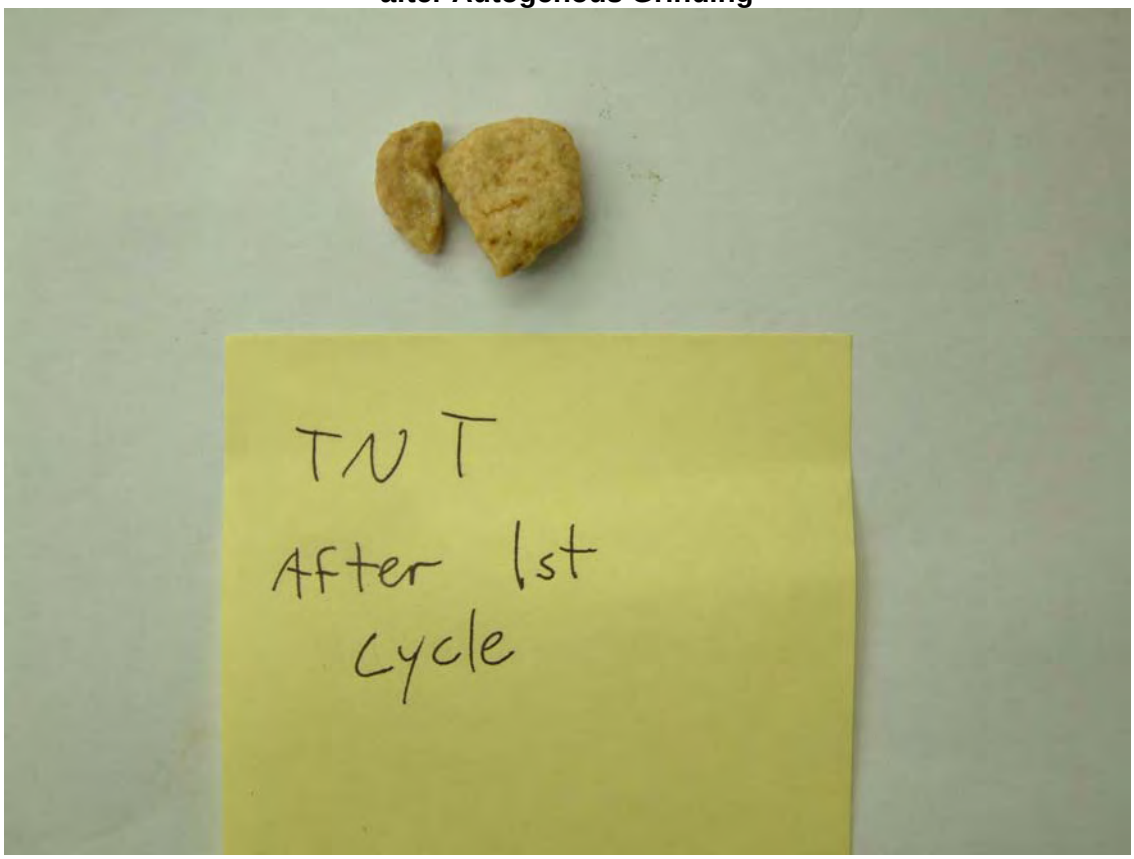
Oversize Grinding Test 1: TNT Particle Detail prior to Autogenous Grinding

Oversize Grinding Test 1: Oversize Fraction 2.0 – 25 mm
Prior to Autogenous Grinding



Grinding Mill

Oversize Grinding Test 1: Oversize Fraction 2.0 – 25 mm after Autogenous Grinding



Oversize Grinding Test 1: TNT Particle Detail after Autogenous Grinding

Oversize Grinding Test 2: Oversize Fraction 2.0 - 12.5 mm after Grinding with 5/8” Dense Alumina Grinding Media

Oversize Grinding Test 2: Oversize Particle Size Fractions after Grinding with 5/8” Alumina Grinding Media

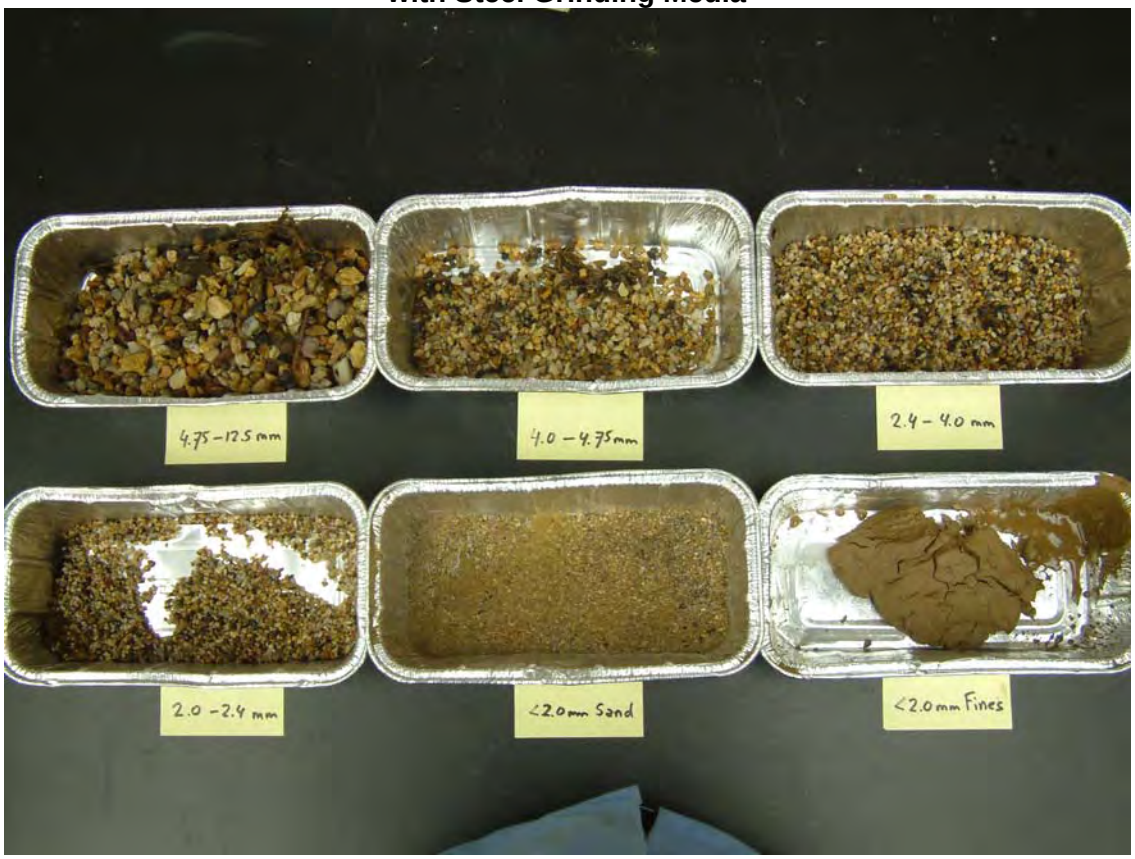
Oversize Grinding Test 2: Oversize Fraction 4.75 – 12.5 mm after Grinding with 5/8" Alumina Grinding Media with TNT Particles Handpicked in Aluminum Dish

Oversize Grinding Test 2: Grinding with 5/8" Alumina Grinding Media Oversize Fractions < 4.75 mm after Grinding

Oversize Grinding Test 3: Oversize Fraction 2.0 - 12.5 mm before Grinding with 95 mm Steel Grinding Media

Oversize Grinding Test 3: TNT Particle before Grinding

Oversize Grinding Test 3: Oversize Size Fraction 2.0 - 12.5 mm after Grinding with Steel Grinding Media



Oversize Grinding Test 3: Oversize Particle Size Fractions after Grinding with Steel Grinding Media

Density Separation of Sand Fraction

Density Separation of Soil Fraction 1.0 - 2.0 mm
Lights Fraction (Left), Heavies Fraction (Right)

Density Separation of Soil Fraction 0.5 - 1.0 mm
Lights Fraction (Left), Heavies Fraction (Right)

Density Separation of Soil Fraction 0.25 – 0.5 mm
Lights Fraction (Left), Heavies Fraction (Right)

Scrubbing, Attrition Grinding and Flotation Tests

High Density Attrition Scrubbing and Pre-conditioning for Flotation

High Density Attrition Scrubbing

Flotation Test #1 – Froth before Skimming

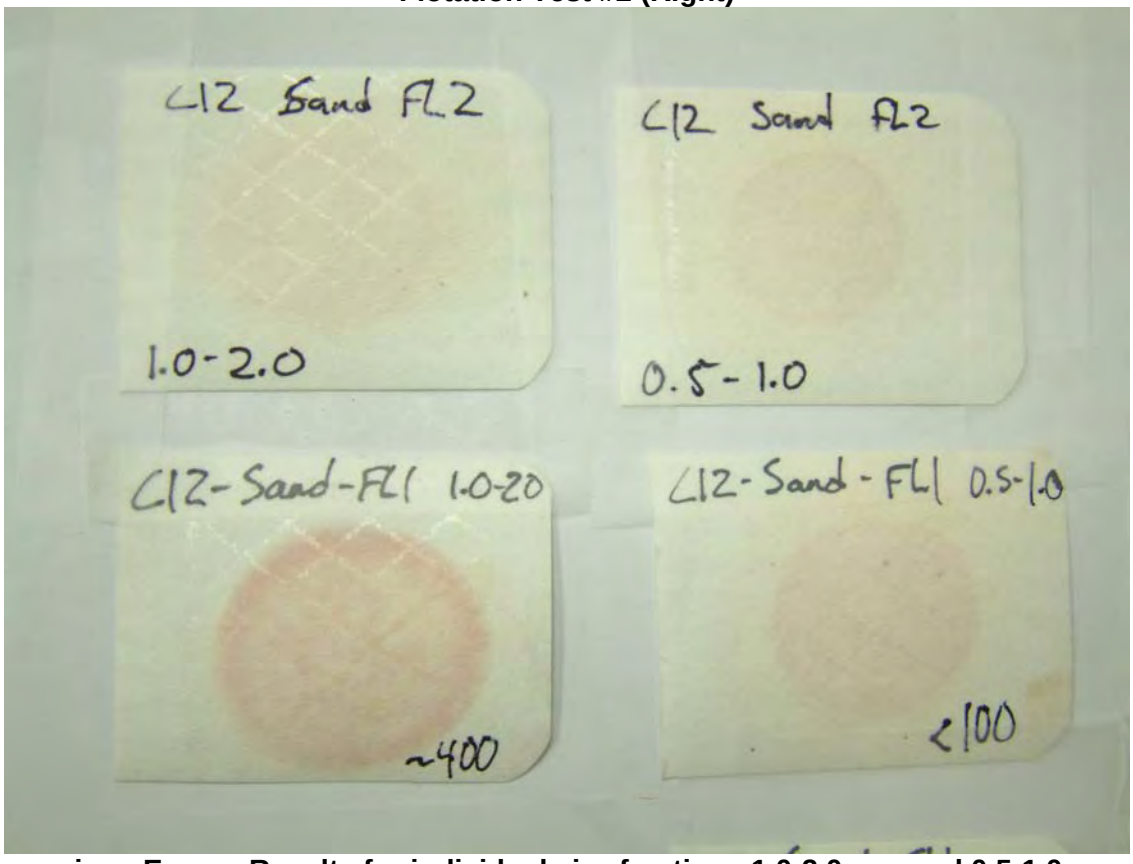
Flotation Cell with Impeller Detail

Flotation Test #1 – Floating Froth Concentrate Skimmed from Surface of Flotation Cell

Flotation Test #1 – Skimmed Froth Detail

Flotation Test #1 - Expray Results for Sand after Flotation Test#1 (Duplicate Results)

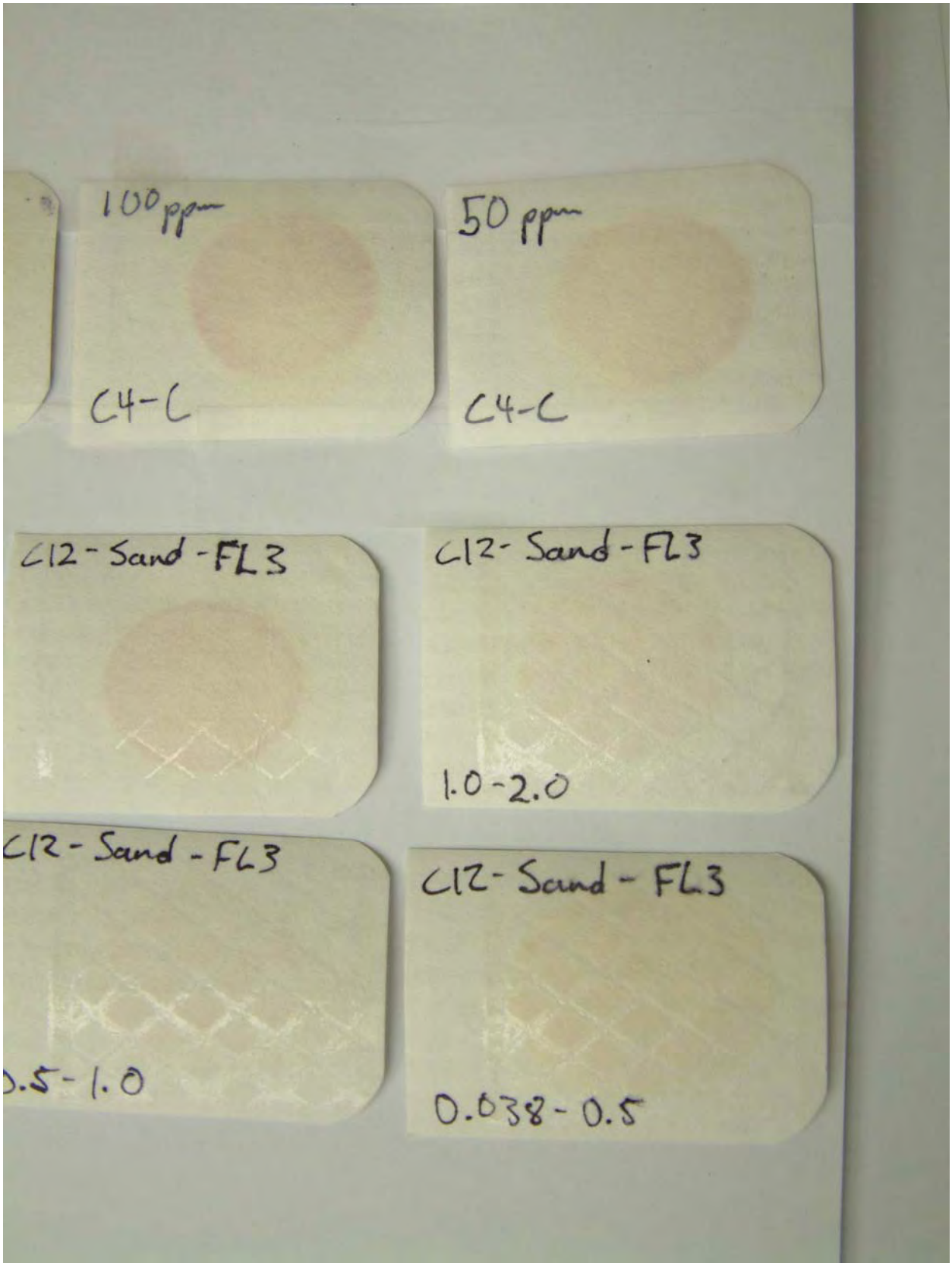
Comparison Expray Results for Sand after Flotation Test #1 (Left) and Flotation Test #2 (Right)



Comparison Expray Results for individual size fractions 1.0-2.0 mm and 0.5-1.0 mm for Flotation Test #2 (Top) and Flotation Test #1 (Bottom) – Residual TNT levels after Flotation Test #2 are lower than after Flotation Test #1

Attrition Grinding

Flotation Test #3 – Flotation with Froth Skimming



Flotation Test #3 – Expray Results for Sand after Flotation Test 3 (C12-Sand-FL3) and individual size fractions 1.0-2.0 mm, 0.5-1.0 mm and 0.038-0.5 mm

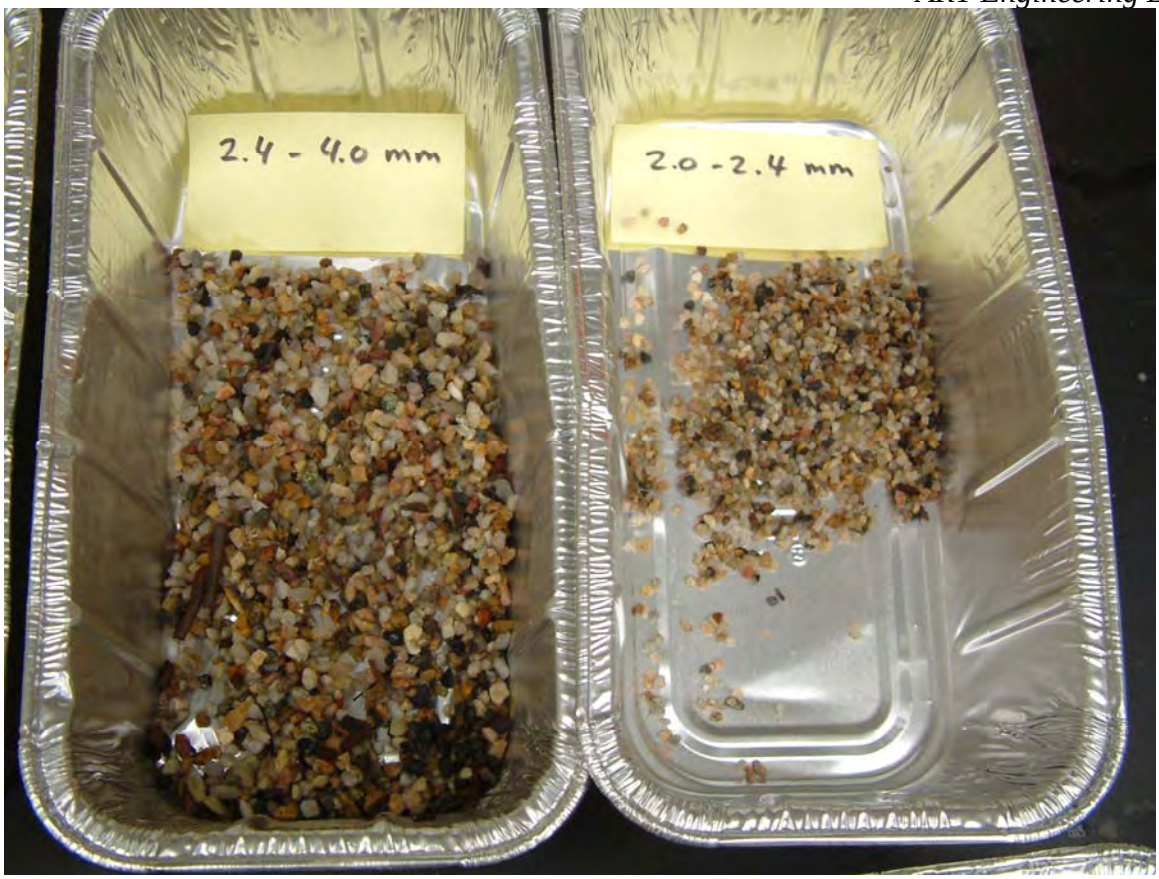
Photos – Round 2 Testing

Combined Oversize Fractions 2 – 25mm used for Oversize Grinding Test#1 – Round 2

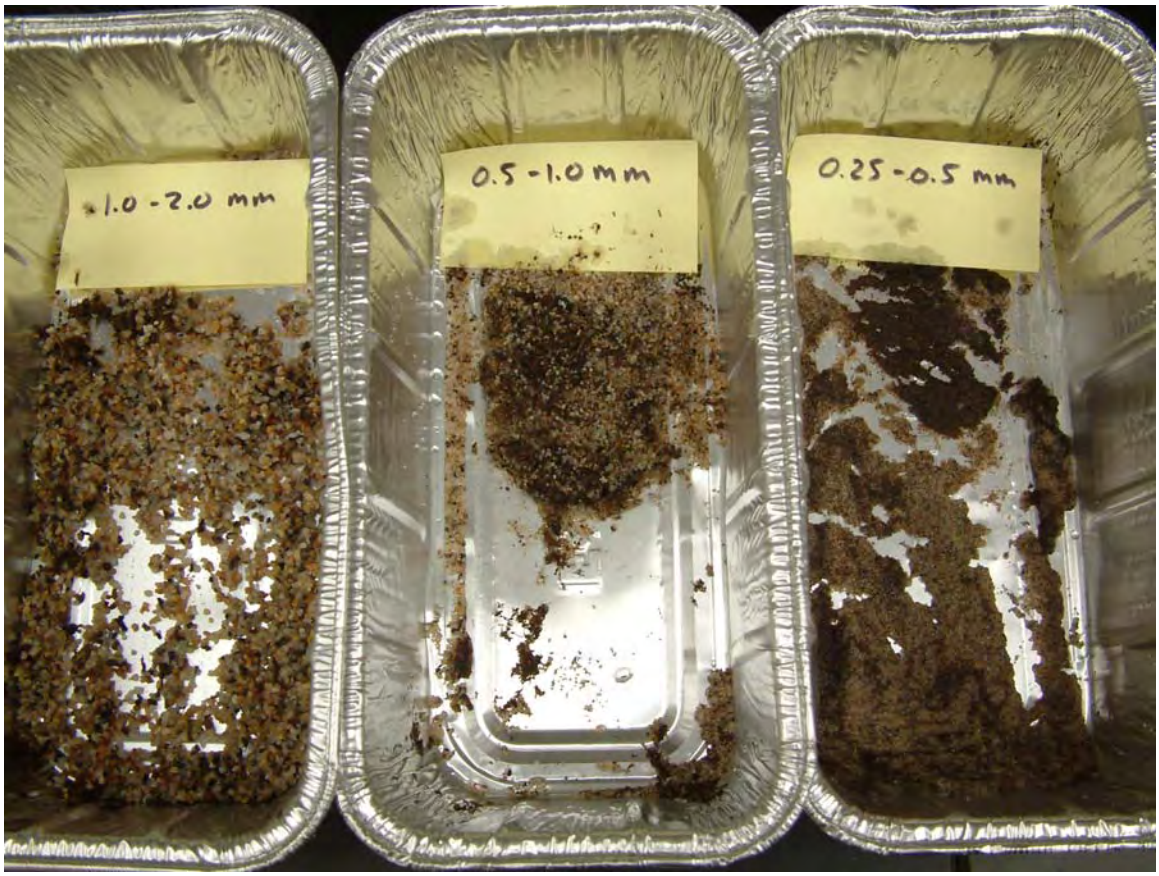
TNT Particle included in Grinding Test#1 – Round 2

Combined Oversize Fractions 2–25mm prior to Oversize Grinding Test#1 – Round 2

Size Fractions after Oversize Grinding Test#1 - Round 2



Size Fractions after Oversize Grinding Test#1 – Round 2 (Continued)



Size Fractions after Oversize Grinding Test#1 – Round 2 (Continued)

Size Fractions after Oversize Grinding Test#1 – Round 2 (Continued)

Size Fractions after Round 2 Grinding Test#1 (Continued)

Combined Oversize Fractions 2 – 25mm – Prior to Round 2 Oversize Grinding Test#2

Size Fractions after Oversize Grinding Test#2 – Round 2

Flotation Concentrate (dried) Test Run #1 - Round 2

Photos – Round 3 Testing

Combined Oversize Fractions 2 – 25mm used for Oversize Grinding – Process Simulation (Round 3)

TNT Particles included in Grinding – Process Simulation (Round 3)

Ground Oversize Sand – Process Simulation (Round 3)

Sand after Hydraulic Separation – Process Simulation (Round 3)

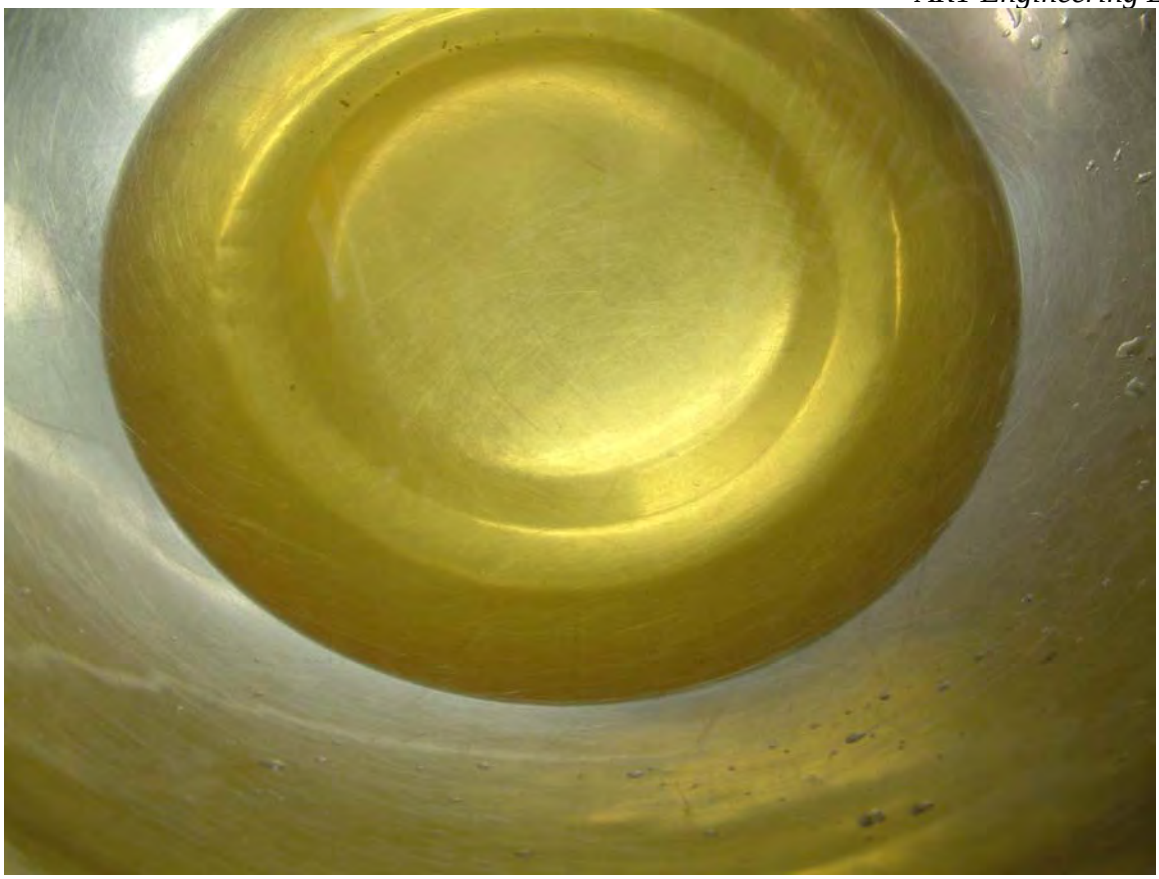
Flotation Concentrate – Process Simulation (Round 3)

Chemical Oxidation Laboratory Set-up

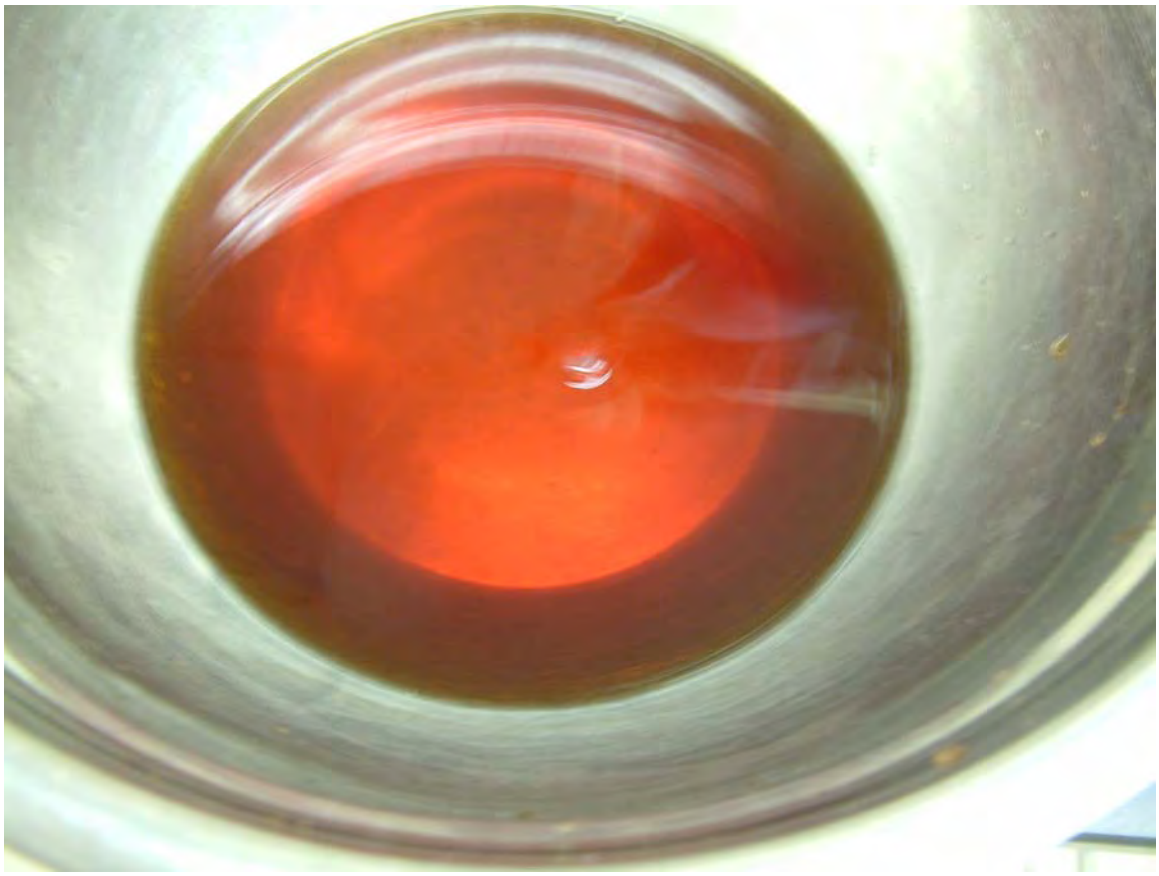
Chemical Oxidation Test Set-up

Oxidation of Sand Fraction (Round 3)

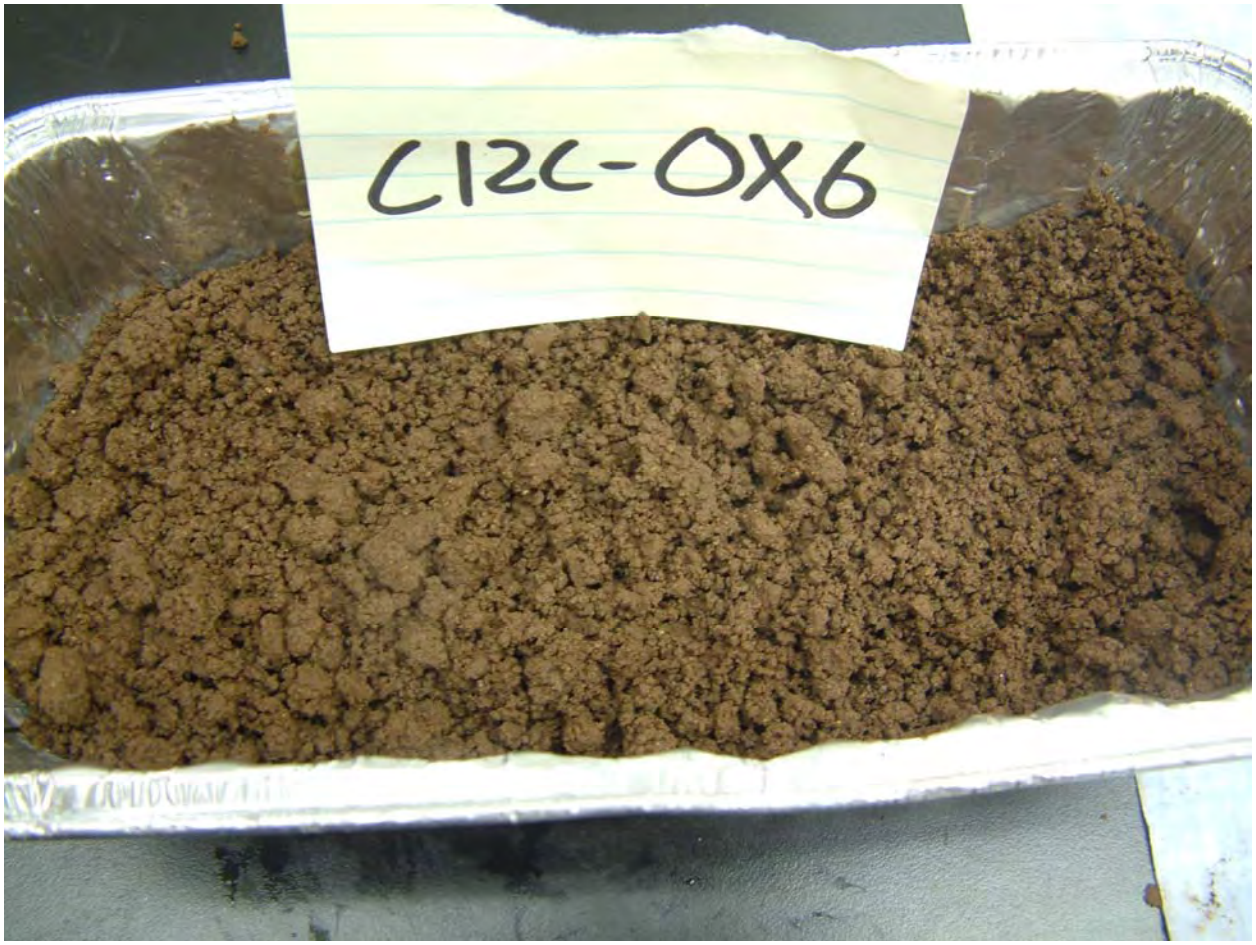
Sand after Chemical Oxidation at ~15% Solids by Weight (Round 3)



Contact Water after Fines Oxidation at Acidic pH < 4 (Round 3)



Contact Water after Fines Oxidation at Alkaline pH > 10 (Round 3)



Combined Sand and Fines Oxidation Test #6

Appendix B

Raw Data Sheets

Data Sheet - Results Dry Screening at 50 mm (2") Performed During Field Sample Collection

Fraction	Net Weight (Moist) (lb)	Mass Distribution (%)
Test Pit 1A		
Oversize + 2"	5.2	8.6%
Soil Fraction - 2"	55.25	91.4%
Total	**60.45**	**100.0%**
Test Pit 1B		
Oversize + 2"	3.55	6.2%
Soil Fraction - 2"	53.35	93.8%
Total	**56.9**	**100.0%**
Test Pit 1C		
Oversize + 2"	12.25	17.6%
Soil Fraction - 2"	57.55	82.4%
Total	**69.8**	**100.0%**
Composite 1 (Average Test Pits 1A, 1B, 1C)		
Oversize + 2"		**10.8%**
Soil Fraction - 2"		**89.2%**
Total		**100.0%**
Test Pit 2A		
Oversize + 2"	12.25	17.6%
Soil Fraction - 2"	57.55	82.4%
Total	**69.8**	**100.0%**
Test Pit 2B1 + 2B2		
Oversize + 2"	2	4.0%
Soil Fraction - 2"	47.6	96.0%
Total	**49.6**	**100.0%**
Test Pit 2C1 + 2C2		
Oversize + 2"	3.85	6.2%
Soil Fraction - 2"	58.65	93.8%
Total	**62.5**	**100.0%**
Composite 2 (Average Test Pits 2A, 2B1, 2B2, 2C1, 2C2)		
Oversize + 2"		**9.2%**
Soil Fraction - 2"		**90.8%**
Total		**100.0%**
Composite 3 (Test Pit 3A)		
Oversize + 2"		0.0%
Soil Fraction - 2"		100.0%
Total		**100.0%**
Test Pit 4A		
Oversize + 2"		0.0%
Soil Fraction - 2"		100.0%
Total		**100.0%**
Test Pit 4B (Pond)		
Oversize + 2"		0.0%
Soil Fraction - 2"		100.0%
Total		**100.0%**

Data Sheet - Dry Screening at 12.5 mm

Fraction	Net Weight Moist (kg)	% Dry Solids (%)	Net Weight Dry (kg)	Mass Distribution on dry Weight Basis (%)
Composite C1				
Soil Fraction < 2"	26.8			
Oversize + 1 - 2" (washed)	1.2	95% [1)]	1.14	5.0%
Oversize + 1/2 - 1" (washed)	1.4	95% [1)]	1.33	5.8%
Soil Fraction -1/2" (calculated)	24.2	84.9%	20.54	89.3%
Total			**23.01**	**100.0%**
Composite C2				
Soil Fraction < 2"	26.8			
Oversize + 1 - 2" (washed)	2.0	95% [1)]	1.90	8.1%
Oversize + 1/2 - 1" (washed)	2.4	95% [1)]	2.28	9.7%
Soil Fraction -1/2" (calculated)	22.4	85.8%	19.21	82.1%
Total			**23.39**	**100.0%**
Composite C3				
Soil Fraction < 2"	21.05			
Oversize + 1 - 2" (washed)	0.17	95% [1)]	0.16	0.9%
Oversize + 1/2 - 1" (washed)	1.2	95% [1)]	1.14	6.5%
Soil Fraction -1/2" (calculated)	19.85	81.4%	16.15	92.5%
Total			**17.45**	**100.0%**
Composite C4				
Soil Fraction < 2"	27.2			
Oversize + 1 - 2" (washed)	0.2	95% [1)]	0.19	0.8%
Oversize + 1/2 - 1" (washed)	3.0	95% [1)]	2.85	11.8%
Soil Fraction -1/2" (calculated)	24.2	87.4%	21.15	87.4%
Total			**24.19**	**100.0%**

1): Typical Assumed Value for % Dry Solids

Data Sheet - Wet Screening Results Soil Fraction < 12.5 mm

Fraction	Composite C1		Composite C2		Composite C3		Composite C4	
	Net	**Distribution**	Net	**Distribution**	Net	**Distribution**	Net	**Distribution**
	(g)	**(%)**	(g)	**(%)**	(g)	**(%)**	(g)	**(%)**
4.75-12.5 mm	24.2	**11.5%**	24.1	**11.4%**	22.8	**11.3%**	55.4	**25.3%**
2.0-4.75 mm	21.7	**10.3%**	25.1	**11.9%**	19.7	**9.7%**	28.1	**12.8%**
1.0-2.0 mm	15.8	**7.5%**	22.8	**10.8%**	18.9	**9.3%**	23.4	**10.7%**
0.5-1.0 mm	23	**11.0%**	27.8	**13.2%**	26.3	**13.0%**	31.8	**14.5%**
0.25-0.5 mm	19.9	**9.5%**	25.7	**12.2%**	27.7	**13.7%**	33.3	**15.2%**
0.125-0.25 mm	15.4	**7.3%**	19.6	**9.3%**	16.7	**8.2%**	20.1	**9.2%**
0.075-0.125mm	9.4	**4.5%**	7.6	**3.6%**	6.5	**3.2%**	6.2	**2.8%**
0.038-0.075 mm	13.1	**6.2%**	11.7	**5.5%**	12.2	**6.0%**	5.1	**2.3%**
<0.038 mm (fines)	67.5	**32.1%**	46.9	**22.2%**	51.7	**25.5%**	15.7	**7.2%**
Total	210	**100.0%**	211.3	**100.0%**	202.5	**100.0%**	219.1	**100.0%**

QA/QC check

Used for particle Size Moist (gram)	250.0		250.0		250.0		250.0	
% solids (measured)	84.9%		85.8%		81.4%		87.4%	
Calculated dry mass used for particle Size-Dry (gram) [A]	212.2		214.4		203.4		218.5	
Total Recovered dry mass [B]	210.0		211.3		202.5		219.1	
loss of mass (gram) [A] - [B]	2.2		3.1		0.9		-0.6	
Mass Loss % [1)]	**0.9%**		**1.2%**		**0.4%**		**-0.2%**	

[1)]: Acceptance Criteria: Mass Loss less than 5%

Data Sheet - Particle Size Analysis Composite Sample C12 - Soil Fraction < 12.5 mm

Fraction	C1 & C2 Combined	
	Net	**Distribution**
	(g)	**(%)**
4.75-12.5 mm	22.4	**9.1%**
2.0-4.75 mm	26.8	**10.9%**
1.0-2.0 mm	27.1	**11.0%**
0.5-1.0 mm	29	**11.8%**
0.25-0.5 mm	28.7	**11.7%**
0.125-0.25 mm	22.4	**9.1%**
0.075-0.125mm	11.1	**4.5%**
0.038-0.075 mm	17.3	**7.1%**
0.020-0.038 mm	11.2	**4.6%**
<0.020 mm (fines)	49.3	**20.1%**
Total	245.3	**100.0%**

150 g C1 & 150 g C2 = 300 g Total

Data Sheet - Wet Screening Results Sand after Hydraulic Separation

Fraction	C1-C		C2-C		C3-C		C4-C	
	Net	**Distribution**	Net	**Distribution**	Net	**Distribution**	Net	**Distribution**
	(g)	**(%)**	(g)	**(%)**	(g)	**(%)**	(g)	**(%)**
1.0-2.0 mm	24	**18.5%**	27.4	**20.5%**	22.4	**17.0%**	26.6	**20.2%**
0.5-1.0 mm	29.2	**22.5%**	33.9	**25.4%**	31.7	**24.1%**	35.9	**27.3%**
0.25-0.5 mm	28	**21.6%**	30	**22.5%**	35.8	**27.2%**	38.5	**29.2%**
0.125-0.25 mm	21.3	**16.4%**	18	**13.5%**	21	**16.0%**	21.6	**16.4%**
0.075-0.125mm	9.3	**7.2%**	5.6	**4.2%**	6.4	**4.9%**	5.8	**4.4%**
0.038-0.075 mm	9	**6.9%**	6.4	**4.8%**	6.3	**4.8%**	3.3	**2.5%**
<0.038 mm (fines)	9	**6.9%**	12.3	**9.2%**	7.8	**5.9%**	0	**0.0%**
Total	129.8	**100.0%**	133.6	**100.0%**	131.4	**100.0%**	131.7	**100.0%**

QA/QC check

Used for particle Size Moist (gram)	160.0		160.0		160.0		160.0	
% solids (measured)	83.4%		83.3%		81.3%		83.9%	
Calculated dry mass used for particle Size-Dry (gram) [A]	133.4		133.3		130.0		134.3	
Total Recovered dry mass [B]	129.8		133.6		131.4		131.7	
loss of mass (gram) [A] - [B]	3.6		-0.3		-1.4		2.6	
Mass Loss % [1)]	**2.3%**		**-0.2%**		**-0.9%**		**1.6%**	

[1)]: Acceptance Criteria: Mass Loss less than 5%

Data Sheet - Wet Screening Results - Fines after Hydraulic Separation

Fraction	C1-D		C2-D		C3-D		C4-D	
	Net	**Distribution**	Net	**Distribution**	Net	**Distribution**	Net	**Distribution**
	(g)	**(%)**	(g)	**(%)**	(g)	**(%)**	(g)	**(%)**
+0.125 mm	1.2	**0.8%**	0.6	**0.6%**	0.9	**0.8%**	0.2	**0.5%**
0.075-0.125mm	0.6	**0.4%**	2.4	**2.6%**	3	**2.5%**	0.9	**2.4%**
0.038-0.075 mm	13.5	**8.8%**	10.4	**11.2%**	16.7	**13.9%**	4.8	**13.0%**
<0.038 mm (fines)	138.1	**90.0%**	79.3	**85.5%**	99.4	**82.8%**	31	**84.0%**
Total	153.4	**100.0%**	92.7	**100.0%**	120	**100.0%**	36.9	**100.0%**

Data Sheet - Particle Size Sand after Hydraulic Separation, Scrubbing and Flotation - Round 1

Fraction	Sand After Hydraulic Separation Sample ID: C12-C		Sand after Scrubbing, Flotation and after Fines Decantion - Test #1 Sample ID: C12-Sand-FL1		Calculated Sand after Scrubbing and Flotation without Fines Decantation - Test #1 (Ref. Note 1)		Sand After Scrubbing Test #2 Sample ID: C12-Sand-SC2		Sand After Attrition Grinding Test #3 Sample ID: C12-Sand-SC3	
	Net (g)	**Distribution (%)**	Net (g)	**Distribution (%)**		**Distribution (%)**	Net (g)	**Distribution (%)**	Net (g)	**Distribution (%)**
1.0-2.0 mm	24.5	**18.7%**	18.1	**14.0%**		**13.2%**	34.5	**19.7%**	19.3	**9.6%**
0.5-1.0 mm	29.4	**22.5%**	36.2	**27.9%**		**26.3%**	39	**22.3%**	42.9	**21.3%**
0.25-0.5 mm	28.8	**22.0%**	30.9	**23.8%**		**22.5%**	37	**21.1%**	53.1	**26.4%**
0.125-0.25 mm	21.6	**16.5%**	20.2	**15.6%**		**14.7%**	25.2	**14.4%**	38	**18.9%**
0.075-0.125 mm	8.4	**6.4%**	8.1	**6.3%**		**5.9%**	9.9	**5.7%**	20	**9.9%**
0.038-0.075 mm	8.1	**6.2%**	8.9	**6.9%**		**6.5%**	10.5	**6.0%**	15	**7.5%**
<0.038 mm (fines)	10.1	**7.7%**	7.2	**5.6%**		**10.9%**	18.9	**10.8%**	12.8	**6.4%**
Total	130.9	**100.0%**	129.6	**100.0%**		**100.0%**	175.0	**100.0%**	201.1	**100.0%**

Note 1): Correction for Decanted Fines after Flotation (Flotation Test 1 only)

Decanted Fines (gr)		35.5
Sand after Flotation (gr - wet Weight)		723
Sand after Flotation (moisture % by weight)		82%
Sand after Flotation (gr - dry Weight)		591.2
Total Sand & Decanted Fines (gr dry weight)		626.7
Mass Fraction of Decanted Fines as fraction of Total Mass Sand after Flotation (%)		5.7%

Data Sheet - Oversize Screening Results after 4 min. Grinding with 5/8" Dense Alumina Grinding Media

Fraction	Net Weight (Moist) (g)	% Solids (%)	Net Weight (Dry) (g)	Mass Distribution (%)
4.75-12.5 mm	663	**95% 1)**	630	**44.4%**
2.4-4.75 mm	336	**95% 1)**	319	**22.5%**
2.0-2.4 mm	58	**95% 1)**	55	**3.9%**
< 2.0 mm	594	**70% 1)**	416	**29.3%**
Total	1651	**0.0%**	1420	**100.0%**

Notes:

1): Estimated Values

Data Sheet - Oversize Screening Results after 2 min. Grinding with 9.5 mm Steel Grinding Media

Fraction	Net Weight (Moist) (g)	% Solids (%)	Net Weight (Dry) (g)	Mass Distribution (%)
4.75-12.5 mm	772	**95% 1)**	733	**44.1%**
4.0-4.75 mm	145	**95% 1)**	138	**8.3%**
2.4-4.0 mm	451	**95% 1)**	428	**25.7%**
2.0-2.4 mm	124	**95% 1)**	118	**7.1%**
< 2.0 mm (Sand)	207	**85% 1)**	176	**10.6%**
< 2.0 mm (Fines)	143	**50% 1)**	72	**4.3%**
Total	1842	**0.0%**	1665	

Notes:

1): Estimated Values

Data Sheet - Particle Size Sand after Hydraulic Separation, Scrubbing and Flotation - Round 1

Fraction	Sand After Hydraulic Separation Sample ID: C12-C		Sand after Scrubbing, Flotation and after Fines Decantion - Test #1 Sample ID: C12-Sand-FL1		Calculated Sand after Scrubbing and Flotation without Fines Decantation - Test #1 (Ref. Note 1)		Sand After Scrubbing Test #2 Sample ID: C12-Sand-SC2		Sand After Attrition Grinding Test #3 Sample ID: C12-Sand-SC3	
	Net (g)	**Distribution (%)**	Net (g)	**Distribution (%)**		**Distribution (%)**	Net (g)	**Distribution (%)**	Net (g)	**Distribution (%)**
1.0-2.0 mm	24.5	**18.7%**	18.1	**14.0%**		**13.2%**	34.5	**19.7%**	19.3	**9.6%**
0.5-1.0 mm	29.4	**22.5%**	36.2	**27.9%**		**26.3%**	39	**22.3%**	42.9	**21.3%**
0.25-0.5 mm	28.8	**22.0%**	30.9	**23.8%**		**22.5%**	37	**21.1%**	53.1	**26.4%**
0.125-0.25 mm	21.6	**16.5%**	20.2	**15.6%**		**14.7%**	25.2	**14.4%**	38	**18.9%**
0.075-0.125 mm	8.4	**6.4%**	8.1	**6.3%**		**5.9%**	9.9	**5.7%**	20	**9.9%**
0.038-0.075 mm	8.1	**6.2%**	8.9	**6.9%**		**6.5%**	10.5	**6.0%**	15	**7.5%**
<0.038 mm (fines)	10.1	**7.7%**	7.2	**5.6%**		**10.9%**	18.9	**10.8%**	12.8	**6.4%**
Total	130.9	**100.0%**	129.6	**100.0%**		**100.0%**	175.0	**100.0%**	201.1	**100.0%**

Note 1): Correction for Decanted Fines after Flotation (Flotation Test 1 only)

Decanted Fines (gr)		35.5
Sand after Flotation (gr - wet Weight)		723
Sand after Flotation (moisture % by weight)		82%
Sand after Flotation (gr - dry Weight)		591.2
Total Sand & Decanted Fines (gr dry weight)		626.7
Mass Fraction of Decanted Fines as fraction of Total Mass Sand after Flotation (%)		5.7%

Data Sheet - Particle Size Analysis Fines after Hydraulic Separation Run A - Round 2

Fraction	**Sample ID: C12A-FI**	
	Net	**Distribution**
	(g)	**(%)**
+0.125 mm	0.26	**0.6%**
0.075-0.125mm	0.31	**0.7%**
0.038-0.075 mm	3.54	**7.6%**
0.020-0.038 mm	5.99	**12.9%**
<0.020 mm (fines)	36.49	**78.3%**
Total	46.59	**100.0%**

Data Sheet - Particle Size Sand after Hydraulic Separation, Scrubbing and Flotation Run A - Round 2

Fraction	Sand After Hydraulic Separation Sample ID: C12A-SA		Sand After Attrittion Scrubbing Sample ID: C12A-SA-SC	
	Net (g)	**Distribution (%)**	Net (g)	**Distribution (%)**
1.0-2.0 mm	24.9	**18.2%**	102.7	**18.5%**
0.5-1.0 mm	30.2	**22.1%**	117.8	**21.2%**
0.25-0.5 mm	28.9	**21.1%**	116.6	**21.0%**
0.125-0.25 mm	22.4	**16.4%**	83.9	**15.1%**
0.075-0.125 mm	9.5	**7.0%**	38.2	**6.9%**
0.038-0.075 mm	9.7	**7.1%**	42.5	**7.7%**
0.020-0.038 mm	6.1	**4.5%**	22.3	**4.0%**
<0.020 mm (fines)	4.8	**3.5%** (A)	31.1	**5.6%** (B)
Total	136.5	**100.0%**	555.1	**100.0%**

Note:
Total Amount of Secondary Fines Generated as the Result of Attrition Scrubbing: (B) - (A) = 2.1% on dry weight basis

Data Sheet - Particle Size Distribution Sand after Flotation and Fines Decantation - Process Optimization Run A & B

Fraction	Sand After Flotation & Fines Decantation - Run A (without addition of Ground Oversize) Sample ID: C12A-SA-FL		Sand After Flotation & Fines Decantation - Run B (with addition of Ground Oversize) Sample ID: C12B-SAC-FL	
	Net Dry Mass (g)	**Mass Distribution (%)**	Net Dry Mass (g)	**Mass Distribution (%)**
1.0-2.0 mm	14.6	**6.6%**	10.3	**5.0%**
0.5-1.0 mm	65.6	**29.9%**	58.9	**28.5%**
0.25-0.5 mm	52.7	**24.0%**	62.9	**30.4%**
0.125-0.25 mm	37.3	**17.0%**	33.6	**16.3%**
0.075-0.125 mm	16.7	**7.6%**	16.5	**8.0%**
0.038-0.075 mm	19.8	**9.0%**	14.2	**6.8%**
0.020-0.038 mm	9.3	**4.2%**	6.6	**3.2%**
<0.020 mm (fines)	3.6	**1.6%**	3.8	**1.8%**
Total	219.4	**100.0%**	206.9	**100.0%**

Data Sheet - Particle Size Distribution Oversize Fraction after Grinding with 3/8" and 5/8" Steel Balls - Run A

Size Fraction	Composite C12A Oversize						
	Net Wet	% Solids	Dry	Distribution	TNT Concentration	2,4 DNT Concentration	TNT / 2,4 DNT Ratio
	(g)	(%)	(g)	(%)	(mg/kg)	(mg/kg)	
>12.5 mm	351.5	95%[1)]	333.9	**25.7%**	no visual TNT	no visual DNT	
4.75-12.5 mm	307.7	92.0%	283.1	**21.8%**	370	19	19
4.0-4.75 mm	64.6	95.2%	61.5	**4.7%**	200	22	9
2.4-4.0 mm	108.7	93.2%	101.3	**7.8%**	51	22	2
2.0-2.4 mm	32.1	94.9%	30.5	**2.3%**	61	23	3
1.0-2.0 mm	51.6	93.1%	48.0	**3.7%**	45	23	2
0.5-1.0 mm	33.2	74.4%	24.7	**1.9%**	420	120	4
0.25-0.5 mm	44.5	67.8%	30.2	**2.3%**	8,400	820	10
0.125-0.25 mm	114.1	67.8%	77.4	**6.0%**			
0.075-0.125mm	91.0	67.8%	61.7	**4.7%**			
0.038-0.075 mm	118.2	67.8%	80.1	**6.2%**			
<0.038 mm (fines)	231.9	72.1%	167.2	**12.9%**	7,400	240	31
Total	**1,549.1**		**1,299.6**	**100.0%**	**2,669**	**199**	

Notes:
[1)] estimated

Data Sheet - Particle Size Distribution Oversize Fraction after Grinding with 1" and 1 1/4" Steel Balls - Run B

Size Fraction	Composite C12B Oversize						
	Net Wet Mass	% Solids	Dry Mass	Mass Distribution on Dry Weight Basis	TNT Concentration	2,4 DNT Concentration	TNT to 2,4 DNT Ratio
	(g)	(%)	(g)	(%)	(mg/kg)	(mg/kg)	
>12.5 mm	271.3	95%[1)]	257.7	**21.8%**	no visual TNT	no visual DNT	
4.75-12.5 mm	121.4	92.0%	111.7	**9.4%**	100	30	3
4.0-4.75 mm	12.7	95.2%	12.1	**1.0%**			
2.4-4.0 mm	29.2	72.0%	21.0	**1.8%**	140	73	2
2.0-2.4 mm	10.3	72.0%	7.4	**0.6%**			
0.038-2.0 mm (sand)	936.0	70.3%	658.0	**55.6%**	4,900	300	16
<0.038 mm (fines)	178.7	64.3%	114.9	**9.7%**	9,100	230	40
Total	**1,559.6**		**1,182.8**	**100.0%**	**3,624**	**194**	

Data Sheet - Mass Balance Process Optimization Run A - Round 2

	Sample ID	Moist Weight (g)	Moisture (%)	Comments	Dry Weight (g)	Mass Distribution on Dry Weight Basis (%)
Soil <12.5 mm		4,500.0	85.3%	average moisture content of Composite C1 and C2	3,838.5	
Oversize Grinding Input - Grinding with combination of 3/8" and 5/8" Steel Grinding Balls						
Soil +12.5 mm (Calculated)		442.0	95%	estimated % solids	419.9	
Oversize 2.0-12.5 mm		1,030.0	92.0%	estimated % solids	947.6	
TNT Particle (dry)					1.2	
Total					**1,368.7**	
Wet Screening & Hydraulic Separation Mass Balance						
Oversize 2.0-12.5 mm		1,030.0	92.0%	estimated % solids	947.6	25.0%
Sand after hydraulic separation	C12A-SA	2,360.0	80.9%		1,908.2	50.4%
Fines after hydraulic separation	C12A-FI	16,750.0	5.57%		932.2	24.6%
Total					**3,788.0**	**100.0%**
Flotation Mass Balance						
Sand after Flotation and Fines Decantation	C12A-SA-FL	649.5	82.2%		534.2	91.7%
Flotation Concentrate	C12A-FL				11.3	1.9%
Decanted fines after Flotation	C12A-SA-FLFI	68.9	53.5%		36.9	6.3%
Total					582.4	**100.0%**

Data Sheet - Mass Balance Process Optimization Run B - Round 2

	Sample ID	Moist Weight (g)	Moisture (%)		Dry Weight (g)	Mass Distribution on Dry Weight Basis (%)
Soil <12.5 mm		4,500	85.3%		3,839	
Oversize Grinding - Input						
Oversize +12.5 mm (Calculated)		445	95%	estimated % solids	423	
Oversize 2.0-12.5 mm		971	92.0%	estimated % solids	893	
Total					**1,316**	
Wet Screening & Hydraulic Separation Mass Balance						
Oversize 2.0-12.5 mm		971	92.0%	estimated % solids	893.3	23.7%
Sand after hydraulic separation	C12B-SA	2,342	82.9%		1,940.9	51.5%
				Same amount of fines assumed as determined for Run #A ; Hydraulic Separation was		
Fines after hydraulic separation	C12B-FI			performed under identical	932.2	24.8%
Total					**3,766.4**	**100.0%**
Flotation Mass Balance						
Sand after Flotation and Fines Decantation	C12B-SAC-FL	660	81.5%		538.2	90.4%
Flotation Concentrate	C12B-FL				9.2	1.5%
Decanted fines after Flotation	C12B-SAC-FLFI	79.39	60.4%		47.9	8.1%
Total					595.3	**100.0%**

Data Sheet - Mass Balance Process Simulation - Round 3

	Sample ID	Moist Weight (g)	% Solids by Weight (%)	Comments	Dry Weight (g)	Mass Distribution on Dry Weight Basis (%)
Soil <12.5 mm		4,500	85.3%		3,839	
Oversize Grinding- input						
Oversize +12.5 mm (calculated)		445	95%	estimated % solids	422.8	
Oversize 2.0-12.5 mm		974	87.6%		853.6	
TNT Particle (dry)					1.2	
Total Before Grinding					**1,276.3**	
Hydraulic Separation Ground Oversize Mass Balance						
Sand after Oversize Grinding	SA-3	1,353	78.9%		1066.9	87.5%
Fines after Oversize Grinding	FI-2	15,500	0.98%		152.7	12.5%
Total					**1219.6**	**100.0%**
Wet Screening & Hydraulic Separation Mass Balance						
Oversize 2.0-12.5 mm		974	87.6%		853.6	22.4%
Sand after Hydraulic Separation	SA-1	2,423	81.8%		1,982.1	51.9%
Fines after Hydraulic Separation	FI-1	17,100	5.74%		980.9	25.7%
Total					**3,816.6**	**100.0%**
Flotation Mass Balance						
Sand after Flotation	SA-4	3,104	83.1%		2,579	91.8%
Flotation Concentrate (dried)					43.7	1.6%
Fines Separated after Flotation	FI-4	9,600	1.9%		186	6.6%
Total					**2,809**	**100.0%**

Data Sheet - Soil Sample Moisture Analysis Results - Round 1 & 2

	Tare (g)	Moist Weight + Sample (g)	Dry Weight + Sample (g)	Net Weight (dry)	Solids (%)
Sample C1 <12.5 mm	2.2	31.3	26.9		84.9%
Sample C2 <12.5 mm	2.2	61.9	53.4		85.8%
Sample C3 <12.5 mm	2.2	47.3	38.9		81.4%
Sample C4 < 12.5 mm	2.2	94.3	82.7		87.4%
Sample C1-B	2.2	31.4	29.8		94.5%
Sample C2-B (replicate A)	2.2	52.0	48.4		92.8%
Sample C2-B (replicate B)	2.2	54.7	50.7		92.4%
Sample C3-B	2.2	33.0	31.4		94.8%
Sample C4-B (replicate A)	2.2	56.2	52.8		93.7%
Sample C4-B (replicate B)	2.2	62.8	59.1		93.9%
Sample C1-C	2.2	31.1	26.3		83.4%
Sample C2-C	2.2	34.0	28.7		83.3%
Sample C3-C	2.2	31.0	25.6		81.3%
Sample C4-C	2.2	32.7	27.8		83.9%
Sample C1-D					7.7%
Sample C2-D					4.6%
Sample C3-D					6.0%
Sample C4-D					1.8%
Sample C12-C	1.9	31.6	26.5		82.9%
Sample Sand FL1 (Sand after Flotation Test#1)	1.9	30.4	25.2		81.8%
Sample FL1- Froth Concentrate	8.8	65.8	21.8	13.0	22.8%
Sample Sand FL2 (Sand after Flotation Test#2)	1.9	29.4	25.8		87.0%
Sample FL2- Froth Concentrate				15.1	
Sample C12-C (C1 & C2 Sand Composite)	1.9	31.6	26.5		82.9%
Sample C12-SC3 (After Scrubbing)	2.2	37.9	28.9		74.8%
Sample FL3- Froth Concentrate				9.8	
Sample C12A-SA	2.2	28.9	23.8		80.9%
Sample C12A-FI (Fines after hydraulic separation	8.9	849.9	55.7		5.6%
Sample C12A-SA-FL	2.0	23.5	19.7		82.2%
Sample C12A-FL-FI (fines fraction - 0.020 mm after flotation)	2.0	14.7	8.8		53.5%
Sample C12A-FL (Flotation Concentrate)				11.3	
Sample C12B-SA (Sand after hydraulic Separation)	2.2	16.3	13.9		82.9%
Sample C12B-OS-SA (0.038 - 2.0 mm)	2.0	11.9	9.8		78.3%
Sample C12B-OS-FI (fines <0.038 mm)	2.2	26.8	19.3		69.5%
Sample C12B-SA (Sand after hydraulic Separation)	2.2	16.3	13.9		82.9%
Sample C12B-SAC (Combined Sand after hydraulic Separation & Sand Fraction from Oversize Grinding Test #2)	2.2	26.7	22.2		81.8%
Sample C12B-SAC-FL (Combined Sand after Flotation)	2.2	21.7	18.1		81.5%
Sample C12B-FL (Flotation Concentrate)				9.2	
Sample C12B-FL-FI (fines fraction - 0.020 mm after flotation)	2.2	15.0	9.9		60.4%

Data Sheet - Soil Sample Moisture Analysis Results - Round 3

	Tare (g)	Moist Weight + Sample (g)	Dry Weight + Sample (g)	Net Weight (dry) (g)	Solids (%)
Combined Composite C12 < 12.5 mm (calculated)					85.3%
Oversize 2.0 - 12.5 mm after Wet Screening	1.3	21.3	18.8		87.6%
Sand after hydraulic Separation (Sample ID: SA-1)	1.3	16.5	13.7		81.8%
Sand after OS Grinding (Sample ID: SA-3)	1.3	18.1	14.6		78.9%
Primary Fines after hydraulic separation (Sample ID: FI-1)	15.9	361.2	35.7		5.7%
Grinding Fines after separation (Sample ID: FI-2)	15.9	450.3	20.2		1.0%
Combined thickened fines for Oxidation Tests (Sample ID: FIC)	9.0	104.9	40.9		33.2%
Combined Sand after hydraulic Separation & Sand Fraction from Oversize Grinding (Sample ID: SA-2)	1.3	16.5	13.7		81.8%
Combined Sand after Flotation for oxidation tests (Sample ID: SA-4)	1.3	22.4	18.8		83.1%
Flotation Concentrate	15.7		59.4	43.7	
Fines fraction - 0.020 mm after flotation (Sample ID: FI-4)	15.6	479.0	24.6		1.9%

Notes:
Highlighted Samples used for Performance of Oxidation Tests

Appendix C

Analytical Data Reports

Part I: Round 1 Testing

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 6/24/2013
Submit Date: 6/13/2013

Lancaster Sample ID		7092365	7092366	7092367	7092368
ART/ARCADIS Sample ID		COMPOSITE 1	COMPOSITE 2	COMPOSITE 2	COMPOSITE 4
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	24,000	40,000	30,000	10,000
2-Amino-4,6-Dinitrotoluene	ug/kg	18,000	42,000	22,000	14,000
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	N.D.	2,000	N.D.	1,100 J
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	490,000	1,400,000	5,800	41,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	2,300	N.D.	2,800
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	3,300	3,900	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	2,900	N.D.	2,000
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	N.D.	4,200	3,200	12,000
2,4,6-Trinitrotoluene	ug/kg	4,900,000	11,000,000	5,000,000	3,800,000
Moisture	%	13.7	14.8	16.6	

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 7/18/2013
Submit Date: 6/28/2013

Lancaster Sample ID		7111833	7111834	7111835	7111836
ART/ARCADIS Sample ID		C1-A	C2-A	C3-A	C4-A
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	15,000	N.D.	61,000	10,000
2-Amino-4,6-Dinitrotoluene	ug/kg	13,000	37,000	40,000	12,000
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	1,200	2,400	2,100	710
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	660,000	2,400,000	39,000	33,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	4,200	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	6,900	21,000	N.D.	19,000
2,4,6-Trinitrotoluene	ug/kg	4,800,000	12,000,000	28,000,000	4,200,000
Moisture	%	15.2	14.0	19.6	11.8

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 7/18/2013
Submit Date: 6/28/2013

Lancaster Sample ID		7111837	7111838	7111839	7111840
ART/ARCADIS Sample ID		C1-B	C2-B	C3-B	C4-B
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	8,500	9,500	N.D.	2,500
2-Amino-4,6-Dinitrotoluene	ug/kg	3,900	9,300	N.D.	3,800
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	830	1,700	N.D.	160 J
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	630,000	400,000	40,000	5,500
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	7,200	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	240 J
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	15,000	8,800	16,000	4,100
2,4,6-Trinitrotoluene	ug/kg	7,300,000	9,400,000	70,000,000	1,600,000
Moisture	%	14.0	8.3	10.4	7.5

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 7/18/2013
Submit Date: 6/28/2013

Lancaster Sample ID		7111841	7111842	7111843	7111844
ART/ARCADIS Sample ID		C1-C	C2-C	C3-C	C4-C
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	12,000	13,000	N.D.	4,600
2-Amino-4,6-Dinitrotoluene	ug/kg	5,800	9,900	15,000	4,200
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	630
1,3-Dinitrobenzene	ug/kg	480	1,800	1,100	800
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	490,000	2,200,000	44,000	27,000 J
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	670 J	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	1,300
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	910
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	8,100	12,000	N.D.	13,000
2,4,6-Trinitrotoluene	ug/kg	5,300,000	7,600,000	22,000,000	4,700,000
Moisture	%	20.0	18.5	19.3	13.4

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 7/18/2013
Submit Date: 6/28/2013

Lancaster Sample ID		7111853	7111854	7111855	7111856
ART/ARCADIS Sample ID		C1-D	C2-D	C3-D	C4-D
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	24,000	31,000 J	68,000	63,000
2-Amino-4,6-Dinitrotoluene	ug/kg	18,000	31,000 J	49,000	83,000
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	N.D.	N.D.	4,900	N.D.
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	330,000	1,700,000	43,000 J	190,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	7,100	12,000	N.D.	N.D.
2,4,6-Trinitrotoluene	ug/kg	5,300,000	11,000,000	17,000,000	22,000,000
Moisture	%	33.9	35.4	42.9	35.8

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 7/18/2013
Submit Date: 6/28/2013

Lancaster Sample ID		7111849	7111850	7111851	7111852
ART/ARCADIS Sample ID		C1-C-500-2000	C2-C-500-2000	C3-C-500-2000	C4-C-500-2000
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	4,700	6,700	3,100	1,700
2-Amino-4,6-Dinitrotoluene	ug/kg	2,400	7,000	2,100	3,200
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	520
1,3-Dinitrobenzene	ug/kg	410	660	940	420
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	410,000	480,000	15,000	9,200
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	1,100	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	3,300	5,500	17,000	3,600
2,4,6-Trinitrotoluene	ug/kg	1,800,000	2,300,000	26,000,000	290,000
Moisture	%	21.5	20.6	26.1	20.7

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 7/18/2013
Submit Date: 6/28/2013

Lancaster Sample ID		7111845	7111846	7111847	7111848
ART/ARCADIS Sample ID		C1-C-038-500	C2-C-038-500	C3-C-038-500	C4-C-038-500
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	9,200	N.D.	4,200	2,500
2-Amino-4,6-Dinitrotoluene	ug/kg	3,400	N.D.	4,200	N.D.
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	820
1,3-Dinitrobenzene	ug/kg	640	3,900	870	1,100
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	240,000	3,500,000	38,000	26,000 J
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	570	970
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	5,300	12,000	N.D.	12,000
2,4,6-Trinitrotoluene	ug/kg	5,600,000	16,000,000	18,000,000	3,400,000
Moisture	%	25.0	27.7	23.6	18.5

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 1
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 7/23/2013
Submit Date: 6/28/2013

Lancaster Sample ID		7111829	7111830	7111831	7111832
ART/ARCADIS Sample ID		C1-W	C2-W	C3-W	C4-W
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/l	N.D.	N.D.	1,700	420
2-Amino-4,6-Dinitrotoluene	ug/l	780	880	1,400	630
1,2-Dinitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/l	23	44	11	6.1
1,4-Dinitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/l	35,000	62,000	2,100	1,300
2,6-Dinitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
HMX	ug/l	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/l	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/l	8.5	21	1.2	5.0
2-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
PETN	ug/l	N.D.	N.D.	N.D.	N.D.
RDX	ug/l	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/l	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/l	72 J	110 J	N.D.	48 J
2,4,6-Trinitrotoluene	ug/l	61,000	73,000	77,000	74,000

Notes:
N.D. Not Detected
J : J-Flag indicates estimated value

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

June 24, 2013

Project: Kenvil Treatability Study

Submittal Date: 06/13/2013
Group Number: 1396997
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LLI) #
COMPOSITE 1 Soil Sample	7092365
COMPOSITE 2 Soil Sample	7092366
COMPOSITE 3 Soil Sample	7092367
COMPOSITE 4 Soil Sample	7092368

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks
ELECTRONIC COPY TO	Arcadis	Attn: Scott Larew

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: COMPOSITE 1 Soil Sample
Kenvil - NJ

LLI Sample # SW 7092365
LLI Group # 1396997
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/12/2013 12:00 by SL

Submitted: 06/13/2013 17:00
Reported: 06/24/2013 09:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

CMP1-

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000	700	1,400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	18,000	460	1,400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	460	1,400	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	460	1,400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	460	1,400	1
06918	2,4-Dinitrotoluene	121-14-2	490,000	46,000	140,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	46,000	140,000	100
06918	HMX	2691-41-0	N.D.	1,200	3,500	1
06918	Nitrobenzene	98-95-3	N.D.	460	1,400	1
06918	Nitroglycerin	55-63-0	N.D.	930,000	2,800,000	100
06918	1-Nitronaphthalene	86-57-7	N.D.	460	1,400	1
06918	2-Nitrotoluene	88-72-2	3,300	930	1,400	1
06918	3-Nitrotoluene	99-08-1	N.D.	1,200	1,400	1
06918	4-Nitrotoluene	99-99-0	N.D.	1,700	1,700	1
06918	PETN	78-11-5	N.D.	9,300	28,000	1
06918	RDX	121-82-4	N.D.	580	1,400	1
06918	Tetryl	479-45-8	N.D.	710	1,400	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	460	1,400	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,900,000	930,000	2,800,000	2000

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
4-Amino-2,6-dinitrotoluene
Reporting limits were raised due to interference from the sample matrix.

Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	13.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/17/2013 02:41	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 01:35	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 02:17	James H Place	100

*=This limit was used in the evaluation of the final result

Sample Description: COMPOSITE 1 Soil Sample
Kenvil - NJ

LLI Sample # SW 7092365
LLI Group # 1396997
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/12/2013 12:00 by SL

Submitted: 06/13/2013 17:00
Reported: 06/24/2013 09:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

CMP1-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131650001A	06/14/2013 01:00	David V Hershey Jr	1
00111	Moisture	SM 2540 G-1997	1	13165820003A	06/14/2013 19:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: COMPOSITE 2 Soil Sample
Kenvil - NJ

LLI Sample # SW 7092366
LLI Group # 1396997
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/12/2013 12:10 by SL

Submitted: 06/13/2013 17:00
Reported: 06/24/2013 09:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

CMP2-

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	40,000	700	1,400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	42,000	470	1,400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	470	1,400	1
06918	1,3-Dinitrobenzene	99-65-0	2,000	470	1,400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	470	1,400	1
06918	2,4-Dinitrotoluene	121-14-2	1,400,000	47,000	140,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	47,000	140,000	100
06918	HMX	2691-41-0	N.D.	1,200	3,500	1
06918	Nitrobenzene	98-95-3	2,300	470	1,400	1
06918	Nitroglycerin	55-63-0	N.D.	940,000	2,800,000	100
06918	1-Nitronaphthalene	86-57-7	N.D.	470	1,400	1
06918	2-Nitrotoluene	88-72-2	3,900	940	1,400	1
06918	3-Nitrotoluene	99-08-1	2,900	1,200	1,400	1
06918	4-Nitrotoluene	99-99-0	N.D.	940	1,400	1
06918	PETN	78-11-5	N.D.	9,400	28,000	1
06918	RDX	121-82-4	N.D.	590	1,400	1
06918	Tetryl	479-45-8	N.D.	720	1,400	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,200	470	1,400	1
06918	2,4,6-Trinitrotoluene	118-96-7	11,000,000	940,000	2,800,000	2000

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
4-Amino-2,6-dinitrotoluene

Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	14.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/17/2013 03:23	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 03:00	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 03:42	James H Place	100

*=This limit was used in the evaluation of the final result

Sample Description: COMPOSITE 2 Soil Sample
Kenvil - NJ

LLI Sample # SW 7092366
LLI Group # 1396997
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/12/2013 12:10 by SL

Submitted: 06/13/2013 17:00
Reported: 06/24/2013 09:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

CMP2-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131650001A	06/14/2013 01:00	David V Hershey Jr	1
00111	Moisture	SM 2540 G-1997	1	13165820003A	06/14/2013 19:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: COMPOSITE 3 Soil Sample
Kenvil - NJ

LLI Sample # SW 7092367
LLI Group # 1396997
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/12/2013 12:20 by SL

Submitted: 06/13/2013 17:00
Reported: 06/24/2013 09:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

CMP3-

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	30,000	720	1,400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	22,000	480	1,400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	480	1,400	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	480	1,400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	480	1,400	1
06918	2,4-Dinitrotoluene	121-14-2	5,800	480	1,400	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	1,300	1,400	1
06918	HMX	2691-41-0	N.D.	1,200	3,600	1
06918	Nitrobenzene	98-95-3	N.D.	480	1,400	1
06918	Nitroglycerin	55-63-0	N.D.	960,000	2,900,000	100
06918	1-Nitronaphthalene	86-57-7	N.D.	480	1,400	1
06918	2-Nitrotoluene	88-72-2	N.D.	960	1,400	1
06918	3-Nitrotoluene	99-08-1	N.D.	1,200	1,400	1
06918	4-Nitrotoluene	99-99-0	N.D.	960	1,400	1
06918	PETN	78-11-5	N.D.	9,600	29,000	1
06918	RDX	121-82-4	N.D.	600	1,400	1
06918	Tetryl	479-45-8	N.D.	730	1,400	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,200	480	1,400	1
06918	2,4,6-Trinitrotoluene	118-96-7	5,000,000	48,000	140,000	100
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4-Amino-2,6-dinitrotoluene					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	16.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 04:24	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 05:07	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131650001A	06/14/2013 01:00	David V Hershey Jr	1
00111	Moisture	SM 2540 G-1997	1	13165820003A	06/14/2013 19:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: COMPOSITE 4 Soil Sample
Kenvil - NJ

LLI Sample # SW 7092368
LLI Group # 1396997
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/12/2013 12:30 by SL

Submitted: 06/13/2013 17:00
Reported: 06/24/2013 09:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

CMP4 -

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg		ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000		600	1,200	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	14,000		400	1,200	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		400	1,200	1
06918	1,3-Dinitrobenzene	99-65-0	1,100	J	400	1,200	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		400	1,200	1
06918	2,4-Dinitrotoluene	121-14-2	41,000		400	1,200	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.		6,700	6,700	1
06918	HMX	2691-41-0	N.D.		22,000	22,000	1
06918	Nitrobenzene	98-95-3	2,800		400	1,200	1
06918	Nitroglycerin	55-63-0	N.D.		8,000	24,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		400	1,200	1
06918	2-Nitrotoluene	88-72-2	N.D.		800	1,200	1
06918	3-Nitrotoluene	99-08-1	2,000		1,000	1,200	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	1,400	1
06918	PETN	78-11-5	N.D.		8,000	24,000	1
06918	RDX	121-82-4	N.D.		3,300	3,300	1
06918	Tetryl	479-45-8	N.D.		610	1,200	1
06918	1,3,5-Trinitrobenzene	99-35-4	12,000		400	1,200	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,800,000		40,000	120,000	100

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
4-Amino-2,6-dinitrotoluene
Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 05:49	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131650001A	06/20/2013 06:32	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131650001A	06/14/2013 01:00	David V Hershey Jr	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1396997
Reported: 06/24/13 at 09:16 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 131650001A	Sample number(s): 7092365-7092368								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	121*	123*	87-120	2	50
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	91	94	84-115	3	50
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	108	111	94-129	3	50
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	105	108	85-124	3	50
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	99	102	83-122	3	50
2,4-Dinitrotoluene	N.D.	100.	300	ug/kg	98	101	82-114	3	50
2,6-Dinitrotoluene	N.D.	100.	300	ug/kg	112	116	86-117	4	50
HMX	N.D.	250.	750	ug/kg	90	93	79-104	3	100
Nitrobenzene	N.D.	100.	300	ug/kg	97	99	80-120	2	50
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	89	91	83-112	3	50
1-Nitronaphthalene	N.D.	100.	300	ug/kg	112	115	83-122	3	50
2-Nitrotoluene	N.D.	200.	300	ug/kg	100	103	82-113	3	50
3-Nitrotoluene	N.D.	250.	300	ug/kg	104	107	88-121	3	50
4-Nitrotoluene	N.D.	200.	300	ug/kg	104	107	88-111	3	50
PETN	N.D.	2,000.	6,000	ug/kg	90	93	89-129	3	50
RDX	N.D.	130.	300	ug/kg	96	99	81-118	3	50
Tetryl	N.D.	150.	300	ug/kg	113	116	58-122	3	50
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	100	103	83-119	3	50
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	97	100	85-122	3	50
Batch number: 13165820003A	Sample number(s): 7092365-7092367								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 13165820003A	Sample number(s): 7092365-7092367					BKG: P092916			
Moisture						14.9	14.4	3	13

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1396997
Reported: 06/24/13 at 09:16 AM

Surrogate Quality Control

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 131650001A

	2-Nitro-m-xylene
7092365	103
7092366	101
7092367	111
7092368	14*
Blank	111
LCS	109
LCSD	120
Limits:	73-155

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

2

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories use only
Acct. # 6716 Group # 1396997 Sample # 7092365-68
Instructions on reverse side correspond with circled numbers.

COC # 333563

1 Client Information

Client: ASHLAND INC	Acct. #:
Project Name/#: KENVIL	PWSID #:
Project Manager: ED MEEKS - ASHLAND	P.O. #:
Sampler: SCOTT LAREW - ARCADIS	Quote #:
Name of state where samples were collected: NJ	

2 Sample Identification / **3 Grab** / **4 Matrix** (Sediment ☐, Soil ☒, Ground ☐, Potable ☐, Surface ☐, NPDES ☐, Water, Other: ___) / **Total # of Containers** / **5 Analysis Requested** (Preservation Codes)

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	EXPL. & ENER (8330)
COMPOSITE 1	6/12/13	1200	X		X			1	X
COMPOSITE 2	6/12/13	1210	X		X			1	X
COMPOSITE 3	6/12/13	1220	X		X			1	X
COMPOSITE 4	6/12/13	1230	X		X			1	X

For Lab Use Only
FSC:
SCR#: 140676

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks
SAMPLES PRE-SCREENED AND SORTED, FIELD ~~TEST~~ TESTS INDICATE CONCENTRATIONS LESS THAN 1%
PLEASE REPORT RESULTS AT RL = 0.1%, RE-RUN AT LOWER DILUTION IF ~~NEW~~ OW TNT IS NON-DETECT AT 0.1% RL

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: TUESDAY, JUNE 18, 2013

E-mail address: scott.larew@arcadis-us.com

8 Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

9

Relinquished by	Date	Time	Received by	Date	Time
L. Megashko	6/10/13	8:38	[signature]	6/11/13	
[signature]	6/13/13	12:57	[signature]	6/13/13	13:10
[signature]	6/13/13	17:00			
			[signature]	6/13/13	1700

EDD Required? Yes No
If yes, format:
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____
Temperature upon receipt 0.8 °C

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

July 18, 2013

Project: Kenvil Treatability Study

Submittal Date: 06/28/2013
Group Number: 1400652
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
C1-A Soil	7111833
C2-A Soil	7111834
C3-A Soil	7111835
C4-A Soil	7111836
C1-B Soil	7111837
C2-B Soil	7111838
C3-B Soil	7111839
C4-B Soil	7111840
C1-C Soil	7111841
C2-C Soil	7111842
C3-C Soil	7111843
C4-C Soil	7111844
C1-C-038-500 Soil	7111845
C2-C-038-500 Soil	7111846
C3-C-038-500 Soil	7111847
C4-C-038-500 Soil	7111848
C1-C-500-2000 Soil	7111849
C2-C-500-2000 Soil	7111850
C3-C-500-2000 Soil	7111851
C4-C-500-2000 Soil	7111852
C1-D Soil	7111853
C2-D Soil	7111854
C3-D Soil	7111855
C4-D Soil	7111856

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks
ELECTRONIC COPY TO	Arcadis	Attn: Scott Larew
ELECTRONIC COPY TO	Art Engineering	Attn: E Groen
ELECTRONIC COPY TO	Arcadis	Attn: David Liles

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: C1-A Soil
Kenvil Treatability Study

LL Sample # SW 7111833
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1-A

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10724	Acenaphthene	83-32-9	N.D.		39	200	10
10724	Acenaphthylene	208-96-8	N.D.		39	200	10
10724	Anthracene	120-12-7	N.D.		39	200	10
10724	Benzo(a)anthracene	56-55-3	61	J	39	200	10
10724	Benzo(a)pyrene	50-32-8	55	J	39	200	10
10724	Benzo(b)fluoranthene	205-99-2	100	J	39	200	10
10724	Benzo(g,h,i)perylene	191-24-2	N.D.		39	200	10
10724	Benzo(k)fluoranthene	207-08-9	58	J	39	200	10
10724	Chrysene	218-01-9	110	J	39	200	10
10724	Dibenz(a,h)anthracene	53-70-3	N.D.		39	200	10
10724	Fluoranthene	206-44-0	130	J	39	200	10
10724	Fluorene	86-73-7	N.D.		39	200	10
10724	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		39	200	10
10724	1-Methylnaphthalene	90-12-0	N.D.		39	200	10
10724	2-Methylnaphthalene	91-57-6	N.D.		39	200	10
10724	Naphthalene	91-20-3	N.D.		39	200	10
10724	Phenanthrene	85-01-8	N.D.		39	200	10
10724	Pyrene	129-00-0	110	J	39	200	10
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	15,000		180	350	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	13,000		120	350	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	350	1
06918	1,3-Dinitrobenzene	99-65-0	1,200		120	350	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	350	1
06918	2,4-Dinitrotoluene	121-14-2	660,000		12,000	35,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		120	350	1
06918	HMX	2691-41-0	N.D.		290	880	1
06918	Nitrobenzene	98-95-3	N.D.		120	350	1
06918	Nitroglycerin	55-63-0	N.D.		2,400	7,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	350	1
06918	2-Nitrotoluene	88-72-2	N.D.		240	350	1
06918	3-Nitrotoluene	99-08-1	N.D.		290	350	1
06918	4-Nitrotoluene	99-99-0	N.D.		240	350	1
06918	PETN	78-11-5	N.D.		2,400	7,100	1
06918	RDX	121-82-4	N.D.		150	350	1
06918	Tetryl	479-45-8	N.D.		180	350	1
06918	1,3,5-Trinitrobenzene	99-35-4	6,900		120	350	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,800,000		240,000	710,000	2000
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,700		8.18	22.7	1
06944	Antimony	7440-36-0	1.47	J	0.839	2.27	1
06935	Arsenic	7440-38-2	6.47		0.794	2.27	1
06946	Barium	7440-39-3	70.3		0.0374	0.567	1
06947	Beryllium	7440-41-7	0.536	J	0.0760	0.567	1
06949	Cadmium	7440-43-9	0.356	J	0.0862	0.567	1
01650	Calcium	7440-70-2	1,110		3.79	22.7	1
06951	Chromium	7440-47-3	27.6		0.181	1.70	1
06952	Cobalt	7440-48-4	4.18		0.112	0.567	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-A Soil
Kenvil Treatability Study

LL Sample # SW 7111833
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1-A

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06953	Copper	7440-50-8	28.2		0.329	1.13	1
01654	Iron	7439-89-6	28,000		4.10	22.7	1
06955	Lead	7439-92-1	444		0.567	1.70	1
01657	Magnesium	7439-95-4	1,770		1.89	11.3	1
06958	Manganese	7439-96-5	158		0.0941	0.567	1
06961	Nickel	7440-02-0	14.2		0.147	1.13	1
01662	Potassium	7440-09-7	863		9.46	56.7	1
06936	Selenium	7782-49-2	1.01	J	0.907	2.27	1
06966	Silver	7440-22-4	N.D.		0.193	0.567	1
01667	Sodium	7440-23-5	69.0	J	18.9	113	1
06925	Thallium	7440-28-0	N.D.		0.590	3.40	1
06971	Vanadium	7440-62-2	37.0		0.147	0.567	1
06972	Zinc	7440-66-6	43.9		0.227	2.27	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.406		0.0116	0.116	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	15.2		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10724	PAH 8270 (microwave)	SW-846 8270C	1	13189SLB026	07/10/2013 07:26	Brian K Graham	10
10814	BNA Soil Microwave PAH	SW-846 3546	1	13189SLB026	07/08/2013 13:30	David S Schrum	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/09/2013 14:10	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/09/2013 14:53	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/09/2013 15:35	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
01643	Aluminum	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06944	Antimony	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06935	Arsenic	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06946	Barium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06947	Beryllium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-A Soil
Kenvil Treatability Study

LL Sample # SW 7111833
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1-A

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
01650	Calcium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06951	Chromium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06952	Cobalt	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06953	Copper	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
01654	Iron	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06955	Lead	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
01657	Magnesium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06958	Manganese	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06961	Nickel	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
01662	Potassium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06936	Selenium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06966	Silver	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
01667	Sodium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06925	Thallium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06971	Vanadium	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
06972	Zinc	SW-846 6010B	1	131825708002	07/02/2013 19:05	John P Hook	1
00159	Mercury	SW-846 7471A	1	131825711002	07/03/2013 17:19	Parker D Lindstrom	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131825708002	07/02/2013 08:53	Denise K Conners	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131825711002	07/02/2013 11:40	Denise K Conners	1
00111	Moisture	SM 2540 G-1997	1	13189820004A	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-A Soil
Kenvil Treatability Study

LL Sample # SW 7111834
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2-A

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10724	Acenaphthene	83-32-9	N.D.		39	200	10
10724	Acenaphthylene	208-96-8	N.D.		39	200	10
10724	Anthracene	120-12-7	N.D.		39	200	10
10724	Benzo(a)anthracene	56-55-3	68	J	39	200	10
10724	Benzo(a)pyrene	50-32-8	53	J	39	200	10
10724	Benzo(b)fluoranthene	205-99-2	95	J	39	200	10
10724	Benzo(g,h,i)perylene	191-24-2	N.D.		39	200	10
10724	Benzo(k)fluoranthene	207-08-9	N.D.		39	200	10
10724	Chrysene	218-01-9	87	J	39	200	10
10724	Dibenz(a,h)anthracene	53-70-3	N.D.		39	200	10
10724	Fluoranthene	206-44-0	160	J	39	200	10
10724	Fluorene	86-73-7	N.D.		39	200	10
10724	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		39	200	10
10724	1-Methylnaphthalene	90-12-0	N.D.		39	200	10
10724	2-Methylnaphthalene	91-57-6	N.D.		39	200	10
10724	Naphthalene	91-20-3	N.D.		39	200	10
10724	Phenanthrene	85-01-8	84	J	39	200	10
10724	Pyrene	129-00-0	120	J	39	200	10
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.		17,000	33,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	37,000		11,000	33,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.		110	330	1
06918	1,3-Dinitrobenzene	99-65-0	2,400		110	330	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		110	330	1
06918	2,4-Dinitrotoluene	121-14-2	2,400,000		220,000	660,000	2000
06918	2,6-Dinitrotoluene	606-20-2	N.D.		22,000	22,000	1
06918	HMX	2691-41-0	N.D.		19,000	19,000	1
06918	Nitrobenzene	98-95-3	4,200		110	330	1
06918	Nitroglycerin	55-63-0	N.D.		2,200	6,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		110	330	1
06918	2-Nitrotoluene	88-72-2	N.D.		220	330	1
06918	3-Nitrotoluene	99-08-1	N.D.		280	330	1
06918	4-Nitrotoluene	99-99-0	N.D.		220	330	1
06918	PETN	78-11-5	N.D.		2,200	6,600	1
06918	RDX	121-82-4	N.D.		520	520	1
06918	Tetryl	479-45-8	N.D.		170	330	1
06918	1,3,5-Trinitrobenzene	99-35-4	21,000		110	330	1
06918	2,4,6-Trinitrotoluene	118-96-7	12,000,000		220,000	660,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,640		8.38	23.3	1
06944	Antimony	7440-36-0	0.979	J	0.860	2.33	1
06935	Arsenic	7440-38-2	5.42		0.814	2.33	1
06946	Barium	7440-39-3	64.8		0.0384	0.581	1
06947	Beryllium	7440-41-7	0.195	J	0.0779	0.581	1
06949	Cadmium	7440-43-9	0.227	J	0.0884	0.581	1
01650	Calcium	7440-70-2	453		3.88	23.3	1
06951	Chromium	7440-47-3	30.4		0.186	1.74	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-A Soil
Kenvil Treatability Study

LL Sample # SW 7111834
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2-A

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06952	Cobalt	7440-48-4	1.56		0.115	0.581	1
06953	Copper	7440-50-8	12.5		0.337	1.16	1
01654	Iron	7439-89-6	12,200		4.21	23.3	1
06955	Lead	7439-92-1	1,580		1.16	3.49	2
01657	Magnesium	7439-95-4	613		1.94	11.6	1
06958	Manganese	7439-96-5	58.1		0.0965	0.581	1
06961	Nickel	7440-02-0	16.2		0.151	1.16	1
01662	Potassium	7440-09-7	701		9.70	58.1	1
06936	Selenium	7782-49-2	N.D.		0.930	2.33	1
06966	Silver	7440-22-4	N.D.		0.198	0.581	1
01667	Sodium	7440-23-5	36.4	J	19.4	116	1
06925	Thallium	7440-28-0	N.D.		0.605	3.49	1
06971	Vanadium	7440-62-2	18.5		0.151	0.581	1
06972	Zinc	7440-66-6	44.5		0.233	2.33	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.138		0.0110	0.110	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	14.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10724	PAH 8270 (microwave)	SW-846 8270C	1	13189SLB026	07/10/2013 07:50	Brian K Graham	10
10814	BNA Soil Microwave PAH	SW-846 3546	1	13189SLB026	07/08/2013 13:30	David S Schrum	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/09/2013 23:22	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 00:04	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 14:13	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
01643	Aluminum	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06944	Antimony	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06935	Arsenic	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06946	Barium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-A Soil
Kenvil Treatability Study

LL Sample # SW 7111834
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2-A

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06947	Beryllium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06949	Cadmium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
01650	Calcium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06951	Chromium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06952	Cobalt	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06953	Copper	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
01654	Iron	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06955	Lead	SW-846 6010B	1	131825708002	07/04/2013 08:57	Eric L Eby	2
01657	Magnesium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06958	Manganese	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06961	Nickel	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
01662	Potassium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06936	Selenium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06966	Silver	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
01667	Sodium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06925	Thallium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06971	Vanadium	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
06972	Zinc	SW-846 6010B	1	131825708002	07/02/2013 19:09	John P Hook	1
00159	Mercury	SW-846 7471A	1	131825711002	07/03/2013 17:21	Parker D Lindstrom	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131825708002	07/02/2013 08:53	Denise K Conners	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131825711002	07/02/2013 11:40	Denise K Conners	1
00111	Moisture	SM 2540 G-1997	1	13189820004A	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-A Soil
Kenvil Treatability Study

LL Sample # SW 7111835
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3-A

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10724	Acenaphthene	83-32-9	N.D.		41	210	10
10724	Acenaphthylene	208-96-8	98	J	41	210	10
10724	Anthracene	120-12-7	150	J	41	210	10
10724	Benzo(a)anthracene	56-55-3	630		41	210	10
10724	Benzo(a)pyrene	50-32-8	700		41	210	10
10724	Benzo(b)fluoranthene	205-99-2	880		41	210	10
10724	Benzo(g,h,i)perylene	191-24-2	470		41	210	10
10724	Benzo(k)fluoranthene	207-08-9	300		41	210	10
10724	Chrysene	218-01-9	590		41	210	10
10724	Dibenz(a,h)anthracene	53-70-3	55	J	41	210	10
10724	Fluoranthene	206-44-0	1,300		41	210	10
10724	Fluorene	86-73-7	N.D.		41	210	10
10724	Indeno(1,2,3-cd)pyrene	193-39-5	430		41	210	10
10724	1-Methylnaphthalene	90-12-0	N.D.		41	210	10
10724	2-Methylnaphthalene	91-57-6	N.D.		41	210	10
10724	Naphthalene	91-20-3	72	J	41	210	10
10724	Phenanthrene	85-01-8	390		41	210	10
10724	Pyrene	129-00-0	1,200		41	210	10
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	61,000		18,000	36,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	40,000		12,000	36,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	360	1
06918	1,3-Dinitrobenzene	99-65-0	2,100		120	360	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	360	1
06918	2,4-Dinitrotoluene	121-14-2	39,000		12,000	36,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		13,000	13,000	1
06918	HMX	2691-41-0	N.D.		300	890	1
06918	Nitrobenzene	98-95-3	N.D.		120	360	1
06918	Nitroglycerin	55-63-0	N.D.		2,400	7,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	360	1
06918	2-Nitrotoluene	88-72-2	N.D.		240	360	1
06918	3-Nitrotoluene	99-08-1	N.D.		300	360	1
06918	4-Nitrotoluene	99-99-0	N.D.		240	360	1
06918	PETN	78-11-5	N.D.		2,400	7,100	1
06918	RDX	121-82-4	N.D.		300	360	1
06918	Tetryl	479-45-8	N.D.		180	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		17,000	36,000	100
06918	2,4,6-Trinitrotoluene	118-96-7	28,000,000		240,000	710,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,600		8.79	24.4	1
06944	Antimony	7440-36-0	1.03	J	0.902	2.44	1
06935	Arsenic	7440-38-2	4.65		0.854	2.44	1
06946	Barium	7440-39-3	69.1		0.0402	0.610	1
06947	Beryllium	7440-41-7	0.646		0.0817	0.610	1
06949	Cadmium	7440-43-9	0.613		0.0927	0.610	1
01650	Calcium	7440-70-2	1,970		4.07	24.4	1
06951	Chromium	7440-47-3	30.9		0.195	1.83	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-A Soil
Kenvil Treatability Study

LL Sample # SW 7111835
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3-A

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06952	Cobalt	7440-48-4	7.58		0.121	0.610	1
06953	Copper	7440-50-8	22.7		0.354	1.22	1
01654	Iron	7439-89-6	33,900		8.83	48.8	2
06955	Lead	7439-92-1	198		0.610	1.83	1
01657	Magnesium	7439-95-4	2,100		2.04	12.2	1
06958	Manganese	7439-96-5	403		0.101	0.610	1
06961	Nickel	7440-02-0	16.4		0.159	1.22	1
01662	Potassium	7440-09-7	877		10.2	61.0	1
06936	Selenium	7782-49-2	1.33	J	0.976	2.44	1
06966	Silver	7440-22-4	N.D.		0.207	0.610	1
01667	Sodium	7440-23-5	92.6	J	20.4	122	1
06925	Thallium	7440-28-0	N.D.		0.634	3.66	1
06971	Vanadium	7440-62-2	44.3		0.159	0.610	1
06972	Zinc	7440-66-6	139		0.244	2.44	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.130		0.0119	0.119	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	19.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10724	PAH 8270 (microwave)	SW-846 8270C	1	13189SLB026	07/10/2013 08:13	Brian K Graham	10
10814	BNA Soil Microwave PAH	SW-846 3546	1	13189SLB026	07/08/2013 13:30	David S Schrum	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 00:47	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 01:29	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 14:56	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
01643	Aluminum	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06944	Antimony	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06935	Arsenic	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06946	Barium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-A Soil
Kenvil Treatability Study

LL Sample # SW 7111835
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3-A

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06947	Beryllium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06949	Cadmium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
01650	Calcium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06951	Chromium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06952	Cobalt	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06953	Copper	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
01654	Iron	SW-846 6010B	1	131825708002	07/04/2013 09:00	Eric L Eby	2
06955	Lead	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
01657	Magnesium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06958	Manganese	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06961	Nickel	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
01662	Potassium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06936	Selenium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06966	Silver	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
01667	Sodium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06925	Thallium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06971	Vanadium	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
06972	Zinc	SW-846 6010B	1	131825708002	07/02/2013 19:20	John P Hook	1
00159	Mercury	SW-846 7471A	1	131825711002	07/03/2013 17:23	Parker D Lindstrom	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131825708002	07/02/2013 08:53	Denise K Conners	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131825711002	07/02/2013 11:40	Denise K Conners	1
00111	Moisture	SM 2540 G-1997	1	13189820004A	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-A Soil
Kenvil Treatability Study

LL Sample # SW 7111836
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4-A

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10724	Acenaphthene	83-32-9	N.D.		38	190	10
10724	Acenaphthylene	208-96-8	N.D.		38	190	10
10724	Anthracene	120-12-7	N.D.		38	190	10
10724	Benzo(a)anthracene	56-55-3	N.D.		38	190	10
10724	Benzo(a)pyrene	50-32-8	N.D.		38	190	10
10724	Benzo(b)fluoranthene	205-99-2	77	J	38	190	10
10724	Benzo(g,h,i)perylene	191-24-2	N.D.		38	190	10
10724	Benzo(k)fluoranthene	207-08-9	N.D.		38	190	10
10724	Chrysene	218-01-9	50	J	38	190	10
10724	Dibenz(a,h)anthracene	53-70-3	N.D.		38	190	10
10724	Fluoranthene	206-44-0	94	J	38	190	10
10724	Fluorene	86-73-7	N.D.		38	190	10
10724	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		38	190	10
10724	1-Methylnaphthalene	90-12-0	N.D.		38	190	10
10724	2-Methylnaphthalene	91-57-6	N.D.		38	190	10
10724	Naphthalene	91-20-3	N.D.		38	190	10
10724	Phenanthrene	85-01-8	85	J	38	190	10
10724	Pyrene	129-00-0	N.D.		38	190	10
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000		160	320	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	12,000		110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		110	320	1
06918	1,3-Dinitrobenzene	99-65-0	710		110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		320	320	1
06918	2,4-Dinitrotoluene	121-14-2	33,000		11,000	32,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		11,000	11,000	1
06918	HMX	2691-41-0	N.D.		270	810	1
06918	Nitrobenzene	98-95-3	N.D.		110	320	1
06918	Nitroglycerin	55-63-0	N.D.		2,200	6,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.		220	320	1
06918	3-Nitrotoluene	99-08-1	N.D.		270	320	1
06918	4-Nitrotoluene	99-99-0	N.D.		220	320	1
06918	PETN	78-11-5	N.D.		2,200	6,500	1
06918	RDX	121-82-4	N.D.		130	320	1
06918	Tetryl	479-45-8	N.D.		170	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	19,000		110	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,200,000		220,000	650,000	2000

Reporting limits were raised due to interference from the sample matrix.
The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	4,810		8.17	22.7	1
06944	Antimony	7440-36-0	1.15	J	0.839	2.27	1
06935	Arsenic	7440-38-2	3.81		0.794	2.27	1
06946	Barium	7440-39-3	41.1		0.0374	0.567	1
06947	Beryllium	7440-41-7	0.381	J	0.0760	0.567	1
06949	Cadmium	7440-43-9	0.491	J	0.0862	0.567	1
01650	Calcium	7440-70-2	2,350		3.79	22.7	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-A Soil
Kenvil Treatability Study

LL Sample # SW 7111836
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4-A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06951	Chromium	7440-47-3	12.5	0.181	1.70	1
06952	Cobalt	7440-48-4	4.78	0.112	0.567	1
06953	Copper	7440-50-8	29.2	0.329	1.13	1
01654	Iron	7439-89-6	29,100	4.10	22.7	1
06955	Lead	7439-92-1	410	0.567	1.70	1
01657	Magnesium	7439-95-4	1,300	1.89	11.3	1
06958	Manganese	7439-96-5	97.6	0.0941	0.567	1
06961	Nickel	7440-02-0	4.97	0.147	1.13	1
01662	Potassium	7440-09-7	697	9.46	56.7	1
06936	Selenium	7782-49-2	0.974 J	0.907	2.27	1
06966	Silver	7440-22-4	N.D.	0.193	0.567	1
01667	Sodium	7440-23-5	144	18.9	113	1
06925	Thallium	7440-28-0	N.D.	0.590	3.40	1
06971	Vanadium	7440-62-2	29.2	0.147	0.567	1
06972	Zinc	7440-66-6	51.9	0.227	2.27	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0823 J	0.0111	0.111	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	11.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10724	PAH 8270 (microwave)	SW-846 8270C	1	13189SLB026	07/10/2013 08:37	Brian K Graham	10
10814	BNA Soil Microwave PAH	SW-846 3546	1	13189SLB026	07/08/2013 13:30	David S Schrum	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 02:12	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 02:54	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 15:38	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
01643	Aluminum	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06944	Antimony	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06935	Arsenic	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-A Soil
Kenvil Treatability Study

LL Sample # SW 7111836
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4-A

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06946	Barium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06947	Beryllium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06949	Cadmium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
01650	Calcium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06951	Chromium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06952	Cobalt	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06953	Copper	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
01654	Iron	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06955	Lead	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
01657	Magnesium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06958	Manganese	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06961	Nickel	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
01662	Potassium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06936	Selenium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06966	Silver	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
01667	Sodium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06925	Thallium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06971	Vanadium	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
06972	Zinc	SW-846 6010B	1	131825708002	07/02/2013 19:24	John P Hook	1
00159	Mercury	SW-846 7471A	1	131825711002	07/03/2013 17:29	Parker D Lindstrom	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131825708002	07/02/2013 08:53	Denise K Conners	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131825711002	07/02/2013 11:40	Denise K Conners	1
00111	Moisture	SM 2540 G-1997	1	13189820004A	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-B Soil
Kenvil Treatability Study

LL Sample # SW 7111837
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1-B

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,500	160	320	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,900	110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	320	1
06918	1,3-Dinitrobenzene	99-65-0	830	110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	320	1
06918	2,4-Dinitrotoluene	121-14-2	630,000	11,000	32,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	11,000	11,000	1
06918	HMX	2691-41-0	N.D.	260	790	1
06918	Nitrobenzene	98-95-3	N.D.	350	350	1
06918	Nitroglycerin	55-63-0	N.D.	2,100	6,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.	210	320	1
06918	3-Nitrotoluene	99-08-1	N.D.	260	320	1
06918	4-Nitrotoluene	99-99-0	N.D.	210	320	1
06918	PETN	78-11-5	N.D.	2,100	6,300	1
06918	RDX	121-82-4	N.D.	130	320	1
06918	Tetryl	479-45-8	N.D.	160	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	15,000	110	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	7,300,000	210,000	630,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	14.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/09/2013 16:17	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 04:19	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 16:21	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004A	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-B Soil
Kenvil Treatability Study

LL Sample # SW 7111838
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2-B

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	9,500	140	270	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,300	91	270	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	91	270	1
06918	1,3-Dinitrobenzene	99-65-0	1,700	91	270	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	91	270	1
06918	2,4-Dinitrotoluene	121-14-2	400,000	9,100	27,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	5,700	5,700	1
06918	HMX	2691-41-0	N.D.	230	680	1
06918	Nitrobenzene	98-95-3	N.D.	1,100	1,100	1
06918	Nitroglycerin	55-63-0	N.D.	1,800	5,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.	91	270	1
06918	2-Nitrotoluene	88-72-2	N.D.	180	270	1
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	2,000	1
06918	4-Nitrotoluene	99-99-0	N.D.	2,000	2,000	1
06918	PETN	78-11-5	N.D.	1,800	5,500	1
06918	RDX	121-82-4	N.D.	110	270	1
06918	Tetryl	479-45-8	N.D.	140	270	1
06918	1,3,5-Trinitrobenzene	99-35-4	8,800	91	270	1
06918	2,4,6-Trinitrotoluene	118-96-7	9,400,000	180,000	550,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	8.3	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/09/2013 17:00	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 05:01	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 17:03	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004A	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-B Soil
Kenvil Treatability Study

LL Sample # SW 7111839
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3-B

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	16,000	32,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	11,000	32,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	320	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	320	1
06918	2,4-Dinitrotoluene	121-14-2	40,000	11,000	32,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	12,000	12,000	1
06918	HMX	2691-41-0	N.D.	270	800	1
06918	Nitrobenzene	98-95-3	N.D.	110	320	1
06918	Nitroglycerin	55-63-0	N.D.	2,100	6,400	1
06918	1-Nitronaphthalene	86-57-7	7,200	110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.	210	320	1
06918	3-Nitrotoluene	99-08-1	N.D.	270	320	1
06918	4-Nitrotoluene	99-99-0	N.D.	230	320	1
06918	PETN	78-11-5	N.D.	2,100	6,400	1
06918	RDX	121-82-4	N.D.	1,400	1,400	1
06918	Tetryl	479-45-8	N.D.	160	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	16,000	110	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	70,000,000	530,000	1,600,000	5000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	10.4	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 05:44	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 17:45	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/12/2013 11:08	James H Place	5000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004A	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-B Soil
Kenvil Treatability Study

LL Sample # SW 7111840
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4-B

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,500		140	280	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,800		94	280	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		94	280	1
06918	1,3-Dinitrobenzene	99-65-0	160	J	94	280	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		94	280	1
06918	2,4-Dinitrotoluene	121-14-2	5,500		94	280	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.		1,500	1,500	1
06918	HMX	2691-41-0	N.D.		240	710	1
06918	Nitrobenzene	98-95-3	N.D.		1,500	1,500	1
06918	Nitroglycerin	55-63-0	N.D.		1,900	5,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		94	280	1
06918	2-Nitrotoluene	88-72-2	N.D.		190	280	1
06918	3-Nitrotoluene	99-08-1	N.D.		240	280	1
06918	4-Nitrotoluene	99-99-0	N.D.		190	280	1
06918	PETN	78-11-5	N.D.		1,900	5,600	1
06918	RDX	121-82-4	240	J	120	280	1
06918	Tetryl	479-45-8	N.D.		140	280	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,100		94	280	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,600,000		9,400	28,000	100
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	7.5		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 06:26	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 18:28	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-C Soil
Kenvil Treatability Study

LL Sample # SW 7111841
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1-C

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	12,000	160	330	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,800	110	330	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	330	1
06918	1,3-Dinitrobenzene	99-65-0	480	110	330	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	330	1
06918	2,4-Dinitrotoluene	121-14-2	490,000	11,000	33,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	11,000	33,000	100
06918	HMX	2691-41-0	N.D.	270	820	1
06918	Nitrobenzene	98-95-3	N.D.	110	330	1
06918	Nitroglycerin	55-63-0	N.D.	2,200	6,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	330	1
06918	2-Nitrotoluene	88-72-2	N.D.	220	330	1
06918	3-Nitrotoluene	99-08-1	N.D.	270	330	1
06918	4-Nitrotoluene	99-99-0	N.D.	220	330	1
06918	PETN	78-11-5	N.D.	2,200	6,500	1
06918	RDX	121-82-4	N.D.	140	330	1
06918	Tetryl	479-45-8	N.D.	170	330	1
06918	1,3,5-Trinitrobenzene	99-35-4	8,100	110	330	1
06918	2,4,6-Trinitrotoluene	118-96-7	5,300,000	220,000	650,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 07:51	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 08:34	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/12/2013 08:18	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-C Soil
Kenvil Treatability Study

LL Sample # SW 7111842
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2-C

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	13,000		180	350	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,900		120	350	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	350	1
06918	1,3-Dinitrobenzene	99-65-0	1,800		120	350	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	350	1
06918	2,4-Dinitrotoluene	121-14-2	2,200,000		12,000	35,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		12,000	35,000	100
06918	HMX	2691-41-0	670	J	290	880	1
06918	Nitrobenzene	98-95-3	N.D.		120	350	1
06918	Nitroglycerin	55-63-0	N.D.		2,300	7,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	350	1
06918	2-Nitrotoluene	88-72-2	N.D.		230	350	1
06918	3-Nitrotoluene	99-08-1	N.D.		290	350	1
06918	4-Nitrotoluene	99-99-0	N.D.		230	350	1
06918	PETN	78-11-5	N.D.		2,300	7,000	1
06918	RDX	121-82-4	N.D.		150	350	1
06918	Tetryl	479-45-8	N.D.		180	350	1
06918	1,3,5-Trinitrobenzene	99-35-4	12,000		120	350	1
06918	2,4,6-Trinitrotoluene	118-96-7	7,600,000		230,000	700,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	18.5		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 09:16	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 09:59	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/12/2013 09:01	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-C Soil
Kenvil Treatability Study

LL Sample # SW 7111843
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3-C

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	7,400	7,400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	15,000	110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	320	1
06918	1,3-Dinitrobenzene	99-65-0	1,100	110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	320	1
06918	2,4-Dinitrotoluene	121-14-2	44,000	11,000	32,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	110	320	1
06918	HMX	2691-41-0	N.D.	270	810	1
06918	Nitrobenzene	98-95-3	N.D.	110	320	1
06918	Nitroglycerin	55-63-0	N.D.	2,200	6,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.	220	320	1
06918	3-Nitrotoluene	99-08-1	N.D.	270	320	1
06918	4-Nitrotoluene	99-99-0	N.D.	220	320	1
06918	PETN	78-11-5	N.D.	2,200	6,500	1
06918	RDX	121-82-4	N.D.	130	320	1
06918	Tetryl	479-45-8	N.D.	160	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	13,000	13,000	1
06918	2,4,6-Trinitrotoluene	118-96-7	22,000,000	220,000	650,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	19.3	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 04:40	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 05:23	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 06:05	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-C Soil
Kenvil Treatability Study

LL Sample # SW 7111844
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4-C

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,600		160	310	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,200		100	310	1
06918	1,2-Dinitrobenzene	528-29-0	630		100	310	1
06918	1,3-Dinitrobenzene	99-65-0	800		100	310	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		100	310	1
06918	2,4-Dinitrotoluene	121-14-2	27,000	J	10,000	31,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		1,300	1,300	1
06918	HMX	2691-41-0	N.D.		260	790	1
06918	Nitrobenzene	98-95-3	1,300		100	310	1
06918	Nitroglycerin	55-63-0	N.D.		2,100	6,300	1
06918	1-Nitronaphthalene	86-57-7	910		100	310	1
06918	2-Nitrotoluene	88-72-2	N.D.		210	310	1
06918	3-Nitrotoluene	99-08-1	N.D.		260	310	1
06918	4-Nitrotoluene	99-99-0	N.D.		210	310	1
06918	PETN	78-11-5	N.D.		2,100	6,300	1
06918	RDX	121-82-4	N.D.		130	310	1
06918	Tetryl	479-45-8	N.D.		160	310	1
06918	1,3,5-Trinitrobenzene	99-35-4	13,000		100	310	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,700,000		210,000	630,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	13.4		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 06:48	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 07:30	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 08:12	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-C-038-500 Soil
Kenvil Treatability Study

LL Sample # SW 7111845
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1C3

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	9,200	190	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,400	130	380	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	380	1
06918	1,3-Dinitrobenzene	99-65-0	640	130	380	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	380	1
06918	2,4-Dinitrotoluene	121-14-2	240,000	13,000	38,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	13,000	13,000	1
06918	HMX	2691-41-0	N.D.	320	950	1
06918	Nitrobenzene	98-95-3	N.D.	670	670	1
06918	Nitroglycerin	55-63-0	N.D.	2,500	7,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	380	1
06918	2-Nitrotoluene	88-72-2	N.D.	250	380	1
06918	3-Nitrotoluene	99-08-1	N.D.	320	380	1
06918	4-Nitrotoluene	99-99-0	N.D.	250	380	1
06918	PETN	78-11-5	N.D.	2,500	7,600	1
06918	RDX	121-82-4	N.D.	160	380	1
06918	Tetryl	479-45-8	N.D.	190	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,300	130	380	1
06918	2,4,6-Trinitrotoluene	118-96-7	5,600,000	250,000	760,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	25.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 09:37	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 10:20	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 11:02	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-C-038-500 Soil
Kenvil Treatability Study

LL Sample # SW 7111846
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2C3

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	4,100	4,100	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	4,100	4,100	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	350	1
06918	1,3-Dinitrobenzene	99-65-0	3,900	120	350	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	350	1
06918	2,4-Dinitrotoluene	121-14-2	3,500,000	230,000	690,000	2000
06918	2,6-Dinitrotoluene	606-20-2	N.D.	24,000	24,000	1
06918	HMX	2691-41-0	N.D.	290	860	1
06918	Nitrobenzene	98-95-3	N.D.	120	350	1
06918	Nitroglycerin	55-63-0	N.D.	2,300	6,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	350	1
06918	2-Nitrotoluene	88-72-2	N.D.	230	350	1
06918	3-Nitrotoluene	99-08-1	N.D.	290	350	1
06918	4-Nitrotoluene	99-99-0	N.D.	230	350	1
06918	PETN	78-11-5	N.D.	2,300	6,900	1
06918	RDX	121-82-4	N.D.	140	350	1
06918	Tetryl	479-45-8	N.D.	180	350	1
06918	1,3,5-Trinitrobenzene	99-35-4	12,000	120	350	1
06918	2,4,6-Trinitrotoluene	118-96-7	16,000,000	230,000	690,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	27.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 11:45	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 13:10	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-C-038-500 Soil
Kenvil Treatability Study

LL Sample # SW 7111847
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3C3

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,200	190	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,200	120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	370	1
06918	1,3-Dinitrobenzene	99-65-0	870	120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	370	1
06918	2,4-Dinitrotoluene	121-14-2	38,000	12,000	37,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	120	370	1
06918	HMX	2691-41-0	N.D.	310	930	1
06918	Nitrobenzene	98-95-3	N.D.	120	370	1
06918	Nitroglycerin	55-63-0	N.D.	2,500	7,500	1
06918	1-Nitronaphthalene	86-57-7	570	120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.	250	370	1
06918	3-Nitrotoluene	99-08-1	N.D.	310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.	250	370	1
06918	PETN	78-11-5	N.D.	2,500	7,500	1
06918	RDX	121-82-4	N.D.	160	370	1
06918	Tetryl	479-45-8	N.D.	190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	15,000	15,000	1
06918	2,4,6-Trinitrotoluene	118-96-7	18,000,000	250,000	750,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	23.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 13:52	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 14:34	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 15:17	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-C-038-500 Soil
Kenvil Treatability Study

LL Sample # SW 7111848
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4C3

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,500		180	350	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.		1,800	1,800	1
06918	1,2-Dinitrobenzene	528-29-0	820		120	350	1
06918	1,3-Dinitrobenzene	99-65-0	1,100		120	350	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	350	1
06918	2,4-Dinitrotoluene	121-14-2	26,000	J	12,000	35,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		6,500	6,500	1
06918	HMX	2691-41-0	N.D.		290	880	1
06918	Nitrobenzene	98-95-3	N.D.		1,700	1,700	1
06918	Nitroglycerin	55-63-0	N.D.		2,300	7,000	1
06918	1-Nitronaphthalene	86-57-7	970		120	350	1
06918	2-Nitrotoluene	88-72-2	N.D.		230	350	1
06918	3-Nitrotoluene	99-08-1	N.D.		290	350	1
06918	4-Nitrotoluene	99-99-0	N.D.		230	350	1
06918	PETN	78-11-5	N.D.		2,300	7,000	1
06918	RDX	121-82-4	N.D.		150	350	1
06918	Tetryl	479-45-8	N.D.		180	350	1
06918	1,3,5-Trinitrobenzene	99-35-4	12,000		120	350	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,400,000		230,000	700,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	18.5		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 15:59	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 17:24	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 18:06	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-C-500-2000 Soil
Kenvil Treatability Study

LL Sample # SW 7111849
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1C5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,700	180	360	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,400	120	360	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	360	1
06918	1,3-Dinitrobenzene	99-65-0	410	120	360	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	360	1
06918	2,4-Dinitrotoluene	121-14-2	410,000	12,000	36,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	8,500	8,500	1
06918	HMX	2691-41-0	N.D.	2,200	2,200	1
06918	Nitrobenzene	98-95-3	N.D.	120	360	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	360	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	360	1
06918	3-Nitrotoluene	99-08-1	N.D.	300	360	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	360	1
06918	PETN	78-11-5	N.D.	2,400	7,300	1
06918	RDX	121-82-4	N.D.	150	360	1
06918	Tetryl	479-45-8	N.D.	190	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,300	120	360	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,800,000	12,000	36,000	100
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	21.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 10:41	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/12/2013 09:43	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-C-500-2000 Soil
Kenvil Treatability Study

LL Sample # SW 7111850
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2C5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,700	160	310	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,000	100	310	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	100	310	1
06918	1,3-Dinitrobenzene	99-65-0	660	100	310	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	100	310	1
06918	2,4-Dinitrotoluene	121-14-2	480,000	10,000	31,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	4,400	4,400	1
06918	HMX	2691-41-0	N.D.	8,400	8,400	1
06918	Nitrobenzene	98-95-3	N.D.	100	310	1
06918	Nitroglycerin	55-63-0	N.D.	2,100	6,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	100	310	1
06918	2-Nitrotoluene	88-72-2	N.D.	210	310	1
06918	3-Nitrotoluene	99-08-1	N.D.	260	310	1
06918	4-Nitrotoluene	99-99-0	N.D.	210	310	1
06918	PETN	78-11-5	N.D.	2,100	6,300	1
06918	RDX	121-82-4	N.D.	130	310	1
06918	Tetryl	479-45-8	N.D.	160	310	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,500	100	310	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,300,000	210,000	630,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/09/2013 19:07	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/10/2013 12:06	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/12/2013 10:26	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-C-500-2000 Soil
Kenvil Treatability Study

LL Sample # SW 7111851
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3C5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,100	180	350	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,100	120	350	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	350	1
06918	1,3-Dinitrobenzene	99-65-0	940	120	350	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	390	390	1
06918	2,4-Dinitrotoluene	121-14-2	15,000	120	350	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	9,700	9,700	1
06918	HMX	2691-41-0	N.D.	290	880	1
06918	Nitrobenzene	98-95-3	N.D.	120	350	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,100	1
06918	1-Nitronaphthalene	86-57-7	1,100	120	350	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	350	1
06918	3-Nitrotoluene	99-08-1	N.D.	290	350	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	350	1
06918	PETN	78-11-5	N.D.	2,400	7,100	1
06918	RDX	121-82-4	N.D.	930	930	1
06918	Tetryl	479-45-8	N.D.	180	350	1
06918	1,3,5-Trinitrobenzene	99-35-4	17,000	120	350	1
06918	2,4,6-Trinitrotoluene	118-96-7	26,000,000	240,000	710,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	26.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 20:14	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 21:38	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-C-500-2000 Soil
Kenvil Treatability Study

LL Sample # SW 7111852
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4C5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,700	160	330	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,200	110	330	1
06918	1,2-Dinitrobenzene	528-29-0	520	110	330	1
06918	1,3-Dinitrobenzene	99-65-0	420	110	330	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	330	1
06918	2,4-Dinitrotoluene	121-14-2	9,200	110	330	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	1,400	1,400	1
06918	HMX	2691-41-0	N.D.	270	820	1
06918	Nitrobenzene	98-95-3	N.D.	330	330	1
06918	Nitroglycerin	55-63-0	N.D.	2,200	6,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	330	1
06918	2-Nitrotoluene	88-72-2	N.D.	220	330	1
06918	3-Nitrotoluene	99-08-1	N.D.	920	920	1
06918	4-Nitrotoluene	99-99-0	N.D.	920	920	1
06918	PETN	78-11-5	N.D.	2,200	6,600	1
06918	RDX	121-82-4	N.D.	230	330	1
06918	Tetryl	479-45-8	N.D.	170	330	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,600	110	330	1
06918	2,4,6-Trinitrotoluene	118-96-7	290,000	11,000	33,000	100

Reporting limits were raised due to interference from the sample matrix.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	20.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 22:21	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800001A	07/03/2013 23:03	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800001A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13189820004B	07/08/2013 21:46	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-D Soil
Kenvil Treatability Study

LL Sample # SW 7111853
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT1-D

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000	200	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	18,000	130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	830	830	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	330,000	13,000	39,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	13,000	13,000	1
06918	HMX	2691-41-0	N.D.	330	990	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,900	1
06918	RDX	121-82-4	N.D.	380	390	1
06918	Tetryl	479-45-8	N.D.	200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	7,100	130	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	5,300,000	260,000	790,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	33.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/08/2013 22:37	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/08/2013 23:19	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 00:02	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800002A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13184820003B	07/03/2013 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-D Soil
Kenvil Treatability Study

LL Sample # SW 7111854
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT2-D

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	31,000	J	22,000	44,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	31,000	J	15,000	44,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	440	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		3,300	3,300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	440	1
06918	2,4-Dinitrotoluene	121-14-2	1,700,000		15,000	44,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		10,000	10,000	1
06918	HMX	2691-41-0	N.D.		3,300	3,300	1
06918	Nitrobenzene	98-95-3	N.D.		150	440	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	440	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	440	1
06918	3-Nitrotoluene	99-08-1	N.D.		370	440	1
06918	4-Nitrotoluene	99-99-0	N.D.		290	440	1
06918	PETN	78-11-5	N.D.		2,900	8,800	1
06918	RDX	121-82-4	N.D.		180	440	1
06918	Tetryl	479-45-8	N.D.		230	440	1
06918	1,3,5-Trinitrobenzene	99-35-4	12,000		150	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	11,000,000		290,000	880,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	35.4		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 05:41	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 06:24	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 07:06	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800002A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13184820003B	07/03/2013 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-D Soil
Kenvil Treatability Study

LL Sample # SW 7111855
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT3-D

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	68,000		24,000	48,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	49,000		16,000	48,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	480	1
06918	1,3-Dinitrobenzene	99-65-0	4,900		160	480	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	480	1
06918	2,4-Dinitrotoluene	121-14-2	43,000	J	16,000	48,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		160	480	1
06918	HMX	2691-41-0	N.D.		400	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		160	480	1
06918	Nitroglycerin	55-63-0	N.D.		3,200	9,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		160	480	1
06918	2-Nitrotoluene	88-72-2	N.D.		320	480	1
06918	3-Nitrotoluene	99-08-1	N.D.		400	480	1
06918	4-Nitrotoluene	99-99-0	N.D.		320	480	1
06918	PETN	78-11-5	N.D.		3,200	9,600	1
06918	RDX	121-82-4	N.D.		200	480	1
06918	Tetryl	479-45-8	N.D.		240	480	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		160	480	1
06918	2,4,6-Trinitrotoluene	118-96-7	17,000,000		320,000	960,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.9		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 07:48	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 08:31	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 09:13	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800002A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13184820003B	07/03/2013 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-D Soil
Kenvil Treatability Study

LL Sample # SW 7111856
LL Group # 1400652
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 by DL

Submitted: 06/28/2013 09:25
Reported: 07/18/2013 12:44

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KT4-D

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	63,000	20,000	41,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	83,000	14,000	41,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.	14,000	41,000	100
06918	1,3-Dinitrobenzene	99-65-0	N.D.	14,000	41,000	100
06918	1,4-Dinitrobenzene	100-25-4	N.D.	14,000	41,000	100
06918	2,4-Dinitrotoluene	121-14-2	190,000	14,000	41,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	14,000	41,000	100
06918	HMX	2691-41-0	N.D.	34,000	100,000	100
06918	Nitrobenzene	98-95-3	N.D.	14,000	41,000	100
06918	Nitroglycerin	55-63-0	N.D.	270,000	810,000	100
06918	1-Nitronaphthalene	86-57-7	N.D.	14,000	41,000	100
06918	2-Nitrotoluene	88-72-2	N.D.	27,000	41,000	100
06918	3-Nitrotoluene	99-08-1	N.D.	34,000	41,000	100
06918	4-Nitrotoluene	99-99-0	N.D.	27,000	41,000	100
06918	PETN	78-11-5	N.D.	270,000	810,000	100
06918	RDX	121-82-4	N.D.	17,000	41,000	100
06918	Tetryl	479-45-8	N.D.	21,000	41,000	100
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	93,000	93,000	100
06918	2,4,6-Trinitrotoluene	118-96-7	22,000,000	270,000	810,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	35.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 09:56	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131800002A	07/09/2013 10:38	James H Place	2000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131800002A	06/29/2013 16:00	Joseph S Feister	1
00111	Moisture	SM 2540 G-1997	1	13184820003B	07/03/2013 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400652
Reported: 07/18/13 at 12:44 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 13189SLB026	Sample number(s): 7111833-7111836								
Acenaphthene	N.D.	3.	17	ug/kg	100		83-111		
Acenaphthylene	N.D.	3.	17	ug/kg	103		83-127		
Anthracene	N.D.	3.	17	ug/kg	102		82-118		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	92		73-123		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	98		80-123		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	104		76-124		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	97		77-122		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	98		75-123		
Chrysene	N.D.	3.	17	ug/kg	90		69-119		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	100		77-125		
Fluoranthene	N.D.	3.	17	ug/kg	98		79-123		
Fluorene	N.D.	3.	17	ug/kg	102		81-117		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	100		77-122		
1-Methylnaphthalene	N.D.	3.	17	ug/kg	105		77-115		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	93		82-120		
Naphthalene	N.D.	3.	17	ug/kg	97		77-115		
Phenanthrene	N.D.	3.	17	ug/kg	100		77-119		
Pyrene	N.D.	3.	17	ug/kg	95		81-114		
Batch number: 131800001A	Sample number(s): 7111833-7111852								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	116		87-120		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	98		84-115		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	112		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	112		85-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	103		83-122		
2,4-Dinitrotoluene	N.D.	100.	300	ug/kg	104		82-114		
2,6-Dinitrotoluene	N.D.	100.	300	ug/kg	110		86-117		
HMX	N.D.	250.	750	ug/kg	94		79-104		
Nitrobenzene	N.D.	100.	300	ug/kg	99		80-120		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	88		83-112		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	112		83-122		
2-Nitrotoluene	N.D.	200.	300	ug/kg	103		82-113		
3-Nitrotoluene	N.D.	250.	300	ug/kg	100		88-121		
4-Nitrotoluene	N.D.	200.	300	ug/kg	103		88-111		
PETN	N.D.	2,000.	6,000	ug/kg	92		89-129		
RDX	N.D.	130.	300	ug/kg	96		81-118		
Tetryl	N.D.	150.	300	ug/kg	93		58-122		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	102		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	105		85-122		
Batch number: 131800002A	Sample number(s): 7111853-7111856								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	108		87-120		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	101		84-115		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400652
Reported: 07/18/13 at 12:44 PM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,2-Dinitrobenzene	N.D.		100.	300	ug/kg	111		94-129		
1,3-Dinitrobenzene	N.D.		100.	300	ug/kg	112		85-124		
1,4-Dinitrobenzene	N.D.		100.	300	ug/kg	102		83-122		
2,4-Dinitrotoluene	N.D.		100.	300	ug/kg	105		82-114		
2,6-Dinitrotoluene	N.D.		100.	300	ug/kg	102		86-117		
HMX	N.D.		250.	750	ug/kg	95		79-104		
Nitrobenzene	N.D.		100.	300	ug/kg	99		80-120		
Nitroglycerin	N.D.		2,000.	6,000	ug/kg	87		83-112		
1-Nitronaphthalene	N.D.		100.	300	ug/kg	112		83-122		
2-Nitrotoluene	N.D.		200.	300	ug/kg	104		82-113		
3-Nitrotoluene	N.D.		250.	300	ug/kg	106		88-121		
4-Nitrotoluene	N.D.		200.	300	ug/kg	105		88-111		
PETN	N.D.		2,000.	6,000	ug/kg	92		89-129		
RDX	N.D.		130.	300	ug/kg	95		81-118		
Tetryl	N.D.		150.	300	ug/kg	95		58-122		
1,3,5-Trinitrobenzene	N.D.		100.	300	ug/kg	102		83-119		
2,4,6-Trinitrotoluene	N.D.		100.	300	ug/kg	104		85-122		
Batch number: 131825708002	Sample number(s): 7111833-7111836									
Aluminum	N.D.		7.21	20.0	mg/kg	110		80-120		
Antimony	N.D.		0.740	2.00	mg/kg	98		80-120		
Arsenic	N.D.		0.700	2.00	mg/kg	100		80-120		
Barium	N.D.		0.0330	0.500	mg/kg	99		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	99		80-120		
Cadmium	N.D.		0.0760	0.500	mg/kg	99		80-120		
Calcium	10.0	J	3.34	20.0	mg/kg	100		80-120		
Chromium	N.D.		0.160	1.50	mg/kg	100		80-120		
Cobalt	N.D.		0.0990	0.500	mg/kg	100		80-120		
Copper	N.D.		0.290	1.00	mg/kg	101		80-120		
Iron	N.D.		3.62	20.0	mg/kg	105		80-120		
Lead	N.D.		0.500	1.50	mg/kg	98		80-120		
Magnesium	N.D.		1.67	10.0	mg/kg	98		80-120		
Manganese	N.D.		0.0830	0.500	mg/kg	99		80-120		
Nickel	N.D.		0.130	1.00	mg/kg	102		80-120		
Potassium	N.D.		8.34	50.0	mg/kg	100		80-120		
Selenium	N.D.		0.800	2.00	mg/kg	98		80-120		
Silver	N.D.		0.170	0.500	mg/kg	110		80-120		
Sodium	N.D.		16.7	100	mg/kg	100		80-120		
Thallium	N.D.		0.520	3.00	mg/kg	104		80-120		
Vanadium	N.D.		0.130	0.500	mg/kg	98		80-120		
Zinc	0.377	J	0.200	2.00	mg/kg	101		80-120		
Batch number: 131825711002	Sample number(s): 7111833-7111836									
Mercury	N.D.		0.0100	0.100	mg/kg	92		80-120		
Batch number: 13184820003B	Sample number(s): 7111853-7111856									
Moisture						100		99-101		
Batch number: 13189820004A	Sample number(s): 7111833-7111839									
Moisture						100		99-101		
Batch number: 13189820004B	Sample number(s): 7111840-7111852									
Moisture						100		99-101		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400652
Reported: 07/18/13 at 12:44 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 13189SLB026	Sample number(s): 7111833-7111836 UNSPK: P117299								
Acenaphthene	100	102	60-120	2	30				
Acenaphthylene	102	103	47-137	1	30				
Anthracene	102	99	41-142	4	30				
Benzo(a)anthracene	95	93	32-150	2	30				
Benzo(a)pyrene	94	95	33-145	1	30				
Benzo(b)fluoranthene	90	90	29-150	0	30				
Benzo(g,h,i)perylene	99	101	48-134	2	30				
Benzo(k)fluoranthene	109	109	41-139	0	30				
Chrysene	98	93	33-142	4	30				
Dibenz(a,h)anthracene	108	102	45-142	5	30				
Fluoranthene	105	95	30-151	8	30				
Fluorene	101	98	55-128	2	30				
Indeno(1,2,3-cd)pyrene	101	102	46-139	1	30				
1-Methylnaphthalene	112	108	36-139	4	30				
2-Methylnaphthalene	95	97	45-134	3	30				
Naphthalene	102	105	35-141	3	30				
Phenanthrene	107	96	34-147	10	30				
Pyrene	99	98	29-148	1	30				
Batch number: 131800001A	Sample number(s): 7111833-7111852 UNSPK: 7111833								
4-Amino-2,6-Dinitrotoluene	215*	145*	85-118	10	50				
2-Amino-4,6-Dinitrotoluene	65*	76*	82-112	6	50				
1,2-Dinitrobenzene	112	110	80-120	11	50				
1,3-Dinitrobenzene	95	97	83-119	12	50				
1,4-Dinitrobenzene	104	102	82-117	12	50				
2,4-Dinitrotoluene	-410 (2)	683 (2)	81-111	9	50				
2,6-Dinitrotoluene	344*	306*	86-114	2	50				
HMX	87	86	72-107	12	50				
Nitrobenzene	142*	66*	78-116	61*	50				
1-Nitronaphthalene	117	114	89-131	11	50				
2-Nitrotoluene	120*	118*	79-112	11	50				
3-Nitrotoluene	123*	119	72-119	10	50				
4-Nitrotoluene	112	113*	81-112	14	50				
PETN	97	113	85-131	28	50				
RDX	86	80	75-108	6	50				
Tetryl	107	66	26-136	35	50				
1,3,5-Trinitrobenzene	59*	82	73-117	16	50				
2,4,6-Trinitrotoluene	700 (2)	-490 (2)	83-119	1	50				
Batch number: 131800002A	Sample number(s): 7111853-7111856 UNSPK: 7111853								
4-Amino-2,6-Dinitrotoluene	251*	155*	85-118	12	50				
2-Amino-4,6-Dinitrotoluene	100	81*	82-112	2	50				
1,2-Dinitrobenzene	106	112	80-120	19	50				
1,3-Dinitrobenzene	98	100	83-119	15	50				
1,4-Dinitrobenzene	100	103	82-117	16	50				
2,4-Dinitrotoluene	700 (2)	206 (2)	81-111	8	50				
2,6-Dinitrotoluene	213*	189*	86-114	1	50				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400652
Reported: 07/18/13 at 12:44 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
HMX	134*	121*	72-107	3	50				
Nitrobenzene	107	113	78-116	19	50				
Nitroglycerin	94	100	83-112	19	50				
1-Nitronaphthalene	113	118	89-131	18	50				
2-Nitrotoluene	214*	187*	79-112	0	50				
3-Nitrotoluene	91	107	72-119	29	50				
4-Nitrotoluene	99	105	81-112	20	50				
PETN	106	108	85-131	14	50				
RDX	94	97	75-108	16	50				
Tetryl	99	105	26-136	18	50				
1,3,5-Trinitrobenzene	61*	54*	73-117	1	50				
2,4,6-Trinitrotoluene	18314 (2)	2212 (2)	83-119	17	50				
Batch number: 131825708002	Sample number(s): 7111833-7111836 UNSPK: P112165 BKG: P112165								
Aluminum	1295 (2)	2486 (2)	75-125	14	20	13,400	14,100	5	20
Antimony	47*	52*	75-125	10	20	1.19 J	1.01 J	17 (1)	20
Arsenic	88	95	75-125	5	20	6.97	5.78	19 (1)	20
Barium	98	105	75-125	5	20	54.8	56.6	3	20
Beryllium	96	101	83-111	5	20	0.586	0.601	3 (1)	20
Cadmium	91	93	75-125	2	20	0.318 J	0.281 J	12 (1)	20
Calcium	146 (2)	161 (2)	75-125	2	20	2,200	2,120	4	20
Chromium	100	122	75-125	9	20	29.2	30.3	4	20
Cobalt	90	90	78-113	0	20	7.54	6.53	14	20
Copper	93	96	75-125	3	20	7.93	7.29	8	20
Iron	-14 (2)	822 (2)	75-125	5	20	16,400	16,600	1	20
Lead	88	80	75-125	5	20	9.86	8.90	10	20
Magnesium	196 (2)	240 (2)	75-125	2	20	3,650	3,980	9	20
Manganese	55*	148*	75-125	19	20	197	181	8	20
Nickel	84	89	75-125	4	20	19.3	16.4	16	20
Potassium	182*	227*	75-125	11	20	1,860	1,960	5	20
Selenium	100	102	75-125	2	20	N.D.	N.D.	0 (1)	20
Silver	109	111	75-125	2	20	N.D.	N.D.	0 (1)	20
Sodium	100	102	75-125	2	20	200	211	5 (1)	20
Thallium	89	88	78-111	1	20	N.D.	N.D.	0 (1)	20
Vanadium	99	110	75-125	6	20	29.7	30.0	1	20
Zinc	74*	85	75-125	6	20	54.3	48.5	11	20
Batch number: 131825711002	Sample number(s): 7111833-7111836 UNSPK: P112165 BKG: P112165								
Mercury	100	109	80-120	7	20	0.0111 J	0.0288 J	89* (1)	20
Batch number: 13184820003B	Sample number(s): 7111853-7111856 BKG: P111391								
Moisture						42.0	41.9	0	13
Batch number: 13189820004A	Sample number(s): 7111833-7111839 BKG: 7111839								
Moisture						10.4	11.2	7*	5
Batch number: 13189820004B	Sample number(s): 7111840-7111852 BKG: 7111840								
Moisture						7.5	7.9	4	5

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400652
Reported: 07/18/13 at 12:44 PM

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH 8270 (microwave)
Batch number: 13189SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7111833	92	88	100
7111834	88	91	99
7111835	104	107	121
7111836	96	96	103
Blank	86	87	100
LCS	93	95	105
MS	99	98	109
MSD	95	94	105
Limits:	54-124	58-121	61-137

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 131800001A

	2-Nitro-m-xylene
7111833	75
7111834	98
7111835	105
7111836	0*
7111837	101
7111838	113
7111839	111
7111840	59*
7111841	88
7111842	98
7111843	93
7111844	18*
7111845	85
7111846	90
7111847	82
7111848	22*
7111849	90
7111850	97
7111851	82
7111852	40*
Blank	114
LCS	104
MS	91
MSD	89
Limits:	73-155

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 131800002A

	2-Nitro-m-xylene

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400652
Reported: 07/18/13 at 12:44 PM

Surrogate Quality Control

7111853	64*
7111854	67*
7111855	94
7111856	0*
Blank	110
LCS	111
MS	61*
MSD	70*
Limits:	73-155

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

acct# 6716 Cap# 1400652 Sample# 7111833-56

ARCADIS
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ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: ARCADIS DAVE LILES	Telephone: 919-328-5574
Address:	Fax:
City State Zip	E-mail Address: david.liles@arcadis-us.com
Project Name/Location (City, State): Kenvil Treat Study	Project #:
Sampler's Printed Name: DAVE LILES	Sampler's Signature: David S. Liles

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 500ml glass 10. Other: _____

Matrix Key: SO - Soil SE - Sediment NL - NAPL/Oil W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	8330 TNT only 4 Day TAT	8330 Full list Standard TAT	8270 PAHs Std TAT	6010 Metals Std TAT
C1-A					SO			1	9	X	X	X	X
C2-A										X	X	X	X
C3-A										X	X	X	X
C4-A										X	X		X
C1-B										X	X		
C2-B											X		
C3-B											X		
C4-B											X		
C1-C										X	X		
C2-C													
C3-C										X	X		
C4-C													
C1-C-038-500													
C2-C-038-500													

REMARKS

One 8330 test w/ TNT reported in 4 Day TAT and full list reported standard TAT

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

contact DAVE LILES w/ questions (919) 280-3529 (919) 328-5574

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Lancaster	Cooler Custody Seal (✓)	Printed Name: DAVE LILES	Printed Name:	Printed Name:	Printed Name: Brandy Barclay
☑ Cooler packed with ice (✓)	☒ Intact ☐ Not Intact	Signature: David S. Liles	Signature:	Signature:	Signature: Brandy Barclay
Specify Turnaround Requirements:	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: LCI
Shipping Tracking #:	Condition/Cooler Temp: 2.8-3.9	Date/Time: 6/27/13	Date/Time:	Date/Time:	Date/Time: 6.28.13 925

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

acct# 67116 Cap# 1400652 Sample# 7111833-56

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: DAVE LILES ARCADIS
Telephone: 919-328-5574
Address:
Fax:
City State Zip
E-mail Address:
Project Name/Location (City, State): KENVIL Treat Study
Project #:
Sampler's Printed Name: DAVE LILES
Sampler's Signature: David S. Liles

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	8330 TNT only 4 day TAT	8330 full list std TAT
C3-C-038-500					SO			1	9	X	X
C4-C-038-500										X	X
C1-C-500-2000										X	X
C2-C-500-2000										X	X
C3-C-500-2000										X	X
C4-C-500-2000										X	X
C1-D										X	X
C2-D										X	X
C3-D										X	X
C4-D										X	X

Keys

Preservation Key:
A. H_2SO_4
B. HCl
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: 500 g jars
10. Other: _____

Matrix Key:
SO - Soil
SE - Sediment
NL - NAPL/Oil
W - Water
SL - Sludge
SW - Sample Wipe
T - Tissue
A - Air
Other: _____

PARAMETER ANALYSIS & METHOD

REMARKS

One 8330 test with TNT reported in 4 day TAT & full list reported standard TAT

Special Instructions/Comments:

Contact DAVE LILES with questions

☐ Special QA/QC Instructions(✓):

(919) 28[illegible]-3529
(919) 328-5574

Laboratory Information and Receipt

Lab Name: Lancaster
☒ Cooler packed with ice (✓)
Specify Turnaround Requirements:
Shipping Tracking #:

Cooler Custody Seal (✓)
☒ Intact ☐ Not Intact
Sample Receipt:
Condition/Cooler Temp: 2.8 C

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: DAVE LILES	Printed Name:	Printed Name:	Printed Name: Brandy Barclay
Signature: David S. Liles	Signature:	Signature:	Signature: Brandy Barclay
Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: LCI
Date/Time: 6/27/13	Date/Time:	Date/Time:	Date/Time: 6.28.13 925

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

July 23, 2013

Project: Kenvil Treatability Study

Submittal Date: 06/28/2013
Group Number: 1400651
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
C1-W Grab Water	7111829
C2-W Grab Water	7111830
C3-W Grab Water	7111831
C4-W Grab Water	7111832

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks
ELECTRONIC COPY TO	Arcadis	Attn: Scott Larew
ELECTRONIC COPY TO	Art Engineering	Attn: E Groen
ELECTRONIC COPY TO	Arcadis	Attn: David Liles

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: C1-W Grab Water
Kenvil Treatability Study

LL Sample # WW 7111829
LL Group # 1400651
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 12:30 by DL

Submitted: 06/28/2013 09:25
Reported: 07/23/2013 11:52

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KTS01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	390	390	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	780	40	120	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.40	1.2	1
06916	1,3-Dinitrobenzene	99-65-0	23	0.40	1.2	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.60	1.2	1
06916	2,4-Dinitrotoluene	121-14-2	35,000	2,900	8,000	2000
06916	2,6-Dinitrotoluene	606-20-2	N.D.	270	270	100
06916	HMX	2691-41-0	N.D.	130	400	100
06916	Nitrobenzene	98-95-3	N.D.	0.40	1.2	1
06916	Nitroglycerin	55-63-0	N.D.	10	30	1
06916	1-Nitronaphthalene	86-57-7	8.5	0.40	1.2	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.50	1.5	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.80	2.4	1
06916	4-Nitrotoluene	99-99-0	N.D.	1.2	2.4	1
06916	PETN	78-11-5	N.D.	12	36	1
06916	RDX	121-82-4	N.D.	40	100	100
06916	Tetryl	479-45-8	N.D.	0.80	1.2	1
06916	1,3,5-Trinitrobenzene	99-35-4	72 J	40	120	100
06916	2,4,6-Trinitrotoluene	118-96-7	61,000	800	2,400	2000

Reporting limits were raised due to interference from the sample matrix.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident during the sample preparation.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/11/2013 23:07	James H Place	2000
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 01:57	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 05:29	James H Place	1
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	131830014A	07/03/2013 12:15	Edwin Ortiz	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-W Grab Water
Kenvil Treatability Study

LL Sample # WW 7111830
LL Group # 1400651
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 12:30 by DL

Submitted: 06/28/2013 09:25
Reported: 07/23/2013 11:52

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KTS02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l		ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.		350	350	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	880		40	120	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.		0.40	1.2	1
06916	1,3-Dinitrobenzene	99-65-0	44		0.40	1.2	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.		0.60	1.2	1
06916	2,4-Dinitrotoluene	121-14-2	62,000		2,900	8,000	2000
06916	2,6-Dinitrotoluene	606-20-2	N.D.		340	340	100
06916	HMX	2691-41-0	N.D.		1.3	4.0	1
06916	Nitrobenzene	98-95-3	N.D.		0.40	1.2	1
06916	Nitroglycerin	55-63-0	N.D.		10	30	1
06916	1-Nitronaphthalene	86-57-7	21		0.40	1.2	1
06916	2-Nitrotoluene	88-72-2	N.D.		0.50	1.5	1
06916	3-Nitrotoluene	99-08-1	N.D.		0.80	2.4	1
06916	4-Nitrotoluene	99-99-0	N.D.		1.2	2.4	1
06916	PETN	78-11-5	N.D.		12	36	1
06916	RDX	121-82-4	N.D.		33	33	1
06916	Tetryl	479-45-8	N.D.		0.80	1.2	1
06916	1,3,5-Trinitrobenzene	99-35-4	110	J	40	120	100
06916	2,4,6-Trinitrotoluene	118-96-7	73,000		800	2,400	2000

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/11/2013 23:49	James H Place	2000
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 02:39	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 06:11	James H Place	1
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	131830014A	07/03/2013 12:15	Edwin Ortiz	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-W Grab Water
Kenvil Treatability Study

LL Sample # WW 7111831
LL Group # 1400651
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 12:30 by DL

Submitted: 06/28/2013 09:25
Reported: 07/23/2013 11:52

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KTS03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,700	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,400	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	11	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	2,100	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	45	130	100
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	1.2	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	N.D.	20	60	100
06916	2,4,6-Trinitrotoluene	118-96-7	77,000	400	1,200	2000

The surrogate data is outside the QC limits due to unresolvable matrix problems evident during the sample preparation.

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 00:32	James H Place	2000
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 03:21	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 06:53	James H Place	1
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	131830014A	07/03/2013 12:15	Edwin Ortiz	1

*=This limit was used in the evaluation of the final result

Sample Description: C4-W Grab Water
Kenvil Treatability Study

LL Sample # WW 7111832
LL Group # 1400651
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 06/27/2013 12:30 by DL

Submitted: 06/28/2013 09:25
Reported: 07/23/2013 11:52

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KTS04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	420	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	630	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	100
06916	1,3-Dinitrobenzene	99-65-0	6.1	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	1,300	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	72	130	100
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	5.0	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	48 J	20	60	100
06916	2,4,6-Trinitrotoluene	118-96-7	74,000	400	1,200	2000

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. No corrective action was taken due to the sample matrix.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident during the sample preparation.

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 01:14	James H Place	2000
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 04:04	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	131830014A	07/12/2013 07:36	James H Place	1
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	131830014A	07/03/2013 12:15	Edwin Ortiz	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400651
Reported: 07/23/13 at 11:52 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 131830014A	Sample number(s): 7111829-7111832								
4-Amino-2,6-Dinitrotoluene	N.D.	0.30	0.60	ug/l	135*	134*	80-120	1	30
2-Amino-4,6-Dinitrotoluene	N.D.	0.20	0.60	ug/l	90	91	74-104	1	30
1,2-Dinitrobenzene	N.D.	0.20	0.60	ug/l	129*	128*	90-118	1	30
1,3-Dinitrobenzene	N.D.	0.20	0.60	ug/l	105	105	76-116	0	30
1,4-Dinitrobenzene	N.D.	0.30	0.60	ug/l	103	102	81-108	0	30
2,4-Dinitrotoluene	N.D.	0.72	2.0	ug/l	96	96	76-104	0	30
2,6-Dinitrotoluene	N.D.	0.45	1.3	ug/l	133*	132*	79-114	0	30
HMX	N.D.	0.65	2.0	ug/l	96	95	73-104	1	30
Nitrobenzene	N.D.	0.20	0.60	ug/l	98	99	71-111	1	30
Nitroglycerin	N.D.	5.2	15	ug/l	97	97	83-104	0	30
1-Nitronaphthalene	N.D.	0.20	0.60	ug/l	107	107	69-125	0	30
2-Nitrotoluene	N.D.	0.25	0.75	ug/l	100	100	78-102	0	30
3-Nitrotoluene	N.D.	0.40	1.2	ug/l	99	99	81-107	1	30
4-Nitrotoluene	N.D.	0.60	1.2	ug/l	104	104	76-105	0	30
PETN	N.D.	6.0	18	ug/l	107	101	88-128	6	30
RDX	N.D.	0.20	0.50	ug/l	101	101	74-107	0	30
Tetryl	N.D.	0.40	0.60	ug/l	88	87	31-148	1	30
1,3,5-Trinitrobenzene	N.D.	0.20	0.60	ug/l	99	99	80-111	0	30
2,4,6-Trinitrotoluene	N.D.	0.20	0.60	ug/l	101	101	76-109	1	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Nitroaromatics/Amines in Water
Batch number: 131830014A

	2-Nitro-m-xylene
7111829	50*
7111830	75
7111831	0*
7111832	0*
Blank	97
LCS	100
LCSD	97
Limits:	56-130

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1400651
Reported: 07/23/13 at 11:52 AM

Surrogate Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

acct# 6716 Cap# 1400651 sample# 7111829-32

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #

Send Results to:

Contact & Company Name: DAVE LILES ARCADIS
Telephone: 919-328-5574
Address:
Fax:
City State Zip
E-mail Address: david.liles@arcadis-us.com
Project Name/Location (City, State): Kenvil Treat study
Project #:
Sampler's Printed Name: DAVE LILES
Sampler's Signature: David S. Liles

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD: 8330 Full list
C1-W	6/27/13	12:30		✓	W			1	2	X
C2-W	↓	↓		✓	W			1	2	X
C3 W	↓	↓		✓	W			1	2	X
C4-W	↓	↓		✓	W			1	2	X

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil | SE - Sediment | NL - NAPL/Oil
W - Water | SL - Sludge | SW - Sample Wipe
T - Tissue | A - Air | Other: _____

REMARKS

Standard TAT

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Lancaster	Cooler Custody Seal (✓)	Printed Name: DAVE LILES	Printed Name:	Printed Name:	Printed Name: Brandy Barclay
☒ Cooler packed with ice (✓)	☒ Intact ☐ Not Intact	Signature: David S. Liles	Signature:	Signature:	Signature: Brandy Barclay
Specify Turnaround Requirements:	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: LL10
Shipping Tracking #:	Condition/Cooler Temp: 2.8:3.7	Date/Time: 6/27/13	Date/Time:	Date/Time:	Date/Time: 6.28.13 925

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

eurofins | Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

August 01, 2013

Project: Kenvil Treatability Study

Submittal Date: 07/12/2013
Group Number: 1403685
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
C12-05-L2.0 Soil Sample	7125461
C12-Fines Soil Sample	7125462
C12-05-L2 Sand Soil Sample	7125463
C12-L Sand Soil Sample	7125464
C12-05-4.0-4.75 Soil Sample	7125465
C12-05-2.4-4.0 Soil Sample	7125466
C12-05-2.0-2.4 Soil Sample	7125467
C12 Sand FL1 Soil Sample	7125468
C12 Sand FL1 1.0-2.0 Soil Sample	7125469
C12 Sand FL1 0.5-1.0 Soil Sample	7125470
C12 Sand FL1 0.038-0.5 Soil Sample	7125471
C12 Sand FL2 Soil Sample	7125472
C12 Sand FL2 1.0-2.0 Soil Sample	7125473
C12 Sand FL2 0.5-1.0 Soil Sample	7125474
C12 Sand FL2 0.038-0.5 Soil Sample	7125475
C12 Sand FL3 Soil Sample	7125476
C12 Sand FL3 1.0-2.0 Soil Sample	7125477
C12 Sand FL3 0.5-1.0 Soil Sample	7125478
C12 Sand FL3 0.038-0.5 Soil Sample	7125479

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks
ELECTRONIC COPY TO	Arcadis	Attn: Scott Larew
ELECTRONIC	Art Engineering	Attn: E Groen

COPY TO
ELECTRONIC Arcadis Attn: David Liles
COPY TO

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: C12-05-L2.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125461
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1201

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	27,000	1,300	2,600	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	15,000	870	2,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	870	2,600	10
06918	1,3-Dinitrobenzene	99-65-0	3,200	870	2,600	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	870	2,600	10
06918	2,4-Dinitrotoluene	121-14-2	2,800,000	170,000	520,000	2000
06918	2,6-Dinitrotoluene	606-20-2	N.D.	35,000	35,000	10
06918	HMX	2691-41-0	N.D.	2,200	6,500	10
06918	Nitrobenzene	98-95-3	4,500	870	2,600	10
06918	Nitroglycerin	55-63-0	N.D.	17,000	52,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	870	2,600	10
06918	2-Nitrotoluene	88-72-2	N.D.	1,700	2,600	10
06918	3-Nitrotoluene	99-08-1	N.D.	2,200	2,600	10
06918	4-Nitrotoluene	99-99-0	N.D.	1,700	2,600	10
06918	PETN	78-11-5	N.D.	17,000	52,000	10
06918	RDX	121-82-4	N.D.	1,100	2,600	10
06918	Tetryl	479-45-8	N.D.	1,300	2,600	10
06918	1,3,5-Trinitrobenzene	99-35-4	13,000	870	2,600	10
06918	2,4,6-Trinitrotoluene	118-96-7	13,000,000	170,000	520,000	2000

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/18/2013 19:10	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 11:32	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-Fines Soil Sample
Kenvil - NJ

LL Sample # SW 7125462
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1202

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	22,000		2,100	4,200	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	26,000		1,400	4,200	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,400	4,200	10
06918	1,3-Dinitrobenzene	99-65-0	2,000	J	1,400	4,200	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,400	4,200	10
06918	2,4-Dinitrotoluene	121-14-2	810,000		14,000	42,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		17,000	17,000	10
06918	HMX	2691-41-0	N.D.		3,500	11,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,400	4,200	10
06918	Nitroglycerin	55-63-0	N.D.		28,000	84,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,400	4,200	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,800	4,200	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,500	4,200	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,800	4,200	10
06918	PETN	78-11-5	N.D.		28,000	84,000	10
06918	RDX	121-82-4	N.D.		1,800	4,200	10
06918	Tetryl	479-45-8	N.D.		2,100	4,200	10
06918	1,3,5-Trinitrobenzene	99-35-4	8,300		1,400	4,200	10
06918	2,4,6-Trinitrotoluene	118-96-7	7,000,000		280,000	840,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	2,140		0.741	2.22	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	35.1		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/18/2013 21:18	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/19/2013 13:35	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 13:39	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-Fines Soil Sample
Kenvil - NJ

LL Sample # SW 7125462
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1202

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:10	Joanne M Gates	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-05-L2 Sand Soil Sample
Kenvil - NJ

LL Sample # SW 7125463
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1203

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	1,500	2,900	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,300	970	2,900	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	970	2,900	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	970	2,900	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	970	2,900	10
06918	2,4-Dinitrotoluene	121-14-2	930,000	9,700	29,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	4,800	4,800	10
06918	HMX	2691-41-0	N.D.	2,400	7,300	10
06918	Nitrobenzene	98-95-3	N.D.	970	2,900	10
06918	Nitroglycerin	55-63-0	N.D.	19,000	58,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	970	2,900	10
06918	2-Nitrotoluene	88-72-2	N.D.	1,900	2,900	10
06918	3-Nitrotoluene	99-08-1	N.D.	2,400	2,900	10
06918	4-Nitrotoluene	99-99-0	N.D.	1,900	2,900	10
06918	PETN	78-11-5	N.D.	19,000	58,000	10
06918	RDX	121-82-4	N.D.	1,200	2,900	10
06918	Tetryl	479-45-8	N.D.	1,500	2,900	10
06918	1,3,5-Trinitrobenzene	99-35-4	3,300	970	2,900	10
06918	2,4,6-Trinitrotoluene	118-96-7	4,800,000	190,000	580,000	2000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	14.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/18/2013 22:00	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/19/2013 21:23	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 14:22	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-L Sand Soil Sample
Kenvil - NJ

LL Sample # SW 7125464
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
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500 Hercules Road
Wilmington DE 19808-1599

C1204

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000		1,600	3,300	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,800		1,100	3,300	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,100	3,300	10
06918	1,3-Dinitrobenzene	99-65-0	1,900	J	1,100	3,300	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,100	3,300	10
06918	2,4-Dinitrotoluene	121-14-2	1,700,000		11,000	33,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		26,000	26,000	10
06918	HMX	2691-41-0	N.D.		2,700	8,100	10
06918	Nitrobenzene	98-95-3	N.D.		1,100	3,300	10
06918	Nitroglycerin	55-63-0	N.D.		22,000	65,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,100	3,300	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,200	3,300	10
06918	3-Nitrotoluene	99-08-1	N.D.		2,700	3,300	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,200	3,300	10
06918	PETN	78-11-5	N.D.		22,000	65,000	10
06918	RDX	121-82-4	N.D.		1,400	3,300	10
06918	Tetryl	479-45-8	N.D.		1,700	3,300	10
06918	1,3,5-Trinitrobenzene	99-35-4	4,000		1,100	3,300	10
06918	2,4,6-Trinitrotoluene	118-96-7	8,200,000		220,000	650,000	2000
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	558		0.574	1.72	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	16.3		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/18/2013 23:25	James H Place	2000
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/19/2013 22:05	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 15:47	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-L Sand Soil Sample
Kenvil - NJ

LL Sample # SW 7125464
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

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500 Hercules Road
Wilmington DE 19808-1599

C1204

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:14	Joanne M Gates	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-05-4.0-4.75 Soil Sample
Kenvil - NJ

LL Sample # SW 7125465
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
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500 Hercules Road
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C1205

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	1,500	2,900	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	980	2,900	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	980	2,900	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	980	2,900	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	980	2,900	10
06918	2,4-Dinitrotoluene	121-14-2	64,000	980	2,900	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	980	2,900	10
06918	HMX	2691-41-0	N.D.	2,500	7,400	10
06918	Nitrobenzene	98-95-3	N.D.	980	2,900	10
06918	Nitroglycerin	55-63-0	N.D.	20,000	59,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	980	2,900	10
06918	2-Nitrotoluene	88-72-2	N.D.	2,000	2,900	10
06918	3-Nitrotoluene	99-08-1	N.D.	2,500	2,900	10
06918	4-Nitrotoluene	99-99-0	N.D.	2,000	2,900	10
06918	PETN	78-11-5	N.D.	20,000	59,000	10
06918	RDX	121-82-4	N.D.	1,200	2,900	10
06918	Tetryl	479-45-8	N.D.	1,500	2,900	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	980	2,900	10
06918	2,4,6-Trinitrotoluene	118-96-7	1,300,000	9,800	29,000	100
	Reporting limits were raised due to interference from the sample matrix.					
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	294	0.524	1.57	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	7.3	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 00:12	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 16:29	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:18	Joanne M Gates	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-05-4.0-4.75 Soil Sample
Kenvil - NJ

LL Sample # SW 7125465
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

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Wilmington DE 19808-1599

C1205

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-05-2.4-4.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125466
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1206

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.		1,400	2,900	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,000	J	950	2,900	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		950	2,900	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		950	2,900	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		950	2,900	10
06918	2,4-Dinitrotoluene	121-14-2	72,000		950	2,900	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.		950	2,900	10
06918	HMX	2691-41-0	N.D.		2,400	7,200	10
06918	Nitrobenzene	98-95-3	N.D.		950	2,900	10
06918	Nitroglycerin	55-63-0	N.D.		19,000	57,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		950	2,900	10
06918	2-Nitrotoluene	88-72-2	N.D.		1,900	2,900	10
06918	3-Nitrotoluene	99-08-1	N.D.		2,400	2,900	10
06918	4-Nitrotoluene	99-99-0	N.D.		1,900	2,900	10
06918	PETN	78-11-5	N.D.		19,000	57,000	10
06918	RDX	121-82-4	N.D.		1,200	2,900	10
06918	Tetryl	479-45-8	N.D.		1,500	2,900	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		950	2,900	10
06918	2,4,6-Trinitrotoluene	118-96-7	830,000		9,500	29,000	100
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	230		0.573	1.72	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	12.7		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 00:55	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 17:12	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:22	Joanne M Gates	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-05-2.4-4.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125466
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
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C1206

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-05-2.0-2.4 Soil Sample
Kenvil - NJ

LL Sample # SW 7125467
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1207

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	1,600	2,800	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,100	940	2,800	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	940	2,800	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	940	2,800	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	940	2,800	10
06918	2,4-Dinitrotoluene	121-14-2	120,000	940	2,800	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	940	2,800	10
06918	HMX	2691-41-0	N.D.	2,400	7,100	10
06918	Nitrobenzene	98-95-3	N.D.	940	2,800	10
06918	Nitroglycerin	55-63-0	N.D.	19,000	56,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	940	2,800	10
06918	2-Nitrotoluene	88-72-2	N.D.	1,900	2,800	10
06918	3-Nitrotoluene	99-08-1	N.D.	2,400	2,800	10
06918	4-Nitrotoluene	99-99-0	N.D.	1,900	2,800	10
06918	PETN	78-11-5	N.D.	19,000	56,000	10
06918	RDX	121-82-4	N.D.	1,200	2,800	10
06918	Tetryl	479-45-8	N.D.	1,400	2,800	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	940	2,800	10
06918	2,4,6-Trinitrotoluene	118-96-7	570,000	9,400	28,000	100
	Reporting limits were raised due to interference from the sample matrix.					
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	233	0.525	1.58	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	7.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 01:37	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 17:54	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:26	Joanne M Gates	1

*=This limit was used in the evaluation of the final result

Sample Description: C12-05-2.0-2.4 Soil Sample
Kenvil - NJ

LL Sample # SW 7125467
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1207

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL1 Soil Sample
Kenvil - NJ

LL Sample # SW 7125468
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1208

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,700		190	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,400		120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	370	1
06918	1,3-Dinitrobenzene	99-65-0	140	J	120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	370	1
06918	2,4-Dinitrotoluene	121-14-2	54,000		1,200	3,700	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.		330	370	1
06918	HMX	2691-41-0	N.D.		310	930	1
06918	Nitrobenzene	98-95-3	N.D.		120	370	1
06918	Nitroglycerin	55-63-0	N.D.		2,500	7,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.		250	370	1
06918	3-Nitrotoluene	99-08-1	N.D.		310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.		250	370	1
06918	PETN	78-11-5	N.D.		2,500	7,500	1
06918	RDX	121-82-4	N.D.		160	370	1
06918	Tetryl	479-45-8	N.D.		190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	330	J	120	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	190,000		1,200	3,700	10
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	197		0.610	1.83	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	19.6		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 18:36	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 03:21	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:38	Joanne M Gates	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL1 Soil Sample
Kenvil - NJ

LL Sample # SW 7125468
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1208

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL1 1.0-2.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125469
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1209

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.		1,800	3,600	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,500	J	1,200	3,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,200	3,600	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,200	3,600	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,200	3,600	10
06918	2,4-Dinitrotoluene	121-14-2	23,000		1,200	3,600	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.		1,200	3,600	10
06918	HMX	2691-41-0	N.D.		3,000	8,900	10
06918	Nitrobenzene	98-95-3	N.D.		1,200	3,600	10
06918	Nitroglycerin	55-63-0	N.D.		24,000	71,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,200	3,600	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,400	3,600	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,000	3,600	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,400	3,600	10
06918	PETN	78-11-5	N.D.		24,000	71,000	10
06918	RDX	121-82-4	N.D.		1,500	3,600	10
06918	Tetryl	479-45-8	N.D.		1,800	3,600	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,200	3,600	10
06918	2,4,6-Trinitrotoluene	118-96-7	65,000		1,200	3,600	10
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	19.7		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 19:19	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL1 0.5-1.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125470
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1210

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	2,100	3,500	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,000	1,200	3,500	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	1,200	3,500	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	1,200	3,500	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	1,200	3,500	10
06918	2,4-Dinitrotoluene	121-14-2	36,000	1,200	3,500	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	1,200	3,500	10
06918	HMX	2691-41-0	N.D.	2,900	8,600	10
06918	Nitrobenzene	98-95-3	N.D.	1,200	3,500	10
06918	Nitroglycerin	55-63-0	N.D.	23,000	69,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	1,200	3,500	10
06918	2-Nitrotoluene	88-72-2	N.D.	2,300	3,500	10
06918	3-Nitrotoluene	99-08-1	N.D.	2,900	3,500	10
06918	4-Nitrotoluene	99-99-0	N.D.	2,300	3,500	10
06918	PETN	78-11-5	N.D.	23,000	69,000	10
06918	RDX	121-82-4	N.D.	1,400	3,500	10
06918	Tetryl	479-45-8	N.D.	1,800	3,500	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	1,200	3,500	10
06918	2,4,6-Trinitrotoluene	118-96-7	360,000	12,000	35,000	100
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	24.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 03:45	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 20:01	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL1 0.038-0.5 Soil Sample
Kenvil - NJ

LL Sample # SW 7125471
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1211

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	910		200	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,800		130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	390	1
06918	2,4-Dinitrotoluene	121-14-2	34,000		1,300	3,900	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.		230	390	1
06918	HMX	2691-41-0	N.D.		330	980	1
06918	Nitrobenzene	98-95-3	N.D.		130	390	1
06918	Nitroglycerin	55-63-0	N.D.		2,600	7,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.		260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.		330	390	1
06918	4-Nitrotoluene	99-99-0	N.D.		260	390	1
06918	PETN	78-11-5	N.D.		2,600	7,800	1
06918	RDX	121-82-4	N.D.		160	390	1
06918	Tetryl	479-45-8	N.D.		200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	260	J	130	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	93,000		1,300	3,900	10
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	23.4		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 20:44	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 04:04	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007A	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL2 Soil Sample
Kenvil - NJ

LL Sample # SW 7125472
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1212

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	980	180	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,800	120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	370	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	370	1
06918	2,4-Dinitrotoluene	121-14-2	58,000	1,200	3,700	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	330	370	1
06918	HMX	2691-41-0	N.D.	310	920	1
06918	Nitrobenzene	98-95-3	N.D.	120	370	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	370	1
06918	3-Nitrotoluene	99-08-1	N.D.	310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	370	1
06918	PETN	78-11-5	N.D.	2,400	7,300	1
06918	RDX	121-82-4	N.D.	150	370	1
06918	Tetryl	479-45-8	N.D.	190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	260	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	110,000	1,200	3,700	10
	Reporting limits were raised due to interference from the sample matrix.					
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	194	0.611	1.83	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	18.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 21:26	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 04:46	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:42	Joanne M Gates	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL2 Soil Sample
Kenvil - NJ

LL Sample # SW 7125472
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1212

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL2 1.0-2.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125473
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1213

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	890	180	360	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	960	120	360	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	360	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	360	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	360	1
06918	2,4-Dinitrotoluene	121-14-2	23,000	120	360	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	310	360	1
06918	HMX	2691-41-0	N.D.	300	900	1
06918	Nitrobenzene	98-95-3	N.D.	120	360	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	360	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	360	1
06918	3-Nitrotoluene	99-08-1	N.D.	300	360	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	360	1
06918	PETN	78-11-5	N.D.	2,400	7,200	1
06918	RDX	121-82-4	N.D.	150	360	1
06918	Tetryl	479-45-8	N.D.	180	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	120	360	1
06918	2,4,6-Trinitrotoluene	118-96-7	49,000	1,200	3,600	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.4	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 22:09	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 05:29	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL2 0.5-1.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125474
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1214

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	640	190	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,200	130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	19,000	130	390	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	390	1
06918	HMX	2691-41-0	N.D.	320	970	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	320	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,800	1
06918	RDX	121-82-4	N.D.	160	390	1
06918	Tetryl	479-45-8	N.D.	200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	190	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	38,000	1,300	3,900	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	26.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/20/2013 23:34	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 07:36	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL2 0.038-0.5 Soil Sample
Kenvil - NJ

LL Sample # SW 7125475
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1215

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	790	180	360	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,200	120	360	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	360	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	360	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	360	1
06918	2,4-Dinitrotoluene	121-14-2	19,000	1,200	3,600	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	120	360	1
06918	HMX	2691-41-0	N.D.	300	900	1
06918	Nitrobenzene	98-95-3	N.D.	120	360	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	360	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	360	1
06918	3-Nitrotoluene	99-08-1	N.D.	300	360	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	360	1
06918	PETN	78-11-5	N.D.	2,400	7,200	1
06918	RDX	121-82-4	N.D.	150	360	1
06918	Tetryl	479-45-8	N.D.	180	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	190	360	1
06918	2,4,6-Trinitrotoluene	118-96-7	67,000	1,200	3,600	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.4	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/21/2013 00:16	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 08:19	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL3 Soil Sample
Kenvil - NJ

LL Sample # SW 7125476
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1216

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,500		190	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,300		120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	370	1
06918	1,3-Dinitrobenzene	99-65-0	140	J	120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	370	1
06918	2,4-Dinitrotoluene	121-14-2	49,000		1,200	3,700	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.		250	370	1
06918	HMX	2691-41-0	N.D.		310	930	1
06918	Nitrobenzene	98-95-3	N.D.		120	370	1
06918	Nitroglycerin	55-63-0	N.D.		2,500	7,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.		250	370	1
06918	3-Nitrotoluene	99-08-1	N.D.		310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.		250	370	1
06918	PETN	78-11-5	N.D.		2,500	7,400	1
06918	RDX	121-82-4	N.D.		150	370	1
06918	Tetryl	479-45-8	N.D.		190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	660		120	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	120,000		1,200	3,700	10
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	197		0.605	1.82	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	19.0		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/21/2013 00:59	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 09:01	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
06955	Lead	SW-846 6010B	1	131985708001	07/18/2013 08:45	Joanne M Gates	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL3 Soil Sample
Kenvil - NJ

LL Sample # SW 7125476
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1216

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131985708001	07/17/2013 22:29	Annamaria Stipkovits	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL3 1.0-2.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125477
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1217

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	380	180	360	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	740	120	360	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	360	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	360	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	360	1
06918	2,4-Dinitrotoluene	121-14-2	11,000	120	360	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	120	360	1
06918	HMX	2691-41-0	N.D.	300	910	1
06918	Nitrobenzene	98-95-3	N.D.	120	360	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	360	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	360	1
06918	3-Nitrotoluene	99-08-1	N.D.	300	360	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	360	1
06918	PETN	78-11-5	N.D.	2,400	7,200	1
06918	RDX	121-82-4	N.D.	150	360	1
06918	Tetryl	479-45-8	N.D.	180	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	120	360	1
06918	2,4,6-Trinitrotoluene	118-96-7	27,000	1,200	3,600	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	17.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/21/2013 01:41	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 09:44	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL3 0.5-1.0 Soil Sample
Kenvil - NJ

LL Sample # SW 7125478
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1218

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	760	180	360	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	910	120	360	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	360	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	360	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	360	1
06918	2,4-Dinitrotoluene	121-14-2	14,000	120	360	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	120	360	1
06918	HMX	2691-41-0	N.D.	300	900	1
06918	Nitrobenzene	98-95-3	N.D.	120	360	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	360	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	360	1
06918	3-Nitrotoluene	99-08-1	N.D.	300	360	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	360	1
06918	PETN	78-11-5	N.D.	2,400	7,200	1
06918	RDX	121-82-4	N.D.	150	360	1
06918	Tetryl	479-45-8	N.D.	180	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	120	360	1
06918	2,4,6-Trinitrotoluene	118-96-7	40,000	1,200	3,600	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/21/2013 02:23	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 10:26	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12 Sand FL3 0.038-0.5 Soil Sample
Kenvil - NJ

LL Sample # SW 7125479
LL Group # 1403685
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 07/11/2013 by DL

Submitted: 07/12/2013 09:20
Reported: 08/01/2013 12:21

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

C1219

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,200	170	340	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,100	110	340	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	190	340	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	110	340	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	340	1
06918	2,4-Dinitrotoluene	121-14-2	35,000	1,100	3,400	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	230	340	1
06918	HMX	2691-41-0	N.D.	280	850	1
06918	Nitrobenzene	98-95-3	N.D.	110	340	1
06918	Nitroglycerin	55-63-0	N.D.	2,300	6,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	340	1
06918	2-Nitrotoluene	88-72-2	N.D.	230	340	1
06918	3-Nitrotoluene	99-08-1	N.D.	280	340	1
06918	4-Nitrotoluene	99-99-0	N.D.	230	340	1
06918	PETN	78-11-5	N.D.	2,300	6,800	1
06918	RDX	121-82-4	N.D.	140	340	1
06918	Tetryl	479-45-8	N.D.	170	340	1
06918	1,3,5-Trinitrobenzene	99-35-4	460	110	340	1
06918	2,4,6-Trinitrotoluene	118-96-7	72,000	1,100	3,400	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	19.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/21/2013 03:06	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	131940004A	07/23/2013 11:09	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	131940004A	07/14/2013 15:00	William H Saadeh	1
00111	Moisture	SM 2540 G-1997	1	13211820007B	07/30/2013 20:48	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1403685
Reported: 08/01/13 at 12:21 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 131940004A	Sample number(s): 7125461-7125479								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	118		87-120		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	97		84-115		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	123		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	106		85-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	100		83-122		
2,4-Dinitrotoluene	N.D.	100.	300	ug/kg	99		82-114		
2,6-Dinitrotoluene	N.D.	100.	300	ug/kg	111		86-117		
HMX	N.D.	250.	750	ug/kg	96		79-104		
Nitrobenzene	N.D.	100.	300	ug/kg	96		80-120		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	87		83-112		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	108		83-122		
2-Nitrotoluene	N.D.	200.	300	ug/kg	99		82-113		
3-Nitrotoluene	N.D.	250.	300	ug/kg	104		88-121		
4-Nitrotoluene	N.D.	200.	300	ug/kg	102		88-111		
PETN	N.D.	2,000.	6,000	ug/kg	111		89-129		
RDX	N.D.	130.	300	ug/kg	100		81-118		
Tetryl	N.D.	150.	300	ug/kg	100		58-122		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	99		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	104		85-122		
Batch number: 131985708001	Sample number(s): 7125462,7125464-7125468,7125472,7125476								
Lead	N.D.	0.500	1.50	mg/kg	99		80-120		
Batch number: 13211820007A	Sample number(s): 7125462-7125471								
Moisture					100		99-101		
Batch number: 13211820007B	Sample number(s): 7125472-7125479								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 131940004A	Sample number(s): 7125461-7125479 UNSPK: 7125461								
4-Amino-2,6-Dinitrotoluene	-10 (2)	58 (2)	85-118	11	50				
2-Amino-4,6-Dinitrotoluene	36*	79*	82-112	12	50				
1,2-Dinitrobenzene	118	125*	80-120	14	50				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1403685
Reported: 08/01/13 at 12:21 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,3-Dinitrobenzene	78*	94	83-119	15	50				
1,4-Dinitrobenzene	91	99	82-117	17	50				
2,4-Dinitrotoluene	158 (2)	7091 (2)	81-111	11	50				
2,6-Dinitrotoluene	813*	847*	86-114	13	50				
HMX	0*	0*	72-107	0	50				
Nitrobenzene	46*	75*	78-116	21	50				
Nitroglycerin	0*	0*	83-112	0	50				
1-Nitronaphthalene	86*	100	89-131	23	50				
2-Nitrotoluene	296*	285*	79-112	5	50				
3-Nitrotoluene	126*	107	72-119	8	50				
4-Nitrotoluene	129*	117*	81-112	0	50				
PETN	0*	0*	85-131	0	50				
RDX	28*	28*	75-108	8	50				
Tetryl	97	116	26-136	26	50				
1,3,5-Trinitrobenzene	43*	202*	73-117	39	50				
2,4,6-Trinitrotoluene	877 (2)	33865 (2)	83-119	11	50				
Batch number: 131985708001	Sample number(s): 7125462,7125464-7125468,7125472,7125476 UNSPK: P128715 BKG: P128715								
Lead	354 (2)	68 (2)	75-125	42*	20	69.2	80.9	16	20
Batch number: 13211820007A	Sample number(s): 7125462-7125471 BKG: 7125464								
Moisture						16.3	16.2	0	5
Batch number: 13211820007B	Sample number(s): 7125472-7125479 BKG: 7125479								
Moisture						19.8	19.8	0	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 131940004A

	2-Nitro-m-xylene
7125461	51*
7125462	43*
7125463	0*
7125464	79
7125465	73
7125466	94
7125467	86
7125468	86
7125469	82
7125470	45*
7125471	89

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1403685
Reported: 08/01/13 at 12:21 PM

Surrogate Quality Control

7125472	89
7125473	89
7125474	110
7125475	91
7125476	87
7125477	93
7125478	81
7125479	93
Blank	112
LCS	104
MS	29*
MSD	51*
Limits:	73-155

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

acct# 6716 Cap# 1403685 sample# 7125461-79

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: DAVE LILES ARCADIS
Telephone: 919-328-5574
Address:
Fax:
City State Zip
E-mail Address: david.liles@arcadis-us.com
Project Name/Location (City, State): Kenvil Treatability Study
Project #: NJ004000.NJ63.00001
Sampler's Printed Name: DAVE LILES
Sampler's Signature: David S. Liles

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	8330 stand. TAT	REMARKS
C12-05-L2.0						E		1	9	x	expect TNT ≥ 1000 mg/kg
C12-Fines										x	"
C12-05-L2 sand										x	"
C12-L sand										x	"
C12-05-4.0-4.75										x	"
C12-05-2.4-4.0										x	"
C12-05-2.0-2.4										x	"

Keys

Preservation Key: A. H_2SO_4 B. HCl C. HNO_3 D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 16 oz glass 10. Other: _____

Matrix Key: SO - Soil SE - Sediment NL - NAPL/Oil W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other: _____

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Lancaster Labs	Cooler Custody Seal (✓) ☑ Intact ☐ Not Intact	Printed Name: DAVE LILES	Printed Name:	Printed Name:	Printed Name: Wesley Miller
☑ Cooler packed with ice (✓)		Signature: David S. Liles	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt: intact 3.4°	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: LLI
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 7/11/13 15:00	Date/Time:	Date/Time:	Date/Time: 7/12/13 920

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

acct# 6716 Cup# 1403685 sample# 7125461-79

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: DAVE LILES, ARCADIS
Telephone: 919-328-5514
Address:
Fax:
City State Zip
E-mail Address: david.liles@arcadis-us.com
Project Name/Location (City, State): Kenvil Treatability Study
Project #: NJ004000.NJ63.00001
Sampler's Printed Name: DAVE LILES
Sampler's Signature: David S. Liles

Preservative	E						
Filtered (✓)							
# of Containers	1						
Container Information	9						

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 16 oz glass 10. Other: _____

Matrix Key: SO - Soil SE - Sediment NL - NAPL/Oil W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other: _____

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8330 Std TAT							REMARKS
C12 Sand FL 1						x							TNT expected less than 1000 mg/kg
C12 Sand FL 1 1.0-2.0						x							
C12 Sand FL 1 0.5-1.0						x							
C12 Sand FL 1 0.038-0.5						x							
C12 Sand FL 2						x							
C12 Sand FL 2 1.0-2.0						x							
C12 Sand FL 2 0.5-1.0						x							
C12 Sand FL 2 0.038-0.5						x							
C12 Sand FL 3						x							
C12 Sand FL 3 1.0-2.0						x							
C12 Sand FL 3 0.5-1.0						x							
C12 Sand FL 3 0.038-0.5						x							

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Lancaster Labs	Cooler Custody Seal (✓)	Printed Name: DAVE LILES	Printed Name:	Printed Name:	Printed Name: Wesley Miller
☐ Cooler packed with ice (✓)	☑ Intact ☐ Not Intact	Signature: David S. Liles	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: LLI
Shipping Tracking #:	Condition/Cooler Temp: Intact 3.4°	Date/Time: 7/11/13 15:00	Date/Time:	Date/Time:	Date/Time: 7/12/13 920

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Appendix C

Analytical Data Reports

Part II: Round 2 Testing

Kenvil Soil Separation Treatability Study - Round 2
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 8/1/2013
Submit Date: 7/12/2013

Lancaster Sample ID		7165593	7165594	7165581	7165583	7165584	7165585	7165582
ART/ARCADIS Sample ID		C12A-SA	C12A-FI	C12A-SA-FL	C12A-SA-FL (1.0-2.0)	C12A-SA-FL (0.5-1.0)	C12A-SA-FL (0.020-0.5)	C12A-SA-FL FI
Analysis Name	Units							
4-Amino-2,6-Dinitrotoluene	ug/kg	8,900	16,000	N.D.	550	730	480	19,000
2-Amino-4,6-Dinitrotoluene	ug/kg	8,500	25,000	N.D.	1,500	1,800	1,100	28,000
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	1,300	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	1,500,000	850,000	58,000 [1)]	28,000	42,000	18,000	690,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	580 J
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	3,600
2,4,6-Trinitrotoluene	ug/kg	8,800,000	7,200,000	130,000 [1)]	55,000	110,000	36,000	3,500,000
Moisture	%	23.5	34.0	23.5	18.1	16.4	24.7	54.2

Notes:
[1)]: Results of Reanalysis; Results of initial analysis were not considered representative
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 2
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 8/1/2013
Submit Date: 7/12/2013

Lancaster Sample ID		7165586	7165587	7165588	7165589
ART/ARCADIS Sample ID		C12B-OS (4.0-12.5)	C12B-OS (2.0-4.0)	C12B-OS SA (0.038-2.0)	C12B-OS FI (<0.038)
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/kg	700	3,800	5,900	22,000
2-Amino-4,6-Dinitrotoluene	ug/kg	1,700	5,900	3,400	21,000
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	860	2,900
1,3-Dinitrobenzene	ug/kg	N.D.	N.D.	640	1,700
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	30,000	73,000	300,000	230,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	4,100
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	N.D.	N.D.	5,800	7,500
2,4,6-Trinitrotoluene	ug/kg	100,000	140,000	4,900,000	9,100,000
Moisture	%	23.9	28.0	29.7	35.7

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 2
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 8/1/2013
Submit Date: 7/12/2013

Lancaster Sample ID		7165605	7165603	7165604	7165590	7165591	7165592
ART/ARCADIS Sample ID		C12B-SAC	C12B-SAC-FL	C12B-SAC-FL FI	C12B-SAC-FL (1.0-2.0)	C12B-SAC-FL (0.5-1.0)	C12B-SAC-FL (0.020-0.5)
Analysis Name	Units						
4-Amino-2,6-Dinitrotoluene	ug/kg	8,400	710	16,000	490	410	480
2-Amino-4,6-Dinitrotoluene	ug/kg	6,800	1,600	24,000	1,000	1,000	1,100
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	1,300	N.D.	1,400	N.D.	N.D.	N.D.
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	1,000,000	40,000	490,000	17,000	16,000	17,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	3,800	270 J	4,500	N.D.	N.D.	N.D.
2,4,6-Trinitrotoluene	ug/kg	7,600,000	85,000	1,400,000	68,000	58,000	42,000
Lead	mg/kg	-	157	-	-	-	-
Moisture	%	20.4	19.9	42.3	26.2	26.1	26.7

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 2
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 8/1/2013
Submit Date: 7/12/2013

Lancaster Sample ID		7165595	7165596	7165597	7165598	7165599	7165600	7165601	7165602
ART/ARCADIS Sample ID		C12A-OS (4.75-12.5)	C12A-OS (4.0-4.75)	C12A-OS (2.4-4.0)	C12A-OS (2.0-2.4)	C12A-OS (1.0-2.0)	C12A-OS (0.5-1.0)	C12A-OS (0.038-0.5)	C12A-OS (<0.038)
Analysis Name	Units								
4-Amino-2,6-Dinitrotoluene	ug/kg	1,600	920	730	420	450	3,700	14,000	15,000
2-Amino-4,6-Dinitrotoluene	ug/kg	1,600	1,200	1,200	650	940	3,800	5,400	12,000
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1,200	N.D.
1,3-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	160 J	1,100	710
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	19,000	22,000	22,000	23,000	23,000	120,000	820,000	240,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	610	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	600	250 J	N.D.	N.D.	N.D.	N.D.	5,800	5,600
2,4,6-Trinitrotoluene	ug/kg	370,000	200,000	51,000	61,000	45,000	420,000	8,400,000	7,400,000
Moisture	%	8.0	4.8	6.8	5.1	6.9	25.6	32.2	27.9

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

September 03, 2013

Project: Kenvil Treatability Study

Submittal Date: 08/17/2013
Group Number: 1412311
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
C12A-SA-FL Soil Sample	7165581
C12A-SA-FLFI Soil Sample	7165582
C12A-SA-FL(1.0-2.0) Soil Sample	7165583
C12A-SA-FL(0.5-1.0) Soil Sample	7165584
C12A-SA-FL(0.020-0.5) Soil Sample	7165585
C12B-OS(4.0-12.5) Soil Sample	7165586
C12B-OS(2.0-4.0) Soil Sample	7165587
C12B-OS-SA(0.038-2.0) Soil Sample	7165588
C12B-OS-FI(<0.038) Soil Sample	7165589
C12B-SAC-FL(1.0-2.0) Soil Sample	7165590
C12B-SAC-FL(0.5-1.0) Soil Sample	7165591
C12B-SAC-FL(0.020-0.5) Soil Sample	7165592
C12A-SA Soil Sample	7165593
C12A-FI Soil Sample	7165594
C12A-OS(4.75-12.5) Soil Sample	7165595
C12A-OS(4.0-4.75) Soil Sample	7165596
C12A-OS(2.4-4.0) Soil Sample	7165597
C12A-OS(2.0-2.4) Soil Sample	7165598
C12A-OS(1.0-2.0) Soil Sample	7165599
C12A-OS(0.5-1.0) Soil Sample	7165600
C12A-OS(0.038-0.5) Soil Sample	7165601
C12A-OS(<0.038) Soil Sample	7165602
C12B-SAC-FL Soil Sample	7165603
C12B-SAC-FLFI Soil Sample	7165604
C12B-SAC Soil Sample	7165605

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks
ELECTRONIC COPY TO	Arcadis	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: David Liles
ELECTRONIC COPY TO	Art Engineering	Attn: E Groen

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: C12A-SA-FL Soil Sample
Kenvil - NJ

LL Sample # SW 7165581
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,200	200	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,900	130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	41,000	6,500	20,000	50
06918	2,6-Dinitrotoluene	606-20-2	N.D.	540	540	1
06918	HMX	2691-41-0	N.D.	330	980	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,800	1
06918	RDX	121-82-4	N.D.	160	390	1
06918	Tetryl	479-45-8	N.D.	200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	130	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	610,000	6,500	20,000	50
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	23.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 02:15	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 09:30	James H Place	50
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-SA-FLFI Soil Sample
Kenvil - NJ

LL Sample # SW 7165582
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	19,000		330	660	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	28,000		220	660	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		2,000	2,000	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		220	660	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		760	760	1
06918	2,4-Dinitrotoluene	121-14-2	690,000		22,000	66,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.		9,600	9,600	1
06918	HMX	2691-41-0	N.D.		550	1,600	1
06918	Nitrobenzene	98-95-3	N.D.		2,500	2,500	1
06918	Nitroglycerin	55-63-0	N.D.		4,400	13,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		920	920	1
06918	2-Nitrotoluene	88-72-2	N.D.		3,000	3,000	1
06918	3-Nitrotoluene	99-08-1	N.D.		550	660	1
06918	4-Nitrotoluene	99-99-0	N.D.		2,100	2,100	1
06918	PETN	78-11-5	N.D.		4,400	13,000	1
06918	RDX	121-82-4	580	J	270	660	1
06918	Tetryl	479-45-8	N.D.		330	660	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,600		220	660	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,500,000		22,000	66,000	100
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	54.2		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 04:23	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 05:05	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-SA-FL(1.0-2.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165583
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	550	180	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,500	120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	370	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	150	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	370	1
06918	2,4-Dinitrotoluene	121-14-2	28,000	610	1,800	5
06918	2,6-Dinitrotoluene	606-20-2	N.D.	120	370	1
06918	HMX	2691-41-0	N.D.	310	920	1
06918	Nitrobenzene	98-95-3	N.D.	120	370	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	370	1
06918	3-Nitrotoluene	99-08-1	N.D.	310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	370	1
06918	PETN	78-11-5	N.D.	2,400	7,300	1
06918	RDX	121-82-4	N.D.	150	370	1
06918	Tetryl	479-45-8	N.D.	190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	120	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	55,000	610	1,800	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	18.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 06:30	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 10:12	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-SA-FL(0.5-1.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165584
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	730	180	360	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,800	120	360	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	360	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	360	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	360	1
06918	2,4-Dinitrotoluene	121-14-2	42,000	1,200	3,600	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	500	500	1
06918	HMX	2691-41-0	N.D.	300	900	1
06918	Nitrobenzene	98-95-3	N.D.	130	360	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	360	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	360	1
06918	3-Nitrotoluene	99-08-1	N.D.	300	360	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	360	1
06918	PETN	78-11-5	N.D.	2,400	7,200	1
06918	RDX	121-82-4	N.D.	150	360	1
06918	Tetryl	479-45-8	N.D.	180	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	220	360	1
06918	2,4,6-Trinitrotoluene	118-96-7	110,000	1,200	3,600	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	16.4	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 07:13	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 10:55	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-SA-FL(0.020-0.5) Soil Sample
Kenvil - NJ

LL Sample # SW 7165585
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	480	200	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,100	130	400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	400	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	400	1
06918	2,4-Dinitrotoluene	121-14-2	18,000	130	400	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	400	1
06918	HMX	2691-41-0	N.D.	330	1,000	1
06918	Nitrobenzene	98-95-3	N.D.	130	400	1
06918	Nitroglycerin	55-63-0	N.D.	2,700	8,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	400	1
06918	2-Nitrotoluene	88-72-2	N.D.	270	400	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	400	1
06918	4-Nitrotoluene	99-99-0	N.D.	270	400	1
06918	PETN	78-11-5	N.D.	2,700	8,000	1
06918	RDX	121-82-4	N.D.	170	400	1
06918	Tetryl	479-45-8	N.D.	200	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	160	400	1
06918	2,4,6-Trinitrotoluene	118-96-7	36,000	660	2,000	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	24.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 09:20	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 11:37	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-OS(4.0-12.5) Soil Sample
Kenvil - NJ

LL Sample # SW 7165586
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	700	200	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,700	130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	30,000	1,300	3,900	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	470	470	1
06918	HMX	2691-41-0	N.D.	330	990	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,900	1
06918	RDX	121-82-4	N.D.	160	390	1
06918	Tetryl	479-45-8	N.D.	200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	370	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	100,000	1,300	3,900	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	23.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 10:03	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 12:20	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-OS(2.0-4.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165587
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,800	210	420	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,900	140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	140	420	1
06918	2,4-Dinitrotoluene	121-14-2	73,000	1,400	4,200	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	560	560	1
06918	HMX	2691-41-0	N.D.	350	1,000	1
06918	Nitrobenzene	98-95-3	N.D.	150	420	1
06918	Nitroglycerin	55-63-0	N.D.	4,200	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.	280	420	1
06918	3-Nitrotoluene	99-08-1	N.D.	350	420	1
06918	4-Nitrotoluene	99-99-0	N.D.	280	420	1
06918	PETN	78-11-5	N.D.	2,800	8,300	1
06918	RDX	121-82-4	N.D.	170	420	1
06918	Tetryl	479-45-8	N.D.	210	420	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	490	490	1
06918	2,4,6-Trinitrotoluene	118-96-7	140,000	1,400	4,200	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	28.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 10:45	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 13:02	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-OS-SA(0.038-2.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165588
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,900	200	410	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,400	140	410	1
06918	1,2-Dinitrobenzene	528-29-0	860	140	410	1
06918	1,3-Dinitrobenzene	99-65-0	640	140	410	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	140	410	1
06918	2,4-Dinitrotoluene	121-14-2	300,000	6,800	20,000	50
06918	2,6-Dinitrotoluene	606-20-2	N.D.	6,000	6,000	1
06918	HMX	2691-41-0	N.D.	340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.	690	690	1
06918	Nitroglycerin	55-63-0	N.D.	2,700	8,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	410	1
06918	2-Nitrotoluene	88-72-2	N.D.	270	410	1
06918	3-Nitrotoluene	99-08-1	N.D.	870	870	1
06918	4-Nitrotoluene	99-99-0	N.D.	870	870	1
06918	PETN	78-11-5	N.D.	2,700	8,100	1
06918	RDX	121-82-4	N.D.	2,200	2,200	1
06918	Tetryl	479-45-8	N.D.	210	410	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,800	140	410	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,900,000	34,000	100,000	250
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	29.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 11:28	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 13:45	James H Place	50
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/27/2013 05:23	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-OS-FI(<0.038) Soil Sample
Kenvil - NJ

LL Sample # SW 7165589
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	22,000	230	470	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	21,000	160	470	1
06918	1,2-Dinitrobenzene	528-29-0	2,900	160	470	1
06918	1,3-Dinitrobenzene	99-65-0	1,700	160	470	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	720	720	1
06918	2,4-Dinitrotoluene	121-14-2	230,000	16,000	47,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	12,000	12,000	1
06918	HMX	2691-41-0	N.D.	390	1,200	1
06918	Nitrobenzene	98-95-3	N.D.	3,300	3,300	1
06918	Nitroglycerin	55-63-0	N.D.	3,100	9,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	160	470	1
06918	2-Nitrotoluene	88-72-2	N.D.	310	470	1
06918	3-Nitrotoluene	99-08-1	N.D.	3,800	3,800	1
06918	4-Nitrotoluene	99-99-0	N.D.	3,800	3,800	1
06918	PETN	78-11-5	N.D.	3,100	9,300	1
06918	RDX	121-82-4	4,100	190	470	1
06918	Tetryl	479-45-8	N.D.	240	470	1
06918	1,3,5-Trinitrobenzene	99-35-4	7,500	160	470	1
06918	2,4,6-Trinitrotoluene	118-96-7	9,100,000	160,000	470,000	1000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	35.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 12:10	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 12:53	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 13:35	James H Place	1000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-SAC-FL(1.0-2.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165590
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/16/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	490	190	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,000	130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	460	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	17,000	130	390	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	390	1
06918	HMX	2691-41-0	N.D.	320	970	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	320	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,700	1
06918	RDX	121-82-4	N.D.	160	390	1
06918	Tetryl	479-45-8	N.D.	200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	260	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	68,000	650	1,900	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	26.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 14:18	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 14:27	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004A	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-SAC-FL(0.5-1.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165591
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/16/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	410	180	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,000	120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	370	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	370	1
06918	2,4-Dinitrotoluene	121-14-2	16,000	120	370	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	120	370	1
06918	HMX	2691-41-0	N.D.	310	920	1
06918	Nitrobenzene	98-95-3	N.D.	120	370	1
06918	Nitroglycerin	55-63-0	N.D.	2,500	7,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.	250	370	1
06918	3-Nitrotoluene	99-08-1	N.D.	310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.	250	370	1
06918	PETN	78-11-5	N.D.	2,500	7,400	1
06918	RDX	121-82-4	N.D.	150	370	1
06918	Tetryl	479-45-8	N.D.	190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	190	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	58,000	620	1,800	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	26.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 15:00	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 15:10	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-SAC-FL(0.020-0.5) Soil Sample
Kenvil - NJ

LL Sample # SW 7165592
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/16/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	480	200	410	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,100	140	410	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	410	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	140	410	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	140	410	1
06918	2,4-Dinitrotoluene	121-14-2	17,000	140	410	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	140	410	1
06918	HMX	2691-41-0	N.D.	340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.	140	410	1
06918	Nitroglycerin	55-63-0	N.D.	2,700	8,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	410	1
06918	2-Nitrotoluene	88-72-2	N.D.	270	410	1
06918	3-Nitrotoluene	99-08-1	N.D.	340	410	1
06918	4-Nitrotoluene	99-99-0	N.D.	270	410	1
06918	PETN	78-11-5	N.D.	2,700	8,200	1
06918	RDX	121-82-4	N.D.	170	410	1
06918	Tetryl	479-45-8	N.D.	210	410	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	180	410	1
06918	2,4,6-Trinitrotoluene	118-96-7	42,000	680	2,000	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	26.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 15:43	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 15:53	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-SA Soil Sample
Kenvil - NJ

LL Sample # SW 7165593
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,900	200	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,500	130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	650	650	1
06918	1,3-Dinitrobenzene	99-65-0	1,300	130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	1,500,000	65,000	200,000	500
06918	2,6-Dinitrotoluene	606-20-2	N.D.	33,000	33,000	1
06918	HMX	2691-41-0	N.D.	330	980	1
06918	Nitrobenzene	98-95-3	N.D.	630	630	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,800	1
06918	RDX	121-82-4	N.D.	160	390	1
06918	Tetryl	479-45-8	N.D.	540	540	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	4,000	4,000	1
06918	2,4,6-Trinitrotoluene	118-96-7	8,800,000	65,000	200,000	500
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	23.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 17:51	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 18:33	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-FI Soil Sample
Kenvil - NJ

LL Sample # SW 7165594
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	16,000	230	450	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	25,000	150	450	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	150	450	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	350	450	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	150	450	1
06918	2,4-Dinitrotoluene	121-14-2	850,000	15,000	45,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	20,000	20,000	1
06918	HMX	2691-41-0	N.D.	380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	150	450	1
06918	Nitroglycerin	55-63-0	N.D.	3,000	9,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.	1,200	1,200	1
06918	2-Nitrotoluene	88-72-2	N.D.	300	450	1
06918	3-Nitrotoluene	99-08-1	N.D.	18,000	18,000	1
06918	4-Nitrotoluene	99-99-0	N.D.	18,000	18,000	1
06918	PETN	78-11-5	N.D.	3,000	9,100	1
06918	RDX	121-82-4	N.D.	1,100	1,100	1
06918	Tetryl	479-45-8	N.D.	230	450	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	2,800	2,800	1
06918	2,4,6-Trinitrotoluene	118-96-7	7,200,000	150,000	450,000	1000
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	34.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 19:16	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 20:02	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 20:44	James H Place	1000
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(4.75-12.5) Soil Sample
Kenvil - NJ

LL Sample # SW 7165595
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,600	160	330	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,600	110	330	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	330	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	110	330	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	330	1
06918	2,4-Dinitrotoluene	121-14-2	19,000	110	330	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	390	390	1
06918	HMX	2691-41-0	N.D.	270	820	1
06918	Nitrobenzene	98-95-3	N.D.	110	330	1
06918	Nitroglycerin	55-63-0	N.D.	2,200	6,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	330	1
06918	2-Nitrotoluene	88-72-2	N.D.	220	330	1
06918	3-Nitrotoluene	99-08-1	N.D.	270	330	1
06918	4-Nitrotoluene	99-99-0	N.D.	220	330	1
06918	PETN	78-11-5	N.D.	2,200	6,500	1
06918	RDX	121-82-4	N.D.	140	330	1
06918	Tetryl	479-45-8	N.D.	170	330	1
06918	1,3,5-Trinitrobenzene	99-35-4	600	110	330	1
06918	2,4,6-Trinitrotoluene	118-96-7	370,000	2,200	6,500	20
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	8.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 21:27	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/27/2013 06:06	James H Place	20
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(4.0-4.75) Soil Sample
Kenvil - NJ

LL Sample # SW 7165596
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg		ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	920		160	320	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,200		110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		110	320	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		110	320	1
06918	2,4-Dinitrotoluene	121-14-2	22,000		1,100	3,200	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.		400	400	1
06918	HMX	2691-41-0	N.D.		260	790	1
06918	Nitrobenzene	98-95-3	N.D.		110	320	1
06918	Nitroglycerin	55-63-0	N.D.		2,100	6,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.		210	320	1
06918	3-Nitrotoluene	99-08-1	N.D.		260	320	1
06918	4-Nitrotoluene	99-99-0	N.D.		210	320	1
06918	PETN	78-11-5	N.D.		2,100	6,300	1
06918	RDX	121-82-4	N.D.		130	320	1
06918	Tetryl	479-45-8	N.D.		160	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	250	J	110	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	200,000		1,100	3,200	10
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		%		%	%	
00111	Moisture	n.a.	4.8		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 22:09	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/27/2013 06:48	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(2.4-4.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165597
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV17

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	730	160	320	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,200	110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	320	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	320	1
06918	2,4-Dinitrotoluene	121-14-2	22,000	110	320	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	380	380	1
06918	HMX	2691-41-0	N.D.	270	800	1
06918	Nitrobenzene	98-95-3	N.D.	110	320	1
06918	Nitroglycerin	55-63-0	N.D.	2,100	6,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.	210	320	1
06918	3-Nitrotoluene	99-08-1	N.D.	270	320	1
06918	4-Nitrotoluene	99-99-0	N.D.	210	320	1
06918	PETN	78-11-5	N.D.	2,100	6,400	1
06918	RDX	121-82-4	N.D.	130	320	1
06918	Tetryl	479-45-8	N.D.	160	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	110	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	51,000	540	1,600	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	6.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 22:52	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/27/2013 07:31	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(2.0-2.4) Soil Sample
Kenvil - NJ

LL Sample # SW 7165598
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV18

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	420	160	320	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	650	110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	320	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	320	1
06918	2,4-Dinitrotoluene	121-14-2	23,000	530	1,600	5
06918	2,6-Dinitrotoluene	606-20-2	N.D.	380	380	1
06918	HMX	2691-41-0	N.D.	260	790	1
06918	Nitrobenzene	98-95-3	N.D.	110	320	1
06918	Nitroglycerin	55-63-0	N.D.	2,100	6,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.	210	320	1
06918	3-Nitrotoluene	99-08-1	N.D.	260	320	1
06918	4-Nitrotoluene	99-99-0	N.D.	210	320	1
06918	PETN	78-11-5	N.D.	2,100	6,300	1
06918	RDX	121-82-4	N.D.	130	320	1
06918	Tetryl	479-45-8	N.D.	160	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	110	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	61,000	530	1,600	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	5.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/23/2013 23:34	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/27/2013 08:13	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(1.0-2.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165599
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV19

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	450	160	320	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	940	110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	320	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	320	1
06918	2,4-Dinitrotoluene	121-14-2	23,000	540	1,600	5
06918	2,6-Dinitrotoluene	606-20-2	N.D.	360	360	1
06918	HMX	2691-41-0	N.D.	270	810	1
06918	Nitrobenzene	98-95-3	N.D.	110	320	1
06918	Nitroglycerin	55-63-0	N.D.	2,100	6,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.	210	320	1
06918	3-Nitrotoluene	99-08-1	N.D.	270	320	1
06918	4-Nitrotoluene	99-99-0	N.D.	210	320	1
06918	PETN	78-11-5	N.D.	2,100	6,400	1
06918	RDX	121-82-4	N.D.	130	320	1
06918	Tetryl	479-45-8	N.D.	160	320	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	130	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	45,000	540	1,600	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	6.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 00:17	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/27/2013 08:56	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(0.5-1.0) Soil Sample
Kenvil - NJ

LL Sample # SW 7165600
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,700		200	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,800		130	400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	400	1
06918	1,3-Dinitrobenzene	99-65-0	160	J	130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	400	1
06918	2,4-Dinitrotoluene	121-14-2	120,000		2,700	8,100	20
06918	2,6-Dinitrotoluene	606-20-2	N.D.		1,200	1,200	1
06918	HMX	2691-41-0	N.D.		340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		370	400	1
06918	Nitroglycerin	55-63-0	N.D.		2,700	8,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	400	1
06918	2-Nitrotoluene	88-72-2	N.D.		270	400	1
06918	3-Nitrotoluene	99-08-1	N.D.		340	400	1
06918	4-Nitrotoluene	99-99-0	N.D.		270	400	1
06918	PETN	78-11-5	N.D.		2,700	8,100	1
06918	RDX	121-82-4	N.D.		170	400	1
06918	Tetryl	479-45-8	N.D.		210	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		440	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	420,000		2,700	8,100	20
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	25.6		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/24/2013 02:25	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132330001A	08/27/2013 11:03	James H Place	20
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132330001A	08/21/2013 14:00	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820004B	08/23/2013 23:52	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(0.038-0.5) Soil Sample
Kenvil - NJ

LL Sample # SW 7165601
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV21

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	14,000	220	440	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,400	150	440	1
06918	1,2-Dinitrobenzene	528-29-0	1,200	150	440	1
06918	1,3-Dinitrobenzene	99-65-0	1,100	150	440	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	440	440	1
06918	2,4-Dinitrotoluene	121-14-2	820,000	7,400	22,000	50
06918	2,6-Dinitrotoluene	606-20-2	N.D.	19,000	19,000	1
06918	HMX	2691-41-0	N.D.	370	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	1,800	1,800	1
06918	Nitroglycerin	55-63-0	N.D.	2,900	8,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.	210	440	1
06918	2-Nitrotoluene	88-72-2	N.D.	290	440	1
06918	3-Nitrotoluene	99-08-1	N.D.	1,400	1,400	1
06918	4-Nitrotoluene	99-99-0	N.D.	1,400	1,400	1
06918	PETN	78-11-5	N.D.	2,900	8,800	1
06918	RDX	121-82-4	610	180	440	1
06918	Tetryl	479-45-8	N.D.	500	500	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,800	150	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	8,400,000	74,000	220,000	500
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/28/2013 16:08	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/28/2013 22:33	James H Place	50
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/29/2013 22:33	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132380005A	08/26/2013 16:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820003A	08/23/2013 21:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-OS(<0.038) Soil Sample
Kenvil - NJ

LL Sample # SW 7165602
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/14/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV22

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	15,000	210	420	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	12,000	140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	420	1
06918	1,3-Dinitrobenzene	99-65-0	710	140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	620	620	1
06918	2,4-Dinitrotoluene	121-14-2	240,000	1,400	4,200	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	14,000	14,000	1
06918	HMX	2691-41-0	N.D.	350	1,000	1
06918	Nitrobenzene	98-95-3	N.D.	3,100	3,100	1
06918	Nitroglycerin	55-63-0	N.D.	2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	350	420	1
06918	2-Nitrotoluene	88-72-2	N.D.	280	420	1
06918	3-Nitrotoluene	99-08-1	N.D.	2,900	2,900	1
06918	4-Nitrotoluene	99-99-0	N.D.	2,900	2,900	1
06918	PETN	78-11-5	N.D.	2,800	8,300	1
06918	RDX	121-82-4	N.D.	650	650	1
06918	Tetryl	479-45-8	N.D.	210	420	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,600	140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	7,400,000	69,000	210,000	500
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	27.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/28/2013 18:15	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/29/2013 01:23	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/29/2013 23:16	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132380005A	08/26/2013 16:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820003A	08/23/2013 21:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-SAC-FL Soil Sample
Kenvil - NJ

LL Sample # SW 7165603
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/16/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV23

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg		ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	710		190	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,600		120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	370	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	370	1
06918	2,4-Dinitrotoluene	121-14-2	40,000		620	1,900	5
06918	2,6-Dinitrotoluene	606-20-2	N.D.		540	540	1
06918	HMX	2691-41-0	N.D.		310	940	1
06918	Nitrobenzene	98-95-3	N.D.		120	370	1
06918	Nitroglycerin	55-63-0	N.D.		2,500	7,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.		250	370	1
06918	3-Nitrotoluene	99-08-1	N.D.		310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.		250	370	1
06918	PETN	78-11-5	N.D.		2,500	7,500	1
06918	RDX	121-82-4	N.D.		160	370	1
06918	Tetryl	479-45-8	N.D.		190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	270	J	120	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	85,000		620	1,900	5
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		mg/kg		mg/kg	mg/kg	
06955	Lead	7439-92-1	157		0.612	1.84	1
Wet Chemistry	**SM 2540 G-1997**		%		%	%	
00111	Moisture	n.a.	19.9		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/28/2013 20:23	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/29/2013 04:13	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132380005A	08/26/2013 16:15	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	132325708003	08/26/2013 09:37	Eric L Eby	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-SAC-FL Soil Sample
Kenvil - NJ

LL Sample # SW 7165603
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/16/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV23

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	132325708003	08/21/2013 09:15	Denise K Conners	1
00111	Moisture	SM 2540 G-1997	1	13235820003A	08/23/2013 21:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-SAC-FLFI Soil Sample
Kenvil - NJ

LL Sample # SW 7165604
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/16/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV24

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	16,000	260	520	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	24,000	170	520	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	170	520	1
06918	1,3-Dinitrobenzene	99-65-0	1,400	170	520	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	1,100	1,100	1
06918	2,4-Dinitrotoluene	121-14-2	490,000	8,700	26,000	50
06918	2,6-Dinitrotoluene	606-20-2	N.D.	5,000	5,000	1
06918	HMX	2691-41-0	N.D.	430	1,300	1
06918	Nitrobenzene	98-95-3	N.D.	8,200	8,200	1
06918	Nitroglycerin	55-63-0	N.D.	3,500	10,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	1,500	1,500	1
06918	2-Nitrotoluene	88-72-2	N.D.	350	520	1
06918	3-Nitrotoluene	99-08-1	N.D.	13,000	13,000	1
06918	4-Nitrotoluene	99-99-0	N.D.	13,000	13,000	1
06918	PETN	78-11-5	N.D.	3,500	10,000	1
06918	RDX	121-82-4	N.D.	290	520	1
06918	Tetryl	479-45-8	N.D.	270	520	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,500	170	520	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,400,000	8,700	26,000	50
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	42.3	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/28/2013 21:08	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/29/2013 04:56	James H Place	50
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132380005A	08/26/2013 16:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820003A	08/23/2013 21:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12B-SAC Soil Sample
Kenvil - NJ

LL Sample # SW 7165605
LL Group # 1412311
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/16/2013 by RS

Submitted: 08/17/2013 09:55
Reported: 09/03/2013 09:33

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

KNV25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,400	190	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,800	130	380	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	680	680	1
06918	1,3-Dinitrobenzene	99-65-0	1,300	130	380	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	200	380	1
06918	2,4-Dinitrotoluene	121-14-2	1,000,000	13,000	38,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	24,000	24,000	1
06918	HMX	2691-41-0	N.D.	310	940	1
06918	Nitrobenzene	98-95-3	N.D.	2,200	2,200	1
06918	Nitroglycerin	55-63-0	N.D.	2,500	7,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.	300	380	1
06918	2-Nitrotoluene	88-72-2	N.D.	250	380	1
06918	3-Nitrotoluene	99-08-1	N.D.	4,300	4,300	1
06918	4-Nitrotoluene	99-99-0	N.D.	4,300	4,300	1
06918	PETN	78-11-5	N.D.	2,500	7,500	1
06918	RDX	121-82-4	N.D.	160	380	1
06918	Tetryl	479-45-8	N.D.	400	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,800	130	380	1
06918	2,4,6-Trinitrotoluene	118-96-7	7,600,000	63,000	190,000	500
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.4	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/28/2013 21:51	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/29/2013 05:38	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132380005A	08/29/2013 23:58	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132380005A	08/26/2013 16:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13235820003A	08/23/2013 21:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1412311
Reported: 09/03/13 at 09:33 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 132330001A	Sample number(s): 7165581-7165600								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	112		87-120		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	108		84-115		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	128		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	113		85-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	105		83-122		
2,4-Dinitrotoluene	N.D.	100.	300	ug/kg	108		82-114		
2,6-Dinitrotoluene	N.D.	100.	300	ug/kg	115		86-117		
HMX	N.D.	250.	750	ug/kg	103		79-104		
Nitrobenzene	N.D.	100.	300	ug/kg	107		80-120		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	96		83-112		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	117		83-122		
2-Nitrotoluene	N.D.	200.	300	ug/kg	102		82-113		
3-Nitrotoluene	N.D.	250.	300	ug/kg	111		88-121		
4-Nitrotoluene	N.D.	200.	300	ug/kg	103		88-111		
PETN	N.D.	2,000.	6,000	ug/kg	102		89-129		
RDX	N.D.	130.	300	ug/kg	108		81-118		
Tetryl	N.D.	150.	300	ug/kg	122		58-122		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	104		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	114		85-122		
Batch number: 132380005A	Sample number(s): 7165601-7165605								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	109		87-120		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	107		84-115		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	120		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	113		85-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	104		83-122		
2,4-Dinitrotoluene	N.D.	100.	300	ug/kg	106		82-114		
2,6-Dinitrotoluene	N.D.	100.	300	ug/kg	111		86-117		
HMX	N.D.	250.	750	ug/kg	103		79-104		
Nitrobenzene	N.D.	100.	300	ug/kg	101		80-120		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	95		83-112		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	115		83-122		
2-Nitrotoluene	N.D.	200.	300	ug/kg	100		82-113		
3-Nitrotoluene	N.D.	250.	300	ug/kg	109		88-121		
4-Nitrotoluene	N.D.	200.	300	ug/kg	99		88-111		
PETN	N.D.	2,000.	6,000	ug/kg	97		89-129		
RDX	N.D.	130.	300	ug/kg	108		81-118		
Tetryl	N.D.	150.	300	ug/kg	72		58-122		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	88		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	111		85-122		
Batch number: 132325708003	Sample number(s): 7165603								
Lead	N.D.	0.500	1.50	mg/kg	102		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1412311
Reported: 09/03/13 at 09:33 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 13235820003A	Sample number(s): 7165601-7165605								
Moisture					100		99-101		
Batch number: 13235820004A	Sample number(s): 7165581-7165590								
Moisture					100		99-101		
Batch number: 13235820004B	Sample number(s): 7165591-7165600								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 132330001A	Sample number(s): 7165581-7165600 UNSPK: 7165581								
4-Amino-2,6-Dinitrotoluene	111	122*	85-118	0	50				
2-Amino-4,6-Dinitrotoluene	126*	123*	82-112	12	50				
1,2-Dinitrobenzene	122*	125*	80-120	7	50				
1,3-Dinitrobenzene	110	110	83-119	9	50				
1,4-Dinitrobenzene	100	103	82-117	7	50				
2,4-Dinitrotoluene	272 (2)	204 (2)	81-111	10	50				
2,6-Dinitrotoluene	110	114	86-114	6	50				
HMX	99	100	72-107	9	50				
Nitrobenzene	106	107	78-116	8	50				
Nitroglycerin	104	106	83-112	8	50				
1-Nitronaphthalene	111	111	89-131	10	50				
2-Nitrotoluene	99	102	79-112	7	50				
3-Nitrotoluene	100	109	72-119	1	50				
4-Nitrotoluene	95	98	81-112	6	50				
PETN	98	100	85-131	8	50				
RDX	105	105	75-108	10	50				
Tetryl	122	127	26-136	6	50				
1,3,5-Trinitrobenzene	105	107	73-117	7	50				
2,4,6-Trinitrotoluene	-7760 (2)	-8518 (2)	83-119	2	50				
Batch number: 132380005A	Sample number(s): 7165601-7165605 UNSPK: 7165601								
4-Amino-2,6-Dinitrotoluene	85	39*	85-118	18	50				
2-Amino-4,6-Dinitrotoluene	88	69*	82-112	13	50				
1,2-Dinitrobenzene	122*	118	80-120	3	50				
1,3-Dinitrobenzene	106	101	83-119	4	50				
1,4-Dinitrobenzene	104	101	82-117	2	50				
2,4-Dinitrotoluene	-1546 (2)	-4346 (2)	81-111	34	50				
2,6-Dinitrotoluene	348*	278*	86-114	22	50				
HMX	97	95	72-107	3	50				
Nitrobenzene	118*	111	78-116	6	50				
Nitroglycerin	108	107	83-112	1	50				
1-Nitronaphthalene	111	113	89-131	1	50				
2-Nitrotoluene	149*	132*	79-112	12	50				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1412311
Reported: 09/03/13 at 09:33 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
3-Nitrotoluene	124*	119	72-119	4	50				
4-Nitrotoluene	116*	109	81-112	6	50				
PETN	98	94	85-131	4	50				
RDX	100	92	75-108	7	50				
Tetryl	0*	104	26-136	200*	50				
1,3,5-Trinitrobenzene	75	52*	73-117	16	50				
2,4,6-Trinitrotoluene	-4951 (2)	-37384 (2)	83-119	35	50				
Batch number: 132325708003	Sample number(s): 7165603 UNSPK: P162779 BKG: P162779								
Lead	96	100	75-125	4	20	3.76	4.27	13 (1)	20
Batch number: 13235820003A	Sample number(s): 7165601-7165605 BKG: P169588								
Moisture						13.7	14.2	3	5
Batch number: 13235820004A	Sample number(s): 7165581-7165590 BKG: 7165582								
Moisture						54.2	55.9	3	5
Batch number: 13235820004B	Sample number(s): 7165591-7165600 BKG: 7165594								
Moisture						34.0	34.6	2	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 132330001A

	2-Nitro-m-xylene
7165581	93
7165582	80
7165583	98
7165584	93
7165585	101
7165586	100
7165587	97
7165588	94
7165589	91
7165590	100
7165591	102
7165592	100
7165593	93
7165594	70*
7165595	102
7165596	101
7165597	95
7165598	101
7165599	101

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1412311
Reported: 09/03/13 at 09:33 AM

Surrogate Quality Control

7165600	87
Blank	99
LCS	109
MS	96
MSD	101

Limits: 73-155

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 132380005A

	2-Nitro-m-xylene
7165601	94
7165602	84
7165603	102
7165604	87
7165605	93
Blank	108
LCS	106
MS	91
MSD	98

Limits: 73-155

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

ARCADIS
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ID#:

6716|1412311|7165581-605 4.7°C

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: Dave Lilo/ARCADIS	Telephone: 919-544-4535
Address:	Fax:
City State Zip	E-mail Address:
Project Name/Location (City, State): Kewl TNT	Project #:
Sampler's Printed Name: Ricky Sams	Sampler's Signature: R Sams

Preservative	6							
Filtered (✓)								
# of Containers	1							
Container Information	7							

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil
W - Water, SL - Sludge, SW - Sample Wipe
T - Tissue, A - Air, Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8330 TNT	Estimated TNT Conc.	REMARKS
C12A-SA-FL	8/15				SO	X	<1000	
C12A-SA-FLFI						X	>1000	
C12A-SA-FL(1.0-2.0)						X	<1000	
C12A-SA-FL(0.5-1.0)						X	<1000	
C12A-SA-FL(0.020-0.5)						X	<1000	
C12B-OS(4.0-12.5)						X	<1000	
C12B-OS(2.0-4.0)						X	<1000	
C12B-OS*(0.038-2.0)						X	>1000	
C12B-OS-FI(<0.038)						X	>1000	
C12B-SAC-FL(1.0-2.0)	8/16					X	<1000	
C12B-SAC-FL(0.5-1.0)	8/16					X	<1000	
C12B-SAC-FL(0.020-0.5)	8/16					X	<1000	

Special Instructions/Comments:

☐ **Special QA/QC Instructions(✓):**

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name:	Printed Name:	Printed Name:	Printed Name: Joseph Gruber
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm:	Firm/Courier:	Firm/Courier:	Firm: ELLI
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time:	Date/Time:	Date/Time:	Date/Time: 8-17-13 0955

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ID#:

6716/1412311/716558/-605 4.7°c

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: Dave Liles/ARCADIS
Telephone: 919-544-4535
Address:
Fax:
City State Zip
E-mail Address:
Project Name/Location (City, State): Kenvil TNT
Project #:
Sampler's Printed Name: Ricky Sams
Sampler's Signature: R. Sams

Preservative	E	E					
Filtered (✓)							
# of Containers	1	1					
Container Information	7	7					

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: _____ 10. Other: _____

Matrix Key: SO - Soil; SE - Sediment; NL - NAPL/Oil; W - Water; SL - Sludge; SW - Sample Wipe; T - Tissue; A - Air; Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8330 TNT	3050/6010 Total Pb	Estimated TNT Conc.	REMARKS
C12A-SA	8/14				SO	X		>1000	~~Estimated TNT Conc. <10~~
C12A-FI	↓				↓	X		>1000	
C12A-OS(4.75-12.5)						X		<1000	
C12A-OS(4.0-4.75)						X		<1000	
C12A-OS(2.4-4.0)						X		<1000	
C12A-OS(2.0-2.4)						X		<1000	
C12A-OS(1.0-2.0)						X		>1000	
C12A-OS(0.5-1.0)						X		>1000	
C12A-OS(0.038-0.5)						X		>1000	
C12A-OS(<0.038)	↓				↓	X		>1000	
C12B-SAC-FL	8/16					X	X	<1000	
C12B-SAC-FL FI	8/16					X		>1000	
C12B-SAC	8/16					X		>1000	

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name:	Printed Name:	Printed Name:	Printed Name: Joseph Graber
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm:	Firm/Courier:	Firm/Courier:	Firm: ELI
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time:	Date/Time:	Date/Time:	Date/Time: 8-17-18 0955

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Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

October 18, 2013

Project: Kenvil Treatability Study

Submittal Date: 10/08/2013
Group Number: 1424644
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
C12A-SA-FL Soil Sample	7228595

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks
ELECTRONIC COPY TO	Art Engineering	Attn: E Groen
ELECTRONIC COPY TO	Arcadis	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: David Liles

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: C12A-SA-FL Soil Sample
Kenvil Treatability Study

LL Sample # SW 7228595
LL Group # 1424644
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 10/08/2013 14:36
Reported: 10/18/2013 14:31

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

12ASA

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	200	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	58,000	1,300	3,900	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	390	1
06918	HMX	2691-41-0	N.D.	330	980	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,900	1
06918	RDX	121-82-4	N.D.	160	390	1
06918	Tetryl	479-45-8	N.D.	200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	940	940	1
06918	2,4,6-Trinitrotoluene	118-96-7	130,000	1,300	3,900	10

The holding time was not met. Per client request, the sample was reextracted after the holding time had already expired.

Reporting limits were raised due to interference from the sample matrix.

Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	23.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011
This sample was originally submitted to the laboratory on 08/17/13 at 09:55. We received authorization for further testing on 10/08/13.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132870002A	10/16/2013 02:18	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132870002A	10/17/2013 21:36	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132870002A	10/14/2013 15:50	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12A-SA-FL Soil Sample
Kenvil Treatability Study

LL Sample # SW 7228595
LL Group # 1424644
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 08/15/2013 by RS

Submitted: 10/08/2013 14:36
Reported: 10/18/2013 14:31

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

12ASA

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	13288820004A	10/15/2013 22:07	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1424644
Reported: 10/18/13 at 02:31 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 132870002A	Sample number(s): 7228595								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	118		98-143		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	103		84-115		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	111		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	112		97-119		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	106		83-122		
2,4-Dinitrotoluene	N.D.	100.	300	ug/kg	107		91-112		
2,6-Dinitrotoluene	N.D.	100.	300	ug/kg	125		86-137		
HMX	N.D.	250.	750	ug/kg	104		79-104		
Nitrobenzene	N.D.	100.	300	ug/kg	97		89-107		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	99		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	113		83-122		
2-Nitrotoluene	N.D.	200.	300	ug/kg	106		91-113		
3-Nitrotoluene	N.D.	250.	300	ug/kg	116		88-121		
4-Nitrotoluene	N.D.	200.	300	ug/kg	116		89-119		
PETN	N.D.	2,000.	6,000	ug/kg	92		67-136		
RDX	N.D.	130.	300	ug/kg	108		87-111		
Tetryl	N.D.	150.	300	ug/kg	103		80-112		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	106		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	114		85-122		
Batch number: 13288820004A	Sample number(s): 7228595								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 132870002A	Sample number(s): 7228595 UNSPK: 7228595								
4-Amino-2,6-Dinitrotoluene	126*	139*	85-118	10	50				
2-Amino-4,6-Dinitrotoluene	124*	128*	69-113	3	50				
1,2-Dinitrobenzene	97	106	80-120	9	50				
1,3-Dinitrobenzene	100	104	89-119	4	50				
1,4-Dinitrobenzene	94	103	82-117	9	50				
2,4-Dinitrotoluene	-119 (2)	-9 (2)	81-111	14	50				
2,6-Dinitrotoluene	95	80*	86-114	17	50				
HMX	88	102	72-107	15	50				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1424644
Reported: 10/18/13 at 02:31 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Nitrobenzene	88	94	86-108	6	50				
Nitroglycerin	91	98	73-116	8	50				
1-Nitronaphthalene	98	105	89-131	7	50				
2-Nitrotoluene	97	102	79-112	5	50				
3-Nitrotoluene	103	111	72-119	7	50				
4-Nitrotoluene	102	108	90-118	6	50				
PETN	113	119	71-133	5	50				
RDX	89	100	75-108	12	50				
Tetryl	79	82	58-125	4	50				
1,3,5-Trinitrobenzene	96	103	58-135	7	50				
2,4,6-Trinitrotoluene	97 (2)	-381 (2)	92-114	26	50				
Batch number: 13288820004A	Sample number(s): 7228595		BKG: P234679						
Moisture						13.5	13.1	3	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 132870002A

	2-Nitro-m-xylene
7228595	85
Blank	115
LCS	111
MS	86
MSD	82
Limits:	63-150

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

1424644 | 7228595 [illegible] 10/8/13
6716 | ~~1412311 | 7165581-605~~ 4.7°C

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order #

Contact & Company Name: Dave Liles/ARCADIS	Telephone: 919-544-4535
Address:	Fax:
City State Zip	E-mail Address:
Project Name/Location (City, State): Kenvil TNT	Project #:
Sampler's Printed Name: Ricky Sams	Sampler's Signature: R. Sams

						E							
						1							
						7							

PARAMETER ANALYSIS & METHOD

Sample ID	Date	Time	Comp	Grab	Matrix	8330 TNT						Estimated TNT Conc.	REMARKS
C12A-SA-FL	8/15				SO	X						<1000	
C12A-SA-FLFI						X						>1000	
C12A-SA-FL(1.0-2.0)						X						<1000	
C12A-SA-FL(0.5-1.0)						X						<1000	Re-entry of
C12A-SA-FL(0.020-0.5)						X						<1000	C12A-SA-FL
C12B-OS(4.0-12.5)						X						<1000	per D. Liles
C12B-OS(2.0-4.0)						X						<1000	
C12B-OS-SA(0.038-2.0)						X						>1000	WAK
C12B-OS-FI(<0.038)						X						>1000	10/9/13
C12B-SAC-FL(1.0-2.0)	8/16					X						<1000	
C12B-SAC-FL(0.5-1.0)	8/16					X						<1000	
C12B-SAC-FL(0.020-0.5)	8/16					X						<1000	

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt	Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name: Joseph Gruber
☐ Cooler packed with ice (✓)	Signature:	Signature:	Signature:	Signature: [signature]
Specify Turnaround Requirements:	Firm:	Firm/Courier:	Firm/Courier:	Firm: ELLI
Shipping Tracking #:	Date/Time:	Date/Time:	Date/Time:	Date/Time: 8-17-13 0955

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

1424644 / 7228595 OK 10/2/13
6716 / ~~1412311~~ / ~~1165581~~ ~~605~~ 4.7°C

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order #

Contact & Company Name: Dave Liles/ARCADIS	Telephone: 919-544-4535
Address:	Fax:
City State Zip	E-mail Address:
Project Name/Location (City, State): Kenvil TNT	Project #:
Sampler's Printed Name: Ricky Sams	Sampler's Signature: R. Sams

						PARAMETER ANALYSIS & METHOD							
						E	E						
						1	1						
						7	7						
						8330 TNT	3050/6010 Total Pb					Estimated TNT Conc.	
C12A-SA	8/14				SO	X						>1000	~~Estimated TNT Conc. <10~~
C12A-FI						X						>1000	
C12A-OS(4.75-12.5)						X						<1000	
C12A-OS(4.0-4.75)						X						<1000	
C12A-OS(2.4-4.0)						X						<1000	
C12A-OS(2.0-2.4)						X						<1000	
C12A-OS(1.0-2.0)						X						>1000	
C12A-OS(0.5-1.0)						X						>1000	
C12A-OS(0.038-0.5)						X						>1000	
C12A-OS(<0.038)	↓				↓	X						>1000	
C12B-SAC-FL	8/16					X	X					<1000	
C12B-SAC-FLFI	8/16					X						>1000	
C12B-SAC	8/16					X						>1000	

REMARKS

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Lab Name:	Printed Name:	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)	Signature:	Signature:	Signature: Joseph Gruber
Specify Turnaround Requirements:	Firm:	Firm/Courier:	Firm: ELLI
Shipping Tracking #:	Date/Time:	Date/Time:	Date/Time: 7-17-18 0955

20730626 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

eurofins | Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Appendix C

Analytical Data Reports

Part III: Round 3 Testing

Kenvil Soil Separation Treatability Study - Round 3
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 9/25/2013
Submit Date: 9/13/2013

Lancaster Sample ID		7196828	7196829	7196830	7196831	7196832	7196833	7196834	7196835
ART/ARCADIS Sample ID		C12C-SAC	C12C-FIC	C12C-SAC-FL	C12C-SAOX1	C12C-FIOX1	C12C-SAOX2	C12C-FIOX2	C12C-SAOX3
Analysis Name	Units								
4-Amino-2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	390	N.D.	230 J	16,000	N.D.
2-Amino-4,6-Dinitrotoluene	ug/kg	N.D.	N.D.	1,800 J	680	N.D.	330 J	9,300	N.D.
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	1,100,000	690,000	38,000	7,500	170,000	2,800	18,000	3,000
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	N.D.	N.D.	N.D.	1,100	N.D.	N.D.	110,000	N.D.
2,4,6-Trinitrotoluene	ug/kg	6,200,000	6,100,000	97,000	22,000	4,200,000	6,700	130,000	9,300
Moisture	%	20.0	36.6	16.8	18.4	37.1	21.4	36.9	21.6

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 3
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 9/25/2013
Submit Date: 9/13/2013

Lancaster Sample ID		7196836	7196837	7196838	7196839	7196840	7196841	7196842	7196843
ART/ARCADIS Sample ID		C12C-FIOX3	C12C-SAOX4	C12C-FIOX4	C12C-SAOX5	C12C-FIOX5	C12C-OX6	C12C-OX7	C12C-OX8
Analysis Name	Units								
4-Amino-2,6-Dinitrotoluene	ug/kg	10,000	490 J	10,000	N.D.	21,000	8,100	10,000	N.D.
2-Amino-4,6-Dinitrotoluene	ug/kg	7,800	880	8,000	N.D.	9,200	4,300	6,200	N.D.
1,2-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/kg	N.D.	280 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,4-Dinitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/kg	18,000	9,700	19,000	4,600	24,000	13,000	19,000	16,000 J
2,6-Dinitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
HMX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/kg	N.D.	N.D.	N.D.	N.D.	12,000	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PETN	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RDX	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/kg	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/kg	80,000	N.D.	87,000	1,800	81,000	58,000	57,000	51,000
2,4,6-Trinitrotoluene	ug/kg	81,000	22,000	N.D.	9,900	250,000	130,000	140,000	460,000
Moisture	%	34.8	21.0	36.1	22.8	38.8	21.7	28.8	18.8

Notes:
All Results Reported on Dry Weight Basis
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 3
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 9/25/2013
Submit Date: 9/13/2013

Lancaster Sample ID		7196844	7196845	7196846	7196847	7196848	7196849	7196850	7196851
ART/ARCADIS Sample ID		C12C-SAOX1W	C12C-SAOX2W	C12C-FIOX2W	C12C-SAOX3W	C12C-FIOX3W	C12C-SAOX4W	C12C-FIOX4W	C12C-SAOX5W
Analysis Name	Units								
4-Amino-2,6-Dinitrotoluene	ug/l	28	48	890	38	560	46	460	76
2-Amino-4,6-Dinitrotoluene	ug/l	9.8	20	330	18	260	18	240	26
1,2-Dinitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/l	0.22 J	0.72	10	0.63	5.2	0.67	5.1	1.7
1,4-Dinitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/l	86	34	530	41	470	25	410	47
2,6-Dinitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
HMX	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PETN	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RDX	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/l	38	28	5,600	12	3,500	25	3,700	130
2,4,6-Trinitrotoluene	ug/l	690	1.7	11,000	9.0	8,500	N.D.	7,000	47

Notes:
N.D. Not Detected
J : J-Flag indicates estimated value

Kenvil Soil Separation Treatability Study - Round 3
Analytical Data Summary Sheet

ART Engineering LLC
ARCADIS US Inc.

Ashland, Inc.
Project: Kenvil Treatability Study
SDG:

Report Date: 9/25/2013
Submit Date: 9/13/2013

Lancaster Sample ID		7196852	7196853	7196854	7196855
ART/ARCADIS Sample ID		C12C-FIOX5W	C12C-OX6W	C12C-OX7W	C12C-OX8W
Analysis Name	Units				
4-Amino-2,6-Dinitrotoluene	ug/l	2,400	1,800	1,800	170
2-Amino-4,6-Dinitrotoluene	ug/l	630	610	710	75
1,2-Dinitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.
1,3-Dinitrobenzene	ug/l	N.D.	29	31	N.D.
1,4-Dinitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	ug/l	2,200	2,100	2,400	N.D.
2,6-Dinitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
HMX	ug/l	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	ug/l	N.D.	N.D.	N.D.	N.D.
Nitroglycerin	ug/l	N.D.	N.D.	N.D.	N.D.
1-Nitronaphthalene	ug/l	N.D.	N.D.	N.D.	N.D.
2-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
3-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
4-Nitrotoluene	ug/l	N.D.	N.D.	N.D.	N.D.
PETN	ug/l	N.D.	N.D.	N.D.	N.D.
RDX	ug/l	N.D.	N.D.	N.D.	N.D.
Tetryl	ug/l	N.D.	N.D.	N.D.	N.D.
1,3,5-Trinitrobenzene	ug/l	4,600	5,500	3,300	11,000
2,4,6-Trinitrotoluene	ug/l	33,000	21,000	9,700	44,000

Notes:
N.D. Not Detected
J : J-Flag indicates estimated value

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

September 25, 2013

Project: Kenvil TNT

Submittal Date: 09/13/2013
Group Number: 1418744
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
C12C-SAC Soil Sample	7196828
C12C-FIC Soil Sample	7196829
C12C-SAC-FL Soil Sample	7196830
C12C-SAOX1 Soil Sample	7196831
C12C-FIOX1 Soil Sample	7196832
C12C-SAOX2 Soil Sample	7196833
C12C-FIOX2 Soil Sample	7196834
C12C-SAOX3 Soil Sample	7196835
C12C-FIOX3 Soil Sample	7196836
C12C-SAOX4 Soil Sample	7196837
C12C-FIOX4 Soil Sample	7196838
C12C-SAOX5 Soil Sample	7196839
C12C-FIOX5 Soil Sample	7196840
C12C-OX6 Soil Sample	7196841
C12C-OX7 Soil Sample	7196842
C12C-OX8 Soil Sample	7196843
C12C-SAOX1W Groundwater Sample	7196844
C12C-SAOX2W Groundwater Sample	7196845
C12C-FIOX2W Groundwater Sample	7196846
C12C-SAOX3W Groundwater Sample	7196847
C12C-FIOX3W Groundwater Sample	7196848
C12C-SAOX4W Groundwater Sample	7196849
C12C-FIOX4W Groundwater Sample	7196850
C12C-SAOX5W Groundwater Sample	7196851
C12C-FIOX5W Groundwater Sample	7196852
C12C-OX6W Groundwater Sample	7196853
C12C-OX7W Groundwater Sample	7196854
C12C-OX8W Groundwater Sample	7196855

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks
ELECTRONIC COPY TO	Arcadis	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: David Liles
ELECTRONIC COPY TO	Art Engineering	Attn: E Groen

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: C12C-SAC Soil Sample
Kenvil TNT

LL Sample # SW 7196828
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/09/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

--SAC

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	19,000	38,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	13,000	38,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.	13,000	38,000	100
06918	1,3-Dinitrobenzene	99-65-0	N.D.	13,000	38,000	100
06918	1,4-Dinitrobenzene	100-25-4	N.D.	13,000	38,000	100
06918	2,4-Dinitrotoluene	121-14-2	1,100,000	13,000	38,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	13,000	38,000	100
06918	HMX	2691-41-0	N.D.	31,000	94,000	100
06918	Nitrobenzene	98-95-3	N.D.	13,000	38,000	100
06918	Nitroglycerin	55-63-0	N.D.	250,000	750,000	100
06918	1-Nitronaphthalene	86-57-7	N.D.	13,000	38,000	100
06918	2-Nitrotoluene	88-72-2	N.D.	25,000	38,000	100
06918	3-Nitrotoluene	99-08-1	N.D.	31,000	38,000	100
06918	4-Nitrotoluene	99-99-0	N.D.	25,000	38,000	100
06918	PETN	78-11-5	N.D.	250,000	750,000	100
06918	RDX	121-82-4	N.D.	16,000	38,000	100
06918	Tetryl	479-45-8	N.D.	19,000	38,000	100
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	13,000	38,000	100
06918	2,4,6-Trinitrotoluene	118-96-7	6,200,000	63,000	190,000	500
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/19/2013 16:48	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 14:45	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIC Soil Sample
Kenvil TNT

LL Sample # SW 7196829
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/09/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

--FIC

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	24,000	47,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	16,000	47,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.	16,000	47,000	100
06918	1,3-Dinitrobenzene	99-65-0	N.D.	16,000	47,000	100
06918	1,4-Dinitrobenzene	100-25-4	N.D.	16,000	47,000	100
06918	2,4-Dinitrotoluene	121-14-2	690,000	16,000	47,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	16,000	47,000	100
06918	HMX	2691-41-0	N.D.	39,000	120,000	100
06918	Nitrobenzene	98-95-3	N.D.	16,000	47,000	100
06918	Nitroglycerin	55-63-0	N.D.	320,000	950,000	100
06918	1-Nitronaphthalene	86-57-7	N.D.	16,000	47,000	100
06918	2-Nitrotoluene	88-72-2	N.D.	32,000	47,000	100
06918	3-Nitrotoluene	99-08-1	N.D.	39,000	47,000	100
06918	4-Nitrotoluene	99-99-0	N.D.	32,000	47,000	100
06918	PETN	78-11-5	N.D.	320,000	950,000	100
06918	RDX	121-82-4	N.D.	20,000	47,000	100
06918	Tetryl	479-45-8	N.D.	24,000	47,000	100
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	16,000	47,000	100
06918	2,4,6-Trinitrotoluene	118-96-7	6,100,000	79,000	240,000	500
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	36.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/19/2013 18:55	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 15:27	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAC-FL Soil Sample
Kenvil TNT

LL Sample # SW 7196830
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/10/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

-ACFL

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.		900	1,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,800	J	600	1,800	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		600	1,800	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		600	1,800	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		600	1,800	5
06918	2,4-Dinitrotoluene	121-14-2	38,000		600	1,800	5
06918	2,6-Dinitrotoluene	606-20-2	N.D.		600	1,800	5
06918	HMX	2691-41-0	N.D.		1,500	4,500	5
06918	Nitrobenzene	98-95-3	N.D.		600	1,800	5
06918	Nitroglycerin	55-63-0	N.D.		12,000	36,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		600	1,800	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,200	1,800	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,500	1,800	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,200	1,800	5
06918	PETN	78-11-5	N.D.		12,000	36,000	5
06918	RDX	121-82-4	N.D.		750	1,800	5
06918	Tetryl	479-45-8	N.D.		920	1,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		600	1,800	5
06918	2,4,6-Trinitrotoluene	118-96-7	97,000		600	1,800	5
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	16.8		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 16:11	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX1 Soil Sample
Kenvil TNT

LL Sample # SW 7196831
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/10/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

SAOX1

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	390	180	370	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	680	120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	370	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	370	1
06918	2,4-Dinitrotoluene	121-14-2	7,500	120	370	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	120	370	1
06918	HMX	2691-41-0	N.D.	310	920	1
06918	Nitrobenzene	98-95-3	N.D.	120	370	1
06918	Nitroglycerin	55-63-0	N.D.	2,500	7,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.	250	370	1
06918	3-Nitrotoluene	99-08-1	N.D.	310	370	1
06918	4-Nitrotoluene	99-99-0	N.D.	250	370	1
06918	PETN	78-11-5	N.D.	2,500	7,400	1
06918	RDX	121-82-4	N.D.	150	370	1
06918	Tetryl	479-45-8	N.D.	190	370	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,100	120	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	22,000	120	370	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	18.4	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 16:53	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX1 Soil Sample
Kenvil TNT

LL Sample # SW 7196832
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/10/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

FIOX1

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	24,000	48,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	16,000	48,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.	16,000	48,000	100
06918	1,3-Dinitrobenzene	99-65-0	N.D.	16,000	48,000	100
06918	1,4-Dinitrobenzene	100-25-4	N.D.	16,000	48,000	100
06918	2,4-Dinitrotoluene	121-14-2	170,000	16,000	48,000	100
06918	2,6-Dinitrotoluene	606-20-2	N.D.	16,000	48,000	100
06918	HMX	2691-41-0	N.D.	40,000	120,000	100
06918	Nitrobenzene	98-95-3	N.D.	16,000	48,000	100
06918	Nitroglycerin	55-63-0	N.D.	320,000	950,000	100
06918	1-Nitronaphthalene	86-57-7	N.D.	16,000	48,000	100
06918	2-Nitrotoluene	88-72-2	N.D.	32,000	48,000	100
06918	3-Nitrotoluene	99-08-1	N.D.	40,000	48,000	100
06918	4-Nitrotoluene	99-99-0	N.D.	32,000	48,000	100
06918	PETN	78-11-5	N.D.	320,000	950,000	100
06918	RDX	121-82-4	N.D.	20,000	48,000	100
06918	Tetryl	479-45-8	N.D.	24,000	48,000	100
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	43,000	48,000	100
06918	2,4,6-Trinitrotoluene	118-96-7	4,200,000	32,000	95,000	200
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	37.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/19/2013 21:02	James H Place	100
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 17:35	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX2 Soil Sample
Kenvil TNT

LL Sample # SW 7196833
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

SAOX2

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	230	J	190	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	330	J	130	380	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	380	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	380	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	380	1
06918	2,4-Dinitrotoluene	121-14-2	2,800		130	380	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.		130	380	1
06918	HMX	2691-41-0	N.D.		320	950	1
06918	Nitrobenzene	98-95-3	N.D.		130	380	1
06918	Nitroglycerin	55-63-0	N.D.		2,500	7,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	380	1
06918	2-Nitrotoluene	88-72-2	N.D.		250	380	1
06918	3-Nitrotoluene	99-08-1	N.D.		320	380	1
06918	4-Nitrotoluene	99-99-0	N.D.		250	380	1
06918	PETN	78-11-5	N.D.		2,500	7,600	1
06918	RDX	121-82-4	N.D.		160	380	1
06918	Tetryl	479-45-8	N.D.		190	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		560	560	1
06918	2,4,6-Trinitrotoluene	118-96-7	6,700		130	380	1
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	21.4		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 18:18	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX2 Soil Sample
Kenvil TNT

LL Sample # SW 7196834
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

FIOX2

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	16,000	2,400	4,800	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,300	1,600	4,800	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	1,600	4,800	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	1,600	4,800	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	1,600	4,800	10
06918	2,4-Dinitrotoluene	121-14-2	18,000	1,600	4,800	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	1,600	4,800	10
06918	HMX	2691-41-0	N.D.	4,000	12,000	10
06918	Nitrobenzene	98-95-3	N.D.	3,600	4,800	10
06918	Nitroglycerin	55-63-0	N.D.	32,000	95,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	1,600	4,800	10
06918	2-Nitrotoluene	88-72-2	N.D.	3,200	4,800	10
06918	3-Nitrotoluene	99-08-1	N.D.	4,000	4,800	10
06918	4-Nitrotoluene	99-99-0	N.D.	3,200	4,800	10
06918	PETN	78-11-5	N.D.	32,000	95,000	10
06918	RDX	121-82-4	N.D.	2,000	4,800	10
06918	Tetryl	479-45-8	N.D.	2,400	4,800	10
06918	1,3,5-Trinitrobenzene	99-35-4	110,000	1,600	4,800	10
06918	2,4,6-Trinitrotoluene	118-96-7	130,000	1,600	4,800	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	36.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 19:01	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX3 Soil Sample
Kenvil TNT

LL Sample # SW 7196835
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

SAOX3

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	190	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	130	380	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	380	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	380	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	380	1
06918	2,4-Dinitrotoluene	121-14-2	3,000	130	380	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	380	1
06918	HMX	2691-41-0	N.D.	320	960	1
06918	Nitrobenzene	98-95-3	N.D.	130	380	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	380	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	380	1
06918	3-Nitrotoluene	99-08-1	N.D.	320	380	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	380	1
06918	PETN	78-11-5	N.D.	2,600	7,700	1
06918	RDX	121-82-4	N.D.	160	380	1
06918	Tetryl	479-45-8	N.D.	200	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	270	380	1
06918	2,4,6-Trinitrotoluene	118-96-7	9,300	130	380	1
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	21.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 19:43	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX3 Soil Sample
Kenvil TNT

LL Sample # SW 7196836
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

FIOX3

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000	1,200	2,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,800	770	2,300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	770	2,300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	770	2,300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	770	2,300	5
06918	2,4-Dinitrotoluene	121-14-2	18,000	770	2,300	5
06918	2,6-Dinitrotoluene	606-20-2	N.D.	770	2,300	5
06918	HMX	2691-41-0	N.D.	1,900	5,800	5
06918	Nitrobenzene	98-95-3	N.D.	3,500	3,500	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	46,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	770	2,300	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	2,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,900	2,300	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	2,300	5
06918	PETN	78-11-5	N.D.	15,000	46,000	5
06918	RDX	121-82-4	N.D.	960	2,300	5
06918	Tetryl	479-45-8	N.D.	1,200	2,300	5
06918	1,3,5-Trinitrobenzene	99-35-4	80,000	770	2,300	5
06918	2,4,6-Trinitrotoluene	118-96-7	81,000	770	2,300	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	34.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 20:26	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX4 Soil Sample
Kenvil TNT

LL Sample # SW 7196837
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

SAOX4

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	490	J	380	760	2
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	880		250	760	2
06918	1,2-Dinitrobenzene	528-29-0	N.D.		250	760	2
06918	1,3-Dinitrobenzene	99-65-0	280	J	250	760	2
06918	1,4-Dinitrobenzene	100-25-4	N.D.		250	760	2
06918	2,4-Dinitrotoluene	121-14-2	9,700		250	760	2
06918	2,6-Dinitrotoluene	606-20-2	N.D.		250	760	2
06918	HMX	2691-41-0	N.D.		630	1,900	2
06918	Nitrobenzene	98-95-3	N.D.		350	760	2
06918	Nitroglycerin	55-63-0	N.D.		5,100	15,000	2
06918	1-Nitronaphthalene	86-57-7	N.D.		250	760	2
06918	2-Nitrotoluene	88-72-2	N.D.		510	760	2
06918	3-Nitrotoluene	99-08-1	N.D.		630	760	2
06918	4-Nitrotoluene	99-99-0	N.D.		510	760	2
06918	PETN	78-11-5	N.D.		5,100	15,000	2
06918	RDX	121-82-4	N.D.		320	760	2
06918	Tetryl	479-45-8	N.D.		390	760	2
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		850	850	2
06918	2,4,6-Trinitrotoluene	118-96-7	22,000		250	760	2
	Reporting limits were raised due to interference from the sample matrix.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	21.0		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 21:08	James H Place	2
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX4 Soil Sample
Kenvil TNT

LL Sample # SW 7196838
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

FIOX4

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000	1,200	2,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,000	780	2,300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	780	2,300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	780	2,300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	780	2,300	5
06918	2,4-Dinitrotoluene	121-14-2	19,000	780	2,300	5
06918	2,6-Dinitrotoluene	606-20-2	N.D.	780	2,300	5
06918	HMX	2691-41-0	N.D.	2,000	5,900	5
06918	Nitrobenzene	98-95-3	N.D.	3,300	3,300	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	47,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	780	2,300	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	2,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	2,300	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	2,300	5
06918	PETN	78-11-5	N.D.	16,000	47,000	5
06918	RDX	121-82-4	N.D.	980	2,300	5
06918	Tetryl	479-45-8	N.D.	1,200	2,300	5
06918	1,3,5-Trinitrobenzene	99-35-4	87,000	780	2,300	5
06918	2,4,6-Trinitrotoluene	118-96-7	N.D.	780	2,300	5
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	36.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 22:33	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX5 Soil Sample
Kenvil TNT

LL Sample # SW 7196839
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

SAOX5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	290	390	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	290	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	4,600	130	390	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	390	1
06918	HMX	2691-41-0	N.D.	320	970	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	390	1
06918	3-Nitrotoluene	99-08-1	N.D.	320	390	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	390	1
06918	PETN	78-11-5	N.D.	2,600	7,800	1
06918	RDX	121-82-4	N.D.	160	390	1
06918	Tetryl	479-45-8	N.D.	200	390	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,800	130	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	9,900	130	390	1
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	22.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 23:16	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX5 Soil Sample
Kenvil TNT

LL Sample # SW 7196840
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

FIOX5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	21,000	2,500	4,900	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,200	1,600	4,900	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	1,600	4,900	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	1,600	4,900	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	1,600	4,900	10
06918	2,4-Dinitrotoluene	121-14-2	24,000	1,600	4,900	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	1,600	4,900	10
06918	HMX	2691-41-0	N.D.	4,100	12,000	10
06918	Nitrobenzene	98-95-3	N.D.	4,500	4,900	10
06918	Nitroglycerin	55-63-0	N.D.	33,000	98,000	10
06918	1-Nitronaphthalene	86-57-7	12,000	1,600	4,900	10
06918	2-Nitrotoluene	88-72-2	N.D.	3,300	4,900	10
06918	3-Nitrotoluene	99-08-1	N.D.	4,100	4,900	10
06918	4-Nitrotoluene	99-99-0	N.D.	3,300	4,900	10
06918	PETN	78-11-5	N.D.	33,000	98,000	10
06918	RDX	121-82-4	N.D.	2,000	4,900	10
06918	Tetryl	479-45-8	N.D.	2,500	4,900	10
06918	1,3,5-Trinitrobenzene	99-35-4	81,000	1,600	4,900	10
06918	2,4,6-Trinitrotoluene	118-96-7	250,000	1,600	4,900	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	38.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/24/2013 23:58	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-OX6 Soil Sample
Kenvil TNT

LL Sample # SW 7196841
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

--OX6

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,100	1,900	3,800	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,300	1,300	3,800	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	1,300	3,800	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	1,300	3,800	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	1,300	3,800	10
06918	2,4-Dinitrotoluene	121-14-2	13,000	1,300	3,800	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	1,300	3,800	10
06918	HMX	2691-41-0	N.D.	3,200	9,600	10
06918	Nitrobenzene	98-95-3	N.D.	1,300	3,800	10
06918	Nitroglycerin	55-63-0	N.D.	26,000	77,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	1,300	3,800	10
06918	2-Nitrotoluene	88-72-2	N.D.	2,600	3,800	10
06918	3-Nitrotoluene	99-08-1	N.D.	3,200	3,800	10
06918	4-Nitrotoluene	99-99-0	N.D.	2,600	3,800	10
06918	PETN	78-11-5	N.D.	26,000	77,000	10
06918	RDX	121-82-4	N.D.	1,600	3,800	10
06918	Tetryl	479-45-8	N.D.	2,000	3,800	10
06918	1,3,5-Trinitrobenzene	99-35-4	58,000	1,300	3,800	10
06918	2,4,6-Trinitrotoluene	118-96-7	130,000	1,300	3,800	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	21.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/25/2013 00:41	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-OX7 Soil Sample
Kenvil TNT

LL Sample # SW 7196842
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

--OX7

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000	2,100	4,200	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,200	1,400	4,200	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	1,400	4,200	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.	1,400	4,200	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.	1,400	4,200	10
06918	2,4-Dinitrotoluene	121-14-2	19,000	1,400	4,200	10
06918	2,6-Dinitrotoluene	606-20-2	N.D.	1,400	4,200	10
06918	HMX	2691-41-0	N.D.	3,500	11,000	10
06918	Nitrobenzene	98-95-3	N.D.	1,400	4,200	10
06918	Nitroglycerin	55-63-0	N.D.	28,000	84,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.	1,400	4,200	10
06918	2-Nitrotoluene	88-72-2	N.D.	2,800	4,200	10
06918	3-Nitrotoluene	99-08-1	N.D.	3,500	4,200	10
06918	4-Nitrotoluene	99-99-0	N.D.	2,800	4,200	10
06918	PETN	78-11-5	N.D.	28,000	84,000	10
06918	RDX	121-82-4	N.D.	1,800	4,200	10
06918	Tetryl	479-45-8	N.D.	2,100	4,200	10
06918	1,3,5-Trinitrobenzene	99-35-4	57,000	1,400	4,200	10
06918	2,4,6-Trinitrotoluene	118-96-7	140,000	1,400	4,200	10
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	28.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/25/2013 01:23	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002A	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-OX8 Soil Sample
Kenvil TNT

LL Sample # SW 7196843
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

--OX8

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.		9,200	18,000	50
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.		6,200	18,000	50
06918	1,2-Dinitrobenzene	528-29-0	N.D.		6,200	18,000	50
06918	1,3-Dinitrobenzene	99-65-0	N.D.		6,200	18,000	50
06918	1,4-Dinitrobenzene	100-25-4	N.D.		6,200	18,000	50
06918	2,4-Dinitrotoluene	121-14-2	16,000	J	6,200	18,000	50
06918	2,6-Dinitrotoluene	606-20-2	N.D.		6,200	18,000	50
06918	HMX	2691-41-0	N.D.		15,000	46,000	50
06918	Nitrobenzene	98-95-3	N.D.		6,200	18,000	50
06918	Nitroglycerin	55-63-0	N.D.		120,000	370,000	50
06918	1-Nitronaphthalene	86-57-7	N.D.		6,200	18,000	50
06918	2-Nitrotoluene	88-72-2	N.D.		12,000	18,000	50
06918	3-Nitrotoluene	99-08-1	N.D.		15,000	18,000	50
06918	4-Nitrotoluene	99-99-0	N.D.		12,000	18,000	50
06918	PETN	78-11-5	N.D.		120,000	370,000	50
06918	RDX	121-82-4	N.D.		7,700	18,000	50
06918	Tetryl	479-45-8	N.D.		9,400	18,000	50
06918	1,3,5-Trinitrobenzene	99-35-4	51,000		6,200	18,000	50
06918	2,4,6-Trinitrotoluene	118-96-7	460,000		6,200	18,000	50

Reporting limits were raised due to interference from the sample matrix.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	18.8		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	132600012A	09/20/2013 05:32	James H Place	50
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	132600012A	09/17/2013 17:15	Wanda F Oswald	1
00111	Moisture	SM 2540 G-1997	1	13262820002B	09/19/2013 20:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX1W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196844
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/10/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

AOX1W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	28	0.30	0.60	1
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	9.8	0.20	0.60	1
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	0.22 J	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	86	14	40	20
06916	2,6-Dinitrotoluene	606-20-2	N.D.	0.45	1.3	1
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	1.5	1.5	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	38	0.20	0.60	1
06916	2,4,6-Trinitrotoluene	118-96-7	690	4.0	12	20

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 03:19	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 12:31	James H Place	20
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX2W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196845
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

AOX2W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	48	6.0	12	20
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	20	0.20	0.60	1
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	0.72	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	34	0.72	2.0	1
06916	2,6-Dinitrotoluene	606-20-2	N.D.	9.0	26	20
06916	HMX	2691-41-0	N.D.	13	40	20
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	4.0	10	20
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	28	0.20	0.60	1
06916	2,4,6-Trinitrotoluene	118-96-7	1.7	0.20	0.60	1

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 04:02	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 13:14	James H Place	20
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX2W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196846
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

IOX2W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	890	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	330	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	10	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	530	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	230	650	500
06916	HMX	2691-41-0	N.D.	65	200	100
06916	Nitrobenzene	98-95-3	N.D.	21	21	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	140	140	100
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	11	11	1
06916	1,3,5-Trinitrobenzene	99-35-4	5,600	100	300	500
06916	2,4,6-Trinitrotoluene	118-96-7	11,000	100	300	500

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 04:44	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 13:56	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/20/2013 06:57	James H Place	500
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX3W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196847
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

AOX3W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	38	6.0	12	20
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	18	0.20	0.60	1
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	0.63	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	41	0.72	2.0	1
06916	2,6-Dinitrotoluene	606-20-2	N.D.	0.45	1.3	1
06916	HMX	2691-41-0	N.D.	13	40	20
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	12	0.20	0.60	1
06916	2,4,6-Trinitrotoluene	118-96-7	9.0	0.20	0.60	1

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 05:27	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 14:39	James H Place	20
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX3W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196848
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

IOX3W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	560	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	260	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	5.2	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	470	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	230	650	500
06916	HMX	2691-41-0	N.D.	65	200	100
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	11	11	1
06916	2-Nitrotoluene	88-72-2	N.D.	18	18	1
06916	3-Nitrotoluene	99-08-1	N.D.	6.3	6.3	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	7.2	7.2	1
06916	1,3,5-Trinitrobenzene	99-35-4	3,500	20	60	100
06916	2,4,6-Trinitrotoluene	118-96-7	8,500	100	300	500

Reporting limits were raised due to interference from the sample matrix.
The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 06:09	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 15:21	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/20/2013 07:39	James H Place	500
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX4W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196849
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

AOX4W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	46	6.0	12	20
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	18	0.20	0.60	1
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	0.67	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	25	0.72	2.0	1
06916	2,6-Dinitrotoluene	606-20-2	N.D.	0.45	1.3	1
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	2.3	2.3	1
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	25	0.20	0.60	1
06916	2,4,6-Trinitrotoluene	118-96-7	N.D.	0.85	0.85	1

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 06:52	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 16:46	James H Place	20
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX4W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196850
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/11/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

IOX4W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	460	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	240	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	5.1	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	410	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	230	650	500
06916	HMX	2691-41-0	N.D.	65	200	100
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	17	17	1
06916	3-Nitrotoluene	99-08-1	N.D.	5.1	5.1	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	4.5	4.5	1
06916	1,3,5-Trinitrobenzene	99-35-4	3,700	20	60	100
06916	2,4,6-Trinitrotoluene	118-96-7	7,000	100	300	500

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 07:34	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 17:29	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/20/2013 08:21	James H Place	500
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-SAOX5W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196851
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

AOX5W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	76	6.0	12	20
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	26	0.20	0.60	1
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	1.7	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	47	14	40	20
06916	2,6-Dinitrotoluene	606-20-2	N.D.	9.0	26	20
06916	HMX	2691-41-0	N.D.	13	40	20
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	4.0	10	20
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	130	4.0	12	20
06916	2,4,6-Trinitrotoluene	118-96-7	47	4.0	12	20

Reporting limits were raised due to interference from the sample matrix.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 08:59	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 18:11	James H Place	20
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-FIOX5W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196852
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

IOX5W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,400	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	630	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	N.D.	18	18	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	30	60	100
06916	2,4-Dinitrotoluene	121-14-2	2,200	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	450	1,300	1000
06916	HMX	2691-41-0	N.D.	65	200	100
06916	Nitrobenzene	98-95-3	N.D.	300	300	100
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	270	270	100
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	9.0	9.0	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	20	50	100
06916	Tetryl	479-45-8	N.D.	40	60	100
06916	1,3,5-Trinitrobenzene	99-35-4	4,600	200	600	1000
06916	2,4,6-Trinitrotoluene	118-96-7	33,000	200	600	1000

Reporting limits were raised due to interference from the sample matrix.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 09:41	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 18:54	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/20/2013 09:04	James H Place	1000
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-OX6W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196853
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

-OX6W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,800	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	610	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	29	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.30	0.60	1
06916	2,4-Dinitrotoluene	121-14-2	2,100	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	450	1,300	1000
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	98	98	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	20	60	100
06916	2-Nitrotoluene	88-72-2	N.D.	330	330	100
06916	3-Nitrotoluene	99-08-1	N.D.	40	120	100
06916	4-Nitrotoluene	99-99-0	N.D.	60	120	100
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	3.1	3.1	1
06916	Tetryl	479-45-8	N.D.	13	13	1
06916	1,3,5-Trinitrobenzene	99-35-4	5,500	200	600	1000
06916	2,4,6-Trinitrotoluene	118-96-7	21,000	200	600	1000

Reporting limits were raised due to interference from the sample matrix.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 10:24	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 19:36	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/20/2013 09:46	James H Place	1000
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-OX7W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196854
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

-OX7W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,800	30	60	100
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	710	20	60	100
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	31	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	150	300	500
06916	2,4-Dinitrotoluene	121-14-2	2,400	72	200	100
06916	2,6-Dinitrotoluene	606-20-2	N.D.	230	650	500
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	290	290	100
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	20	60	100
06916	2-Nitrotoluene	88-72-2	N.D.	340	340	100
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	60	120	100
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	3,300	20	60	100
06916	2,4,6-Trinitrotoluene	118-96-7	9,700	100	300	500

Reporting limits were raised due to interference from the sample matrix.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 11:06	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 20:18	James H Place	100
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/20/2013 10:29	James H Place	500
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Sample Description: C12C-OX8W Groundwater Sample
Kenvil TNT

LL Sample # WW 7196855
LL Group # 1418744
Account # 06716

Project Name: Kenvil TNT

Collected: 09/12/2013 by RS

Submitted: 09/13/2013 09:05
Reported: 09/25/2013 15:16

Ashland, Inc.
Bldg. 8139-48
500 Hercules Road
Wilmington DE 19808-1599

-OX8W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		ug/l	ug/l	ug/l	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	170	6.0	12	20
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	75	4.0	12	20
06916	1,2-Dinitrobenzene	528-29-0	N.D.	4.0	12	20
06916	1,3-Dinitrobenzene	99-65-0	N.D.	7.1	7.1	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	600	1,200	2000
06916	2,4-Dinitrotoluene	121-14-2	N.D.	1,400	4,000	2000
06916	2,6-Dinitrotoluene	606-20-2	N.D.	900	2,600	2000
06916	HMX	2691-41-0	N.D.	13	40	20
06916	Nitrobenzene	98-95-3	N.D.	400	1,200	2000
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	500	1,500	2000
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.60	1
06916	1,3,5-Trinitrobenzene	99-35-4	11,000	400	1,200	2000
06916	2,4,6-Trinitrotoluene	118-96-7	44,000	400	1,200	2000

Reporting limits were raised due to interference from the sample matrix.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 11:49	James H Place	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/17/2013 21:01	James H Place	20
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	132570006A	09/20/2013 11:11	James H Place	2000
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	132570006A	09/15/2013 16:30	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1418744
Reported: 09/25/13 at 03:16 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 132570006A	Sample number(s): 7196844-7196855								
4-Amino-2,6-Dinitrotoluene	N.D.	0.30	0.60	ug/l	124	130	97-156	5	30
2-Amino-4,6-Dinitrotoluene	N.D.	0.20	0.60	ug/l	90	89	65-107	1	30
1,2-Dinitrobenzene	N.D.	0.20	0.60	ug/l	107	107	90-118	1	30
1,3-Dinitrobenzene	N.D.	0.20	0.60	ug/l	106	105	78-121	0	30
1,4-Dinitrobenzene	N.D.	0.30	0.60	ug/l	102	102	81-108	0	30
2,4-Dinitrotoluene	N.D.	0.72	2.0	ug/l	99	100	71-111	0	30
2,6-Dinitrotoluene	N.D.	0.45	1.3	ug/l	119	115	84-157	3	30
HMX	N.D.	0.65	2.0	ug/l	93	91	73-112	2	30
Nitrobenzene	N.D.	0.20	0.60	ug/l	97	95	71-111	1	30
Nitroglycerin	N.D.	5.2	15	ug/l	95	95	73-116	0	30
1-Nitronaphthalene	N.D.	0.20	0.60	ug/l	105	104	69-125	0	30
2-Nitrotoluene	N.D.	0.25	0.75	ug/l	90	91	74-115	0	30
3-Nitrotoluene	N.D.	0.40	1.2	ug/l	99	99	76-115	0	30
4-Nitrotoluene	N.D.	0.60	1.2	ug/l	96	97	76-120	1	30
PETN	N.D.	6.0	18	ug/l	110	114	73-126	4	30
RDX	N.D.	0.20	0.50	ug/l	97	97	70-117	0	30
Tetryl	N.D.	0.40	0.60	ug/l	98	96	43-133	2	30
1,3,5-Trinitrobenzene	N.D.	0.20	0.60	ug/l	99	102	72-119	3	30
2,4,6-Trinitrotoluene	N.D.	0.20	0.60	ug/l	105	111	75-119	5	30
Batch number: 132600012A	Sample number(s): 7196828-7196843								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	300	ug/kg	114		98-143		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	102		84-115		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	112		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	115		97-119		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	107		83-122		
2,4-Dinitrotoluene	N.D.	100.	300	ug/kg	111		91-112		
2,6-Dinitrotoluene	N.D.	100.	300	ug/kg	106		86-137		
HMX	N.D.	250.	750	ug/kg	89		79-104		
Nitrobenzene	N.D.	100.	300	ug/kg	103		89-107		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	80		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	116		83-122		
2-Nitrotoluene	N.D.	200.	300	ug/kg	96		91-113		
3-Nitrotoluene	N.D.	250.	300	ug/kg	103		88-121		
4-Nitrotoluene	N.D.	200.	300	ug/kg	98		89-119		
PETN	N.D.	2,000.	6,000	ug/kg	112		67-136		
RDX	N.D.	130.	300	ug/kg	104		87-111		
Tetryl	N.D.	150.	300	ug/kg	101		80-112		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	106		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	115		85-122		
Batch number: 13262820002A	Sample number(s): 7196828-7196842								
Moisture					100		99-101		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1418744
Reported: 09/25/13 at 03:16 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 13262820002B	Sample number(s): 7196843								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 132600012A	Sample number(s): 7196828-7196843 UNSPK: 7196828								
4-Amino-2,6-Dinitrotoluene	0*	0*	85-118	0	50				
2-Amino-4,6-Dinitrotoluene	0*	0*	69-113	0	50				
1,2-Dinitrobenzene	0*	336*	80-120	200*	50				
1,3-Dinitrobenzene	0*	0*	89-119	0	50				
1,4-Dinitrobenzene	0*	0*	82-117	0	50				
2,4-Dinitrotoluene	-5220 (2)	-1004 (2)	81-111	28	50				
2,6-Dinitrotoluene	0*	0*	86-114	0	50				
HMX	0*	0*	72-107	0	50				
Nitrobenzene	0*	957*	86-108	200*	50				
Nitroglycerin	0*	0*	73-116	0	50				
1-Nitronaphthalene	0*	0*	89-131	0	50				
2-Nitrotoluene	0*	0*	79-112	0	50				
3-Nitrotoluene	0*	0*	72-119	0	50				
4-Nitrotoluene	0*	0*	90-118	0	50				
PETN	0*	0*	71-133	0	50				
RDX	0*	0*	75-108	0	50				
Tetryl	0*	0*	58-125	0	50				
1,3,5-Trinitrobenzene	0*	0*	58-135	0	50				
2,4,6-Trinitrotoluene	-11517 (2)	21698 (2)	92-114	32	50				
Batch number: 13262820002A	Sample number(s): 7196828-7196842 BKG: 7196834								
Moisture						36.9	36.9	0	5
Batch number: 13262820002B	Sample number(s): 7196843 BKG: 7196843								
Moisture						18.8	17.7	6*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Nitroaromatics/Amines in Water
Batch number: 132570006A

	2-Nitro-m-xylene
7196844	93

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland, Inc. Group Number: 1418744
Reported: 09/25/13 at 03:16 PM

Surrogate Quality Control

7196845	86
7196846	116
7196847	83
7196848	58*
7196849	86
7196850	94
7196851	94
7196852	269*
7196853	313*
7196854	307*
7196855	127*
Blank	99
LCS	91
LCSD	99

Limits: 73-122

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 132600012A

	2-Nitro-m-xylene
7196828	0*
7196829	0*
7196830	92
7196831	105
7196832	0*
7196833	104
7196834	151*
7196835	111
7196836	109
7196837	112
7196838	101
7196839	102
7196840	73
7196841	124
7196842	146
7196843	122
Blank	116
LCS	110
MS	0*
MSD	0*

Limits: 63-150

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

A6716/1418744/7196828-55

ARCADIS
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ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order #:

Send Results to:

Contact & Company Name: Dave Liles/ARCADIS	Telephone: 919-544-4535
Address:	Fax:
City State Zip	E-mail Address:
Project Name/Location (City, State): Kenvil TNT	Project #:
Sampler's Printed Name: Ricky Sams	Sampler's Signature: R Sams

Preservative	6							
Filtered (✓)								
# of Containers	1							
Container Information	9							

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: 60ml Glass
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8330	REMARKS
C12C-SAC	9/9/13				SO	X	Standard TAT
C12C-FIC	9/9/13				SO	X	
C12C-SAC-FL	9/9/13				SO	X	
C12C-SA0X1	9/10/13				SO	X	
C12C-FI0X1	9/10/13				SO	X	
C12C-SA0X2	9/11/13				SO	X	
C12C-FI0X2	9/11/13				SO	X	
C12C-SA0X3	9/11/13				SO	X	
C12C-FI0X3	9/11/13				SO	X	
C12C-SA0X4	9/11/13				SO	X	
C12C-FI0X4	9/11/13				SO	X	
C12C-SA0X5	9/12/13				SO	X	
C12C-FI0X5	9/12/13				SO	X	
C12C-0X6	9/12/13				SO	X	

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: ELLE	Cooler Custody Seal (✓)	Printed Name: Ricky Sams	Printed Name:	Printed Name:	Printed Name: Deborah A Neslund
☒ Cooler packed with ice (✓)	☒ Intact ☐ Not Intact	Signature: R Sams	Signature:	Signature:	Signature: Deborah A Neslund
Specify Turnaround Requirements:	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: ELLE
Shipping Tracking #:	Condition/Cooler Temp: 1.4-2.6	Date/Time: 9/12/13 17:00	Date/Time:	Date/Time:	Date/Time: 9/13/13 0905

A6716 / 1418744 / 7196828-55

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ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order #

Send Results to:

Contact & Company Name:	Telephone:
Dave Liles/ARCADIS	919-544-4535
Address:	Fax:
City State Zip	E-mail Address:
Project Name/Location (City, State): Kenvil TNT	Project #:
Sampler's Printed Name: Ricky Sams	Sampler's Signature: R Sams

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	8330	8330						
						E	E										
								1	1								
						9	10										
C12C-OX7	9/12/13				SO					X							
C12C-OX8	9/12/13				SO					X							
C12C-SAOX1W	9/10/13				W						X						
C12C-SAOX2W	9/11/13				W						X						
C12C-FIOX2W	9/11/13				W						X						
C12C-SAOX3W	9/11/13				W						X						
C12C-FIOX3W	9/11/13				W						X						
C12C-SAOX4W	9/11/13				W						X						
C12C-FIOX4W	9/11/13				W						X						
C12C-SAOX5W	9/12/13				W						X						
C12C-FIOX5W	9/12/13				W						X						
C12C-OX6W	9/12/13				W						X						
C12C-OX7W	9/12/13				W						X						
C12C-OX8W	9/12/13				W						X						

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: 60ml Glass
10. Other: 500ml Glass

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

REMARKS

Standard TAT

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: ELLE	Cooler Custody Seal (✓)	Printed Name: Ricky Sams	Printed Name:	Printed Name:	Printed Name: Deborah A Neslund
X Cooler packed with ice (✓)	X Intact ☐ Not Intact	Signature: R Sams	Signature:	Signature:	Signature: Deborah A Neslund
Specify Turnaround Requirements:	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: ELLE
Shipping Tracking #:	Condition/Cooler Temp: 1.4-2.6	Date/Time: 9/12/13 17:00	Date/Time:	Date/Time:	Date/Time: 9/13/13 0905

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

eurofins | Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Attachment 3

TNT Soil Bioremediation Pilot Study Report

TNT Soil Bioremediation Pilot Study Report

Hercules LLC
Kenvil Works Facility (PI No. 000741)
Kenvil, Morris County, New Jersey

January 2017

TNT Soil Bioremediation Pilot Study Report

Kenvil Works Facility
Kenvil, Morris County, New Jersey

Prepared for:
Hercules LLC

Date:
January 2017

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Attachments

1 Soil Erosion and Sediment Control Plan approved by Morris County Soil Conservation District

2 In-Situ Waste Characterization Memo

3 Analytical Data Packages

Executive Summary

Hercules LLC (Hercules), an indirect, wholly-owned subsidiary of Ashland Global Holdings Inc., performed a field pilot study to evaluate an ex-situ remedial technology to address 2,4,6-trinitrotoulene (TNT) at the former Kenvil Works Facility in Kenvil, New Jersey (the Facility). Selection of the ex-situ technology, bioremediation, was based on a multiyear remedial technology evaluation performed by Hercules. Pilot study objectives included evaluating the cost, effectiveness, and scalability of the remedial technology to determine its applicability for full-scale implementation and identify any improvements that could prove beneficial.

Hercules' initial studies related to TNT and its breakdown products identified native microbial communities in soil and groundwater at the Facility capable of degrading constituent mass. These studies identified source mass reduction in soil as a critical element of a comprehensive TNT Area remedy reliant upon natural attenuation to address groundwater.

Remedial technology evaluations and bench-scale treatability studies identified a combination of ex-situ processes to remove TNT mass from soil. The approach relies on enhancing the native microbial communities to biodegrade TNT and its breakdown products. The conceptual remedy involves soil preparation to reduce TNT grain size and increase surface area to volume ratio, followed by amendment addition to stimulate biodegradation.

This pilot study explored enhanced biodegradation techniques, comparing low-bulking composting with wood mulch (10 percent by volume) and a commercially-available amendment (PeroxyChem's DARAMEND OE® at 2, 3, and 4 percent by weight). The influences of amendment amount, dosing regime (incremental versus one time), and periodic redistribution via mixing, were evaluated.

The soil preparation process proved effective at generating a feed material having the targeted grain size distribution (i.e., $\leq$2mm) to facilitate amendment contact with soil. Study findings providing specific information necessary to optimize the preparation process, spatial requirements, and material handling best practices during design of a full-scale system.

The pilot study demonstrated the effectiveness of bioremediation using DARAMEND OE® to degrade TNT and breakdown products in soil to, or below, cleanup goals in a single field season. The low-bulking compost approach demonstrated an ability to degrade TNT; however, the degradation did not achieve target cleanup goals within a reasonable timeframe (single field season).

Specifically, pilot study results indicate the following:

- The addition of coarse cellulose (wood mulch) did not reduced TNT concentrations in soil to at or below its NRDCSRS, RDCSRS, and IGWSSL within the study period.

- The degradation rates observed over the study period in coarse cellulose trials are insufficient to support a single season remedial effort.

- The addition of DARAMEND OE® reduced TNT concentrations in soil to below its NRDCSRS in each of the DARAMEND OE® trials within the study period.

- The addition of DARAMEND OE® reduced concentrations of TNT, DNTs, and ADNTs in soil to below their respective RDCSRS in the 3 and 4 percent single and cyclical dose trials.

- The addition of DARAMEND OE® reduced concentrations of DNTs in soil to below their respective IGWSSL in the 3 and 4 percent single and cyclical dose trials.

- TNT and ADNT concentrations remained at least one order of magnitude greater than their respective IGWSSL and will be a focal point of the remedial strategy.

- On average, TNT concentrations were reduced by 99 percent in each DARAMEND OE® trial

- Both cyclical and single dose approaches were effective at reducing TNT concentrations to below the NRDCSRS. Soil conditions in the study boxes remained reducing at the end of the study period, and provided more time, further reductions of target constituent concentrations would be expected to occur.

- Soil turnover is not necessary to maintain degradation after the addition of DARAMEND OE®. No substantial differences were noted between single and cyclical turning regimes.

- While both approaches proved effective in reducing target constituent mass, the single dose approach appears more efficient with regards to both time (days to achieve success criteria) and effort (labor) relative to the cyclical dosing method.

- Remedial objectives for the Facility (i.e., reduce TNT, DNT, and ADNT concentrations to at or below NRDCSRS and RDCSRS) could be achieved in a single field season using DARAMEND OE®.

The following table summarizes pilot study findings.

SUMMARY OF FINDINGS *TNT Soil Bioremediation Pilot Study*	DARAMEND OE®			Low-Bulk Composting		
	TNT	DNTs	ADNTs	TNT	DNTs	ADNTs
Effectiveness						
≤NRDCSRS	Y	Y	Y	N	N	N
≤RDCSRS	Y	Y	Y	N	N	N
≤IGWSSL	N	Y	N	N	N	N
Implementability						
Current Site	Y			N		
W/ Modifications	---			Y		
Cost						
Site Preparation	$$			$$$		
$ Amendment/Ton Soil	$60/ton			$10/ton		
No. of Seasons	4-5			10+		

Based on the multiyear study of remedial alternatives and the results of this pilot study, enhanced bioremediation of TNT and breakdown products in Facility soil using DARAMEND OE® at a 3 percent by weight application rate represents the most cost-effective, efficient, and readily-implementable approach.

TNT soil bioremediation is a mass reduction component of a comprehensive remedy for soil and groundwater in the TNT Area. Residual constituent mass (i.e., concentrations greater than IGWSSLs) will be addressed via the lasting effects of the amendment in soil (i.e., DARAMEND OE® continues to support biological breakdown for approximately 5 years). Natural attenuation by native microbial communities will continue following the effective timeframe of DARAMEND OE® and will be the final remedy for soil and groundwater.

1. Introduction

Hercules LLC (Hercules), an indirect, wholly-owned subsidiary of Ashland Global Holdings Inc., performed a field pilot study to evaluate an ex-situ remedial technology to address 2,4,6-trinitrotoulene (TNT) at the former Kenvil Works Facility in Kenvil, New Jersey (the Facility). The ex-situ technology selected in this effort is based on a multiyear remedial technology evaluation performed by Hercules. The purpose of this pilot study was to field verify at reduced scale a safe and cost effective soil remedial technology to address TNT, 2,4/2,6-dinitrotoluene (DNT), and their breakdown products. The objective was to evaluate the cost, effectiveness, and scalability of the remedial technology to determine its applicability for full-scale implementation and identify any improvements that could prove beneficial.

1.1 Overview and Background

Historic process upsets and thermal decontamination of the manufacturing facility in the 1970's introduced solid-phase, crystalline TNT, and to a lesser degree DNT, to the soil surface and shallow subsurface in the former TNT manufacturing area (TNT Area) at the Facility. Subsequent erosion and redeposition of site soils following precipitation events redistributed the TNT, DNT and their breakdown products in the shallow subsurface soil within defined portions of the TNT Area. These soluble materials represent an ongoing source to groundwater. The site and remedial investigations identified TNT and its breakdown products in TNT Area soil and groundwater in the southwestern corner of the Facility.

Hercules studied microbial degradation of TNT and its breakdown products in groundwater in support of a monitored natural attenuation remedy. The findings of those studies indicated that biological breakdown facilitated by the native microbial community was occurring, and identified source mass removal/reduction in soil as a critical element of a comprehensive TNT Area remedy reliant upon natural attenuation to address groundwater.

A bench scale TNT soil separation treatability study conducted in 2013 evaluated the effectiveness of separating solid-phase, crystalline TNT from TNT Area soil. The objective was to determine if it was possible to remove the crystalline TNT from Facility soils so that it could be shipped off-site for destruction with the intention of allowing natural attenuation to address residual soil concentrations. The study results indicated that physical separation processes effectively segregated soil particles by grain size, allowed removal of large crystalline TNT particles, and concentrated residual energetic material in the finer grained fractions (ART & Arcadis, 2013). The study effectively removed TNT from gravel and larger sized soils (i.e., grain size greater than 2 millimeters [mm] in diameter) and concentrated fine TNT particles in the sand and smaller sized soils (grain size less than 2 mm in diameter). The majority of the Facility soils are comprised of poorly sorted glacially derived sediments, and thus the fine

fraction (less than 2 mm diameter) constitutes a large fraction of the soils (up to 65 percent). As such, physical separation remedy was not considered a viable, cost effective remedial technology and was not evaluated further. However, building upon the information gained in this study the following efforts began to evaluate the chemical/biological treatment of TNT and its breakdown products as a key component of the remedial strategy.

With the knowledge that physical processes alone could not achieve the New Jersey Department of Environmental Protection (NJDEP) remediation standards, and that offsite destruction would be very costly, the next phase of the treatability study evaluated chemical oxidation using Fenton's reagent to reduce concentrations of TNT and its breakdown products. The chemical oxidation step achieved the stated objectives; however, an evaluation of full-scale implementation identified the following two conditions that would render the technology undesirable for field implementation:

- Chemical oxidation would consume a substantial quantity of bulk chemicals (i.e., concentrated hydrogen peroxide), requiring an extensive regulatory permitting effort to authorize their storage and use at the Facility.
- Reagent contact occurred in a soil slurry (~15 percent solids), this process required a large volume of water that would require offsite disposal or additional onsite treatment.

Bioremediation is an established remedial technology and has been used by the US Department of Defense (DoD) on a number of TNT remedial projects. Bioremediation enhances and accelerates the biological reduction of nitro-based energetics in soils through anaerobic degradation. A variety of techniques can be used to achieve and maintain soil conditions that facilitate bioremediation; land farming and/or composting represent low-tech options amenable to large field scale implementation. Accelerated breakdown can also be achieved via the addition of commercially-formulated mixtures to enhance specific reactions.

A review of bioremediation scientific literature, DoD reports, and discussions with Alan Seech, Ph.D. of PeroxyChem identified PeroxyChem's DARAMEND OE®[1] as a proven, readily-available amendment that would provide a high probability of achieving the Facility's remedial objectives. DARAMEND OE® is typically blended with soil at a

[1] DARAMEND OE® is a commercially-available soil amendment that integrates slow-released carbon and nutrients with zero-valent iron to stimulate the native microorganisms and degrade organic constituents (PeroxyChem website). Oxygen is consumed in soil via the stimulation of native microorganisms, creating strong reducing (anaerobic) conditions. Zero-valent iron serves as an oxygen scavenger, furthering the anaerobic conditions and yielding redox potential as low as -600 millivolts (mV). DARAMEND OE® is typically added at 0.5 to 5 percent by weight, resulting in minimal soil bulking without altering the physical properties of the soil being treated.

rate of 0.5 to 5 percent by weight to treat TNT and other organic explosives; this low bulking factor also aligns with the Facility's goal of soil reuse onsite.

Previous pilot and full-scale remediation efforts conducted by PeroxyChem at DoD facilities demonstrated that DARAMEND OE® was capable of degrading organic explosives at source area concentrations in Facility soil. DARAMEND OE® has demonstrated reductions of TNT concentrations in soil from greater than 40,000,000 micrograms per kilogram (µg/kg) to less than 10,000 µg/kg. An evaluation of mass distribution of TNT and its breakdown products identified average concentrations of approximately 9,000,000 µg/kg TNT and approximately 1,500,000 µg/kg DNT in TNT Area source areas.

Based on this information, the concept of physical separation was changed to a physical preparation process to prepare the soil (removing soil aggregates over 2 mm in diameter and reducing TNT particles as small as practicable) and maximize the effectiveness of biological degradation. The physical processes (i.e., crushing and sieving) involved in soil preparation will be addressed in a separate document. As such, the pilot study focused on evaluating the effectiveness of DARAMEND OE® alongside other degradation-enhancing amendments (i.e., wood mulch) over the course of a single field season (April to October) in a soil fraction similar to that generated by a full-scale physical preparation process (i.e., less than 2 mm diameter).

The remainder of this document outlines the specific objectives and methods of the study, provides technical details on study implementation, and presents the results of the study.

2. Bioremediation Pilot Study Objectives

The remedial objective is to reduce concentrations of TNT and its breakdown products in soil to concentrations that are below applicable regulatory standards (i.e., NJDEP's Non-Residential and Residential Direct Contact Soil Remediation Standards [NRDCSRS and RDCSRS], and NJDEP's Default and/or Facility-specific Impact to Groundwater Soil Screening Levels [IGWSSL]) and reduce future partitioning to groundwater so that a natural attenuation remedy is appropriate for addressing groundwater in the TNT Area.

To meet this objective, the bioremediation pilot study focused on evaluating:

- The effectiveness of DARAMEND OE® to treat TNT and breakdown products (i.e., DNTs and aminodinitrotoluenes [ADNTs]) in Facility soil

- The influence of different amendment amounts, physical activity levels, and treatment durations needed to effectively reduce TNT concentrations in one field season

- The differences between coarse cellulose composting with wood mulch and treatment via DARAMEND OE®, as both are proven technologies to address TNT in soils employed by the DoD.

2.1 Critical Questions

The pilot study was designed to answer critical questions in the soil bioremediation process specific to the Facility. Answers to these questions will inform additional study and/or design of the full-scale remedy. A number of questions were formulated in the Work Plan and further refined during implementation of the pilot study.

Critical questions include:

- Will DARAMEND OE® enhance degradation of TNT and breakdown product mass in Facility soil to concentrations at or below regulatory standards?

- Will coarse organic matter (i.e., wood mulch) enhance degradation of TNT and breakdown product mass in Facility soil to concentrations at or below regulatory standards?

- Does soil turnover improve degradation rates and efficiency?

- What type of water management is required to maintain soil water content at 80 to 90 percent of water holding capacity?

- How does varying the amount of DARAMEND OE® amendment on a weight/weight (w/w) basis influence TNT degradation?

- Is DARAMEND OE® amendment more effective if added in a single dose at the beginning of the study period or incrementally throughout the study period?

- Will any breakdown products be formed, and remain present, during the process that may influence groundwater quality once the material is returned to excavation site? If so, are they products currently found in groundwater beneath the TNT Area, and how does their persistence and/or toxicity compare to that of TNT?

- Is it more cost effective to use a larger volume of wood mulch at a low unit cost than smaller volume of DARAMEND OE® at a higher unit cost?

- What is an estimated remedial cost per ton of soil?

2.2 Study Variables

Consideration of the objectives and critical questions above identified two primary variables requiring Facility-specific study:

1) Amount of amendment necessary

2) Soil management effort

In combination, these variables have the greatest potential to influence the ability to achieve the remedial goals in a single field season. Optimizing these variables directly relates to potential full-scale implementation, where DARAMEND OE® would represent a large capital cost, composting amendments would generate large material volume increases, and the overall volume of material (TNT soil with amendment) undergoing treatment would require efficient bioremediation to complete the remedy in a reasonable timeframe.

Two approaches for treating soil with DARAMEND OE® have proven effective. The traditional approach involves the incremental introduction of DARAMEND OE® via cycles ranging from 7 to 21 days in length. At the end of each cycle, the soil is turned over and additional DARAMEND OE® introduced. The cumulative amount of DARAMEND OE® added across the cycles typically falls within the 0.5 to 5 percent range. Successful pilot and full-scale demonstrations of the traditional approach were conducted at Joliet Army Ammunition Plant (Illinois), Yorktown Naval Weapons Station (Virginia), Hawthorne Army Depot (Nevada), and Raritan Arsenal (New Jersey). Recent efforts at Tooele Army Depot demonstrated that a single dose treatment with minimal turnover proved as effective as the traditional incremental dosage and turn over approach.

The U.S. Army demonstrated the successful use of composting to treat TNT in soil during pilot studies and full-scale remediation at multiple facilities (Tooele Army Depot, Umatilla Army Depot, Joliet Army Ammunition Plant) (Biocycle, 2006). The composting remedies used a combination of nitrogenous and coarse bulking amendments in a mixture of 70 percent amendment to 30 percent soil. Other studies (In et al., 2007) using sewage sludge proved effective at ratios as low as 33 percent amendment to 67 percent soil.

The pilot study evaluated the effectiveness of both the traditional (incremental) and single dose DARAMEND OE® application methods using varying amounts of the amendment (2, 3, and 4 percent). The study coupled the evaluation of variables related to DARAMEND OE® with composting trials using coarse cellulose matter (i.e., wood mulch) in a low-bulking approach enabling soil reuse onsite and a series of control trials (i.e., no amendment).

3. Bioremediation Pilot Study Implementation

Bioremediation pilot study implementation occurred over the course of 5 months during summer/fall 2015. Site preparation and soil separation began in late June 2015 and concluded in mid-July 2015. Biological activity was monitored from mid-July until October of 2015.

The subsections below describe the chronological phases of work related to study implementation.

3.1 Work Area Preparation

The pilot study was carried out in an area approximately 250 feet by 100 feet in a former scrap material laydown area known as "30-acres" (C13-1) in the footprint of the existing TNT Area groundwater plume. Work surface preparation included clearing of vegetation, grading, placement of a geotextile fabric covered with a minimum of 6 inches of quarry process (QP) material, and installation of soil erosion controls (i.e., silt fence and hay bales) at the work area perimeter. Activities were conducted in compliance with the Soil Erosion and Sediment Control Plan approved by the Morris County Soil Conservation District (Attachment 1). Secondary containment vessels were set up on the work surface beneath/around the wetted process equipment.

Work area preparation also included the siting of eleven watertight, 12-cubic yard (cy), steel roll off containers (study boxes) in which the various treatment regimes were carried out over the course of the study. The study boxes were aligned side by side in an open area where they were subjected to generally the same environmental conditions (e.g., sun, wind, shade, precipitation). Each study box was slightly elevated at one end to facilitate reclamation of excess water that leached from the soil (e.g., after a precipitation event). A slotted PVC pipe with a diameter sufficient to accommodate a submersible pump was placed in the low corner of each study box.

3.2 Material Excavation

Material excavation focused on TNT Area source areas previously used to support the treatability study. Given the larger volume of material necessary to support the pilot study, study preparation considered Resource Conservation and Recovery Act (RCRA) regulations pertaining to the treatment of hazardous waste. Prior to excavation, in-situ material was characterized in accordance with an In-Situ Waste Characterization Plan (Arcadis, 2014), NJDEP Waste Classification Request Form (HWM-009) and the U.S. Environmental Protection Agency's (USEPA's) Six-Step Hazardous Waste Identification Flow Chart (per 40 CFR 261). Characterization aimed to classify in-situ material relative to 40CFR261.24 regulatory levels, such that in-situ materials with potentially hazardous characteristics were not disturbed during excavation. Characterization identified an area of soil with lead concentrations exceeding the

40CFR261.24 regulatory level; this area was excluded from the pilot study excavation plan. Attachment 2 presents the In-Situ Waste Characterization Memo (Arcadis, 2015); the memo includes the In-Situ Waste Characterization Plan as an appendix.

Treatability study results indicated that fines and sand (less than 2 mm) make up approximately 65 percent of the TNT Area source area soil targeted for excavation. The pilot study required approximately 98 cy of post-processed ($\leq$2 mm) soil (11 study boxes, 8 cy per box, 10 percent contingency). As such, approximately 250 cy of material was excavated and stockpiled in the work area to support the pilot study.

3.3 Soil Preparation

ART Engineering LLC designed a multi-step system that combined oversized (>2 inch) dry screening with wet screening to isolate the $\leq$2 mm soil fraction supporting the study. This system was procured, assembled and tested at ART's facility prior to shipment to the Facility. Upon reaching the Facility, the soil preparation system was assembled on the work surface within secondary containment (where appropriate). Additional support equipment (e.g., generator) was rented locally. A NJ-licensed electrician was onsite to make the appropriate electrical connections. The Facility's water supply wells provided process water. Truck-mounted tanks were used to transfer water from a hydrant to various tanks staged in the work area.

Appendix A provides a layout diagram of the pilot scale soil preparation plant. Appendix B presents a soil preparation process flow sheet and mass balance diagram. A photograph log documenting the soil separation and management process is included as Appendix C.

Prior to soil preparation, PeroxyChem's soil laboratory in Ontario, Canada tested a composite soil sample collected from the excavation areas to evaluate the potential influence of the soil's geochemical properties on the pH of process water and soil moisture, and the ability of DARAMEND OE® to establish strong reducing conditions in a potentially low pH (less than 5) environment. The tests indicated that strong reducing conditions could be rapidly achieved. ART and PeroxyChem discussed pH adjustment during the wetted separation process and agreed that a pH adjustment step would minimize pH-related concerns and increase the potential for success via the elimination of an unknown/variable. To this end, the project team maintained process water pH levels between 6.5 and 7.2 though out the preparation process via the additional of hydrated lime to the process water recirculation tank (Tank B). Process water contact with soil effectively raised feed material pH.

Following initial testing and production runs using the process outlined in Appendix B, the field team evaluated the effectiveness of the sand screw for transporting settled fines. The length of time it took for the fines to settle out precluded effective use of the sand screw. In response, the settled fines were pumped directly from the low end of

the sand screw (sump) to a study box for dewatering; while the sand screw was used to dewater and discharge the sand fraction into the same dewatering study box. Samples of the sand screw discharge (sand fraction), settled fines, and combined sand and fines fractions were collected and submitted to Eurofins Lancaster Laboratories, a NJ-certified lab located in Lancaster Pennsylvania (Eurofins), for analysis.

Analytical parameters included:

- Semivolatile Organic Compounds (SVOCs) via USEPA SW-846 8270C
- Nitroaromatics and Nitroamines via USEPA SW-846 8330
- Target Analyte List (TAL) Metals via USEPA SW-846 6010B
- Mercury via USEPA SW-846 7471A
- Total Organic Carbon (TOC) via Lloyd Kahn Method
- Grain size distribution via Sieve and Hydrometer

These data were used to evaluate the distribution of TNT among the two fractions (building on the treatability study data), and evaluate constituent heterogeneity (in combination with the baseline sampling conducted in each study box – see *Study Box Monitoring and Management* section below). Table 1 presents analytical results for these process samples.

Once in the dewatering study box, a submersible pump within a perforated casing was used to further dewater the feed material. Field trials indicated that manipulating the feed material in the dewatering study box with the excavator bucket expedited dewatering. Following dewatering, the material was moved via excavator bucket to one of eleven study boxes staged in the work area.

Using the process outlined above, the pilot plant generated 108 cy of feed material over the course of 10 days of operation. The feed material was evenly distributed among eleven study boxes to a depth of approximately 2.5 feet (~8 cy), with the remaining feed material staged in other study boxes for potential future study. Process water was collected and staged in process tanks for use during the monitoring and management phase of the study. Study boxes were dewatered to achieve a target moisture content and appearance. Water pumped from the study boxes was returned to the process water tank. Following completion of the soil preparation process, the pilot plant equipment was decontaminated, covered, and stored in the work area for future use during full-scale operation.

3.4 Study Box Monitoring and Management

Soil preparation generated eleven study boxes of feed material, each containing approximately 8 cy of material similar in physical and chemical composition and moisture content. Each of the study boxes (A through K) represented a unique

treatment regime as outlined in Table 2. The regimes represent combinations of variables (i.e., moisture, amendment, physical manipulation/turnover) facilitating evaluation of study objectives relative to established controls.

Prior to initiating the treatment regime in each study box, a baseline sampling event was conducted. The baseline sampling event collected four composite samples from each study box to establish baseline data for each study box as well as assess the variability of constituent concentrations and physical parameters within the feed material. Each container was visually divided into quadrants approximately 4-feet wide and 6-feet long. In-situ field measurements and soil samples for laboratory analysis were collected from four random locations and depths within each quadrant. In-situ field measurements were averaged to calculate a value for each quadrant. Soil samples from each quadrant were composited in the field resulting in four composite samples per study box and a total of 44 samples. This more rigorous baseline sampling protocol was also used at the end of the 4th treatment cycle (estimated timeframe for meeting RDCSRS targets) and at the end of the 6th cycle (end of active management study period).

A less rigorous approach was used to monitor interim progress at the end of the 1st, 2nd, and 3rd cycles, and at 30-days post study, focusing on TNT and its degradation products. Using this approach, the boxes were visually divided into four quadrants and a single discrete grab sample was collected from each quadrant. These grab samples were composited in the field and submitted for the laboratory as a single composite sample representative of that study box. One composite sample per box was collected for a total of eleven samples per sampling event.

Field measurements, collected using in-situ field probes, included:

- pH
- moisture (visual inspection)
- temperature (°C)
- redox potential / ORP (mV)

Discrete grab soil samples of approximate equal weight were collected using disposable acetate core tubes or plastic scoops from the same sample locations as in-situ measurements. The use of the core tubes enabled sample collection from representative depths within each box. Samples collected using cores were field composited to generate a sample representative of the quadrant (or study box) for laboratory analysis.

Laboratory analyses included:

- SVOCs via USEPA SW-846 8270C
- Nitroaromatics and Nitroamines via USEPA SW-846 8330
- TAL Metals via USEPA SW-846 6010B
- Mercury via USEPA SW-846 7471A
- TOC via Lloyd Kahn Method

Samples for laboratory analysis were sent via lab-provided courier service to Eurofins. Results reported for Methods 8270C and 8330 included tentatively identified compounds (TICs) and complete chromatograms to facilitate tracking of degradation products beyond those on the reported analyte lists. Table 3 presents baseline in-situ field measurements. Table 4 presents baseline sampling analytical results. Analytical data packages are presented as Attachment 3.

Field data, laboratory sample information and visual observations were recorded on field data sheets (Appendix D).

Following the baseline sampling event, each study box was prepared for its unique treatment regime. A small excavator incorporated solid amendments (i.e., DARAMEND OE® or hardwood mulch) into the study box soil. The required amount of amendment was placed on top of the soil in the study box and the articulating bucket arm of an excavator sequentially turned over the soil throughout the study box until the material was visually distributed throughout the soil. Throughout the study period, boxes were turned using the same effort based on minutes of mixing/box with the mini-excavator.

Biological degradation occurs within wetted interstitial space among soil particles. As such, soil moisture management is crucial to successful degradation. Early literature review and conversation with Dr. Seech indicated keeping the soil moist but not overly wet would be critical in the success of the bioremediation pilot study. Following the blending of amendments, the study boxes were watered/dewatered to between 80 and 90 percent of the soil's water holding capacity (WHC). The WHC was qualitatively evaluated using visual assessment of each study box. Dr. Seech instructed the project field lead to visually inspect each box ensuring appropriate moisture content when the soil surface "glistened, resembling oatmeal". A small amount of standing puddled water was considered acceptable but thicker layers of overlying water that may have been present following precipitation events were removed via submersible pump during the pilot study.

Table 2 summarizes the treatment regimes by study box. Treatment regimes included:

Control Trials

Study Box A – no amendment, no water management, turned over on Study Day 1

Study Box B – no amendment, maintained at 80 to 90 percent WHC, turned over on Study Day 1 and on Study Day 71 (after 5th cycle)

Study Box C – no amendment, maintained at 80 to 90 percent WHC, cyclical turnover (Study Days 1, 15, 29, 43, 57, and 71)

DARAMEND OE® – Cyclical Dosing Trials

Study Box D – DARAMEND OE® added incrementally at 4 percent by weight

Study Box E – DARAMEND OE® added incrementally at 3 percent by weight

Study Box F – DARAMEND OE® added incrementally at 2 percent by weight

Each study box was maintained at 80 to 90 percent WHC and turned over at the beginning of each cycle following application of amendment (Study Days 1, 15, 29, 57, and 71) and turned over without the application of amendment on Study Day 43.

DARAMEND OE® – Single Dosing Trials

Study Box G – DARAMEND OE® added at 4 percent by weight on Study Day 1

Study Box H – DARAMEND OE® added at 3 percent by weight on Study Day 1

Study Box I – DARAMEND OE® added at 2 percent by weight on Study Day 1

Each study box was maintained at 80 to 90 percent WHC and turned over on Study Day 1 to incorporate amendment and again on Study Day 71 (after 5th cycle).

Coarse Cellulose Composting Trials

Study Box J – Hardwood mulch added at 10 percent by volume on Study Day 1, maintained at 80 to 90 percent WHC, cyclical turnover (Study Days 1, 15, 29, 43, 57, and 71)

Study Box K – Hardwood mulch added at 10 percent by volume on Study Day 1, maintained at 80 to 90 percent WHC, turned over on Study Day 1 to incorporate amendment and again on Study Day 71 (after 5th cycle)

Active management of the study boxes continued for six 14-day cycles (84 days total) consistent with the scope and schedule defined in Table 5. Field measurements and samples for laboratory analysis were collected throughout the study period in accordance with Table 5. An additional sampling event occurred 30 days beyond the end of the sixth cycle (Study Day 114) to evaluate ongoing degradation without active management (i.e., turnover, WHC maintenance).

Tables 3 and 4 summarize field measurements (i.e., pH, redox potential, temperature, and soil moisture) and laboratory analytical data, respectively, generated during the pilot study. Data were uploaded to the Facility's EQuIS database. Analytical data packages are presented as Attachment 3.

4. Bioremediation Pilot Study Findings

Specific results from the pilot study are presented below in the context of the critical questions posed at the beginning of this document. Field measurements for pH, redox potential, temperature, and soil moisture are referred to inside this discussion and are included in Exhibit D for reference.

Tables 3, 4, and 6 present field and laboratory analytical results collected during the study period. Table 4 presents a summary of target constituent analytical results by treatment regime and percent attainment of associated remedial targets (i.e., NRDCSRS, RDCSRS, IGWSSL, and Facility-specific remediation goals provided by NJDEP). Table 6 presents a summary of all analytical data collected during the study. Figures 1 through 9 present a series of graphs illustrating the study results. These tables and figures are referenced accordingly in the discussion of the results that follows.

4.1 Results

4.1.1 Baseline Sampling Event

Baseline data for target constituents were collected from each study box prior to adding amendments. For the SW846 8330 E&E analysis, the project team expressed concerns to the laboratory staff regarding the potential presence of one or more crystalline TNT particles in the soil aliquot used for sample extraction. The parties agreed to extract from a larger sample aliquot than that for the standard extraction process specified in the laboratory's 8330 analytical procedure in an effort to reduce heterogeneity across the study boxes. The use of a larger sample aliquot un-expectedly led to an underestimation of the mass of 8330 analyte list target constituents (TNT and ADNTs) in the study boxes. This process was repeated on the samples collected following the end of the 1st cycle (Study Day 14). Upon recognition that the underestimation had occurred, the project team and analytical laboratory agreed to analyze the remainder of the study samples using the standard extraction technique for the 8330 analysis.

The Baseline and End of 1st Cycle data from the 8330 analysis were discarded based on the underestimation. In the absence of these data, and acknowledging the need for baseline data to evaluate effectiveness, time series values representing Study Boxes A, B and C were averaged to yield TNT and ADNT concentrations representative of the combined control dataset. These data were used as surrogate baseline values for tracking study performance. DNT analytical results from the SW846 Method 8270C analysis were not influenced by the 8330 extraction procedure issues, and thus study box-specific data exists and is used to track study performance associated with these constituents.

Average baseline concentrations of TNT and ADNTs are presented in Table 4 as well as below in comparison to NJDEP comparison criteria.

Baseline Data Summary					
	2,4,6-TNT	2,4-DNT	2,6-DNT	2-A-4,6-DNT	4-A-2,6-DNT
Average Concentration	2,170,833	908 – 2,850*	152 – 798*	27,009	33,787
NRDCSRS	95,000	3,000	3,000	61,000	61,000
RDCSRS	21,000	700	700	4,700	4,700
IGWSSL	200	700	500	400	300

* Study box specific data exists (Table 4), range of values shown

Values presented in micrograms per kilogram (µg/kg)

4.1.2 Control Trials (Study Boxes A through C)

Control trial treatment regimes are outlined in Section 3.4 and summarized in Table 2. Analytical results for control trials are presented in Table 4, and on Figures 1, 3, 4, 7, 8, and 9.

These results indicate stable concentrations of TNT, DNTs and ADNTs in each of the control boxes. Control boxes include a static control that was turned on Study Day 1, but not mixed again or watered during the study cycle (Box A), a control box where the WHC was maintained at approximately 85% and turned on Study Days 1 and 71 only (Box B) and a control box where WHC was maintained and the soil was turned cyclically on Study Days 1, 15, 29, 43, 57, and 71. Although the mixing frequency was different in the three boxes, TNT, DNT and ADNT concentrations remained stable and similar across the three controls. These results indicate that water management and mixing frequency variables alone do not substantially influence degradation of nitrotoluenes in soil.

4.1.3 Cyclical Dose DARAMEND OE® Trials (Study Boxes D through F)

Cyclical dose DARAMEND OE® treatment regimes are outlined in Section 3.4 and summarized in Table 2. Analytical results for cyclical dose trials are presented in Table 4, and on Figures 2, 3, 4, 7, 8, and 9. Results of cyclical dose trials are summarized in the following table.

DARAMEND OE® – Cyclical Dose Trail Results Summary					
Trial/Constituent		Total Concentration Reduction (%)	Final Concentration Less Than		
			NRDCSRS	RDCSRS	IGWSSL
Study Box D (4% w/w)	2,4,6-TNT	99	X	X	
	2,4-DNT	76	X*	X	X
	2,6-DNT	80	X*	X*	X
	2-A-4,6-DNT	91	X*	X	
	4-A-2,6-DNT	91	X*	X	
Study Box E (3% w/w)	2,4,6-TNT	99 (a)	X (a)		
	2,4-DNT	77	X*	X	X
	2,6-DNT	64	X*	X*	X
	2-A-4,6-DNT	86	X*	X	
	4-A-2,6-DNT	89	X*	X	
Study Box F (2% w/w)	2,4,6-TNT	99	X	X	
	2,4-DNT	62	X*		
	2,6-DNT	76	X*	X*	
	2-A-4,6-DNT	74	X*		
	4-A-2,6-DNT	75	X*		

(a) The TNT concentration increased by an order of magnitude between the end of the study and the 30-day post study sample period.

* Baseline concentration less than regulatory standard

These results indicate:

- Order(s) of magnitude decreases to TNT, DNT, and ADNT concentrations by the end of the study (Study Day 84).
- The 4 percent trial (Box D) provided the greatest reduction in TNT, DNT, and ADNT concentrations. Concentrations for each constituent were reduced below NRDCSRS and RDCSRS; and below IGWSSL for DNTs (Figure 2).
- Each cyclical dosing trial yielded TNT, DNT and ADNT concentrations less than their respective NRDCSRS at the end of the study period (Figures 2, 3, and 4).
- TNT degradation resulted in a transient increase in ADNT concentrations at the end of the second cycle (Study Day 28) in each trial (Boxes D, E, and F); however,

ADNTs degraded to concentrations less than NRDCSRS throughout the remainder of the study period (Figure 2 and Table 4).

- TNT, DNT and ADNT concentrations decreased to less than RDCSRS in the 4 percent trial (Box D), for all but TNT in the 3 percent trial (Box E), and for only TNT and 2,6-DNT in the 2 percent trial (Box F). Although the RDCSRS for TNT wasn't achieved in the 3 percent trial at the end of the study period, interim TNT monitoring results fell below the RDCSRS on two occasions (Table 4).

- DNT concentrations decreased to less than IGWSSL during the course of the study in each of the cyclical dose trials, with DNT concentrations at the end of the study period remaining below IGWSSL for all but 2,4-DNT in the 3 percent trial (Box F). 2,4-DNT concentrations decreased by an order of magnitude over the study period, while 2,6-DNT concentrations decreased between 80 percent (4 percent trial) and 60 percent (2 percent trial). TNT and ADNT concentrations also demonstrated order of magnitude reductions; however, TNT and ADNT concentrations at the end of the study period remained at least one order of magnitude greater than their corresponding IGWSSL.

4.1.4 Single Dose DARAMEND OE® Trials (Study Boxes G through I)

Single dose DARAMEND OE® treatment regimes are outlined in Section 3.4 and summarized in Table 2. Analytical results for single dose trials are presented in Table 4, and on Figures 3, 4, 5, 7, 8, and 9. Results of single dose trials are summarized in the following table.

DARAMEND OE® – Single Dose Trail Results Summary					
Trial/Constituent		Total Concentration Reduction (%)	Final Concentration Less Than		
			NRDCSRS	RDCSRS	IGWSSL
Study Box G (4% w/w)	2,4,6-TNT	99	X	X	
	2,4-DNT	82	X*	X	X
	2,6-DNT	84	X*	X	X
	2-A-4,6-DNT	89	X*	X	
	4-A-2,6-DNT	91	X*	X	
Study Box H (3% w/w)	2,4,6-TNT	99	X	X	
	2,4-DNT	75	X*	X	X
	2,6-DNT	58	X*	X*	X
	2-A-4,6-DNT	83	X*	X	
	4-A-2,6-DNT	83	X*		
Study Box I (2% w/w)	2,4,6-TNT	99	X		
	2,4-DNT	49	X*		
	2,6-DNT	39	X*	X*	X*
	2-A-4,6-DNT	79	X*		
	4-A-2,6-DNT	73	X*		

* Baseline concentration less than regulatory standard

These results indicate:

- Order(s) of magnitude decreases in TNT, DNT, and ADNT concentrations by the end of the study (Study Day 84).

- The 4 percent trial (Box G) provided the greatest reduction in TNT, DNT, and ADNT concentrations. Concentrations for each constituent in this trial were reduced below NRDCSRS and RDCSRS; and below IGWSSL for DNTs (Figure 5).

- Single dose trials yielded TNT, DNT and ADNT concentrations less than their respective NRDCSRS at the end of the study period (Figures 3, 4, and 5).

- Target constituent concentrations were reduced to less than RDCSRS in the 4 percent trial (Box G), for all but 4-A-2,6-DNT in the 3 percent trial (Box H), and for 2,6-DNT only in the 2 percent trial (Box I, baseline 2,6-DNT concentration was less than RDCSRS).

- DNT concentrations were reduced to less than IGWSSL during the course of the study in each of the single dose trials, with the exception of 2,4-DNT in the 2 percent trial (Box I). 2,4-DNT concentrations decreased by an order of magnitude over the study period, while 2,6-DNT concentrations decreased between 80 percent (4 percent trial) and 40 percent (2 percent trial). TNT and ADNT concentrations demonstrated similar order of magnitude reductions; however, TNT and ADNT concentrations at the end of the study period remained at least one order of magnitude greater than their corresponding IGWSSL.

- TNT degradation resulted in a transient increase in ADNT concentrations at the end of the second cycle (Study Day 28) in the 3 and 2 percent trials (Boxes H and I); while ADNT concentrations decreased throughout the study period in the 4 percent trial (Box G). Although ADNTs were likely generated in the 4 percent single dose trial (Box G), an increase in concentration is not observed suggesting the ADNTs were degraded at a rate similar to their production.

- The reduction in concentration was slower in the 2 percent trial (Box I) than the higher doses (Boxes G and H) with much of the reduction occurring after the box was turned over at Study Day 57. This suggests that the reduction reaction was limited by the amount of DARAMEND OE® in contact with soil grains and mixing improved contact. The concentration of TNT was reduced to below the NRDCSRS by Study Day 70. TNT remained present at a concentration slightly above the RDCSRS at the end of the study period.

4.1.5 Wood Mulch Trials (Study Boxes J and K)

Coarse cellulose composting treatment regimes are outlined in Section 3.4 and summarized in Table 2. Analytical results for coarse cellulose trials are presented in Table 4, and on Figures 3, 4, and 6. Results of the coarse cellulose trials are presented in the following table.

Coarse Cellulose Composting Trail Results Summary					
Trial/Constituent		Total Concentration Reduction (%)	Final Concentration Less Than		
			NRDCSRS	RDCSRS	IGWSSL
Study Box J (cyclical turn)	2,4,6-TNT	36			
	2,4-DNT	(84)	*		
	2,6-DNT	(551)	X*	*	*
	2-A-4,6-DNT	(33)	X*		
	4-A-2,6-DNT	(10)	X*		
Study Box K (single turn)	2,4,6-TNT	45			
	2,4-DNT	(64)	X*		
	2,6-DNT	(80)	X*	*	*
	2-A-4,6-DNT	(33)	X*		
	4-A-2,6-DNT	(69)	X*		

* Baseline concentration less than regulatory standard

These results indicate:

- TNT concentrations at the end of the study period demonstrated an overall decrease; however, results throughout the study period did not indicate a reducing trend, with concentrations increasing and decreasing sporadically throughout. Despite this variability, TNT concentrations remained orders of magnitude greater than the NRDCSRS at the end of the study period (Figure 6).

- DNT concentrations appear to increase over the duration of the study. This trend may be attributable to biological degradation of TNT yielding DNT and its resistance to further reduction in this trial.

- ADNT concentrations increased throughout much of the study period, indicating that biological degradation of TNT was occurring. The 30-day post-study sampling results (Study Day 114) indicated a decrease in ADNT concentrations (Table 4).

This decrease may indicate that both formation and subsequent degradation of ADNTs was underway. The duration of the study period, corresponding to a single field season, was insufficient to fully evaluate this potential trend.

4.1.6 Notable Observations

Notable observations beyond the data- and study box-specific findings noted above may be useful as they relate to decision making regarding large scale soil remediation, and include:

- DNT concentrations present in prepared soil were at or below the NRDCSRS at the beginning of the study period (as footnoted in the tables presented in Sections 4.1.3 through 4.1.5). Although some individual analytical samples had concentrations greater than NRDCSRS, as a whole, DNT concentrations remained at or below the NRDCSRS throughout the study period in each trial. DNT concentrations were reduced below their RDCSRS and IGWSSL in the 4 percent and 3 percent DARAMEND OE® trials (Study Boxes D, E, G, and H).

- ADNT concentrations present in prepared soil were at or below the NRDCSRS at the beginning of the study period (as footnoted in the tables presented in Sections 4.1.3 through 4.1.5). ADNT concentrations increased in most trials as TNT was biologically degraded to ADNTs. In the DARAMEND OE® trials, this increase in ADNTs was followed by their degradation (Study Boxes D, E, F, H, and I), with the exception of the 4 percent single dose trial (Box G), where no increase in ADNT concentrations was observed and both TNT and ADNT concentrations decreased in parallel (Table 4).

- Variability in analytical data should be considered when using sampling results for the attainment of success criteria. Heterogeneity of the soil mixture may be responsible for a portion of the variability in these results; with the incorporation of wood mulch likely exacerbating this effect. The physical manipulation of the material redistributes the crystalline solid throughout the mixture.

    - Order of magnitude differences in analytical results from subsamples sharing a common composite parent sample are well-documented in soil samples containing crystalline solid TNT (Crockett et al, 1998; Jenkins et al, 1998). These factors likely influenced study results. Variability among results within each trial is evident in the time-series datasets (Table 4), and believed to be an artifact of sample heterogeneity.

- Concentrations of lead increased consistently in soil treatments over time (Table 4). The average lead concentration from all boxes at the beginning of the study was ~124,000 µg/kg (range of 100,000 to 165,000 µg/kg) while the average concentration at the end of the study was ~241,000 µg/kg (range of 221,000 to

277,000 µg/kg). Although an increase in concentration was noted, soil lead concentrations remained below the RDCSRS of 400,000 µg/kg. It is unclear what caused this apparent increase in lead concentrations in soil.

4.2 Critical Questions

Will DARAMEND OE® enhance degradation of TNT and breakdown product mass in Facility soil to concentrations at or below regulatory standards?

- The addition of DARAMEND OE® reduced concentrations of TNT, DNTs, and ADNTs in soil to below their respective NRDCSRS in each of the DARAMEND OE® trials (2, 3, and 4 percent; cyclical and single dose).

- The addition of DARAMEND OE® reduced concentrations of TNT, DNTs, and ADNTs in soil to below their respective RDCSRS in the 4 percent single and cyclical dose trials.

- The addition of DARAMEND OE® reduced concentrations of DNTs in soil to below their respective IGWSSL in the 3 and 4 percent single and cyclical dose trials.

- TNT and ADNT concentrations remained at least one order of magnitude greater than their respective IGWSSL and will be a focal point of the remedial strategy.

- On average TNT concentrations were reduced by 99 percent in each DARAMEND OE® trial (Table 4); however, compliance will be evaluated against NJDEP's comparison criteria . Figures 7 through 9 illustrate the percent reduction efficiency for TNT and ADNTs, respectively.

Will coarse organic matter (i.e., wood mulch) enhance degradation of TNT and breakdown product mass in Facility soil to concentrations at or below regulatory standards?

- The addition of coarse cellulose did not reduced TNT concentrations in soil to at or below its NRDCSRS in either trial (cyclical and single turning) within the study period.

- DNT and ADNT concentrations generally increased through the early part of the study period as TNT degraded, with a decreasing trend towards the end of the study period. With the exception of 2,4-DNT, DNT and ADNT concentrations decreased to below their respective NRDCSRS in both trials by the end of the study period. However, DNT and ADNT baseline concentrations were also below NRDCSRS.

- The addition of coarse cellulose did not reduce TNT, DNT, and ADNT concentrations in soil to below their respective RDCSRS and IGWSSL within the study period.

- The degradation rates observed over the study period in coarse cellulose trials are insufficient to support a single season remedial effort.

Is soil turnover required to achieve degradation?

- Soil turnover is not necessary to maintain degradation after the addition of DARAMEND OE®. Decreasing TNT (and metabolite) concentrations and strong reducing conditions were noted in each study box where DARAMEND OE® was added. No substantial differences were noted between single and cyclical turning regimes (Table 2, 3b, 4).

- Soil turnover in the cyclical turn coarse cellulose trial resulted in weaker reducing conditions relative to the single turn trial. The stronger reducing conditions in the single turn trial probably facilitated degradation of TNT to ADNTs.

What type of water management is required to maintain soil water content at 80 to 90 percent of WHC?

- The field management of water in the study boxes demonstrated that maintaining the soil at the target WHC is achievable, and provided information useful in planning the full-scale remedy. During the study period (July 2016 to October 2016) soil moisture levels were maintained at 80 to 90 percent of the WHC. The soil in the study boxes was exposed to the elements (e.g., sun, wind, precipitation) and the field team added or removed water from the water-tight boxes in anticipation of and response to weather at the Facility. Observations and activities related moisture in each study box are presented in Appendix D.

- The inability for the study boxes to self-drain in response to precipitation events likely underestimated the frequency at which the boxes required the addition of water. Freely draining piles at full-scale will likely require more routine watering to maintain target moisture levels.
- The grain size distribution of the material (mixture of sands and silt) will allow water to freely drain through stockpiled material at full-scale and dictate the configuration of the soil treatment cell.

How does varying the amount of DARAMEND OE® amendment on a weight/weight (w/w) basis influence TNT degradation?

- TNT, DNT, and ADNT concentrations decreased to less than their NRDCSRS and RDCSRS in the 4 percent DARAMEND OE® cyclical and single turn trials during the study period (Table 4).

- TNT, DNT, and ADNT concentrations decreased to less than NRDCSRS, but did not consistently meet their respective RDCSRS in the 3 percent and 2 percent DARAMEND OE® trials during the study period (Table 4). Decreasing trends approaching the RDCSRS were observed in these trials.

- DNT concentrations decreased to less than their IGWSSL in the 4 percent and 3 percent DARAMEND OE® trials during the study period (Table 4). Decreasing trends were observed in the 2 percent trials.

- TNT and ADNT concentrations remained order(s) of magnitude greater than their IGWSSL in each DARAMEND OE® trial.

- Overall, the higher percentage DARAMEND OE® trials demonstrated more rapid and complete degradation of TNT, DNT, and ADNTs.

Is DARAMEND OE® *more effective if added in a single dose at the beginning of the study or incrementally throughout the study period?*

- Both cyclical and single dose approaches were effective at reducing TNT concentrations to below the NRDCSRS. Soil conditions in the study boxes remained reducing at the end of the study period, and provided more time, further reductions of target constituent concentrations would be expected to occur.

- Redox measurements were collected in-situ at the end of each cycle. No differences in reducing conditions were noted between boxes that were stirred only once versus boxes that were stirred at each cycle.

- The 4 percent single dose trial was the only trial that did not generate ADNT concentrations greater than NRDCSRS during the TNT degradation process. The 4 percent cyclical dose trial, as well as the 3 percent cyclical and single dose trials, demonstrated an increase in ADNT concentrations at the end of the first cycle. These concentrations decreased to ranges similar to those observed in the 4 percent single dose trial through the remainder of the study period.

- While both approaches proved effective in reducing target constituent mass, the single dose approach appears more efficient with regards to both time (days to achieve success criteria) and effort (labor) relative to the cyclical dosing method.

Will any breakdown byproducts be formed, and remain present, during the process that may influence groundwater quality?

- Degradation of ADNTs to diaminonitrotoluenes (DANTs) and triaminotoluenes (TATs) likely occurred, although these breakdown products

were not part of the analytical monitoring suite and are not regulated by NJDEP or USEPA. Ahmad and Hughes (2000) document these biodegradation pathways and products. Samples will be collected from the most successful trials and will be evaluated for DANTs and TATs.

- Laboratory chromatograms from pilot study soil samples were reviewed to evaluate the potential presence and degradation of intermediary breakdown products not included in a standard list of analytes. The results of the chromatogram evaluation did not identify any accumulation of breakdown products that would alter the conclusions of this study. Long chain fatty acids were identified in the chromatogram review indicating some degree of complete degradation is occurring.

Is it more cost effective to use a larger volume of wood mulch at a low unit cost than smaller volume of DARAMEND OE® at a higher unit cost?

Coarse Cellulose

- While raw material costs per unit (T) are lower for coarse cellulose, the apparent timeframe for degradation will last longer than a single field season and overall costs are similar to DARAMEND OE®.

- The low-bulking (10 percent [v/v]) wood mulch approach proved unsuccessful at meeting NJDEP remediation goals in the study period, with signs that degradation may occur over a longer timeframe.

- Traditional composting studies targeting TNT in soil have relied on amendment percentages ranging from 33 to 70 percent by volume. Increasing wood mulch volumes to this range would increase material costs by a factor of 4 to 7 times and require management (or disposal) of the excess material that would not fit back in the excavation.

- As evaluated in the pilot study (10 percent v/v), the unit cost using coarse cellulose is $10 per ton of soil. Using traditional composting studies (33 to 70 percent compost), unit costs range from $33 to $70 per ton of soil. Unit costs are for amendment only and based on 100,000 tons of soil requiring treatment.

- Additional factors include: larger infrastructure (e.g., laydown and staging pads); bulk wood mulch sourcing, procurement and delivery; and longer management and monitoring periods.

DARAMEND OE®

- The pilot study demonstrated the effectiveness of DARAMEND OE® at a 3 percent (w/w) application rate to achieve remedial goals within a single field season.

- Existing facility infrastructure is capable of storing a single field season's worth of DARAMEND OE® within former warehouses.

- Unit cost using DARAMEND OE® is $60 per ton of soil. Unit cost is for amendment only and based on a 3 percent application rate and 100,000 tons of soil requiring treatment.

5. Conclusions and Recommendations

5.1 Conclusions

The bioremediation pilot study proved that the overall remedial objectives for the Facility (i.e., reduce TNT, DNT, and ADNT concentrations to at or below NRDCSRS and RDCSRS) could be achieved in a single field season using DARAMEND OE®. Low bulking coarse cellulose composting (10 percent compost) demonstrated an ability to degrade TNT; however, multiple field seasons (years) would be required to achieve remedial objectives. Traditional composting approaches with the demonstrated ability to degrade TNT over a single field season (33 to 70 percent compost) are similar in cost to DARAMEND OE®.

The addition of DARAMEND OE® reduced concentrations of TNT and breakdown products in soil to below the remedial objectives for the Facility (NRDCSRS/RDCSRS). The more stringent RDCSRS values were met for TNT and breakdown products where DARAMEND OE® was added at 4 percent, and expected to be met at 3 percent, using cyclical or single dosing approaches. The 2 percent DARAMEND OE® trials did not consistently achieve concentrations below the RDCSRS. Although the IGWSSL values were not met for TNT or ADNTs in any trial, the addition of DARAMEND OE® was effective in reducing concentrations of DNTs to below the IGWSSL values in 3 and 4 percent trials. Given the solubility and mobility of DNTs this is an important finding when considering the full-scale remedy.

Time required to achieve the remedial objective varied depending on the amendment dosage and amount of physical mixing applied in each treatment. Treatments that generated strong reducing conditions supported greater TNT and metabolite removal. Reducing conditions, and a reduction in mass, were achieved faster in treatments where the total target amendment amount was added at the beginning of the study. However, cyclical addition of amendment yielded similar end of study results. Adding DARAMEND OE® in a large dose at the beginning of the study also reduced the resources necessary to incrementally add amendment and mix the material over the course of the study.

TNT soil bioremediation is a mass reduction component of a comprehensive remedy for soil and groundwater in the TNT Area. Residual constituent mass (i.e., concentrations greater than IGWSSLs) will be addressed via the lasting effects of the amendment in soil (i.e., DARAMEND OE® continues to support biological breakdown for approximately 5 years). Natural attenuation by native microbial communities will continue following the effective timeframe of DARAMEND OE® and will be the final remedy for soil and groundwater.

5.2 Future Considerations

Results of the field study provide valuable insight to inform the remedial design for bioremediation of TNT soil at the Facility. The DARAMEND OE® approaches evaluated are scalable to full-scale. Pilot study findings called attention to a number of additional considerations at full-scale beyond the effectiveness and efficiency of DARAMEND OE®. These considerations include:

Material handling and management – The slurried feed material reduces mechanical handling effort and may prove to be an efficient means of transporting material from the processing area to the soil treatment cell. Draining water from the slurried material will be required to attain target WHC in the field, and will necessitate consideration of leachate management as part of full-scale design. Collected leachate can be used to irrigate the soil treatment cell to maintain target WHC and enhance the microbial communities in treated soil.

Material processing – Amendment distribution and feed material homogeneity are critical aspects of achieving expected results at full-scale and merit attention during design. The heterogeneous mixture achieved using the excavator bucket in the pilot study was effective; however, improvements can be made at full scale that would result in more homogenous blending and less effort. The soil preparation process should minimize the size of crystalline TNT particles present in soil to maximize the effectiveness of the amendment and microbial degradation.

Regulatory Interpretation – A detailed review of the historic process will be performed to evaluate if any of the residual TNT could be classified as a K047 listed hazardous waste that would require additional permitting during full-scale implementation of the remedy. Areas of interest include a potential former settling pond (B13-1) and gravel pit (B13-2) that may have been used as a settling pond.

Non-target constituents – Treatability and pilot work have focused primarily on a target suite of E&E constituents and, to a lesser degree, lead. A cursory evaluation of the fate of lead and other comingled non-target constituents (e.g., pyrogenic polycyclic aromatic hydrocarbons) was conducted as part of this pilot study data evaluation. These non-target constituents were sporadically detected; and with few exceptions, concentrations detected were below NJDEP remedial standards (i.e., NRDCSRS, RDCSRS, IGWSSL). The full-scale remedial design should address the possibility of encountering areas of soil containing non-target constituents exceeding NJDEP remedial standards and its potential effect on reuse of treated material to the excavation area.

Analytical laboratory data – Analytical data will be the primary means of demonstrating attainment of remedial goals at full scale. To this end, accurate and precise analytical laboratory data is critical. The management of elements discussed above (e.g., mixture

heterogeneity, crystalline TNT particle size) should improve consistency of sampled material. Further, technical planning discussions with the analytical laboratory provide a means of standardizing the analytical approach to reduce variability.

6. References

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TABLES

Table 1. Soil Preparation Process Analytical Data

Parameter	Unit	Location Sample ID Sample Date	Process_Combination Process_Combination_ Fraction 7/18/2015	Process_Flock Process_Flock_ Fraction 7/18/2015	Process_Sand Process_Sand_ Fraction 7/18/2015
Explosives and Energetics					
1,2-Dinitrobenzene	ug/kg		60 U	60 U	60 U
1,3,5-Trinitrobenzene	ug/kg		1800	1100	360
1,3-Dinitrobenzene	ug/kg		190	120	65
1,4-Dinitrobenzene	ug/kg		60 U	60 U	60 U
1-Nitronaphthalene	ug/kg		60 U	60 U	60 U
2,4,6-Trinitrotoluene	ug/kg		1100000	610000	300000
2-Amino-4,6-dinitrotoluene	ug/kg		7100	6200	1200
2-Nitrotoluene	ug/kg		80 U	80 U	80 U
3-Nitrotoluene	ug/kg		71 J	77 J	100 U
4-Amino-2,6-dinitrotoluene	ug/kg		8600	7400	1200
4-Nitrotoluene	ug/kg		570 U	450 U	80 U
HMX	ug/kg		1100 U	270 U	150 U
Nitrobenzene	ug/kg		60 U	60 U	60 U
Nitroglycerin	ug/kg		6000 U	6000 U	6000 U
Pentaerythritol Tetranitrate	ug/kg		1200 U	1200 U	1200 U
RDX	ug/kg		290 U	380 U	60 U
Tetryl	ug/kg		80 U	80 U	80 U
General Chemistry					
Total Organic Carbon	mg/kg		5410	8390	487
Metals					
Aluminum	mg/kg		9260	8560	3200
Antimony	mg/kg		1.99	1.53 J	1.21 J
Arsenic	mg/kg		2.31	1.88 J	1.19 J
Barium	mg/kg		29.3	27.9	11.6
Beryllium	mg/kg		0.355 J	0.290 J	0.172 J
Cadmium	mg/kg		0.0692 J	0.0718 J	0.0883 J
Calcium	mg/kg		787	752	464
Chromium	mg/kg		10.1	6.8	5.56
Cobalt	mg/kg		2.85	1.98	1.31
Copper	mg/kg		9.88	8.65	5.47
Iron	mg/kg		12300	8860	7970
Lead	mg/kg		111	110	48.7
Magnesium	mg/kg		731	588	364
Manganese	mg/kg		114	74.9	58.1
Mercury	mg/kg		0.0254 J	0.0203 J	0.0984 U
Nickel	mg/kg		4.51	3.8	2.04
Potassium	mg/kg		466	435	263
Selenium	mg/kg		1.75 J	1.42 J	1.32 J
Silver	mg/kg		0.481 U	0.485 U	0.485 U
Sodium	mg/kg		32.7 J	33.7 J	22.1 J
Thallium	mg/kg		2.88 U	2.91 U	2.91 U
Vanadium	mg/kg		19.2	14.4	11
Zinc	mg/kg		24.4	15.8	11.4
SVOCs					
1,1-Biphenyl	ug/kg		33 U	33 U	33 U
2,2-Oxybis(1-Chloropropane)	ug/kg		33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg		33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg		33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg		33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg		33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg		990 U	990 U	1000 U
2,4-Dinitrotoluene	ug/kg		1800	170 U	3400
2,6-Dinitrotoluene	ug/kg		530	33 U	470
2-Chloronaphthalene	ug/kg		33 U	33 U	33 U
2-Chlorophenol	ug/kg		33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg		490 U	500 U	500 U
2-Methylnaphthalene	ug/kg		17 U	17 U	52
2-Methylphenol	ug/kg		33 U	33 U	33 U
2-Nitroaniline	ug/kg		33 U	33 U	33 U
2-Nitrophenol	ug/kg		33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg		330 U	330 U	330 U
3-Nitroaniline	ug/kg		160 U	170 U	170 U
4-Bromophenyl phenyl ether	ug/kg		33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg		33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg		33 U	33 U	33 U
4-Methylphenol	ug/kg		33 U	33 U	33 U
4-Nitroaniline	ug/kg		160 U	170 U	170 U
4-Nitrophenol	ug/kg		490 U	500 U	500 U
Acenaphthene	ug/kg		17 U	17 U	17 U
Acenaphthylene	ug/kg		6 J	17 U	6 J

Table 1. Soil Preparation Process Analytical Data

Parameter	Unit	Process_Combination Process_Combination_Fraction 7/18/2015	Process_Flock Process_Flock_Fraction 7/18/2015	Process_Sand Process_Sand_Fraction 7/18/2015
Acetophenone	ug/kg	33 U	33 U	33 U
Anthracene	ug/kg	4 J	17 U	17 U
Atrazine	ug/kg	160 U	170 U	170 U
Benzaldehyde	ug/kg	160 U	170 U	170 U
Benzo(a)anthracene	ug/kg	28	18	33
Benzo(a)pyrene	ug/kg	24	15 J	32
Benzo(b)fluoranthene	ug/kg	44	28	43
Benzo(g,h,i)perylene	ug/kg	19	12 J	23
Benzo(k)fluoranthene	ug/kg	20	12 J	22
bis(2-Chloroethoxy)methane	ug/kg	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	160 U	170 U	170 U
Caprolactam	ug/kg	160 U	170 U	170 U
Carbazole	ug/kg	33 U	33 U	33 U
Chrysene	ug/kg	33	22	35
Dibenzo(a,h)anthracene	ug/kg	8 J	6 J	7 J
Dibenzofuran	ug/kg	33 U	33 U	33 U
Diethyl phthalate	ug/kg	160 U	170 U	170 U
Dimethyl phthalate	ug/kg	160 U	170 U	170 U
Di-n-butyl phthalate	ug/kg	160 U	170 U	170 U
Di-n-octyl phthalate	ug/kg	160 U	170 U	170 U
Fluoranthene	ug/kg	43	26	46
Fluorene	ug/kg	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	490 U	500 U	500 U
Hexachloroethane	ug/kg	160 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	ug/kg	19	11 J	21
Isophorone	ug/kg	33 U	33 U	33 U
Naphthalene	ug/kg	17 U	17 U	45
Nitrobenzene	ug/kg	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	33 U	33 U	33 U
p-Chloroaniline	ug/kg	66 U	66 U	67 U
Pentachlorophenol	ug/kg	170 U	170 U	170 U
Phenanthrene	ug/kg	22	15 J	17 U
Phenol	ug/kg	33 U	33 U	33 U
Pyrene	ug/kg	40	31	42
SVOC TICs				
1,2,3-Trimethylbenzene	ug/kg	NA	NA	160 J
1,3-Dinitrobenzene	ug/kg	NA	NA	180 J
2,4,6-Trinitrotoluene	ug/kg	50000 J	NA	88000 J
2,6-Dimethylundecane	ug/kg	NA	290 J	NA
2-Amino-4,6-dinitrotoluene	ug/kg	NA	2600 J	1600 J
2-Methyl dodecane	ug/kg	390 J	350 J	NA
2-Methyl tridecane	ug/kg	360 J	290 J	NA
4-Amino-2,6-dinitrotoluene	ug/kg	1000 J	1900 J	360 J
cis, cis-3-Ethylbicyclo[4.4.]	ug/kg	NA	350 J	NA
cis,trans-3-Ethylbicyclo[4.4]	ug/kg	390 J	NA	NA
Diacetone Alcohol	ug/kg	NA	NA	1200 JBA
Eicosane	ug/kg	NA	1100 J	NA
Heptacosane	ug/kg	NA	NA	730 J
Heptadecane	ug/kg	1000 J	NA	NA
Heptadecane, 9-octyl	ug/kg	2000 J	NA	NA
Hexadecane, 2,6,10,14-tetramethyl-	ug/kg	NA	2200 J	NA
n-Dodecane	ug/kg	NA	410 J	NA
N-Hexadecane	ug/kg	290 J	260 J	NA
n-Pentatriacontane (C35)	ug/kg	2700 J	NA	NA
N-Tetradecane	ug/kg	450 J	870 J	NA
N-Tridecane	ug/kg	1500 J	1400 J	NA
Octacosane	ug/kg	NA	1600 J	NA
Octadecane	ug/kg	NA	NA	1100 J
Total SVOC TICs	ug/kg	70000 J	130000 J	95000 JBA
Unknown	ug/kg	4100 J	830 J	610 J
Unknown	ug/kg	330 J	270 J	NA
Unknown	ug/kg	330 J	NA	NA
Unknown	ug/kg	320 J	NA	NA
Unknown	ug/kg	310 J	NA	NA
Unknown	ug/kg	250 J	NA	NA
Unknown	ug/kg	940 J	730 J	280 J

Table 1. Soil Preparation Process Analytical Data

Parameter	Unit	*Location* *Sample ID* *Sample Date*	Process_Combination Process_Combination_ Fraction 7/18/2015	Process_Flock Process_Flock_ Fraction 7/18/2015	Process_Sand Process_Sand_ Fraction 7/18/2015
Unknown	ug/kg		520 J	570 J	190 J
Unknown	ug/kg		400 J	440 J	NA
Unknown	ug/kg		380 J	420 J	NA
Unknown	ug/kg		360 J	320 J	NA
Unknown	ug/kg		360 J	310 J	NA
Unknown	ug/kg		340 J	310 J	NA
Unknown	ug/kg		340 J	290 J	NA
Unknown aromatic	ug/kg		NA	110000 J	390 J
Unknown aromatic	ug/kg		NA	240 J	NA

Notes:
SVOC = Semivolatile organic compounc
TIC = Tentatively identified compounc
NA = Not analyzed
U = Constituent not detected, associated value is laboratory detection limi
J = Estimated concentration
B = Constituent detected in blank, indicates probable blank contaminatio
A = Indicates TIC is a suspected aldol condensation produc
ug/kg = Microgram per kilogram
mg/kg = Milligram per kilogram

Table 2. Study Box Treatment Regime Summary

Objective	*Study Box*	*Description*			
		Water	**Turnover**	**Daramend**	**Wood Chips**
Control	A	N	N	N	N
	B	Y - to 85% WHC	Y - Once after Cycle 5	N	N
	C	Y - to 85% WHC	Y - Each Cycle	N	N
DARAMEND OE Cyclical Turning	D	Y - to 85% WHC	Y - Each Cycle	4% total weight - per table below	N
	E	Y - to 85% WHC	Y - Each Cycle	3% total weight - per table below	N
	F	Y - to 85% WHC	Y - Each Cycle	2% total weight - per table below	N
DARAMEND OE Single Turn	G	Y - to 85% WHC	Y - Once after Cycle 5	4% total weight - at Study Day 1	N
	H	Y - to 85% WHC	Y - Once after Cycle 5	3% total weight - at Study Day 1	N
	I	Y - to 85% WHC	Y - Once after Cycle 5	2% total weight - at Study Day 1	N
Wood Chips	J	Y - to 85% WHC	Y - Each Cycle	N	Y - at 10% by volume at Study Day 1
	K	Y - to 85% WHC	Y - Once after Cycle 5	N	Y - at 10% by volume at Study Day 1

Cycle Information		*DARAMEND OE Incremental Addition Information*						
Cycle No.	Study Day	Fraction/cycle	% Weight	Weight (lbs)	% Weight	Weight (lbs)	% Weight	Weight (lbs)
Total		Total	4	832	3	624	2	416
Cycle 1	14	2	1.33	277	1.00	208	0.67	139
Cycle 2	28	1	0.67	139	0.50	104	0.33	69
Cycle 3	42	1	0.67	139	0.50	104	0.33	69
Cycle 4	56	0	0.00	0	0.00	0	0.00	0
Cycle 5	70	1	0.67	139	0.50	104	0.33	69
Cycle 6	84	1	0.67	139	0.50	104	0.33	69

General Notes:
% = percent
cy = cubic yards
lbs = pounds
N = no
T = tons
WHC - water holding capacity
Y = yes

Table 3a. Study Box Monitoring - In-Situ Field Measurements: pH

Date	Study Day	Cycle	A	B	C	D	E	F	G	H	I	J	K
			Control - No Stir	Control - 1 Stir	Control - All Stir	4% Daramend - All Stir	3% Daramend - All Stir	2% Daramend - All Stir	4% Daramend - 1 Stir	3% Daramend - 1Stir	2% Daramend - 1 Stir	Wood Chip - All Stir	Wood Chip - 1 Stir
			SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU
20-Jul	1	*Cycle 1: Start*	5.41	5.14	5.34	4.70	4.98	5.18	5.26	5.88	6.46	4.97	6.44
22-Jul	3	*Cycle 1: Post-Start*	6.60	5.21	5.29	4.95	5.28	5.21	5.25	5.07	5.17	4.92	6.47
27-Jul	7	*Cycle 1: Midpoint*	6.60	5.34	5.24	5.58	6.58	6.42	5.11	7.56	7.38	4.99	6.87
3-Aug	15	*Cycle 2: Start*	6.55	5.28	5.30	5.51	5.44	5.49	6.00	6.19	6.00	5.35	6.47
10-Aug	21	*Cycle 2: Midpoint*	6.92	5.21	6.08	6.15	6.25	5.96	7.30	6.77	7.27	4.50	6.74
17-Aug	29	*Cycle 3: Start*	6.55	4.77	5.24	5.97	6.20	7.20	6.99	6.74	7.17	4.93	7.03
24-Aug	35	*Cycle 3: Midpoint*	6.67	4.93	4.94	5.67	5.50	5.62	7.13	6.78	6.72	5.42	6.76
31-Aug	43	*Cycle 4: Start*	6.73	4.87	5.12	5.57	5.41	6.99	7.55	6.54	5.92	4.88	6.79
8-Sep	50	*Cycle 4: Midpoint*	6.70	5.03	5.08	5.44	5.46	5.43	6.96	6.88	6.60	4.85	6.93
14-Sep	57	*Cycle 5: Start*	6.24	5.31	5.40	5.45	5.45	5.76	7.08	7.07	7.05	5.34	6.75
21-Sep	63	*Cycle 5: Midpoint*	6.75	4.72	5.10	5.04	5.11	5.24	7.47	6.93	6.74	5.12	6.70
28-Sep	71	*Cycle 6: Start*	6.69	5.29	5.32	5.55	5.21	5.44	6.21	5.85	5.62	5.33	7.01
5-Oct	77	*Cycle 6: Midpoint*	6.52	5.83	5.53	5.46	5.45	5.48	5.22	5.37	5.68	5.55	6.58
12-Oct	84	*Cycle 6: End*	6.55	5.61	5.30	5.60	5.23	5.32	5.37	5.64	5.52	5.56	6.85
10-Nov	114	*30 Days Post-Study*	6.44	5.63	6.20	5.28	5.24	5.27	5.18	5.29	6.47	5.75	6.47

Notes:
SU = standard unit
% = percent

Table 3b. Study Box Monitoring - In-Situ Field Measurements: Redox

Date	Study Day	Cycle	A	B	C	D	E	F	G	H	I	J	K
			Control - No Stir	Control - 1 Stir	Control - All Stir	4% Daramend - All Stir	3% Daramend - All Stir	2% Daramend - All Stir	4% Daramend - 1 Stir	3% Daramend - 1 Stir	2% Daramend - 1 Stir	Wood Chip - All Stir	Wood Chip - 1 Stir
			mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV
20-Jul	1	*Cycle 1: Start*	198.8	203.1	175.7	253.2	227.6	235.4	190.9	166.8	136.9	223.0	169.5
21-Jul	2	*Cycle 1: Post-Start*	170.1	173.9	238.4	286.2	177.4	217.0	81.6	-162.6	-220.9	212.6	148.1
22-Jul	3	*Cycle 1: Post-Start*	153.8	70.5	94.1	-152.2	-20.4	-182.3	-235.3	-192.7	-100.1	99.5	95.2
27-Jul	7	*Cycle 1: Midpoint*	91.1	186.1	204.2	-28.4	-100.4	-96.0	-302.7	-253.6	-293.7	163.4	44.5
3-Aug	15	*Cycle 2: Start*	64.7	195.0	187.9	-212.1	-157.3	-164.9	-380.2	-172.6	-302.1	213.1	44.9
10-Aug	21	*Cycle 2: Midpoint*	40.1	176.2	185.8	-44.5	-133.4	-12.9	24.0	81.3	-111.9	203.9	-10.3
17-Aug	29	*Cycle 3: Start*	114.2	212.4	252.1	-119.3	-170.1	2.3	-67.7	-132.3	-100.2	232.8	55.7
24-Aug	35	*Cycle 3: Midpoint, (Shallow)*	68.1	133.4	89.9	-325.1	-447.3	-158.8	132.6	-262.2	-204.0	126.8	52.2
24-Aug	35	*Cycle 3: Midpoint (Deep)*	19.6	64.2	211.5	-339.5	-398.3	-278.0	100.8	-390.6	-253.6	68.1	-22.4
31-Aug	43	*Cycle 4: Start (Shallow)*	41.4	183.9	191.4	-121.0	-253.3	-137.2	9.0	-157.4	-141.6	147.2	58.1
31-Aug	43	*Cycle 4: Start (Deep)*	37.6	174.7	169.1	-120.5	-146.8	-129.9	-213.6	-134.9	-118.7	146.5	75.4
8-Sep	50	*Cycle 4: Midpoint (Shallow)*	53.3	141.9	152.7	-177.2	-170.6	-123.5	-206.0	-240.8	-163.8	134.3	28.5
8-Sep	50	*Cycle 4: Midpoint (Deep)*	82.3	159.1	140.5	-151.9	-149.3	-135.7	-159.7	-148.8	-159.5	131.5	53.9
14-Sep	57	*Cycle 5: Start (Shallow)*	42.4	175.8	176.1	-156.4	-177.5	-84.1	-319.4	-158.4	-201.4	152.7	21.0
14-Sep	57	*Cycle 5: Start (Deep)*	38.9	158.8	154.6	-201.1	-181.3	-100.2	-226.5	-248.4	-243.1	141.0	23.7
21-Sep	63	*Cycle 5: Midpoint (Shallow)*	82.9	239.8	148.4	-107.1	-165.4	-433.8	-54.6	-203.9	-178.8	148.3	44.8
21-Sep	63	*Cycle 5: Midpoint (Deep)*	99.1	165.6	132.9	-105.9	-169.6	-143.9	-157.1	-120.3	-199.7	151.6	59.8
28-Sep	71	*Cycle 6: Start (shallow)*	41.9	181.7	163.4	-146.7	-167.8	-98.6	-201.0	-178.0	-212.8	146.2	25.8
28-Sep	71	*Cycle 6: Start (deep)*	28.8	169.3	163.8	-149.1	-151.8	-89.2	-254.3	-174.1	-159.9	138.4	29.6
5-Oct	77	*Cycle 6: Midpoint (Shallow)*	35.0	147.6	164.9	-185.5	-166.8	-99.1	-228.6	-224.2	-157.1	151.3	38.1

Table 3b. Study Box Monitoring - In-Situ Field Measurements: Redox

Date	*Study Day*	*Cycle*	A	B	C	D	E	F	G	H	I	J	K
			Control - No Stir	Control - 1 Stir	Control - All Stir	4% Daramend - All Stir	3% Daramend - All Stir	2% Daramend - All Stir	4% Daramend - 1 Stir	3% Daramend - 1 Stir	2% Daramend - 1 Stir	Wood Chip - All Stir	Wood Chip - 1 Stir
			mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV
5-Oct	**77**	***Cycle 6: Midpoint (Deep)***	65.9	164.9	151.4	-177.3	-169.8	-139.1	-171.1	-148.7	-117.1	136.4	62.7
12-Oct	**84**	***Cycle 6: End (Shallow)***	34.3	198.4	170.0	-133.1	-65.1	-58.0	-155.8	-68.0	-91.0	160.5	64.9
12-Oct	**84**	***Cycle 6: End (Deep)***	39.7	197.7	178.6	-109.2	-80.5	-95.2	-127.6	-121.6	-116.8	163.7	51.7
10-Nov	**114**	***30 Days Post-Study (Shallow)***	124.4	209.5	189.8	-144.5	-154.4	-96.8	-197.9	-192.5	-160.4	169.4	75.1
10-Nov	**114**	***30 Days Post-Study (Deep)***	109.5	192.9	163.7	-144.0	-167.1	-79.2	-246.4	-82.2	-173.5	145.6	81.3

Notes:
mV = millivolt
% = percent

Table 3c. Study Box Monitoring - In-Situ Field Measurements: Temperature and Moisture

Date	Study Day	Cycle	Parameter	Tracking Method	A	B	C	D	E	F	G	H	I	J	K	Average
					Control - No Stir	Control - 1 Stir	Control - All Stir	4% Daramend - All Stir	3% Daramend - All Stir	2% Daramend - All Stir	4% Daramend - 1 Stir	3% Daramend - 1Stir	2% Daramend - 1 Stir	Wood Chip - All Stir	Wood Chip - 1 Stir	Test-Wide Average
20-Jul	1	Cycle 1: Start	Temp	°C	26.8	27.5	27.3	29.4	30	28.1	27.4	28.1	29	29.6	28.8	28.4
			Moisture	Visual Assessment	Saturated	Saturated	Saturated	Saturated	Saturated	Saturated	Saturated	Saturated	Saturated	Saturated	Saturated	--
21-Jul	2	Cycle 1: Post-Start	Temp	°C	26.4	24.9	24.5	27	27.9	26.5	24.9	25	25.2	25.5	25	25.7
			Moisture	Visual Assessment	--	--	--	--	--	--	--	--	--	--	--	--
22-Jul	3	Cycle 1: Post-Start	Temp	°C	21.9	22.8	22.3	22.4	22.7	22.3	22	22.7	23.2	21	21.3	22.2
			Moisture	Visual Assessment	--	--	--	--	--	--	--	--	--	--	--	--
27-Jul	7	Cycle 1: Midpoint	Temp	°C	23	22.9	23.7	24.7	23.6	23.8	22.9	23.2	22.9	23.5	22.5	23.3
			Moisture	Visual Assessment	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	--
3-Aug	15	Cycle 2: Start	Temp	°C	20.5	23.1	22.5	21.5	19.6	20.4	21.8	21.9	22.4	21.9	21.3	21.5
			Moisture	Visual Assessment	Moist/ Saturated	Moist/Dry	Moist/Dry	Moist/Dry	Moist/Dry	Moist/Dry	Moist/Dry	Moist/Dry	Moist	Moist/Dry	Moist	--
10-Aug	21	Cycle 2: Midpoint	Temp	°C	22.7	22.5	22.6	23.4	23.3	22.9	23.4	23.6	23.1	22.5	22	22.9
			Moisture	Visual Assessment	Dry	Dry (1)	Dry (1)	Dry (1)	Dry (1)	Dry (1)	Dry (1)	Dry (1)	Dry (1)	Dry (1)	Dry (1)	--
17-Aug	29	Cycle 3: Start	Temp	°C	25.1	22.6	22.1	22.2	20.8	21.4	25.1	23.7	23.8	22	24.1	23.0
			Moisture	Visual Assessment	Moist, no standing water, not cracked	Dry, cracked	Dry, cracked	Dry, cracked	Dry, cracked	Dry, cracked	Dry, cracked	Dry, cracked	Dry, cracked	Dry, cracked	Wet, standing water	--
24-Aug	35	Cycle 3: Midpoint	Temp	°C	27.2	26.8	26.2	26	25.4	25.9	24.7	25.7	25.5	26.1	24.9	25.9
			Moisture	Visual Assessment	OK	OK	OK	OK	OK	OK	Slightly Dry	Slightly Dry	OK	OK	OK	--
31-Aug	43	Cycle 4: Start	Temp	°C	24.1	22.3	21.7	21.7	21.6	22.2	21.2	23.9	23.2	23.2	24.2	22.7
			Moisture	Visual Assessment	Dry	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	Dry, 100 gal added	--
8-Sep	50	Cycle 4: Midpoint	Temp	°C	26.1	24.3	22.2	21.6	20.1	20.2	21	23.2	23.4	24.1	23.1	22.7
			Moisture	Visual Assessment	dry, cracked, sump dry	wet, standing water	wet, standing water	wet, standing water	wet, standing water	wet, standing water	wet, standing water	wet, standing water	wet, standing water	wet, standing water	wet, standing water	--
14-Sep	57	Cycle 5: Start	Temp	°C	17.8	15.7	16	15.6	17	16.2	15.8	15.7	17.7	15.5	18.9	16.5
			Moisture	Visual Assessment	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	wet, standing water (~2")	--
21-Sep	63	Cycle 5: Midpoint	Temp	°C	17.1	14.7	16.8	15.8	15.8	15.2	14.4	14.8	15.3	14.5	15.6	15.5
			Moisture	Visual Assessment	wet, some standing water	dry, 50 gal added	wet, some standing water	wet, some standing water	wet, some standing water	wet, some standing water	dry, 50 gal added	dry, 50 gal added	dry, 50 gal added	wet, some standing water	dry, 50 gal added	--
28-Sep	71	Cycle 6: Start	Temp	°C	17.2	16.7	17	16.7	17	17.1	16.6	16.8	16.8	16.9	16.9	16.9
			Moisture	Visual Assessment	Dry, 30 gal added	Dry, 30 gallon added	standing water	dry, 30 gallon added	standing water	dry, 30 gallon added	Moist/Dry	dry, 30 gallon added	Moist	Moist/Dry	standing water	--
5-Oct	77	Cycle 6: Midpoint	Temp	°C	14.8	15.1	15.1	15.9	14.6	13.2	15.3	14.8	15.1	14.3	14.9	14.8
			Moisture	Visual Assessment	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	wet, standing water removed	--
12-Oct	84	Cycle 6: End	Temp (shallow)	°C	8.6	9.7	8.9	9.6	8.3	9.1	9.9	10.2	10.7	9.2	10.8	9.5
			Temp (deep)	°C	10.9	12.5	14.3	13.1	11.9	11.9	10.4	12.8	13	11.3	11.6	12.2
			Moisture	Visual Assessment	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	Wet, standing water, 40 gal removed	--
10-Nov	114	30 Days Post-Study	Temp	°C	10.1	10.1	10.8	11.5	9.5	10.1	10.2	10.1	9.9	9.6	9.8	10.2
			Moisture	Visual Assessment	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	Wet, some standing water	--

Notes:
°C = degrees Celsius
(1) - Boxes were noted as being dry on 8/10. Heavy rain occurred on 8/11 and boxes were rechecked and found to be moist.
% = percent

Table 4. Study Box Monitoring - Laboratory Analytical Data

Sample Event	Sample Date	Study Container												Study Container					
		A - Control (no water/no turn)						B - Control (water/one turn)						C - Control (water/cyclical turns)					
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)
Baseline Average	07.20.2015	2,170,833	908	328	27,009	33,787	165,000	2,170,833	2,075	523	27,009	33,787	100,000	2,170,833	2,100	583	27,009	33,787	123,000
End of 2nd Cycle	08.17.2015	1,900,000	*540*	1,200	27,000	39,000	---	1,900,000	4,000	800	19,000	19,000	---	2,000,000	4,100	900	19,000	20,000	---
End of 3rd Cycle	08.31.2015	2,100,000	1,200	330	19,000	33,000	---	1,300,000	1,400	380	13,000	14,000	---	1,800,000	*170*	*33*	16,000	17,000	---
End of 4th Cycle (Average)	09.14.2015	2,100,000	4,725	2,775	43,000	69,250	262,000	3,425,000	5,850	1,925	27,000	29,500	243,000	2,825,000	6,150	2,425	35,667	37,667	273,000
End of 5th Cycle	09.28.2015	2,000,000	3,700	1,800	43,000	65,000	---	2,100,000	5,000	1,500	28,000	29,000	---	3,000,000	4,500	1,400	30,000	30,000	---
End of 6th Cycle (Average)	10.12.2015	2,775,000	3,750	1,250	50,750	78,750	277,000	2,000,000	5,025	1,118	23,750	25,000	226,000	2,750,000	5,000	1,300	32,000	30,000	246,000
30 Days Post Study	11.10.2015	1,500,000	2,300	670	26,000	40,000	---	1,700,000	3,200	800	15,000	14,000	---	1,900,000	3,700	820	19,000	18,000	---
Overall Reduction (%)		31%	-153%	-105%	4%	-18%		22%	-54%	-53%	44%	59%		12%	-76%	-41%	30%	47%	
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000		95,000	3,000	3,000	61,000	61,000		95,000	3,000	3,000	61,000	61,000	
Percent Attainment		6%	130%	448%	235%	153%		6%	94%	375%	407%	436%		5%	81%	366%	321%	339%	
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700		21,000	700	700	4,700	4,700		21,000	700	700	4,700	4,700	
Percent Attainment		1%	30%	104%	18%	12%		1%	22%	88%	31%	34%		1%	19%	85%	25%	26%	
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300		200	700	500	400	300		200	700	500	400	300	
Percent Attainment		0%	30%	75%	2%	1%		0%	22%	63%	3%	2%		0%	19%	61%	2%	2%	

Sample Event	Sample Date	Study Container												Study Container					
		D - DARAMEND OE (4%, cyclical turns)						E - DARAMEND OE (3%, cyclical turns)						F - DARAMEND OE (2%, cyclical turns)					
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)
Baseline Average	07.20.2015	2,170,833	2,225	643	27,009	33,787	137,000	2,170,833	2,300	528	27,009	33,787	114,000	2,170,833	2,000	540	27,009	33,787	126,000
End of 2nd Cycle	08.17.2015	550,000	1,100	260	130,000	130,000	---	47,000	1,100	370	87,000	120,000	---	280,000	2,000	640	320,000	350,000	---
End of 3rd Cycle	08.31.2015	47,000	390	110	5,000	6,400	---	11,000	<830	86	5,700	7,800	---	94,000	360	*170*	58,000	78,000	---
End of 4th Cycle (Average)	09.14.2015	102,750	815	53	10,825	9,150	201,000	51,500	978	350	11,525	11,800	244,000	230,500	953	105	20,000	24,500	203,000
End of 5th Cycle	09.28.2015	12,000	520	*46*	3,700	4,900	---	15,000	520	<46	3,900	5,400	---	29,000	680	220	11,000	13,000	---
End of 6th Cycle (Average)	10.12.2015	11,625	1,325	263	3,950	5,475	225,000	22,250	*1,350*	235	3,975	5,750	230,000	26,000	823	263	9,800	13,250	229,000
30 Days Post Study	11.10.2015	10,000	*530*	*130*	2,500	3,200	---	260,000 (a)	*540*	190	3,700	3,800	---	18,000	760	*130*	7,100	8,600	---
Overall Reduction (%)		99.5%	76%	80%	91%	91%		99.0%	77%	64%	86%	89%		99.2%	62%	76%	74%	75%	
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000		95,000	3,000	3,000	61,000	61,000		95,000	3,000	3,000	61,000	61,000	
Percent Attainment		950%	566%	2308%	2440%	1906%		427%	556%	1579%	1649%	1605%		528%	395%	2308%	859%	709%	
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700		21,000	700	700	4,700	4,700		21,000	700	700	4,700	4,700	
Percent Attainment		210%	132%	538%	188%	147%		94%	130%	368%	127%	124%		117%	92%	538%	66%	55%	
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300		200	700	500	400	300		200	700	500	400	300	
Percent Attainment		2%	132%	385%	16%	9%		1%	130%	263%	11%	8%		1%	92%	385%	6%	3%	

(a) Concentration assumed due to presence of TNT particle in extraction vial, percentages calculated based on End of 6th Cycle data

Table 4. Study Box Monitoring - Laboratory Analytical Data

Sample Event	Sample Date	Study Container																	
		G - DARAMEND OE (4%, single turn)						H - DARAMEND OE (3%, single turn)						I - DARAMEND OE (2%, single turn)					
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)
Baseline Average	07.20.2015	2,170,833	2,850	798	27,009	33,787	125,000	2,170,833	2,150	593	27,009	33,787	113,000	2,170,833	1,925	493	27,009	33,787	103,000
End of 2nd Cycle	08.17.2015	13,000	690	260	4,300	8,700	---	410,000	710	230	34,000	61,000	---	190,000	1,400	620	130,000	220,000	---
End of 3rd Cycle	08.31.2015	14,000	490	150	6,800	8,100	---	14,000	380	180	4,400	6,700	---	220,000	800	200	43,000	72,000	---
End of 4th Cycle (Average)	09.14.2015	16,250	638	57	3,500	5,600	270,000	26,000	908	477	5,800	9,125	225,000	407,750	988	412	34,700	44,000	229,000
End of 5th Cycle	09.28.2015	20,000	520	190	2,500	4,700	---	140,000	600	200	7,700	10,000	---	21,000	800	*50*	8,800	13,000	---
End of 6th Cycle (Average)	10.12.2015	15,975	1,425	258	2,825	4,350	244,000	20,750	*1,400*	250	5,775	7,650	236,000	37,333	1,240	300	13,225	20,000	248,000
30 Days Post Study	11.10.2015	16,000	*520*	*130*	2,900	2,900	---	19,000	*530*	250	4,600	5,600	---	25,000	980	300	5,800	9,100	---
Overall Reduction (%)		99.3%	82%	84%	89%	91%		99.1%	75%	58%	83%	83%		98.8%	49%	39%	79%	73%	
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000		95,000	3,000	3,000	61,000	61,000		95,000	3,000	3,000	61,000	61,000	
Percent Attainment		594%	577%	2308%	2103%	2103%		500%	566%	1200%	1326%	1089%		380%	306%	1000%	1052%	670%	
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700		21,000	700	700	4,700	4,700		21,000	700	700	4,700	4,700	
Percent Attainment		131%	135%	538%	162%	162%		111%	132%	280%	102%	84%		84%	71%	233%	81%	52%	
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300		200	700	500	400	300		200	700	500	400	300	
Percent Attainment		1%	135%	385%	14%	10%		1%	132%	200%	9%	5%		1%	71%	167%	7%	3%	

Sample Event	Sample Date	Study Container											
		J - Wood Chips (10% by volume, cyclical turns)						K - Wood Chips (10% by volume, single turn)					
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Lead (µg/kg)
Baseline Average	07.20.2015	2,170,833	2,225	152	27,009	33,787	120,000	2,170,833	1,588	455	27,009	33,787	144,000
End of 2nd Cycle	08.17.2015	2,800,000	4,000	1,000	24,000	26,000	---	1,700,000	3,500	1,200	47,000	70,000	---
End of 3rd Cycle	08.31.2015	1,400,000	2,500	790	17,000	20,000	---	750,000	870	360	26,000	39,000	---
End of 4th Cycle (Average)	09.14.2015	2,350,000	4,025	1,750	36,500	43,250	204,000	1,550,000	3,825	3,400	58,250	95,500	254,000
End of 5th Cycle	09.28.2015	1,900,000	4,300	1,400	35,000	42,000	---	2,200,000	3,200	1,500	55,000	86,000	---
End of 6th Cycle (Average)	10.12.2015	2,300,000	2,475	723	50,250	52,250	221,000	2,275,000	2,850	908	82,500	137,500	274,000
30 Days Post Study	11.10.2015	1,400,000	4,100	990	36,000	37,000	---	1,200,000	2,600	820	36,000	57,000	---
Overall Reduction (%)		36%	-84%	-551%	-33%	-10%		45%	-64%	-80%	-33%	-69%	
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000		95,000	3,000	3,000	61,000	61,000	
Percent Attainment		7%	73%	303%	169%	165%		8%	115%	366%	169%	107%	
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700		21,000	700	700	4,700	4,700	
Percent Attainment		2%	17%	71%	13%	13%		2%	27%	85%	13%	8%	
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300		200	700	500	400	300	
Percent Attainment		0%	17%	51%	1%	1%		0%	27%	61%	1%	1%	

Notes:
Italicized values represent non-detect reporting limits (or average thereof)
--- = Not analyzed
% = Percent
µg/kg = Micrograms per kilogram
NJDEP = New Jersey Department of Environmental Protection
SRS = Soil remediation standard

Table 5. Study Box Management Schedule

Field Activities	Date	20-Jul	27-Jul	3-Aug	10-Aug	17-Aug	24-Aug	31-Aug	7-Sep	14-Sep	21-Sep	28-Sep	5-Oct	12-Oct	10-Nov
	Study Day	1	7	15	21	29	35	43	49	57	63	71	77	84	114
	Event	*Cycle 1: Start/Baseline*	*Cycle 1: Midpoint*	*Cycle 2: Start*	*Cycle 2: Midpoint*	*Cycle 3: Start*	*Cycle 3: Midpoint*	*Cycle 4: Start*	*Cycle 4: Midpoint*	*Cycle 5: Start*	*Cycle 5: Midpoint*	*Cycle 6: Start*	*Cycle 6: Midpoint*	*Cycle 6: End*	*30 Days Post-Study*
In-situ Measurements															
pH		A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K
Moisture		A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K
Temperature		A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K
ORP		A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K
Laboratory Samples															
SVOCs (SW846 8270)		A thru K x 4	---	A thru K x 1	---	A thru K x 1	---	A thru K x 1	---	A thru K x 4	---	A thru K x 1	---	A thru K x 4	A thru K x 1
E&E (SW846 8330)		A thru K x 4	---	A thru K x 1	---	A thru K x 1	---	A thru K x 1	---	A thru K x 4	---	A thru K x 1	---	A thru K x 4	A thru K x 1
Metals (SW846 6010)		A thru K x 4	---	---	---	---	---	---	---	A thru K x 4	---	---	---	A thru K x 4	---
TOC		A thru K x 4	---	A thru K x 1	---	A thru K x 1	---	A thru K x 1	---	A thru K x 4	---	A thru K x 1	---	A thru K x 4	A thru K x 1
Percent Moisture		A thru K x 4	---	A thru K x 1	---	A thru K x 1	---	A thru K x 1	---	A thru K x 4	---	A thru K x 1	---	A thru K x 4	A thru K x 1
Study Box Management															
Add Water (to 80-90 percent WHC)		B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	B thru K	---
Add Daramend OE (as specified in Table 2)		D thru I	---	D, E, F	---	D, E, F	---	D, E, F	---	D, E, F	---	D, E, F	---	---	---
Add Wood Chips (as specified in Table 2)		J, K	---	---	---	---	---	---	---	---	---	---	---	---	---
Turnover Soil		B thru K	---	C, D, E, F, J	---	C, D, E, F, J	---	C, D, E, F, J	---	C, D, E, F, J	---	B thru K	---	---	---
Check/Evacuate Sumps (as needed)		A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K	A thru K

Notes:
E&E - Explosives and energetics
SVOCs - semivolatile organic compounds
TOC - total organic carbon
ORP - oxidation reduction potential
WHC - water holding capacity

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-A-1	7/20/2015 TNT-PS-A-2	7/20/2015 TNT-PS-A-3	7/20/2015 TNT-PS-A-4	7/20/2015 TNT-PS-B-1	7/20/2015 TNT-PS-B-2	7/20/2015 TNT-PS-B-3
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	58 U	59 U	59 U	60 U	59 U	60 U	58 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	830	1200	1100	1300	1500	2100	910
1,3-Dinitrobenzene	ug/kg	NS	NS	100	210	170	230	440	470	110
1,4-Dinitrobenzene	ug/kg	NS	NS	58 U	59 U	59 U	60 U	59 U	60 U	58 U
1-Nitronaphthalene	ug/kg	NS	NS	410 U	59 U	59 U	60 U	59 U	180 U	58 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**580000**	**770000**	**700000**	**790000**	**830000**	**1300000**	**310000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**7100**	**9500**	**9000**	**8700**	**6500**	**7100**	2500
2-Nitrotoluene	ug/kg	NS	NS	77 U	79 U	79 U	80 U	78 U	80 U	77 U
3-Nitrotoluene	ug/kg	NS	NS	210	190	150	260	220	120	96 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**8400**	**12000**	**11000**	**11000**	**7800**	**8700**	2800
4-Nitrotoluene	ug/kg	NS	NS	230	290	260	250	200	80 U	77 U
HMX	ug/kg	NS	NS	140 U	650 U	780 U	2100 U	1400 U	540 U	140 U
Nitrobenzene	ug/kg	340000	31000	280 U	59 U	59 U	290 U	59 U	60 U	58 U
Nitroglycerin	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
RDX	ug/kg	NS	NS	460 U	1200 U	360 U	430 U	360 U	60 U	58 U
Tetryl	ug/kg	NS	NS	77 U	79 U	79 U	80 U	78 U	80 U	77 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	5940000	10600000	12700000	10700000	11600000	16000000	6010000
Metals										
Aluminum	ug/kg	NS	78000000	9560000	12400000	12600000	11700000	6990000	8730000	7210000
Antimony	ug/kg	450000	31000	1470 J	1730 J	1870 J	1850 J	1510 J	1850 J	2080
Arsenic	ug/kg	19000	19000	1930	2460	2600	2530	1680 J	4580	4220
Barium	ug/kg	59000000	16000000	31900	42000	41600	38000	26900	27900	22900
Beryllium	ug/kg	140000	16000	336 J	436 J	451 J	403 J	290 J	287 J	261 J
Cadmium	ug/kg	78000	78000	79.8 J	96.0 J	74.8 J	114 J	80.6 J	176 J	141 J
Calcium	ug/kg	NS	NS	575000	696000	678000	663000	454000	522000	431000
Chromium	ug/kg	20000	240000	7880	10100	10200	9310	7290	8480	9160
Cobalt	ug/kg	590000	1600000	2560	3260	3340	3030	2590	2760	2580
Copper	ug/kg	45000000	3100000	10000	12900	13300	11900	7560	9070	7550
Iron	ug/kg	NS	NS	10700000	13700000	14400000	12500000	12300000	14100000	14300000
Lead	ug/kg	800000	400000	138000	175000	186000	161000	99200	104000	93000
Magnesium	ug/kg	NS	NS	644000	828000	840000	777000	577000	727000	608000
Manganese	ug/kg	5900000	11000000	84100	108000	111000	99100	90700	101000	93900
Mercury	ug/kg	65000	23000	24.6 J	38.8 J	41.9 J	39.3 J	28.0 J	19.7 J	30.7 J
Nickel	ug/kg	23000000	1600000	4530	5670	5850	5340	3330	5300	4560
Potassium	ug/kg	NS	NS	381000	507000	452000	479000	375000	504000	430000
Selenium	ug/kg	5700000	390000	1630 J	1940 J	1630 J	1470 J	2220	1960 J	1740 J
Silver	ug/kg	5700000	390000	153 J	278 J	296 J	175 J	166 J	285 J	258 J
Sodium	ug/kg	NS	NS	47300 J	50500 J	46100 J	54100 J	46600 J	44800 J	38500 J
Thallium	ug/kg	79000	5000	2880 U	2970 U	2910 U	2970 U	2910 U	2970 U	2940 U
Vanadium	ug/kg	1100000	78000	16800	21200	21800	19700	18000	19800	20400
Zinc	ug/kg	110000000	23000000	22400	26200	26200	23400	15000	24000	15100
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-A-1	7/20/2015 TNT-PS-A-2	7/20/2015 TNT-PS-A-3	7/20/2015 TNT-PS-A-4	7/20/2015 TNT-PS-B-1	7/20/2015 TNT-PS-B-2	7/20/2015 TNT-PS-B-3
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1000 U	1000 U	990 U	990 U	990 U	990 U	990 U
2,4-Dinitrotoluene	ug/kg	3000	700	320	**1300**	**1300**	**710**	**1400**	**2600**	**2300**
2,6-Dinitrotoluene	ug/kg	3000	700	120	390	570	230	350	550	700
2-Chloronaphthalene	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	500 U	500 U	500 U	500 U	490 U	490 U	490 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	17 U	17 U	17	17 U	17 U	17 U
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	170 U	170 U	170 U	170 U	160 U	160 U	160 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	170 U	170 U	170 U	170 U	160 U	160 U	160 U
4-Nitrophenol	ug/kg	NS	NS	500 U	500 U	500 U	500 U	490 U	490 U	490 U
Acenaphthene	ug/kg	37000000	3400000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Acenaphthylene	ug/kg	300000000	NS	17 U	17 U	17 U	17 U	17 U	17 U	5 J
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	17 U	4 J	5 J	17 U	17 U	17 U	4 J
Atrazine	ug/kg	2400000	210000	170 U	170 U	170 U	170 U	160 U	160 U	160 U
Benzaldehyde	ug/kg	68000000	6100000	170 U	170 U	170 U	170 U	160 U	160 U	160 U
Benzo(a)anthracene	ug/kg	2000	600	9 J	17	21	11 J	19	18	24
Benzo(a)pyrene	ug/kg	200	200	7 J	12 J	17	11 J	16 J	15 J	24
Benzo(b)fluoranthene	ug/kg	2000	600	10 J	21	31	15 J	24	25	37
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	8 J	7 J	12 J	11 J	12 J	11 J	16 J
Benzo(k)fluoranthene	ug/kg	23000	6000	6 J	13 J	13 J	8 J	15 J	12 J	18
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	170 U	170 U	170 U	170 U	3100	160 U	160 U
Caprolactam	ug/kg	340000000	31000000	170 U	170 U	170 U	170 U	160 U	160 U	160 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	9 J	19	23	13 J	22	23	30
Dibenzo(a,h)anthracene	ug/kg	200	200	3 J	17 U	17 U	6 J	4 J	5 J	6 J
Dibenzofuran	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	170 U	170 U	170 U	170 U	160 U	160 U	160 U
Dimethyl phthalate	ug/kg	NS	NS	170 U	170 U	170 U	170 U	160 U	160 U	160 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	170 U	170 U	170 U	170 U	160 U	160 U	160 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-A-1	7/20/2015 TNT-PS-A-2	7/20/2015 TNT-PS-A-3	7/20/2015 TNT-PS-A-4	7/20/2015 TNT-PS-B-1	7/20/2015 TNT-PS-B-2	7/20/2015 TNT-PS-B-3
Di-n-octyl phthalate	ug/kg	27000000	2400000	170 U	170 U	170 U	170 U	160 U	160 U	160 U
Fluoranthene	ug/kg	24000000	2300000	15 J	31	39	19	33	32	40
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	500 U	500 U	500 U	500 U	490 U	490 U	490 U
Hexachloroethane	ug/kg	140000	35000	170 U	170 U	170 U	170 U	160 U	160 U	160 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	6 J	8 J	11 J	8 J	12 J	11 J	15 J
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	17 U	17 U	17 U	13 J	17 U	17 U	17 U
Nitrobenzene	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	66 U	67 U	66 U	66 U	66 U	66 U	66 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	7 J	13 J	18	8 J	20	18	20
Phenol	ug/kg	210000000	18000000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	12 J	26	31	16 J	28	26	33

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-B-4	7/20/2015 TNT-PS-C-1	7/20/2015 TNT-PS-C-2	7/20/2015 TNT-PS-C-3	7/20/2015 TNT-PS-C-4	7/20/2015 TNT-PS-D-1	7/20/2015 TNT-PS-D-2
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	59 U	59 U	59 U	59 U	60 U	58 U	58 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	930	1400	1300	730	830	790	570
1,3-Dinitrobenzene	ug/kg	NS	NS	130	160	190	120	130	180	110
1,4-Dinitrobenzene	ug/kg	NS	NS	59 U	59 U	59 U	59 U	60 U	58 U	58 U
1-Nitronaphthalene	ug/kg	NS	NS	59 U	59 U	59 U	59 U	60 U	58 U	58 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**340000**	**420000**	**680000**	**510000**	**330000**	**720000**	**450000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	2800	3400	3900	4000	2000	**6200**	2900
2-Nitrotoluene	ug/kg	NS	NS	79 U	79 U	78 U	79 U	80 U	77 U	77 U
3-Nitrotoluene	ug/kg	NS	NS	50 J	51 J	54 J	170	100 U	260	96 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	3200	3900	**5200**	**5100**	2400	**7600**	3400
4-Nitrotoluene	ug/kg	NS	NS	79 U	79 U	78 U	79 U	80 U	77 U	77 U
HMX	ug/kg	NS	NS	530 U	710 U	490 U	150 U	270 U	140 U	110 J
Nitrobenzene	ug/kg	340000	31000	59 U	59 U	59 U	59 U	60 U	58 U	58 U
Nitroglycerin	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
RDX	ug/kg	NS	NS	59 U	59 U	59 U	490 U	60 U	310 U	130 U
Tetryl	ug/kg	NS	NS	79 U	79 U	78 U	79 U	80 U	77 U	77 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	8790000	10400000	5120000	5650000	6710000	8330000	7540000
Metals										
Aluminum	ug/kg	NS	78000000	8030000	9390000	9490000	8660000	6880000	12200000	11500000
Antimony	ug/kg	450000	31000	2370	2030	1590 J	2020	1730 J	2030	1980
Arsenic	ug/kg	19000	19000	4360	4460	4410	3800	3720	4560	4290
Barium	ug/kg	59000000	16000000	24400	33100	30700	29300	23800	38700	36300
Beryllium	ug/kg	140000	16000	305 J	305 J	306 J	298 J	239 J	388 J	378 J
Cadmium	ug/kg	78000	78000	172 J	151 J	127 J	139 J	151 J	188 J	178 J
Calcium	ug/kg	NS	NS	466000	668000	793000	654000	558000	610000	468000
Chromium	ug/kg	20000	240000	12500	8010	11400	8340	7740	11100	9910
Cobalt	ug/kg	590000	1600000	2770	2970	2710	2600	2230	3390	3510
Copper	ug/kg	45000000	3100000	8180	9860	9440	14300	8010	11500	11400
Iron	ug/kg	NS	NS	14400000	13500000	13000000	12700000	12500000	15100000	14300000
Lead	ug/kg	800000	400000	102000	137000	130000	120000	105000	137000	130000
Magnesium	ug/kg	NS	NS	654000	673000	681000	659000	524000	1050000	806000
Manganese	ug/kg	5900000	11000000	104000	120000	93200	110000	83700	127000	130000
Mercury	ug/kg	65000	23000	34.5 J	33.1 J	24.4 J	24.9 J	25.0 J	37.1 J	25.5 J
Nickel	ug/kg	23000000	1600000	4500	4930	5200	4680	3980	6430	5980
Potassium	ug/kg	NS	NS	414000	402000	495000	397000	369000	553000	499000
Selenium	ug/kg	5700000	390000	2250	1620 J	1660 J	1800 J	1880 J	1600 J	1580 J
Silver	ug/kg	5700000	390000	259 J	255 J	228 J	245 J	117 J	307 J	306 J
Sodium	ug/kg	NS	NS	38000 J	43700 J	43800 J	35400 J	36000 J	66700 J	40100 J
Thallium	ug/kg	79000	5000	2880 U	2940 U	2880 U	2910 U	2910 U	2910 U	2880 U
Vanadium	ug/kg	1100000	78000	22800	17700	21200	18300	15800	23400	21500
Zinc	ug/kg	110000000	23000000	16600	19100	17700	17200	15200	23100	21600
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-B-4	7/20/2015 TNT-PS-C-1	7/20/2015 TNT-PS-C-2	7/20/2015 TNT-PS-C-3	7/20/2015 TNT-PS-C-4	7/20/2015 TNT-PS-D-1	7/20/2015 TNT-PS-D-2
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1000 U	980 U	990 U	990 U	990 U	990 U	990 U
2,4-Dinitrotoluene	ug/kg	3000	700	**2000**	**1900**	**1200**	**2400**	**2900**	**2500**	**2200**
2,6-Dinitrotoluene	ug/kg	3000	700	490	490	310	**760**	**770**	640	570
2-Chloronaphthalene	ug/kg	NS	NS	33 U	32 U	33 U	33 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	500 U	490 U	500 U	500 U	500 U	500 U	490 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	170 U	160 U	170 U	170 U	170 U	170 U	160 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	170 U	160 U	170 U	170 U	170 U	170 U	160 U
4-Nitrophenol	ug/kg	NS	NS	500 U	490 U	500 U	500 U	500 U	500 U	490 U
Acenaphthene	ug/kg	37000000	3400000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Acenaphthylene	ug/kg	300000000	NS	13 J	17 U	17 U	17 U	5 J	4 J	17 U
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	9 J	17 U	17 U	17 U	3 J	4 J	17 U
Atrazine	ug/kg	2400000	210000	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Benzaldehyde	ug/kg	68000000	6100000	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Benzo(a)anthracene	ug/kg	2000	600	76	11 J	13 J	20	24	26	14 J
Benzo(a)pyrene	ug/kg	200	200	63	9 J	12 J	17 J	22	22	11 J
Benzo(b)fluoranthene	ug/kg	2000	600	89	16 J	20	29	36	33	19
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	35	6 J	8 J	13 J	15 J	15 J	8 J
Benzo(k)fluoranthene	ug/kg	23000	6000	42	8 J	10 J	15 J	19	17 J	7 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Caprolactam	ug/kg	340000000	31000000	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	71	14 J	16 J	22	27	27	14 J
Dibenzo(a,h)anthracene	ug/kg	200	200	10 J	17 U	17 U	4 J	5 J	6 J	4 J
Dibenzofuran	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Dimethyl phthalate	ug/kg	NS	NS	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	170 U	160 U	170 U	170 U	170 U	170 U	160 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-B-4	7/20/2015 TNT-PS-C-1	7/20/2015 TNT-PS-C-2	7/20/2015 TNT-PS-C-3	7/20/2015 TNT-PS-C-4	7/20/2015 TNT-PS-D-1	7/20/2015 TNT-PS-D-2
Di-n-octyl phthalate	ug/kg	27000000	2400000	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Fluoranthene	ug/kg	24000000	2300000	130	22	24	37	42	43	23
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	500 U	490 U	500 U	500 U	500 U	500 U	490 U
Hexachloroethane	ug/kg	140000	35000	170 U	160 U	170 U	170 U	170 U	170 U	160 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	35	7 J	9 J	12 J	15 J	14 J	9 J
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Nitrobenzene	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	66 U	66 U	66 U	66 U	66 U	66 U	66 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	21	14 J	12 J	20	22	22	13 J
Phenol	ug/kg	210000000	18000000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	110	18	20	30	35	34	18

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-D-3	7/20/2015 TNT-PS-D-4	7/20/2015 TNT-PS-E-1	7/20/2015 TNT-PS-E-2	7/20/2015 TNT-PS-E-3	7/20/2015 TNT-PS-E-4	7/20/2015 TNT-PS-F-1
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	59 U	58 U	60 U	59 U	59 U	58 U	60 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	810	520	340	920	1200	710	420
1,3-Dinitrobenzene	ug/kg	NS	NS	160	94	64	100	140	85	89
1,4-Dinitrobenzene	ug/kg	NS	NS	59 U	58 U	60 U	59 U	59 U	58 U	60 U
1-Nitronaphthalene	ug/kg	NS	NS	59 U	58 U	60 U	59 U	59 U	58 U	60 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**560000**	**270000**	**180000**	**290000**	**590000**	**270000**	**390000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	3700	2600	1500	2400	3400	1900	2600
2-Nitrotoluene	ug/kg	NS	NS	78 U	78 U	80 U	79 U	78 U	78 U	80 U
3-Nitrotoluene	ug/kg	NS	NS	98 U	54 J	100 U	99 U	160	97 U	100 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	4700	3100	1800	2800	4200	2200	2700
4-Nitrotoluene	ug/kg	NS	NS	78 U	78 U	80 U	79 U	78 U	78 U	80 U
HMX	ug/kg	NS	NS	490 U	270 U	150 U	150 U	150 U	260 U	150 U
Nitrobenzene	ug/kg	340000	31000	59 U	58 U	60 U	59 U	59 U	58 U	60 U
Nitroglycerin	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	6000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
RDX	ug/kg	NS	NS	70 U	58 U	60 U	59 U	59 U	58 U	80
Tetryl	ug/kg	NS	NS	78 U	78 U	80 U	79 U	78 U	78 U	80 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	5900000	5100000	8450000	2830000	9030000	5380000	7740000
Metals										
Aluminum	ug/kg	NS	78000000	10600000	12800000	10200000	9450000	10000000	7270000	9070000
Antimony	ug/kg	450000	31000	1930	2140	2060	1810 J	1730 J	2090	2240
Arsenic	ug/kg	19000	19000	4540	5060	4350	3920	3830	3960	4720
Barium	ug/kg	59000000	16000000	34800	41900	33100	42800	39600	24700	28700
Beryllium	ug/kg	140000	16000	343 J	409 J	328 J	313 J	314 J	259 J	301 J
Cadmium	ug/kg	78000	78000	197 J	197 J	164 J	173 J	155 J	155 J	158 J
Calcium	ug/kg	NS	NS	388000	539000	637000	482000	447000	406000	453000
Chromium	ug/kg	20000	240000	9020	10500	9670	9210	8050	10800	8250
Cobalt	ug/kg	590000	1600000	2980	3780	3400	2780	3200	2570	2840
Copper	ug/kg	45000000	3100000	10700	12800	10200	9540	9650	8370	9690
Iron	ug/kg	NS	NS	14700000	15500000	13900000	12700000	12500000	13500000	15100000
Lead	ug/kg	800000	400000	125000	154000	126000	115000	119000	94100	115000
Magnesium	ug/kg	NS	NS	764000	886000	752000	724000	697000	847000	677000
Manganese	ug/kg	5900000	11000000	110000	146000	115000	101000	149000	108000	105000
Mercury	ug/kg	65000	23000	24.4 J	33.3 J	28.6 J	23.1 J	29.1 J	26.5 J	18.6 J
Nickel	ug/kg	23000000	1600000	5530	6540	5520	5010	5280	4420	5050
Potassium	ug/kg	NS	NS	425000	511000	448000	441000	465000	342000	382000
Selenium	ug/kg	5700000	390000	1960	2020	1880 J	1920 J	1470 J	2070	2260
Silver	ug/kg	5700000	390000	267 J	297 J	281 J	139 J	126 J	317 J	365 J
Sodium	ug/kg	NS	NS	38200 J	41300 J	41100 J	44500 J	41200 J	31000 J	36400 J
Thallium	ug/kg	79000	5000	2880 U	2970 U	2970 U	2970 U	2970 U	2970 U	2940 U
Vanadium	ug/kg	1100000	78000	20000	22900	21300	18700	21000	16800	18800
Zinc	ug/kg	110000000	23000000	20300	24900	20800	19100	18400	22900	19300
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-D-3	7/20/2015 TNT-PS-D-4	7/20/2015 TNT-PS-E-1	7/20/2015 TNT-PS-E-2	7/20/2015 TNT-PS-E-3	7/20/2015 TNT-PS-E-4	7/20/2015 TNT-PS-F-1
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1000 U	1000 U	1000 U	990 U	990 U	990 U	1000 U
2,4-Dinitrotoluene	ug/kg	3000	700	**2300**	**1900**	**2400**	**2300**	**2100**	**2400**	**1900**
2,6-Dinitrotoluene	ug/kg	3000	700	690	670	700	660	33 U	**720**	450
2-Chloronaphthalene	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	500 U	500 U	500 U	500 U	500 U	500 U	500 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Nitrophenol	ug/kg	NS	NS	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Acenaphthene	ug/kg	37000000	3400000	17 U	17 U	17 U	17 U	6 J	17 U	17 U
Acenaphthylene	ug/kg	300000000	NS	5 J	4 J	6 J	4 J	17 U	17 U	17 U
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	6 J	17 U	17 U	3 J	38	3 J	17 U
Atrazine	ug/kg	2400000	210000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzaldehyde	ug/kg	68000000	6100000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	ug/kg	2000	600	22	22	35	21	82	26	21
Benzo(a)pyrene	ug/kg	200	200	22	18	27	18	71	21	22
Benzo(b)fluoranthene	ug/kg	2000	600	33	31	44	31	90	36	35
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	14 J	14 J	17	13 J	43	14 J	16 J
Benzo(k)fluoranthene	ug/kg	23000	6000	17	16 J	25	11 J	52	14 J	15 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Caprolactam	ug/kg	340000000	31000000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	28	25	36	22	76	28	26
Dibenzo(a,h)anthracene	ug/kg	200	200	5 J	5 J	6 J	5 J	11 J	17 U	6 J
Dibenzofuran	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dimethyl phthalate	ug/kg	NS	NS	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	170 U	170 U	170 U	170 U	170 U	170 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-D-3	7/20/2015 TNT-PS-D-4	7/20/2015 TNT-PS-E-1	7/20/2015 TNT-PS-E-2	7/20/2015 TNT-PS-E-3	7/20/2015 TNT-PS-E-4	7/20/2015 TNT-PS-F-1
Di-n-octyl phthalate	ug/kg	27000000	2400000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluoranthene	ug/kg	24000000	2300000	42	38	55	43	170	42	40
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	6 J	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Hexachloroethane	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	12 J	12 J	18	12 J	38	14 J	16 J
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Nitrobenzene	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	66 U	66 U	66 U	66 U	66 U	66 U	66 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	21	19	20	25	120	18	19
Phenol	ug/kg	210000000	18000000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	35	32	47	36	140	35	35

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-F-2	7/20/2015 TNT-PS-F-3	7/20/2015 TNT-PS-F-4	7/20/2015 TNT-PS-G-1	7/20/2015 TNT-PS-G-2	7/20/2015 TNT-PS-G-3	7/20/2015 TNT-PS-G-4
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	60 U	59 U	59 U	60 U	59 U	59 U	59 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	850	530	570	590	560	680	510
1,3-Dinitrobenzene	ug/kg	NS	NS	89	86	110	110	80	99	100
1,4-Dinitrobenzene	ug/kg	NS	NS	60 U	59 U	59 U	60 U	59 U	59 U	59 U
1-Nitronaphthalene	ug/kg	NS	NS	60 U	59 U	59 U	60 U	59 U	59 U	59 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**460000**	**600000**	**490000**	**490000**	**470000**	**410000**	**290000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	4300	4200	2600	2900	3000	3400	2400
2-Nitrotoluene	ug/kg	NS	NS	80 U	79 U	79 U	80 U	79 U	78 U	78 U
3-Nitrotoluene	ug/kg	NS	NS	92 J	99 U	99 U	69 J	64 J	57 J	55 J
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**4900**	**5000**	2700	3000	3200	3700	2500
4-Nitrotoluene	ug/kg	NS	NS	110	71 J	79 U	81	90	59 J	44 J
HMX	ug/kg	NS	NS	150 U	410 U	190 U	360 U	250 U	150 U	150 U
Nitrobenzene	ug/kg	340000	31000	120 U	290	170 U	390 U	230 U	59 U	59 U
Nitroglycerin	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
RDX	ug/kg	NS	NS	60 U	95 U	59 U	80 U	59 U	59 U	59 U
Tetryl	ug/kg	NS	NS	80 U	79 U	79 U	80 U	79 U	78 U	78 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	9810000	8920000	8710000	10700000	8540000	9910000	10300000
Metals										
Aluminum	ug/kg	NS	78000000	10600000	10600000	9340000	10500000	8950000	9640000	10500000
Antimony	ug/kg	450000	31000	1840 J	2160	1760 J	1970 J	1750 J	2140	1930 J
Arsenic	ug/kg	19000	19000	4630	4100	4030	2020	1880 J	1910 J	2040
Barium	ug/kg	59000000	16000000	33800	35100	29000	34400	28600	30600	32900
Beryllium	ug/kg	140000	16000	345 J	358 J	302 J	388 J	341 J	368 J	402 J
Cadmium	ug/kg	78000	78000	156 J	215 J	175 J	52.0 J	51.9 J	58.8 J	500 U
Calcium	ug/kg	NS	NS	542000	530000	429000	591000	545000	601000	585000
Chromium	ug/kg	20000	240000	9880	9380	8190	9120	7920	8820	9120
Cobalt	ug/kg	590000	1600000	3020	2940	2890	2960	3040	3700	2770
Copper	ug/kg	45000000	3100000	11100	11200	9290	11600	10200	10800	10600
Iron	ug/kg	NS	NS	13700000	14500000	12800000	13600000	12500000	13700000	14100000
Lead	ug/kg	800000	400000	137000	140000	111000	133000	116000	122000	127000
Magnesium	ug/kg	NS	NS	803000	791000	664000	776000	713000	739000	778000
Manganese	ug/kg	5900000	11000000	111000	110000	98200	102000	104000	102000	104000
Mercury	ug/kg	65000	23000	26.2 J	32.2 J	20.7 J	22.9 J	19.7 J	28.5 J	27.4 J
Nickel	ug/kg	23000000	1600000	5560	5660	5500	4970	4400	4750	4930
Potassium	ug/kg	NS	NS	423000	449000	442000	476000	400000	425000	481000
Selenium	ug/kg	5700000	390000	1680 J	2520	1640 J	1990 J	1720 J	1790 J	1650 J
Silver	ug/kg	5700000	390000	266 J	270 J	167 J	386 J	229 J	269 J	374 J
Sodium	ug/kg	NS	NS	46100 J	38600 J	39600 J	39600 J	33600 J	38600 J	36200 J
Thallium	ug/kg	79000	5000	3000 U	2940 U	3000 U	3000 U	2880 U	2940 U	3000 U
Vanadium	ug/kg	1100000	78000	19500	20700	18400	19100	17400	18700	22300
Zinc	ug/kg	110000000	23000000	20700	29100	18100	21000	19400	20000	20500
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	23 J	33 U	33 U	33 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-F-2	7/20/2015 TNT-PS-F-3	7/20/2015 TNT-PS-F-4	7/20/2015 TNT-PS-G-1	7/20/2015 TNT-PS-G-2	7/20/2015 TNT-PS-G-3	7/20/2015 TNT-PS-G-4
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1000 U	990 U	990 U	990 U	990 U	1000 U	1000 U
2,4-Dinitrotoluene	ug/kg	3000	700	**1500**	**2500**	**2100**	**2700**	**3300**	**2700**	**2700**
2,6-Dinitrotoluene	ug/kg	3000	700	390	**800**	520	**710**	**950**	**740**	**790**
2-Chloronaphthalene	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	500 U	500 U	500 U	500 U	500 U	500 U	500 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Nitrophenol	ug/kg	NS	NS	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Acenaphthene	ug/kg	37000000	3400000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Acenaphthylene	ug/kg	300000000	NS	17 U	17 U	7 J	5 J	17 U	17 U	7 J
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	4 J	9 J	5 J	7 J	8 J	9 J	4 J
Atrazine	ug/kg	2400000	210000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzaldehyde	ug/kg	68000000	6100000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	ug/kg	2000	600	17	37	28	26	29	23	22
Benzo(a)pyrene	ug/kg	200	200	17	34	27	23	25	21	20
Benzo(b)fluoranthene	ug/kg	2000	600	27	53	42	37	42	33	35
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	12 J	23	19	17	17	16 J	14 J
Benzo(k)fluoranthene	ug/kg	23000	6000	10 J	24	19	17	20	16 J	18
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Caprolactam	ug/kg	340000000	31000000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	21	40	27	30	34	27	28
Dibenzo(a,h)anthracene	ug/kg	200	200	5 J	9 J	7 J	7 J	7 J	5 J	5 J
Dibenzofuran	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dimethyl phthalate	ug/kg	NS	NS	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	170 U	170 U	170 U	170 U	170 U	170 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-F-2	7/20/2015 TNT-PS-F-3	7/20/2015 TNT-PS-F-4	7/20/2015 TNT-PS-G-1	7/20/2015 TNT-PS-G-2	7/20/2015 TNT-PS-G-3	7/20/2015 TNT-PS-G-4
Di-n-octyl phthalate	ug/kg	27000000	2400000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluoranthene	ug/kg	24000000	2300000	29	62	44	43	47	45	42
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Hexachloroethane	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	9 J	23	18	16 J	19	15 J	15 J
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Nitrobenzene	ug/kg	340000	31000	33 U	27 J	33 U	33 U	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	67 U	66 U	66 U	66 U	66 U	67 U	67 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	14 J	32	22	24	26	22	22
Phenol	ug/kg	210000000	18000000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	25	51	39	37	38	34	34

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-H-1	7/20/2015 TNT-PS-H-2	7/20/2015 TNT-PS-H-3	7/20/2015 TNT-PS-H-4	7/20/2015 TNT-PS-I-1	7/20/2015 TNT-PS-I-2	7/20/2015 TNT-PS-I-3
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	59 U	60 U	59 U	60 U	58 U	59 U	58 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	510	500	430	440	140	570	1100
1,3-Dinitrobenzene	ug/kg	NS	NS	82	100	110	50 J	58 U	110	180
1,4-Dinitrobenzene	ug/kg	NS	NS	59 U	60 U	59 U	60 U	58 U	59 U	58 U
1-Nitronaphthalene	ug/kg	NS	NS	59 U	60 U	59 U	60 U	58 U	59 U	58 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**240000**	**380000**	**340000**	**250000**	**230000**	**290000**	**440000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	1600	2700	2900	2400	470	2600	4600
2-Nitrotoluene	ug/kg	NS	NS	78 U	80 U	78 U	80 U	78 U	79 U	77 U
3-Nitrotoluene	ug/kg	NS	NS	98 U	57 J	98 U	100 U	97 U	86 J	50 J
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	1600	2700	2900	2500	580	3100	**5200**
4-Nitrotoluene	ug/kg	NS	NS	78 U	41 J	78 U	80 U	78 U	70 J	88
HMX	ug/kg	NS	NS	150 U	170 U	290 U	150 U	150 U	250 U	190 U
Nitrobenzene	ug/kg	340000	31000	59 U	60 U	59 U	60 U	58 U	66 U	260 U
Nitroglycerin	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
RDX	ug/kg	NS	NS	59 U	60 U	62 U	60 U	58 U	65 U	380 U
Tetryl	ug/kg	NS	NS	78 U	80 U	78 U	80 U	78 U	79 U	77 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	6830000	8160000	7820000	8460000	8550000	5900000	8040000
Metals										
Aluminum	ug/kg	NS	78000000	8240000	7140000	7730000	7160000	6190000	6370000	7480000
Antimony	ug/kg	450000	31000	1980 J	2030	2130	1810 J	1970 J	1860 J	2230
Arsenic	ug/kg	19000	19000	1610 J	1480 J	1510 J	1990	1320 J	1320 J	1630 J
Barium	ug/kg	59000000	16000000	25800	24500	25200	22400	20100	21200	24200
Beryllium	ug/kg	140000	16000	315 J	293 J	314 J	301 J	266 J	261 J	314 J
Cadmium	ug/kg	78000	78000	54.5 J	54.0 J	49.5 J	61.2 J	54.0 J	66.7 J	490 U
Calcium	ug/kg	NS	NS	649000	802000	580000	703000	663000	816000	700000
Chromium	ug/kg	20000	240000	8070	8280	11400	7350	7190	7710	7550
Cobalt	ug/kg	590000	1600000	2380	2420	2430	2180	2270	2300	2680
Copper	ug/kg	45000000	3100000	8840	9480	8770	8200	7290	7520	9000
Iron	ug/kg	NS	NS	12300000	11900000	13000000	11100000	12800000	11300000	14000000
Lead	ug/kg	800000	400000	113000	114000	121000	102000	86300	91700	113000
Magnesium	ug/kg	NS	NS	731000	643000	613000	616000	532000	570000	613000
Manganese	ug/kg	5900000	11000000	93400	92100	94300	78400	83100	99800	102000
Mercury	ug/kg	65000	23000	13.6 J	18.6 J	22.3 J	27.7 J	23.6 J	23.3 J	25.0 J
Nickel	ug/kg	23000000	1600000	4060	3660	3950	3610	3170	3440	3740
Potassium	ug/kg	NS	NS	429000	413000	388000	386000	349000	351000	340000
Selenium	ug/kg	5700000	390000	1630 J	1770 J	1860 J	1500 J	1920 J	1850 J	1830 J
Silver	ug/kg	5700000	390000	252 J	255 J	367 J	240 J	277 J	290 J	355 J
Sodium	ug/kg	NS	NS	33200 J	35900 J	29700 J	32700 J	25000 J	29700 J	27200 J
Thallium	ug/kg	79000	5000	2970 U	3000 U	2910 U	2910 U	3000 U	2940 U	2940 U
Vanadium	ug/kg	1100000	78000	16800	15700	20000	14600	16600	14800	17500
Zinc	ug/kg	110000000	23000000	17600	17500	17000	15400	13200	15300	15700
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-H-1	7/20/2015 TNT-PS-H-2	7/20/2015 TNT-PS-H-3	7/20/2015 TNT-PS-H-4	7/20/2015 TNT-PS-I-1	7/20/2015 TNT-PS-I-2	7/20/2015 TNT-PS-I-3
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	990 U	990 U	990 U	1000 U	990 U	990 U	990 U
2,4-Dinitrotoluene	ug/kg	3000	700	**2000**	**2400**	**2300**	**1900**	**1900**	**2200**	**1800**
2,6-Dinitrotoluene	ug/kg	3000	700	580	650	590	550	440	560	520
2-Chloronaphthalene	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	490 U	500 U	500 U	500 U	500 U	490 U	500 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	160 U	170 U	170 U	170 U	170 U	160 U	170 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	160 U	170 U	170 U	170 U	170 U	160 U	170 U
4-Nitrophenol	ug/kg	NS	NS	490 U	500 U	500 U	500 U	500 U	490 U	500 U
Acenaphthene	ug/kg	37000000	3400000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Acenaphthylene	ug/kg	300000000	NS	4 J	8 J	5 J	5 J	17 U	11 J	4 J
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	4 J	4 J	4 J	9 J	17 U	14 J	5 J
Atrazine	ug/kg	2400000	210000	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Benzaldehyde	ug/kg	68000000	6100000	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Benzo(a)anthracene	ug/kg	2000	600	22	34	27	33	18	49	26
Benzo(a)pyrene	ug/kg	200	200	19	28	26	28	16 J	45	21
Benzo(b)fluoranthene	ug/kg	2000	600	29	50	44	40	25	56	32
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	12 J	18	18	16 J	13 J	25	14 J
Benzo(k)fluoranthene	ug/kg	23000	6000	15 J	20	16 J	20	14 J	33	16 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Caprolactam	ug/kg	340000000	31000000	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	24	37	30	33	19	49	27
Dibenzo(a,h)anthracene	ug/kg	200	200	4 J	6 J	5 J	6 J	17 U	8 J	5 J
Dibenzofuran	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Dimethyl phthalate	ug/kg	NS	NS	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	160 U	170 U	170 U	170 U	170 U	160 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-H-1	7/20/2015 TNT-PS-H-2	7/20/2015 TNT-PS-H-3	7/20/2015 TNT-PS-H-4	7/20/2015 TNT-PS-I-1	7/20/2015 TNT-PS-I-2	7/20/2015 TNT-PS-I-3
Di-n-octyl phthalate	ug/kg	27000000	2400000	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Fluoranthene	ug/kg	24000000	2300000	36	54	50	64	28	83	41
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	490 U	500 U	500 U	500 U	500 U	490 U	500 U
Hexachloroethane	ug/kg	140000	35000	160 U	170 U	170 U	170 U	170 U	160 U	170 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	12 J	18	18	16 J	10 J	23	13 J
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Nitrobenzene	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	66 U	66 U	66 U	67 U	66 U	66 U	66 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	17	20	23	29	14 J	52	20
Phenol	ug/kg	210000000	18000000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	28	49	42	55	22	74	35

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-I-4	7/20/2015 TNT-PS-J-1	7/20/2015 TNT-PS-J-2	7/20/2015 TNT-PS-J-3	7/20/2015 TNT-PS-J-4	7/20/2015 TNT-PS-K-1	7/20/2015 TNT-PS-K-2
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	59 U	58 U	59 U	58 U	59 U	59 U	59 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	920	370	390	880	650	700	950
1,3-Dinitrobenzene	ug/kg	NS	NS	130	73	130	130	92	86	220
1,4-Dinitrobenzene	ug/kg	NS	NS	59 U	58 U	59 U	58 U	59 U	59 U	59 U
1-Nitronaphthalene	ug/kg	NS	NS	59 U	58 U	59 U	58 U	59 U	59 U	59 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**700000**	**210000**	**550000**	**400000**	**380000**	**770000**	**900000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**5200**	1700	4400	2700	2600	**7300**	**7000**
2-Nitrotoluene	ug/kg	NS	NS	79 U	77 U	78 U	78 U	79 U	79 U	79 U
3-Nitrotoluene	ug/kg	NS	NS	190	96 U	98 U	97 U	99 U	99 U	190
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**5900**	1900	**4800**	3000	3100	**8900**	**8500**
4-Nitrotoluene	ug/kg	NS	NS	270	77 U	78 U	78 U	79 U	580	630 U
HMX	ug/kg	NS	NS	150 U	140 U	150 U	150 U	150 U	150 U	150 U
Nitrobenzene	ug/kg	340000	31000	59 U	58 U	59 U	58 U	59 U	59 U	59 U
Nitroglycerin	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	5900 U	5900 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
RDX	ug/kg	NS	NS	140 U	58 U	210 U	58 U	60 U	350 U	270 U
Tetryl	ug/kg	NS	NS	79 U	77 U	78 U	78 U	79 U	79 U	79 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	9970000	5360000	6710000	10300000	5530000	8890000	6950000
Metals										
Aluminum	ug/kg	NS	78000000	7720000	10300000	9740000	7970000	9540000	10200000	11300000
Antimony	ug/kg	450000	31000	1470 J	2080	1970	2610	1730 J	1810 J	1960
Arsenic	ug/kg	19000	19000	1890 J	2010	1680 J	1930 J	1820 J	2030	2400
Barium	ug/kg	59000000	16000000	31900	32500	32900	24900	31200	32900	37000
Beryllium	ug/kg	140000	16000	294 J	377 J	383 J	317 J	370 J	376 J	423 J
Cadmium	ug/kg	78000	78000	62.0 J	55.3 J	56.3 J	485 U	48.1 J	52.9 J	54.4 J
Calcium	ug/kg	NS	NS	797000	483000	502000	467000	464000	725000	713000
Chromium	ug/kg	20000	240000	7590	8870	9650	9090	8920	10200	9510
Cobalt	ug/kg	590000	1600000	2530	2830	3310	2660	2860	2780	3020
Copper	ug/kg	45000000	3100000	9090	10700	10300	9400	10400	11000	12200
Iron	ug/kg	NS	NS	11000000	13500000	14300000	17100000	12800000	12800000	14300000
Lead	ug/kg	800000	400000	121000	127000	121000	106000	125000	137000	159000
Magnesium	ug/kg	NS	NS	612000	741000	710000	642000	686000	757000	793000
Manganese	ug/kg	5900000	11000000	92800	107000	163000	109000	105000	104000	111000
Mercury	ug/kg	65000	23000	20.0 J	26.4 J	24.8 J	19.1 J	30.6 J	30.5 J	28.9 J
Nickel	ug/kg	23000000	1600000	3680	4720	5390	4230	4590	4670	5670
Potassium	ug/kg	NS	NS	336000	450000	418000	334000	361000	396000	442000
Selenium	ug/kg	5700000	390000	1310 J	2020	2000	2530	1810 J	1650 J	1750 J
Silver	ug/kg	5700000	390000	227 J	328 J	439 J	585	238 J	297 J	360 J
Sodium	ug/kg	NS	NS	28700 J	31400 J	31600 J	26000 J	29600 J	40700 J	34600 J
Thallium	ug/kg	79000	5000	3000 U	2910 U	2910 U	2910 U	2880 U	2940 U	2910 U
Vanadium	ug/kg	1100000	78000	15400	18400	20000	17800	18600	18000	19700
Zinc	ug/kg	110000000	23000000	25000	21400	19300	22300	20900	21700	22500
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-I-4	7/20/2015 TNT-PS-J-1	7/20/2015 TNT-PS-J-2	7/20/2015 TNT-PS-J-3	7/20/2015 TNT-PS-J-4	7/20/2015 TNT-PS-K-1	7/20/2015 TNT-PS-K-2
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	990 U	1000 U	980 U	1000 U	990 U	990 U	990 U
2,4-Dinitrotoluene	ug/kg	3000	700	**1800**	**2000**	**2300**	**2000**	**2600**	**1700**	**950**
2,6-Dinitrotoluene	ug/kg	3000	700	450	510	33 U	33 U	33 U	480	280
2-Chloronaphthalene	ug/kg	NS	NS	33 U	33 U	32 U	33 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	500 U	500 U	490 U	500 U	500 U	500 U	500 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	170 U	170 U	160 U	170 U	170 U	170 U	170 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	170 U	170 U	160 U	170 U	170 U	170 U	170 U
4-Nitrophenol	ug/kg	NS	NS	500 U	500 U	490 U	500 U	500 U	500 U	500 U
Acenaphthene	ug/kg	37000000	3400000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Acenaphthylene	ug/kg	300000000	NS	3 J	17 U	6 J	17 U	4 J	8 J	17 U
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	17 U	15 J	9 J	4 J	17 U	5 J	17 U
Atrazine	ug/kg	2400000	210000	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Benzaldehyde	ug/kg	68000000	6100000	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	ug/kg	2000	600	14 J	27	29	18	17 J	25	9 J
Benzo(a)pyrene	ug/kg	200	200	13 J	24	25	17 J	17 J	27	10 J
Benzo(b)fluoranthene	ug/kg	2000	600	23	33	38	25	24	40	15 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	10 J	15 J	17	12 J	11 J	20	9 J
Benzo(k)fluoranthene	ug/kg	23000	6000	8 J	17 J	21	14 J	13 J	19	9 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Caprolactam	ug/kg	340000000	31000000	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	17	27	32	20	20	29	12 J
Dibenzo(a,h)anthracene	ug/kg	200	200	17 U	4 J	5 J	4 J	4 J	11 J	4 J
Dibenzofuran	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Dimethyl phthalate	ug/kg	NS	NS	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	170 U	170 U	160 U	170 U	170 U	170 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-I-4	7/20/2015 TNT-PS-J-1	7/20/2015 TNT-PS-J-2	7/20/2015 TNT-PS-J-3	7/20/2015 TNT-PS-J-4	7/20/2015 TNT-PS-K-1	7/20/2015 TNT-PS-K-2
Di-n-octyl phthalate	ug/kg	27000000	2400000	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Fluoranthene	ug/kg	24000000	2300000	26	58	65	32	33	44	13 J
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	500 U	500 U	490 U	500 U	500 U	500 U	500 U
Hexachloroethane	ug/kg	140000	35000	170 U	170 U	160 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	11 J	15 J	18	12 J	11 J	17	9 J
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	17 U	17 U	17 U	4 J	17 U	17 U	17 U
Nitrobenzene	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	66 U	67 U	66 U	67 U	66 U	66 U	66 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	14 J	51	39	16 J	19	26	7 J
Phenol	ug/kg	210000000	18000000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	23	52	54	26	26	42	13 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-K-3	7/20/2015 TNT-PS-K-4	8/3/2015 TNT-PS-A	8/3/2015 TNT-PS-B	8/3/2015 TNT-PS-C	8/3/2015 TNT-PS-D	8/3/2015 TNT-PS-E
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	60 U	60 U	300 U	300 U	300 U	300 U	300 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	1000	860	2300	2500	2500 U	300 U	300 U
1,3-Dinitrobenzene	ug/kg	NS	NS	190	200	440	160 J	500 U	150 J	300 U
1,4-Dinitrobenzene	ug/kg	NS	NS	60 U	60 U	300 U	300 U	300 U	300 U	300 U
1-Nitronaphthalene	ug/kg	NS	NS	60 U	60 U	300 U	300 U	300 U	300 U	300 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**800000**	**930000**	**1200000**	**950000**	**1200000**	**480000**	**360000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**7100**	**8700**	**8800**	**9400**	**8500**	**160000**	**190000**
2-Nitrotoluene	ug/kg	NS	NS	80 U	80 U	400 U	400 U	400 U	400 U	400 U
3-Nitrotoluene	ug/kg	NS	NS	100 J	650 U	500 U	500 U	500 U	500 U	500 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**8600**	**11000**	**11000**	**11000**	**9900**	**200000**	**260000**
4-Nitrotoluene	ug/kg	NS	NS	540 U	79 J	400 U	400 U	620 U	400 U	400 U
HMX	ug/kg	NS	NS	710 U	800 U	740 U	740 U	740 U	750 U	19000 U
Nitrobenzene	ug/kg	340000	31000	60 U	60 U	300 U	300 U	300 U	300 U	300 U
Nitroglycerin	ug/kg	NS	NS	6000 U	1200 U	5900 U	5900 U	5900 U	6000 U	5900 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	1200 U	1200 U	5900 U	5900 U	5900 U	6000 U	5900 U
RDX	ug/kg	NS	NS	60 U	550 U	300 U	300 U	300 U	300 U	300 U
Tetryl	ug/kg	NS	NS	80 U	80 U	400 U	400 U	400 U	400 U	400 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	8890000	7400000	7840000	8810000	9320000	11400000	13700000
Metals										
Aluminum	ug/kg	NS	78000000	9480000	10300000	10600000	12800000	12000000	11700000	11100000
Antimony	ug/kg	450000	31000	1820 J	1870 J	541 J	399 J	1980 U	588 J	464 J
Arsenic	ug/kg	19000	19000	2380	2380	1900 J	2300	2170	1490 J	1660 J
Barium	ug/kg	59000000	16000000	30200	33600	34600	40500	38500	36700	35100
Beryllium	ug/kg	140000	16000	336 J	379 J	350 J	442 J	417 J	413 J	367 J
Cadmium	ug/kg	78000	78000	74.8 J	71.0 J	159 J	158 J	164 J	206 J	188 J
Calcium	ug/kg	NS	NS	821000	959000	868000	642000	529000	749000	651000
Chromium	ug/kg	20000	240000	7840	8660	9180	11100	11000	13800	12600
Cobalt	ug/kg	590000	1600000	2680	2830	3110	3470	4270	5720	4750
Copper	ug/kg	45000000	3100000	10200	11300	11700	13000	13000	15800	15200
Iron	ug/kg	NS	NS	11700000	12400000	12900000	15800000	15700000	21100000	18800000
Lead	ug/kg	800000	400000	132000	148000	143000	152000	147000	140000	160000
Magnesium	ug/kg	NS	NS	694000	789000	761000	912000	878000	916000	893000
Manganese	ug/kg	5900000	11000000	86800	99000	111000	129000	135000	155000	122000
Mercury	ug/kg	65000	23000	19.4 J	23.4 J	26.4 J	26.2 J	29.0 J	26.7 J	27.4 J
Nickel	ug/kg	23000000	1600000	5130	5000	5290	5850	5740	9540	8630
Potassium	ug/kg	NS	NS	396000	440000	505000	597000	551000	620000	700000
Selenium	ug/kg	5700000	390000	1260 J	1680 J	1350 J	1750 J	1940 J	2710	2260
Silver	ug/kg	5700000	390000	235 J	224 J	485 U	159 J	141 J	127 J	500 U
Sodium	ug/kg	NS	NS	35000 J	39800 J	34900 J	44100 J	37100 J	55100 J	50400 J
Thallium	ug/kg	79000	5000	2910 U	3000 U	2910 U	749 J	1040 J	881 J	3000 U
Vanadium	ug/kg	1100000	78000	16100	17900	19900	23800	24200	28800	25100
Zinc	ug/kg	110000000	23000000	25700	21100	23700	25900	30800	29500	29700
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-K-3	7/20/2015 TNT-PS-K-4	8/3/2015 TNT-PS-A	8/3/2015 TNT-PS-B	8/3/2015 TNT-PS-C	8/3/2015 TNT-PS-D	8/3/2015 TNT-PS-E
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1000 U	990 U	990 U	990 U	990 U	990 U	1000 U
2,4-Dinitrotoluene	ug/kg	3000	700	**1800**	**1900**	**3600**	**3400**	**4200**	**2400**	**2400**
2,6-Dinitrotoluene	ug/kg	3000	700	540	520	**1000**	**840**	**980**	**820**	**930**
2-Chloronaphthalene	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	500 U	490 U	490 U	500 U	490 U	500 U	500 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	25	17 U	17 U	9 J	9 J	8 J
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	170 U	160 U	160 U	170 U	160 U	100 J	150 J
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	170 U	160 U	160 U	170 U	160 U	170 U	170 U
4-Nitrophenol	ug/kg	NS	NS	500 U	490 U	490 U	500 U	490 U	500 U	500 U
Acenaphthene	ug/kg	37000000	3400000	17 U	17 U	17 U	12 J	12 J	8 J	9 J
Acenaphthylene	ug/kg	300000000	NS	14 J	17 U	14 J	7 J	13 J	8 J	13 J
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	8 J	17 U	9 J	5 J	6 J	10 J	18
Atrazine	ug/kg	2400000	210000	170 U	160 U	160 U	170 U	160 U	170 U	170 U
Benzaldehyde	ug/kg	68000000	6100000	170 U	160 U	140 J	71 J	93 J	88 J	110 J
Benzo(a)anthracene	ug/kg	2000	600	74	16 J	53	35	58	62	150
Benzo(a)pyrene	ug/kg	200	200	63	16 J	41	35	52	45	100
Benzo(b)fluoranthene	ug/kg	2000	600	96	26	75	53	72	61	150
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	39	16 J	30	24	38	34	67
Benzo(k)fluoranthene	ug/kg	23000	6000	43	12 J	38	23	45	37	84
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	170 U	170 U	170 U	170 U	170 U	170 U	120 J
Butyl benzyl phthalate	ug/kg	14000000	1200000	170 U	160 U	160 U	170 U	160 U	170 U	170 U
Caprolactam	ug/kg	340000000	31000000	170 U	160 U	160 U	170 U	160 U	170 U	170 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	73	19	66	42	65	71	150
Dibenzo(a,h)anthracene	ug/kg	200	200	15 J	8 J	13 J	8 J	12 J	13 J	21
Dibenzofuran	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	170 U	160 U	160 U	170 U	160 U	170 U	170 U
Dimethyl phthalate	ug/kg	NS	NS	170 U	160 U	160 U	170 U	160 U	170 U	170 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	170 U	160 U	160 U	170 U	160 U	170 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 7/20/2015 TNT-PS-K-3	7/20/2015 TNT-PS-K-4	8/3/2015 TNT-PS-A	8/3/2015 TNT-PS-B	8/3/2015 TNT-PS-C	8/3/2015 TNT-PS-D	8/3/2015 TNT-PS-E
Di-n-octyl phthalate	ug/kg	27000000	2400000	170 U	160 U	160 U	170 U	160 U	170 U	170 U
Fluoranthene	ug/kg	24000000	2300000	85	25	100	66	88	91	170
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	500 U	490 U	490 U	500 U	490 U	500 U	500 U
Hexachloroethane	ug/kg	140000	35000	170 U	160 U	160 U	170 U	160 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	41	13 J	33	22	32	30	67
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	17 U	17 U	16 J	6 J	11 J	10 J	17
Nitrobenzene	ug/kg	340000	31000	33 U	33 U	33 U	31 J	45	45	26 J
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	66 U	66 U	66 U	66 U	66 U	66 U	66 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	23	17 U	42	31	43	46	45
Phenol	ug/kg	210000000	18000000	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	80	23	74	50	64	69	130

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/3/2015 TNT-PS-F	8/3/2015 TNT-PS-G	8/3/2015 TNT-PS-H	8/3/2015 TNT-PS-I	8/3/2015 TNT-PS-J	8/3/2015 TNT-PS-K	8/17/2015 TNT-PS-A
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	290 U	300 U	300 U	290 U	290 U	300 U	2200 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	440	300 U	300 U	290 U	2000	3000	2200 U
1,3-Dinitrobenzene	ug/kg	NS	NS	170 J	300 U	300 U	290 U	470	340 U	2200 U
1,4-Dinitrobenzene	ug/kg	NS	NS	290 U	180 J	300 U	380 U	290 U	300 U	2200 U
1-Nitronaphthalene	ug/kg	NS	NS	290 U	150 J	300 U	290 U	290 U	300 U	2200 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**440000**	**51000**	**67000**	**120000**	**1300000**	**980000**	**1900000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**87000**	**8500**	**89000**	**130000**	**8900**	**16000**	**27000**
2-Nitrotoluene	ug/kg	NS	NS	390 U	400 U	400 U	390 U	390 U	400 U	3000 U
3-Nitrotoluene	ug/kg	NS	NS	490 U	720 U	500 U	490 U	490 U	610 U	3700 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**110000**	**14000**	**160000**	**240000**	**11000**	**24000**	**39000**
4-Nitrotoluene	ug/kg	NS	NS	390 U	720 U	400 U	390 U	390 U	610 U	3000 U
HMX	ug/kg	NS	NS	6600 U	750 U	740 U	730 U	740 U	740 U	5600 U
Nitrobenzene	ug/kg	340000	31000	290 U	300 U	300 U	290 U	290 U	300 U	2200 U
Nitroglycerin	ug/kg	NS	NS	5900 U	6000 U	5900 U	5800 U	5900 U	5900 U	45000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	5900 U	6000 U	5900 U	5800 U	5900 U	5900 U	45000 U
RDX	ug/kg	NS	NS	290 U	1500 U	300 U	290 U	290 U	300 U	2200 U
Tetryl	ug/kg	NS	NS	390 U	400 U	400 U	390 U	390 U	400 U	3000 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	8920000	15000000	11800000	10200000	7380000	9930000	8550000
Metals										
Aluminum	ug/kg	NS	78000000	12400000	10600000	9390000	10200000	12000000	10400000	NA
Antimony	ug/kg	450000	31000	779 J	575 J	453 J	687 J	2000 U	1960 U	NA
Arsenic	ug/kg	19000	19000	1060 J	953 J	1280 J	1590 J	2020	1920 J	NA
Barium	ug/kg	59000000	16000000	39800	36700	33100	33600	38600	34300	NA
Beryllium	ug/kg	140000	16000	415 J	364 J	318 J	350 J	411 J	345 J	NA
Cadmium	ug/kg	78000	78000	188 J	196 J	173 J	195 J	156 J	186 J	NA
Calcium	ug/kg	NS	NS	606000	899000	889000	981000	564000	1770000	NA
Chromium	ug/kg	20000	240000	12700	14400	13400	11200	11400	10400	NA
Cobalt	ug/kg	590000	1600000	5280	7340	6420	4530	3450	3040	NA
Copper	ug/kg	45000000	3100000	16300	20500	16100	14100	12000	10800	NA
Iron	ug/kg	NS	NS	20400000	25600000	23000000	17800000	16200000	12800000	NA
Lead	ug/kg	800000	400000	150000	146000	140000	159000	132000	150000	NA
Magnesium	ug/kg	NS	NS	894000	838000	726000	773000	859000	781000	NA
Manganese	ug/kg	5900000	11000000	141000	137000	126000	119000	133000	104000	NA
Mercury	ug/kg	65000	23000	28.0 J	25.8 J	24.2 J	25.8 J	27.8 J	28.6 J	NA
Nickel	ug/kg	23000000	1600000	9170	13700	11100	7700	5500	4930	NA
Potassium	ug/kg	NS	NS	612000	730000	658000	630000	584000	573000	NA
Selenium	ug/kg	5700000	390000	2330	3070	2480	2260	1380 J	1490 J	NA
Silver	ug/kg	5700000	390000	141 J	150 J	160 J	135 J	176 J	120 J	NA
Sodium	ug/kg	NS	NS	41200 J	51500 J	47800 J	43700 J	36900 J	58100 J	NA
Thallium	ug/kg	79000	5000	843 J	809 J	2940 U	2910 U	948 J	2940 U	NA
Vanadium	ug/kg	1100000	78000	25500	25800	25600	24300	28000	21700	NA
Zinc	ug/kg	110000000	23000000	29200	37500	31200	29600	23800	21200	NA
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	36	33 U	33 U	33 U	33 U	33 U	270 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/3/2015 TNT-PS-F	8/3/2015 TNT-PS-G	8/3/2015 TNT-PS-H	8/3/2015 TNT-PS-I	8/3/2015 TNT-PS-J	8/3/2015 TNT-PS-K	8/17/2015 TNT-PS-A
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2,4-Dichlorophenol	ug/kg	2100000	180000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2,4-Dinitrophenol	ug/kg	1400000	120000	990 U	1000 U	990 U	1000 U	990 U	990 U	8000 U
2,4-Dinitrotoluene	ug/kg	3000	700	**3000**	**1300**	**1300**	**1800**	**3700**	**3800**	1300 U
2,6-Dinitrotoluene	ug/kg	3000	700	**1100**	420	510	700	**870**	33 U	**1200**
2-Chloronaphthalene	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2-Chlorophenol	ug/kg	2200000	310000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	500 U	500 U	490 U	500 U	500 U	500 U	4000 U
2-Methylnaphthalene	ug/kg	2400000	230000	17 U	17 U	17 U	17 U	7 J	17 U	140 U
2-Methylphenol	ug/kg	3400000	310000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2-Nitroaniline	ug/kg	23000000	39000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
2-Nitrophenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	270 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	330 U	330 U	330 U	330 U	330 U	330 U	2700 U
3-Nitroaniline	ug/kg	NS	NS	170 U	110 J	160 U	170 U	170 U	170 U	1300 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	270 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	270 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	270 U
4-Methylphenol	ug/kg	340000	31000	33 U	28 J	33 U	33 U	33 U	33 U	270 U
4-Nitroaniline	ug/kg	NS	NS	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
4-Nitrophenol	ug/kg	NS	NS	500 U	500 U	490 U	500 U	500 U	500 U	4000 U
Acenaphthene	ug/kg	37000000	3400000	12 J	17 U	17 U	17 U	18	17 U	140 U
Acenaphthylene	ug/kg	300000000	NS	9 J	19	10 J	12 J	18	10 J	140 U
Acetophenone	ug/kg	5000	2000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
Anthracene	ug/kg	30000000	17000000	10 J	12 J	11 J	11 J	10 J	9 J	140 U
Atrazine	ug/kg	2400000	210000	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
Benzaldehyde	ug/kg	68000000	6100000	150 J	96 J	76 J	170 U	95 J	150 J	1300 U
Benzo(a)anthracene	ug/kg	2000	600	53	78	59	75	89	57	58 J
Benzo(a)pyrene	ug/kg	200	200	39	55	39	58	74	49	66 J
Benzo(b)fluoranthene	ug/kg	2000	600	67	89	68	93	120	82	100 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	28	42	30	41	46	33	60 J
Benzo(k)fluoranthene	ug/kg	23000	6000	32	47	38	37	45	43	30 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	33 U	33 U	33 U	33 U	33 U	33 U	270 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	33 U	33 U	33 U	33 U	33 U	33 U	270 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	100 J	170 U	170 U	170 U	170 U	170 U	1400 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
Caprolactam	ug/kg	340000000	31000000	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
Carbazole	ug/kg	96000	24000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
Chrysene	ug/kg	230000	62000	63	84	68	78	84	73	85 J
Dibenzo(a,h)anthracene	ug/kg	200	200	11 J	16 J	13 J	14 J	15 J	11 J	140 U
Dibenzofuran	ug/kg	NS	NS	33 U	17 J	33 U	33 U	33 U	33 U	270 U
Diethyl phthalate	ug/kg	550000000	49000000	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
Dimethyl phthalate	ug/kg	NS	NS	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	170 U	170 U	160 U	170 U	170 U	170 U	1300 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/3/2015 TNT-PS-F	8/3/2015 TNT-PS-G	8/3/2015 TNT-PS-H	8/3/2015 TNT-PS-I	8/3/2015 TNT-PS-J	8/3/2015 TNT-PS-K	8/17/2015 TNT-PS-A
Di-n-octyl phthalate	ug/kg	27000000	2400000	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
Fluoranthene	ug/kg	24000000	2300000	85	130	100	110	130	110	97 J
Fluorene	ug/kg	24000000	2300000	17 U	17 U	17 U	17 U	17 U	17 U	140 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
Hexachlorobenzene	ug/kg	1000	300	17 U	17 U	17 U	17 U	17 U	17 U	140 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	500 U	500 U	490 U	500 U	500 U	500 U	4000 U
Hexachloroethane	ug/kg	140000	35000	170 U	170 U	160 U	170 U	170 U	170 U	1300 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	29	40	28	38	46	35	38 J
Isophorone	ug/kg	2000000	510000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
Naphthalene	ug/kg	17000	6000	13 J	11 J	9 J	10 J	12 J	14 J	140 U
Nitrobenzene	ug/kg	340000	31000	51	33 U	33 U	33 U	29 J	33 U	270 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	33 U	33 U	33 U	33 U	33 U	33 U	270 U
N-nitrosodiphenylamine	ug/kg	390000	99000	33 U	33 U	33 U	33 U	33 U	33 U	270 U
p-Chloroaniline	ug/kg	NS	NS	66 U	66 U	66 U	66 U	66 U	66 U	540 U
Pentachlorophenol	ug/kg	10000	3000	170 U	170 U	170 U	170 U	170 U	170 U	1400 U
Phenanthrene	ug/kg	300000000	NS	44	54	49	44	47	45	64 J
Phenol	ug/kg	210000000	18000000	33 U	170	33 U	33 U	33 U	33 U	270 U
Pyrene	ug/kg	18000000	1700000	64	92	69	80	110	75	76 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/17/2015 TNT-PS-B	8/17/2015 TNT-PS-C	8/17/2015 TNT-PS-D	8/17/2015 TNT-PS-E	8/17/2015 TNT-PS-F	8/17/2015 TNT-PS-G	8/17/2015 TNT-PS-H
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2400 U	2100 U	1900 U	1900 U	2100 U	1900 U	2100 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	1800 J	2300	1900 U	1900 U	2100 U	1900 U	2100 U
1,3-Dinitrobenzene	ug/kg	NS	NS	2400 U	1200 J	1900 U	1900 U	2100 U	1900 U	2100 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2400 U	2100 U	1900 U	1900 U	2100 U	1900 U	2100 U
1-Nitronaphthalene	ug/kg	NS	NS	2400 U	2100 U	1900 U	1900 U	2100 U	1900 U	2100 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**1900000**	**2000000**	**550000**	**47000**	**280000**	13000	**410000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**19000**	**19000**	**130000**	**87000**	**320000**	4300	**34000**
2-Nitrotoluene	ug/kg	NS	NS	3300 U	2800 U	2500 U	2600 U	2800 U	2500 U	2800 U
3-Nitrotoluene	ug/kg	NS	NS	4100 U	3500 U	3100 U	3200 U	3400 U	3100 U	3500 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**19000**	**20000**	**130000**	**120000**	**350000**	**8700**	**61000**
4-Nitrotoluene	ug/kg	NS	NS	3300 U	2800 U	2500 U	2600 U	2800 U	2500 U	2800 U
HMX	ug/kg	NS	NS	6100 U	5200 U	4700 U	4900 U	5200 U	4700 U	5200 U
Nitrobenzene	ug/kg	340000	31000	2400 U	2100 U	1900 U	1900 U	2100 U	1900 U	2100 U
Nitroglycerin	ug/kg	NS	NS	49000 U	41000 U	38000 U	39000 U	41000 U	37000 U	41000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	49000 U	41000 U	38000 U	39000 U	41000 U	37000 U	41000 U
RDX	ug/kg	NS	NS	2400 U	2100 U	1900 U	1900 U	2100 U	1900 U	2100 U
Tetryl	ug/kg	NS	NS	3300 U	2800 U	2500 U	2600 U	2800 U	2500 U	2800 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	9240000	9730000	14000000	15300000	13200000	16300000	13000000
Metals										
Aluminum	ug/kg	NS	78000000	NA	NA	NA	NA	NA	NA	NA
Antimony	ug/kg	450000	31000	NA	NA	NA	NA	NA	NA	NA
Arsenic	ug/kg	19000	19000	NA	NA	NA	NA	NA	NA	NA
Barium	ug/kg	59000000	16000000	NA	NA	NA	NA	NA	NA	NA
Beryllium	ug/kg	140000	16000	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/kg	78000	78000	NA	NA	NA	NA	NA	NA	NA
Calcium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Chromium	ug/kg	20000	240000	NA	NA	NA	NA	NA	NA	NA
Cobalt	ug/kg	590000	1600000	NA	NA	NA	NA	NA	NA	NA
Copper	ug/kg	45000000	3100000	NA	NA	NA	NA	NA	NA	NA
Iron	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Lead	ug/kg	800000	400000	NA	NA	NA	NA	NA	NA	NA
Magnesium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Manganese	ug/kg	5900000	11000000	NA	NA	NA	NA	NA	NA	NA
Mercury	ug/kg	65000	23000	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/kg	23000000	1600000	NA	NA	NA	NA	NA	NA	NA
Potassium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Selenium	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Silver	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Sodium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Thallium	ug/kg	79000	5000	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/kg	1100000	78000	NA	NA	NA	NA	NA	NA	NA
Zinc	ug/kg	110000000	23000000	NA	NA	NA	NA	NA	NA	NA
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	270 U	260 U	240 U	250 U	240 U	250 U	240 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/17/2015 TNT-PS-B	8/17/2015 TNT-PS-C	8/17/2015 TNT-PS-D	8/17/2015 TNT-PS-E	8/17/2015 TNT-PS-F	8/17/2015 TNT-PS-G	8/17/2015 TNT-PS-H
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2,4-Dichlorophenol	ug/kg	2100000	180000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2,4-Dinitrophenol	ug/kg	1400000	120000	8100 U	7900 U	7100 U	7400 U	7300 U	7400 U	7300 U
2,4-Dinitrotoluene	ug/kg	3000	700	**4000**	**4100**	**1100 J**	**1100 J**	**2000**	690 J	**710 J**
2,6-Dinitrotoluene	ug/kg	3000	700	**880**	**900**	260	370	640	260	230 J
2-Chloronaphthalene	ug/kg	NS	NS	270 U	260 U	240 U	250 U	240 U	240 U	240 U
2-Chlorophenol	ug/kg	2200000	310000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	4000 U	4000 U	3600 U	3700 U	3700 U	3700 U	3700 U
2-Methylnaphthalene	ug/kg	2400000	230000	140 U	130 U	120 U	130 U	120 U	130 U	120 U
2-Methylphenol	ug/kg	3400000	310000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2-Nitroaniline	ug/kg	23000000	39000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
2-Nitrophenol	ug/kg	NS	NS	270 U	260 U	240 U	250 U	240 U	250 U	240 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	2700 U	2600 U	2400 U	2500 U	2400 U	2500 U	2400 U
3-Nitroaniline	ug/kg	NS	NS	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	270 U	260 U	240 U	250 U	240 U	250 U	240 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	270 U	260 U	240 U	250 U	240 U	250 U	240 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	270 U	260 U	240 U	250 U	240 U	250 U	240 U
4-Methylphenol	ug/kg	340000	31000	270 U	260 U	240 U	250 U	240 U	120 J	240 U
4-Nitroaniline	ug/kg	NS	NS	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
4-Nitrophenol	ug/kg	NS	NS	4000 U	4000 U	3600 U	3700 U	3700 U	3700 U	3700 U
Acenaphthene	ug/kg	37000000	3400000	140 U	130 U	120 U	130 U	120 U	130 U	120 U
Acenaphthylene	ug/kg	300000000	NS	140 U	130 U	120 U	130 U	120 U	130 U	120 U
Acetophenone	ug/kg	5000	2000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
Anthracene	ug/kg	30000000	17000000	140 U	130 U	120 U	130 U	120 U	130 U	120 U
Atrazine	ug/kg	2400000	210000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Benzaldehyde	ug/kg	68000000	6100000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Benzo(a)anthracene	ug/kg	2000	600	100 J	46 J	73 J	65 J	70 J	74 J	61 J
Benzo(a)pyrene	ug/kg	200	200	99 J	53 J	70 J	67 J	75 J	71 J	35 J
Benzo(b)fluoranthene	ug/kg	2000	600	150	77 J	76 J	93 J	92 J	81 J	78 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	81 J	130 U	120 U	59 J	52 J	40 J	55 J
Benzo(k)fluoranthene	ug/kg	23000	6000	43 J	27 J	32 J	58 J	42 J	53 J	33 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	270 U	260 U	240 U	250 U	240 U	250 U	240 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	270 U	260 U	240 U	250 U	240 U	250 U	240 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1400 U	1300 U	1200 U	1300 U	1200 U	1300 U	1200 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Caprolactam	ug/kg	340000000	31000000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Carbazole	ug/kg	96000	24000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
Chrysene	ug/kg	230000	62000	120 J	58 J	69 J	85 J	85 J	85 J	68 J
Dibenzo(a,h)anthracene	ug/kg	200	200	57 J	130 U	120 U	130 U	29 J	130 U	120 U
Dibenzofuran	ug/kg	NS	NS	270 U	260 U	240 U	250 U	240 U	250 U	240 U
Diethyl phthalate	ug/kg	550000000	49000000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Dimethyl phthalate	ug/kg	NS	NS	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/17/2015 TNT-PS-B	8/17/2015 TNT-PS-C	8/17/2015 TNT-PS-D	8/17/2015 TNT-PS-E	8/17/2015 TNT-PS-F	8/17/2015 TNT-PS-G	8/17/2015 TNT-PS-H
Di-n-octyl phthalate	ug/kg	27000000	2400000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Fluoranthene	ug/kg	24000000	2300000	180	84 J	100 J	130	110 J	120 J	95 J
Fluorene	ug/kg	24000000	2300000	140 U	130 U	120 U	130 U	120 U	130 U	120 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
Hexachlorobenzene	ug/kg	1000	300	140 U	130 U	120 U	130 U	120 U	130 U	120 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	4000 U	4000 U	3600 U	3700 U	3700 U	3700 U	3700 U
Hexachloroethane	ug/kg	140000	35000	1300 U	1300 U	1200 U	1200 U	1200 U	1200 U	1200 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	72 J	36 J	120 U	43 J	52 J	32 J	47 J
Isophorone	ug/kg	2000000	510000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
Naphthalene	ug/kg	17000	6000	140 U	130 U	120 U	130 U	120 U	130 U	120 U
Nitrobenzene	ug/kg	340000	31000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	270 U	260 U	240 U	250 U	240 U	250 U	240 U
N-nitrosodiphenylamine	ug/kg	390000	99000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
p-Chloroaniline	ug/kg	NS	NS	540 U	530 U	480 U	500 U	490 U	490 U	490 U
Pentachlorophenol	ug/kg	10000	3000	1400 U	1300 U	1200 U	1300 U	1200 U	1300 U	1200 U
Phenanthrene	ug/kg	300000000	NS	92 J	48 J	39 J	51 J	47 J	55 J	43 J
Phenol	ug/kg	210000000	18000000	270 U	260 U	240 U	250 U	240 U	250 U	240 U
Pyrene	ug/kg	18000000	1700000	140	78 J	75 J	94 J	88 J	97 J	85 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/17/2015 TNT-PS-I	8/17/2015 TNT-PS-J	8/17/2015 TNT-PS-K	8/31/2015 TNT-PS-A	8/31/2015 TNT-PS-B	8/31/2015 TNT-PS-C	8/31/2015 TNT-PS-D
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2000 U	2000 U	2400 U	1500 U	1400 U	1400 U	1300 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2000 U	3800	4300	1900	1300 J	1700	1300 U
1,3-Dinitrobenzene	ug/kg	NS	NS	2000 U	770 J	2400 U	1000 J	1400 U	470 J	1300 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2000 U	2000 U	2400 U	1500 U	1400 U	1400 U	1300 U
1-Nitronaphthalene	ug/kg	NS	NS	2000 U	2000 U	2400 U	1500 U	1400 U	1400 U	1300 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**190000**	**2800000**	**1700000**	**2100000**	**1300000**	**1800000**	**47000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**130000**	**24000**	**47000**	**19000**	**13000**	**16000**	**5000**
2-Nitrotoluene	ug/kg	NS	NS	2700 U	2700 U	3200 U	2000 U	1900 U	1800 U	1700 U
3-Nitrotoluene	ug/kg	NS	NS	3300 U	3300 U	4000 U	2500 U	2400 U	2300 U	2100 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**220000**	**26000**	**70000**	**33000**	**14000**	**17000**	**6400**
4-Nitrotoluene	ug/kg	NS	NS	2700 U	2700 U	3200 U	2000 U	1900 U	1800 U	1700 U
HMX	ug/kg	NS	NS	5000 U	5000 U	6100 U	3700 U	3600 U	3500 U	3200 U
Nitrobenzene	ug/kg	340000	31000	2000 U	2000 U	2400 U	1500 U	1400 U	1400 U	1300 U
Nitroglycerin	ug/kg	NS	NS	40000 U	40000 U	48000 U	30000 U	29000 U	28000 U	25000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	40000 U	40000 U	48000 U	30000 U	29000 U	28000 U	25000 U
RDX	ug/kg	NS	NS	2000 U	2000 U	2400 U	1500 U	1400 U	1400 U	1300 U
Tetryl	ug/kg	NS	NS	2700 U	2700 U	3200 U	2000 U	1900 U	1800 U	1700 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	14500000	9870000	14500000	9120000	6840000	6920000	11500000
Metals										
Aluminum	ug/kg	NS	78000000	NA	NA	NA	NA	NA	NA	NA
Antimony	ug/kg	450000	31000	NA	NA	NA	NA	NA	NA	NA
Arsenic	ug/kg	19000	19000	NA	NA	NA	NA	NA	NA	NA
Barium	ug/kg	59000000	16000000	NA	NA	NA	NA	NA	NA	NA
Beryllium	ug/kg	140000	16000	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/kg	78000	78000	NA	NA	NA	NA	NA	NA	NA
Calcium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Chromium	ug/kg	20000	240000	NA	NA	NA	NA	NA	NA	NA
Cobalt	ug/kg	590000	1600000	NA	NA	NA	NA	NA	NA	NA
Copper	ug/kg	45000000	3100000	NA	NA	NA	NA	NA	NA	NA
Iron	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Lead	ug/kg	800000	400000	NA	NA	NA	NA	NA	NA	NA
Magnesium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Manganese	ug/kg	5900000	11000000	NA	NA	NA	NA	NA	NA	NA
Mercury	ug/kg	65000	23000	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/kg	23000000	1600000	NA	NA	NA	NA	NA	NA	NA
Potassium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Selenium	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Silver	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Sodium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Thallium	ug/kg	79000	5000	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/kg	1100000	78000	NA	NA	NA	NA	NA	NA	NA
Zinc	ug/kg	110000000	23000000	NA	NA	NA	NA	NA	NA	NA
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	250 U	250 U	290 U	160 U	33 U	33 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/17/2015 TNT-PS-I	8/17/2015 TNT-PS-J	8/17/2015 TNT-PS-K	8/31/2015 TNT-PS-A	8/31/2015 TNT-PS-B	8/31/2015 TNT-PS-C	8/31/2015 TNT-PS-D
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2,4-Dichlorophenol	ug/kg	2100000	180000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2,4-Dinitrophenol	ug/kg	1400000	120000	7500 U	7500 U	8700 U	4900 U	990 U	990 U	5000 U
2,4-Dinitrotoluene	ug/kg	3000	700	**1400**	**4000**	**3500**	**1200**	**1400**	170 U	390 J
2,6-Dinitrotoluene	ug/kg	3000	700	620	**1000**	**1200**	330	380	33 U	110 J
2-Chloronaphthalene	ug/kg	NS	NS	250 U	250 U	290 U	160 U	33 U	33 U	160 U
2-Chlorophenol	ug/kg	2200000	310000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	3800 U	3700 U	4400 U	2500 U	490 U	500 U	2500 U
2-Methylnaphthalene	ug/kg	2400000	230000	130 U	130 U	150 U	84 U	17 U	17 U	84 U
2-Methylphenol	ug/kg	3400000	310000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2-Nitroaniline	ug/kg	23000000	39000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
2-Nitrophenol	ug/kg	NS	NS	250 U	250 U	290 U	160 U	33 U	33 U	170 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	2500 U	2500 U	2900 U	1600 U	330 U	330 U	1700 U
3-Nitroaniline	ug/kg	NS	NS	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	250 U	250 U	290 U	160 U	33 U	33 U	170 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	250 U	250 U	290 U	160 U	33 U	33 U	170 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	250 U	250 U	290 U	160 U	33 U	33 U	170 U
4-Methylphenol	ug/kg	340000	31000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
4-Nitroaniline	ug/kg	NS	NS	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
4-Nitrophenol	ug/kg	NS	NS	3800 U	3700 U	4400 U	2500 U	490 U	500 U	2500 U
Acenaphthene	ug/kg	37000000	3400000	130 U	130 U	150 U	84 U	4 J	17 U	84 U
Acenaphthylene	ug/kg	300000000	NS	130 U	130 U	150 U	84 U	17 U	15 J	84 U
Acetophenone	ug/kg	5000	2000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
Anthracene	ug/kg	30000000	17000000	130 U	130 U	150 U	84 U	17 U	4 J	84 U
Atrazine	ug/kg	2400000	210000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Benzaldehyde	ug/kg	68000000	6100000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Benzo(a)anthracene	ug/kg	2000	600	68 J	59 J	88 J	27 J	14 J	19	37 J
Benzo(a)pyrene	ug/kg	200	200	83 J	53 J	82 J	84 U	12 J	15 J	34 J
Benzo(b)fluoranthene	ug/kg	2000	600	94 J	74 J	110 J	23 J	17 J	23	48 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	70 J	130 U	150 U	22 J	12 J	18	27 J
Benzo(k)fluoranthene	ug/kg	23000	6000	64 J	35 J	53 J	21 J	9 J	12 J	20 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	250 U	250 U	290 U	160 U	33 U	33 U	170 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	250 U	250 U	290 U	160 U	33 U	33 U	170 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1300 U	1300 U	1500 U	840 U	170 U	170 U	840 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Caprolactam	ug/kg	340000000	31000000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Carbazole	ug/kg	96000	24000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
Chrysene	ug/kg	230000	62000	95 J	58 J	94 J	31 J	14 J	22	46 J
Dibenzo(a,h)anthracene	ug/kg	200	200	130 U	130 U	150 U	84 U	17 U	8 J	84 U
Dibenzofuran	ug/kg	NS	NS	250 U	250 U	290 U	160 U	33 U	33 U	170 U
Diethyl phthalate	ug/kg	550000000	49000000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Dimethyl phthalate	ug/kg	NS	NS	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/17/2015 TNT-PS-I	8/17/2015 TNT-PS-J	8/17/2015 TNT-PS-K	8/31/2015 TNT-PS-A	8/31/2015 TNT-PS-B	8/31/2015 TNT-PS-C	8/31/2015 TNT-PS-D
Di-n-octyl phthalate	ug/kg	27000000	2400000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Fluoranthene	ug/kg	24000000	2300000	120 J	96 J	130 J	35 J	24	27	66 J
Fluorene	ug/kg	24000000	2300000	130 U	130 U	150 U	84 U	17 U	17 U	84 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
Hexachlorobenzene	ug/kg	1000	300	130 U	130 U	150 U	84 U	17 U	17 U	84 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	3800 U	3700 U	4400 U	2500 U	490 U	500 U	2500 U
Hexachloroethane	ug/kg	140000	35000	1300 U	1200 U	1500 U	820 U	160 U	170 U	830 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	40 J	25 J	45 J	21 J	11 J	13 J	28 J
Isophorone	ug/kg	2000000	510000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
Naphthalene	ug/kg	17000	6000	130 U	130 U	150 U	84 U	17 U	4 J	84 U
Nitrobenzene	ug/kg	340000	31000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	250 U	250 U	290 U	160 U	33 U	33 U	170 U
N-nitrosodiphenylamine	ug/kg	390000	99000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
p-Chloroaniline	ug/kg	NS	NS	500 U	500 U	580 U	330 U	66 U	66 U	330 U
Pentachlorophenol	ug/kg	10000	3000	1300 U	1300 U	1500 U	840 U	170 U	170 U	840 U
Phenanthrene	ug/kg	300000000	NS	71 J	130 U	72 J	20 J	12 J	13 J	30 J
Phenol	ug/kg	210000000	18000000	250 U	250 U	290 U	160 U	33 U	33 U	170 U
Pyrene	ug/kg	18000000	1700000	100 J	68 J	130 J	30 J	18	26	55 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/31/2015 TNT-PS-E	8/31/2015 TNT-PS-F	8/31/2015 TNT-PS-G	8/31/2015 TNT-PS-H	8/31/2015 TNT-PS-I	8/31/2015 TNT-PS-J	8/31/2015 TNT-PS-K
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	1500 U	1400 U	1500 U	1400 U	1200 U	1200 U	1400 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	1500 U	1400 U	1500 U	1400 U	1200 U	1500	1600 U
1,3-Dinitrobenzene	ug/kg	NS	NS	1500 U	1400 U	1500 U	1400 U	1200 U	1200 U	1400 U
1,4-Dinitrobenzene	ug/kg	NS	NS	1500 U	1400 U	1500 U	1400 U	1200 U	1200 U	1400 U
1-Nitronaphthalene	ug/kg	NS	NS	1500 U	1400 U	1500 U	1400 U	1200 U	1200 U	1400 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	11000	**94000**	14000	14000	**220000**	**1400000**	**750000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**5700**	**58000**	**6800**	4400	**43000**	**17000**	**26000**
2-Nitrotoluene	ug/kg	NS	NS	2000 U	1800 U	1900 U	1900 U	1700 U	1700 U	1900 U
3-Nitrotoluene	ug/kg	NS	NS	2500 U	2300 U	2400 U	2400 U	2100 U	2100 U	2400 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**7800**	**78000**	**8100**	**6700**	**72000**	**20000**	**39000**
4-Nitrotoluene	ug/kg	NS	NS	2000 U	1800 U	1900 U	1900 U	1700 U	1700 U	1900 U
HMX	ug/kg	NS	NS	3700 U	3500 U	3600 U	3600 U	3100 U	3100 U	3600 U
Nitrobenzene	ug/kg	340000	31000	1500 U	1400 U	1500 U	1400 U	1200 U	1200 U	1400 U
Nitroglycerin	ug/kg	NS	NS	30000 U	28000 U	29000 U	28000 U	25000 U	25000 U	29000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	30000 U	28000 U	29000 U	28000 U	25000 U	25000 U	29000 U
RDX	ug/kg	NS	NS	1500 U	1400 U	1500 U	1500 U	1700 U	1200 U	1400 U
Tetryl	ug/kg	NS	NS	2000 U	1800 U	1900 U	1900 U	1700 U	1700 U	1900 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	11900000	10300000	13100000	10900000	8440000	6770000	6560000
Metals										
Aluminum	ug/kg	NS	78000000	NA	NA	NA	NA	NA	NA	NA
Antimony	ug/kg	450000	31000	NA	NA	NA	NA	NA	NA	NA
Arsenic	ug/kg	19000	19000	NA	NA	NA	NA	NA	NA	NA
Barium	ug/kg	59000000	16000000	NA	NA	NA	NA	NA	NA	NA
Beryllium	ug/kg	140000	16000	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/kg	78000	78000	NA	NA	NA	NA	NA	NA	NA
Calcium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Chromium	ug/kg	20000	240000	NA	NA	NA	NA	NA	NA	NA
Cobalt	ug/kg	590000	1600000	NA	NA	NA	NA	NA	NA	NA
Copper	ug/kg	45000000	3100000	NA	NA	NA	NA	NA	NA	NA
Iron	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Lead	ug/kg	800000	400000	NA	NA	NA	NA	NA	NA	NA
Magnesium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Manganese	ug/kg	5900000	11000000	NA	NA	NA	NA	NA	NA	NA
Mercury	ug/kg	65000	23000	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/kg	23000000	1600000	NA	NA	NA	NA	NA	NA	NA
Potassium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Selenium	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Silver	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Sodium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Thallium	ug/kg	79000	5000	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/kg	1100000	78000	NA	NA	NA	NA	NA	NA	NA
Zinc	ug/kg	110000000	23000000	NA	NA	NA	NA	NA	NA	NA
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	170 U	170 U	170 U	160 U	33 U	33 U	33 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/31/2015 TNT-PS-E	8/31/2015 TNT-PS-F	8/31/2015 TNT-PS-G	8/31/2015 TNT-PS-H	8/31/2015 TNT-PS-I	8/31/2015 TNT-PS-J	8/31/2015 TNT-PS-K
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2,4-Dichlorophenol	ug/kg	2100000	180000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2,4-Dinitrophenol	ug/kg	1400000	120000	5000 U	5000 U	5000 U	4900 U	990 U	1000 U	1000 U
2,4-Dinitrotoluene	ug/kg	3000	700	830 U	360 J	490 J	380 J	**800**	**2500**	**870**
2,6-Dinitrotoluene	ug/kg	3000	700	86 J	170 U	150 J	180	200	**790**	360
2-Chloronaphthalene	ug/kg	NS	NS	160 U	160 U	160 U	160 U	33 U	33 U	33 U
2-Chlorophenol	ug/kg	2200000	310000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	2500 U	2500 U	2500 U	2500 U	490 U	500 U	500 U
2-Methylnaphthalene	ug/kg	2400000	230000	85 U	85 U	85 U	84 U	17 U	17 U	17 U
2-Methylphenol	ug/kg	3400000	310000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2-Nitroaniline	ug/kg	23000000	39000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
2-Nitrophenol	ug/kg	NS	NS	170 U	170 U	170 U	160 U	33 U	33 U	33 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	1700 U	1700 U	1700 U	1600 U	330 U	330 U	330 U
3-Nitroaniline	ug/kg	NS	NS	830 U	830 U	830 U	820 U	160 U	170 U	170 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	170 U	170 U	170 U	160 U	33 U	33 U	33 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	170 U	170 U	170 U	160 U	33 U	33 U	33 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	170 U	170 U	170 U	160 U	33 U	33 U	33 U
4-Methylphenol	ug/kg	340000	31000	170 U	170 U	1100	760	63	33 U	33 U
4-Nitroaniline	ug/kg	NS	NS	830 U	830 U	830 U	820 U	160 U	170 U	170 U
4-Nitrophenol	ug/kg	NS	NS	2500 U	2500 U	2500 U	2500 U	490 U	500 U	500 U
Acenaphthene	ug/kg	37000000	3400000	85 U	85 U	85 U	84 U	17 U	17 U	17 U
Acenaphthylene	ug/kg	300000000	NS	85 U	85 U	85 U	84 U	6 J	17 U	17 U
Acetophenone	ug/kg	5000	2000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
Anthracene	ug/kg	30000000	17000000	85 U	85 U	85 U	18 J	6 J	4 J	4 J
Atrazine	ug/kg	2400000	210000	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Benzaldehyde	ug/kg	68000000	6100000	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Benzo(a)anthracene	ug/kg	2000	600	28 J	32 J	32 J	56 J	46	26	19
Benzo(a)pyrene	ug/kg	200	200	19 J	85 U	17 J	43 J	29	20	14 J
Benzo(b)fluoranthene	ug/kg	2000	600	31 J	30 J	35 J	71 J	52	34	30
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	85 U	85 U	85 U	52 J	21	13 J	11 J
Benzo(k)fluoranthene	ug/kg	23000	6000	28 J	85 U	24 J	36 J	25	14 J	7 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	170 U	170 U	170 U	160 U	33 U	33 U	33 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	170 U	170 U	170 U	160 U	33 U	33 U	33 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	850 U	850 U	850 U	840 U	170 U	170 U	170 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Caprolactam	ug/kg	340000000	31000000	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Carbazole	ug/kg	96000	24000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
Chrysene	ug/kg	230000	62000	31 J	32 J	31 J	66 J	46	30	21
Dibenzo(a,h)anthracene	ug/kg	200	200	85 U	85 U	85 U	84 U	17 U	17 U	5 J
Dibenzofuran	ug/kg	NS	NS	170 U	170 U	170 U	160 U	33 U	33 U	33 U
Diethyl phthalate	ug/kg	550000000	49000000	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Dimethyl phthalate	ug/kg	NS	NS	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	830 U	830 U	830 U	820 U	160 U	170 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 8/31/2015 TNT-PS-E	8/31/2015 TNT-PS-F	8/31/2015 TNT-PS-G	8/31/2015 TNT-PS-H	8/31/2015 TNT-PS-I	8/31/2015 TNT-PS-J	8/31/2015 TNT-PS-K
Di-n-octyl phthalate	ug/kg	27000000	2400000	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Fluoranthene	ug/kg	24000000	2300000	42 J	37 J	45 J	91	74	45	32
Fluorene	ug/kg	24000000	2300000	85 U	85 U	85 U	84 U	17 U	17 U	17 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
Hexachlorobenzene	ug/kg	1000	300	85 U	85 U	85 U	84 U	17 U	17 U	17 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	2500 U	2500 U	2500 U	2500 U	490 U	500 U	500 U
Hexachloroethane	ug/kg	140000	35000	830 U	830 U	830 U	820 U	160 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	85 U	85 U	22 J	51 J	22	17	10 J
Isophorone	ug/kg	2000000	510000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
Naphthalene	ug/kg	17000	6000	85 U	85 U	85 U	84 U	17 U	17 U	17 U
Nitrobenzene	ug/kg	340000	31000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	170 U	170 U	170 U	160 U	33 U	33 U	33 U
N-nitrosodiphenylamine	ug/kg	390000	99000	170 U	170 U	170 U	160 U	33 U	33 U	33 U
p-Chloroaniline	ug/kg	NS	NS	330 U	330 U	330 U	330 U	66 U	66 U	66 U
Pentachlorophenol	ug/kg	10000	3000	850 U	850 U	850 U	840 U	170 U	170 U	170 U
Phenanthrene	ug/kg	300000000	NS	85 U	18 J	85 U	60 J	23	26	16 J
Phenol	ug/kg	210000000	18000000	170 U	170 U	200	160 U	33 U	33 U	33 U
Pyrene	ug/kg	18000000	1700000	41 J	34 J	36 J	91	58	37	26

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-A-1	9/14/2015 TNT-PS-A-2	9/14/2015 TNT-PS-A-3	9/14/2015 TNT-PS-A-4	9/14/2015 TNT-PS-B-1	9/14/2015 TNT-PS-B-2	9/14/2015 TNT-PS-B-3
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2400 U	2800 U	2400 U	2000 U	2700 U	3200 U	2400 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	4400	3600	3400	2800	2400 J	4100	2300 J
1,3-Dinitrobenzene	ug/kg	NS	NS	2400 U	2800 U	1600 J	1300 J	2700 U	1400 J	2400 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2400 U	2800 U	2400 U	2000 U	2700 U	3200 U	2400 U
1-Nitronaphthalene	ug/kg	NS	NS	2400 U	2800 U	2400 U	2000 U	2700 U	3200 U	2400 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**2700000**	**2200000**	**1800000**	**1700000**	**2100000**	**4800000**	**4400000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**48000**	**47000**	**39000**	**38000**	**25000**	**36000**	**21000**
2-Nitrotoluene	ug/kg	NS	NS	3200 U	3800 U	3200 U	2600 U	3600 U	4300 U	3200 U
3-Nitrotoluene	ug/kg	NS	NS	4000 U	4700 U	3900 U	3300 U	4500 U	5400 U	4100 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**71000**	**77000**	**63000**	**66000**	**27000**	**40000**	**23000**
4-Nitrotoluene	ug/kg	NS	NS	3200 U	3800 U	3200 U	2600 U	3600 U	4300 U	3200 U
HMX	ug/kg	NS	NS	6000 U	7000 U	5900 U	4900 U	6700 U	8100 U	6100 U
Nitrobenzene	ug/kg	340000	31000	2400 U	2800 U	2400 U	2000 U	2700 U	3200 U	2400 U
Nitroglycerin	ug/kg	NS	NS	48000 U	56000 U	47000 U	39000 U	54000 U	65000 U	49000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	48000 U	56000 U	47000 U	39000 U	54000 U	65000 U	49000 U
RDX	ug/kg	NS	NS	2400 U	2800 U	2400 U	2000 U	2700 U	3200 U	2400 U
Tetryl	ug/kg	NS	NS	3200 U	3800 U	3200 U	2600 U	3600 U	4300 U	3200 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	15400000	20600000	16200000	19400000	15400000	21900000	24100000
Metals										
Aluminum	ug/kg	NS	78000000	18400000	24100000	18700000	17600000	20200000	23500000	19000000
Antimony	ug/kg	450000	31000	3250 U	1340 J	1280 J	1340 J	1120 J	910 J	1750 J
Arsenic	ug/kg	19000	19000	3420	5320	5340	4390	3110 J	4810	4790
Barium	ug/kg	59000000	16000000	55800	72100	56800	56200	60800	88500	58400
Beryllium	ug/kg	140000	16000	647 J	803 J	651 J	596 J	703 J	779 J	831 J
Cadmium	ug/kg	78000	78000	813 U	997 U	808 U	768 U	935 U	1090 U	855 U
Calcium	ug/kg	NS	NS	1510000	1980000	1520000	1440000	1160000	1140000	1040000
Chromium	ug/kg	20000	240000	16400	**20900**	16300	15300	18300	**20100**	17100
Cobalt	ug/kg	590000	1600000	4740	5830	4650	4450	4960	6000	4870
Copper	ug/kg	45000000	3100000	30500	33400	27600	25900	29400	32700	28300
Iron	ug/kg	NS	NS	24700000	29800000	24700000	22600000	25700000	28500000	24800000
Lead	ug/kg	800000	400000	242000	312000	251000	242000	233000	262000	223000
Magnesium	ug/kg	NS	NS	1320000	1780000	1330000	1270000	1430000	1750000	1420000
Manganese	ug/kg	5900000	11000000	178000	234000	186000	171000	194000	316000	188000
Mercury	ug/kg	65000	23000	69.1 J	80.4 J	48.3 J	49.4 J	52.6 J	57.9 J	44.4 J
Nickel	ug/kg	23000000	1600000	9200	11400	9420	8730	10200	11500	9530
Potassium	ug/kg	NS	NS	733000	1020000	754000	700000	813000	1010000	842000
Selenium	ug/kg	5700000	390000	3710	4380	3120 J	2900 J	3720 J	3630 J	3390 J
Silver	ug/kg	5700000	390000	813 U	997 U	808 U	768 U	935 U	1090 U	855 U
Sodium	ug/kg	NS	NS	51600 J	64700 J	50200 J	47300 J	52500 J	54500 J	64200 J
Thallium	ug/kg	79000	5000	4880 U	1580 J	4850 U	1250 J	1610 J	6510 U	1290 J
Vanadium	ug/kg	1100000	78000	35100	43100	35200	32800	37400	41300	37800
Zinc	ug/kg	110000000	23000000	35000	43500	35200	35700	39000	48900	37200
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	54 U	68 U	54 U	51 U	63 U	72 U	57 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-A-1	9/14/2015 TNT-PS-A-2	9/14/2015 TNT-PS-A-3	9/14/2015 TNT-PS-A-4	9/14/2015 TNT-PS-B-1	9/14/2015 TNT-PS-B-2	9/14/2015 TNT-PS-B-3
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2,4-Dichlorophenol	ug/kg	2100000	180000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1600 U	2000 U	1600 U	1500 U	1900 U	2200 U	1700 U
2,4-Dinitrotoluene	ug/kg	3000	700	**4500**	**4700**	**4700**	**5000**	**5900**	**6400**	**5600**
2,6-Dinitrotoluene	ug/kg	3000	700	**2800**	**2800**	**2900**	**2600**	**1900**	**2200**	**1800**
2-Chloronaphthalene	ug/kg	NS	NS	53 U	67 U	53 U	51 U	62 U	72 U	56 U
2-Chlorophenol	ug/kg	2200000	310000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	810 U	1000 U	800 U	770 U	940 U	1100 U	850 U
2-Methylnaphthalene	ug/kg	2400000	230000	27 U	34 U	27 U	26 U	32 U	37 U	29 U
2-Methylphenol	ug/kg	3400000	310000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2-Nitroaniline	ug/kg	23000000	39000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
2-Nitrophenol	ug/kg	NS	NS	54 U	68 U	54 U	51 U	63 U	72 U	57 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	540 U	680 U	540 U	510 U	630 U	720 U	570 U
3-Nitroaniline	ug/kg	NS	NS	270 U	340 U	270 U	260 U	310 U	360 U	280 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	54 U	68 U	54 U	51 U	63 U	72 U	57 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	54 U	68 U	54 U	51 U	63 U	72 U	57 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	54 U	68 U	54 U	51 U	63 U	72 U	57 U
4-Methylphenol	ug/kg	340000	31000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
4-Nitroaniline	ug/kg	NS	NS	270 U	340 U	270 U	260 U	310 U	360 U	280 U
4-Nitrophenol	ug/kg	NS	NS	810 U	1000 U	800 U	770 U	940 U	1100 U	850 U
Acenaphthene	ug/kg	37000000	3400000	27 U	34 U	27 U	26 U	32 U	37 U	29 U
Acenaphthylene	ug/kg	300000000	NS	27 U	34 U	27 U	26 U	32 U	37 U	29 U
Acetophenone	ug/kg	5000	2000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
Anthracene	ug/kg	30000000	17000000	22 J	22 J	24 J	19 J	21 J	21 J	16 J
Atrazine	ug/kg	2400000	210000	270 U	340 U	270 U	260 U	310 U	360 U	280 U
Benzaldehyde	ug/kg	68000000	6100000	270 U	340 U	130 J	110 J	310 U	360 U	280 U
Benzo(a)anthracene	ug/kg	2000	600	92	83	91	87	69	84	63
Benzo(a)pyrene	ug/kg	200	200	70	77	67	72	66	86	60
Benzo(b)fluoranthene	ug/kg	2000	600	140	120	130	110	100	140	93
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	56	45	46	47	44	68	44
Benzo(k)fluoranthene	ug/kg	23000	6000	49	54	55	58	46	65	47
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	54 U	68 U	54 U	51 U	63 U	72 U	57 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	54 U	68 U	54 U	51 U	63 U	72 U	57 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	270 U	340 U	270 U	260 U	320 U	370 U	290 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	270 U	340 U	270 U	260 U	310 U	360 U	280 U
Caprolactam	ug/kg	340000000	31000000	270 U	340 U	270 U	260 U	310 U	360 U	280 U
Carbazole	ug/kg	96000	24000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
Chrysene	ug/kg	230000	62000	110	100	110	97	83	110	79
Dibenzo(a,h)anthracene	ug/kg	200	200	25 J	17 J	15 J	22 J	12 J	22 J	14 J
Dibenzofuran	ug/kg	NS	NS	54 U	68 U	54 U	51 U	63 U	72 U	57 U
Diethyl phthalate	ug/kg	550000000	49000000	270 U	340 U	270 U	260 U	310 U	360 U	280 U
Dimethyl phthalate	ug/kg	NS	NS	270 U	340 U	270 U	260 U	310 U	360 U	280 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	270 U	340 U	270 U	260 U	310 U	360 U	280 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-A-1	9/14/2015 TNT-PS-A-2	9/14/2015 TNT-PS-A-3	9/14/2015 TNT-PS-A-4	9/14/2015 TNT-PS-B-1	9/14/2015 TNT-PS-B-2	9/14/2015 TNT-PS-B-3
Di-n-octyl phthalate	ug/kg	27000000	2400000	270 U	340 U	140 J	260 U	310 U	360 U	280 U
Fluoranthene	ug/kg	24000000	2300000	160	130	150	130	120	150	110
Fluorene	ug/kg	24000000	2300000	27 U	34 U	27 U	26 U	32 U	37 U	29 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
Hexachlorobenzene	ug/kg	1000	300	27 U	34 U	27 U	26 U	32 U	37 U	29 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	810 U	1000 U	800 U	770 U	940 U	1100 U	850 U
Hexachloroethane	ug/kg	140000	35000	270 U	340 U	270 U	260 U	310 U	360 U	280 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	63	48	54	52	38	65	44
Isophorone	ug/kg	2000000	510000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
Naphthalene	ug/kg	17000	6000	27 U	34 U	27 U	26 U	32 U	37 U	29 U
Nitrobenzene	ug/kg	340000	31000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	54 U	68 U	54 U	51 U	63 U	72 U	57 U
N-nitrosodiphenylamine	ug/kg	390000	99000	54 U	68 U	54 U	51 U	71	72 U	57 U
p-Chloroaniline	ug/kg	NS	NS	110 U	140 U	110 U	100 U	130 U	140 U	110 U
Pentachlorophenol	ug/kg	10000	3000	270 U	340 U	270 U	260 U	320 U	370 U	290 U
Phenanthrene	ug/kg	300000000	NS	79	68	85	68	65	85	59
Phenol	ug/kg	210000000	18000000	54 U	68 U	54 U	51 U	63 U	72 U	57 U
Pyrene	ug/kg	18000000	1700000	120	110	120	110	89	120	93

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-B-4	9/14/2015 TNT-PS-C-1	9/14/2015 TNT-PS-C-2	9/14/2015 TNT-PS-C-3	9/14/2015 TNT-PS-C-4	9/14/2015 TNT-PS-D-1	9/14/2015 TNT-PS-D-2
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2900 U	2900 U	2200 U	2200 U	2300 U	2200 U	2100 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2200 J	6100	2600	3200	3600	2200 U	2100 U
1,3-Dinitrobenzene	ug/kg	NS	NS	2900 U	2000 J	2200 U	2200 U	2300 U	2200 U	2100 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2900 U	2900 U	2200 U	2200 U	2300 U	2200 U	2100 U
1-Nitronaphthalene	ug/kg	NS	NS	2900 U	2900 U	2200 U	2200 U	2300 U	2200 U	2100 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**2400000**	**4800000**	**1700000**	**2500000**	**2300000**	13000	**370000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**26000**	**54000**	**24000**	29000 U	**29000**	**19000**	**14000**
2-Nitrotoluene	ug/kg	NS	NS	3800 U	3900 U	3000 U	3000 U	3100 U	2900 U	2700 U
3-Nitrotoluene	ug/kg	NS	NS	4800 U	4900 U	3700 U	3700 U	3900 U	3700 U	3400 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**28000**	**58000**	**24000**	30000 U	**31000**	**8900**	**13000**
4-Nitrotoluene	ug/kg	NS	NS	3800 U	3900 U	3000 U	3000 U	3100 U	2900 U	2700 U
HMX	ug/kg	NS	NS	7200 U	7300 U	5500 U	5500 U	5800 U	5500 U	5200 U
Nitrobenzene	ug/kg	340000	31000	2900 U	2900 U	2200 U	2200 U	2300 U	2200 U	2100 U
Nitroglycerin	ug/kg	NS	NS	58000 U	59000 U	44000 U	44000 U	47000 U	44000 U	41000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	58000 U	59000 U	44000 U	2200000 U	47000 U	44000 U	41000 U
RDX	ug/kg	NS	NS	2900 U	2900 U	2200 U	2200 U	2300 U	2200 U	2100 U
Tetryl	ug/kg	NS	NS	3800 U	3900 U	3000 U	3000 U	3100 U	2900 U	2700 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	30300000	53000000	27100000	24500000	28400000	38400000	24800000
Metals										
Aluminum	ug/kg	NS	78000000	21500000	27900000	19300000	20900000	16900000	18000000	16600000
Antimony	ug/kg	450000	31000	1530 J	1700 J	1180 J	1060 J	2070 J	3100 U	816 J
Arsenic	ug/kg	19000	19000	5650	5430	6570	4230	4910	2550 J	1430 J
Barium	ug/kg	59000000	16000000	67300	85700	58400	63600	51000	56800	78500
Beryllium	ug/kg	140000	16000	699 J	898 J	669 J	757 J	537 J	641 J	683 J
Cadmium	ug/kg	78000	78000	978 U	1050 U	830 U	807 U	884 U	774 U	782 U
Calcium	ug/kg	NS	NS	1090000	1230000	876000	935000	1050000	1210000	1020000
Chromium	ug/kg	20000	240000	17100	**20500**	16700	17700	13400	**20400**	**22500**
Cobalt	ug/kg	590000	1600000	5240	6240	4890	5520	3950	9880	12100
Copper	ug/kg	45000000	3100000	29600	37600	27900	30500	23400	39300	37800
Iron	ug/kg	NS	NS	23400000	28600000	27300000	29800000	18300000	36300000	42800000
Lead	ug/kg	800000	400000	255000	343000	284000	269000	197000	206000	220000
Magnesium	ug/kg	NS	NS	1490000	1820000	1390000	1430000	1140000	1370000	1390000
Manganese	ug/kg	5900000	11000000	191000	244000	216000	215000	161000	228000	264000
Mercury	ug/kg	65000	23000	52.6 J	70.6 J	45.2 J	39.1 J	42.0 J	44.8 J	40.4 J
Nickel	ug/kg	23000000	1600000	10300	13000	9640	10400	7680	20000	23700
Potassium	ug/kg	NS	NS	900000	1020000	702000	787000	685000	942000	844000
Selenium	ug/kg	5700000	390000	2650 J	3050 J	4460	4350	2780 J	6610	8770
Silver	ug/kg	5700000	390000	978 U	1050 U	830 U	807 U	884 U	818	2150
Sodium	ug/kg	NS	NS	62300 J	69800 J	50500 J	46100 J	42600 J	41800 J	35900 J
Thallium	ug/kg	79000	5000	5870 U	6310 U	4980 U	1520 J	5300 U	1750 J	1730 J
Vanadium	ug/kg	1100000	78000	37300	44300	35000	39800	28600	38200	38600
Zinc	ug/kg	110000000	23000000	38900	49500	35400	69600	29700	48500	56700
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	64 U	73 U	57 U	56 U	59 U	54 U	54 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-B-4	9/14/2015 TNT-PS-C-1	9/14/2015 TNT-PS-C-2	9/14/2015 TNT-PS-C-3	9/14/2015 TNT-PS-C-4	9/14/2015 TNT-PS-D-1	9/14/2015 TNT-PS-D-2
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2,4-Dichlorophenol	ug/kg	2100000	180000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1900 U	2200 U	1700 U	1700 U	1800 U	1600 U	1600 U
2,4-Dinitrotoluene	ug/kg	3000	700	**5500**	**8400**	**5200**	**5800**	**5200**	**980**	**1100**
2,6-Dinitrotoluene	ug/kg	3000	700	**1800**	**3100**	**2200**	**2200**	**2200**	54 U	54 U
2-Chloronaphthalene	ug/kg	NS	NS	64 U	72 U	57 U	55 U	59 U	54 U	54 U
2-Chlorophenol	ug/kg	2200000	310000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	970 U	1100 U	860 U	840 U	890 U	810 U	820 U
2-Methylnaphthalene	ug/kg	2400000	230000	33 U	37 U	29 U	28 U	30 U	28 U	28 U
2-Methylphenol	ug/kg	3400000	310000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2-Nitroaniline	ug/kg	23000000	39000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
2-Nitrophenol	ug/kg	NS	NS	64 U	73 U	57 U	56 U	59 U	54 U	54 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	640 U	730 U	570 U	560 U	590 U	540 U	540 U
3-Nitroaniline	ug/kg	NS	NS	320 U	370 U	290 U	280 U	300 U	250 J	170 J
4-Bromophenyl phenyl ether	ug/kg	NS	NS	64 U	73 U	57 U	56 U	59 U	54 U	54 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	64 U	73 U	57 U	56 U	59 U	54 U	54 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	64 U	73 U	57 U	56 U	59 U	54 U	54 U
4-Methylphenol	ug/kg	340000	31000	64 U	73 U	57 U	56 U	59 U	970	830
4-Nitroaniline	ug/kg	NS	NS	320 U	370 U	290 U	280 U	300 U	270 U	270 U
4-Nitrophenol	ug/kg	NS	NS	970 U	1100 U	860 U	840 U	890 U	810 U	820 U
Acenaphthene	ug/kg	37000000	3400000	33 U	37 U	29 U	28 U	30 U	28 U	28 U
Acenaphthylene	ug/kg	300000000	NS	33 U	37 U	29 U	28 U	30 U	16 J	28 U
Acetophenone	ug/kg	5000	2000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
Anthracene	ug/kg	30000000	17000000	14 J	19 J	10 J	23 J	19 J	12 J	16 J
Atrazine	ug/kg	2400000	210000	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Benzaldehyde	ug/kg	68000000	6100000	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Benzo(a)anthracene	ug/kg	2000	600	65	100	57	80	67	59	69
Benzo(a)pyrene	ug/kg	200	200	56	94	56	67	65	44	51
Benzo(b)fluoranthene	ug/kg	2000	600	100	170	84	130	130	82	91
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	40	74	41	45	50	36	43
Benzo(k)fluoranthene	ug/kg	23000	6000	45	57	53	44	50	31	35
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	64 U	73 U	57 U	56 U	59 U	54 U	54 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	64 U	73 U	57 U	56 U	59 U	54 U	54 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	330 U	370 U	290 U	120 J	300 U	280 U	280 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Caprolactam	ug/kg	340000000	31000000	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Carbazole	ug/kg	96000	24000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
Chrysene	ug/kg	230000	62000	74	120	70	96	94	69	82
Dibenzo(a,h)anthracene	ug/kg	200	200	12 J	12 J	29 U	13 J	19 J	28 U	28 U
Dibenzofuran	ug/kg	NS	NS	64 U	73 U	57 U	56 U	59 U	54 U	54 U
Diethyl phthalate	ug/kg	550000000	49000000	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Dimethyl phthalate	ug/kg	NS	NS	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	320 U	370 U	290 U	280 U	300 U	270 U	270 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-B-4	9/14/2015 TNT-PS-C-1	9/14/2015 TNT-PS-C-2	9/14/2015 TNT-PS-C-3	9/14/2015 TNT-PS-C-4	9/14/2015 TNT-PS-D-1	9/14/2015 TNT-PS-D-2
Di-n-octyl phthalate	ug/kg	27000000	2400000	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Fluoranthene	ug/kg	24000000	2300000	110	200	93	150	130	100	130
Fluorene	ug/kg	24000000	2300000	33 U	37 U	29 U	28 U	30 U	28 U	28 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
Hexachlorobenzene	ug/kg	1000	300	33 U	37 U	29 U	28 U	30 U	28 U	28 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	970 U	1100 U	860 U	840 U	890 U	810 U	820 U
Hexachloroethane	ug/kg	140000	35000	320 U	370 U	290 U	280 U	300 U	270 U	270 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	35	69	40	48	50	36	43
Isophorone	ug/kg	2000000	510000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
Naphthalene	ug/kg	17000	6000	10 J	37 U	29 U	28 U	30 U	24 J	22 J
Nitrobenzene	ug/kg	340000	31000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	64 U	73 U	57 U	56 U	59 U	54 U	54 U
N-nitrosodiphenylamine	ug/kg	390000	99000	64 U	73 U	57 U	56 U	59 U	54 U	54 U
p-Chloroaniline	ug/kg	NS	NS	130 U	150 U	110 U	110 U	120 U	110 U	110 U
Pentachlorophenol	ug/kg	10000	3000	330 U	370 U	290 U	280 U	300 U	280 U	280 U
Phenanthrene	ug/kg	300000000	NS	51	100	52	81	69	59	65
Phenol	ug/kg	210000000	18000000	64 U	73 U	57 U	56 U	59 U	250	190
Pyrene	ug/kg	18000000	1700000	84	150	82	120	110	28 U	100

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-D-3	9/14/2015 TNT-PS-D-4	9/14/2015 TNT-PS-E-1	9/14/2015 TNT-PS-E-2	9/14/2015 TNT-PS-E-3	9/14/2015 TNT-PS-E-4	9/14/2015 TNT-PS-F-1
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2000 U	2100 U	2500 U	2200 U	2500 U	2700 U	2300 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2000 U	2100 U	2500 U	2200 U	2500 U	2700 U	2300 U
1,3-Dinitrobenzene	ug/kg	NS	NS	2000 U	2100 U	2500 U	2200 U	2500 U	2700 U	2300 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2000 U	2100 U	2500 U	2200 U	2500 U	2700 U	2300 U
1-Nitronaphthalene	ug/kg	NS	NS	2000 U	2100 U	2500 U	2200 U	2500 U	2700 U	2300 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	14000	14000	**110000**	**50000**	**27000**	19000	21000
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**4800**	**5500**	**7200**	**24000**	**7400**	**7500**	**15000**
2-Nitrotoluene	ug/kg	NS	NS	2700 U	2700 U	3300 U	2900 U	3300 U	3600 U	3100 U
3-Nitrotoluene	ug/kg	NS	NS	3400 U	3400 U	4100 U	3700 U	4100 U	4500 U	3900 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**6900**	**7800**	**8200**	**19000**	**10000**	**10000**	**22000**
4-Nitrotoluene	ug/kg	NS	NS	2700 U	2700 U	3300 U	2900 U	3300 U	3600 U	3100 U
HMX	ug/kg	NS	NS	5100 U	5100 U	6200 U	5500 U	6100 U	6700 U	5900 U
Nitrobenzene	ug/kg	340000	31000	2000 U	2100 U	2500 U	2200 U	2500 U	2700 U	2300 U
Nitroglycerin	ug/kg	NS	NS	41000 U	41000 U	49000 U	44000 U	49000 U	54000 U	47000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	41000 U	41000 U	49000 U	44000 U	49000 U	54000 U	47000 U
RDX	ug/kg	NS	NS	2000 U	2100 U	2500 U	2200 U	2500 U	2700 U	2300 U
Tetryl	ug/kg	NS	NS	2700 U	2700 U	3300 U	2900 U	3300 U	3600 U	3100 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	28700000	27700000	28300000	43100000	34800000	47600000	32000000
Metals										
Aluminum	ug/kg	NS	78000000	17800000	14600000	16900000	15900000	14100000	17400000	19400000
Antimony	ug/kg	450000	31000	2970 U	3030 U	3300 U	3410 U	3380 U	3450 U	11400
Arsenic	ug/kg	19000	19000	2550 J	1440 J	2870 J	2870 J	1050 J	2960 J	2800 J
Barium	ug/kg	59000000	16000000	57200	43900	55200	50300	45900	53800	58900
Beryllium	ug/kg	140000	16000	608 J	551 J	550 J	572 J	488 J	587 J	707 J
Cadmium	ug/kg	78000	78000	742 U	758 U	825 U	853 U	845 U	863 U	1290
Calcium	ug/kg	NS	NS	1220000	1080000	1280000	1330000	999000	1130000	1220000
Chromium	ug/kg	20000	240000	18700	**20300**	16400	19600	20000	**21900**	**23100**
Cobalt	ug/kg	590000	1600000	8970	9670	7580	8250	9810	10700	9770
Copper	ug/kg	45000000	3100000	36700	35300	35100	35100	34900	38700	26900
Iron	ug/kg	NS	NS	32600000	38000000	26000000	32700000	36200000	37500000	35900000
Lead	ug/kg	800000	400000	201000	175000	259000	227000	217000	273000	222000
Magnesium	ug/kg	NS	NS	1310000	1120000	1250000	1350000	1070000	1280000	1480000
Manganese	ug/kg	5900000	11000000	231000	200000	210000	213000	177000	200000	208000
Mercury	ug/kg	65000	23000	41.3 J	38.7 J	55.3 J	46.0 J	44.1 J	35.4 J	59.8 J
Nickel	ug/kg	23000000	1600000	17600	20200	13200	16800	20700	20600	18500
Potassium	ug/kg	NS	NS	906000	758000	908000	840000	775000	919000	1020000
Selenium	ug/kg	5700000	390000	6090	7420	4180	5620	7170	6790	5810
Silver	ug/kg	5700000	390000	444 J	1130	825 U	853 U	529 J	661 J	1530
Sodium	ug/kg	NS	NS	46500 J	33000 J	52500 J	53700 J	28300 J	40600 J	77800 J
Thallium	ug/kg	79000	5000	1760 J	1910 J	1300 J	1860 J	1640 J	1670 J	1350 J
Vanadium	ug/kg	1100000	78000	34500	38300	32000	37200	33600	36800	38800
Zinc	ug/kg	110000000	23000000	50300	42200	48400	48100	43900	48600	48200
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	51 U	52 U	55 U	58 U	56 U	59 U	55 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-D-3	9/14/2015 TNT-PS-D-4	9/14/2015 TNT-PS-E-1	9/14/2015 TNT-PS-E-2	9/14/2015 TNT-PS-E-3	9/14/2015 TNT-PS-E-4	9/14/2015 TNT-PS-F-1
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2,4-Dichlorophenol	ug/kg	2100000	180000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1500 U	1600 U	1700 U	1700 U	1700 U	1800 U	1600 U
2,4-Dinitrotoluene	ug/kg	3000	700	690	490	**1100**	**1100**	**1000**	**710**	**1000**
2,6-Dinitrotoluene	ug/kg	3000	700	51 U	52 U	350	58 U	56 U	59 U	55 U
2-Chloronaphthalene	ug/kg	NS	NS	51 U	51 U	55 U	57 U	55 U	59 U	54 U
2-Chlorophenol	ug/kg	2200000	310000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	770 U	780 U	830 U	870 U	840 U	890 U	820 U
2-Methylnaphthalene	ug/kg	2400000	230000	26 U	26 U	28 U	29 U	29 U	30 U	28 U
2-Methylphenol	ug/kg	3400000	310000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2-Nitroaniline	ug/kg	23000000	39000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
2-Nitrophenol	ug/kg	NS	NS	51 U	52 U	55 U	58 U	56 U	59 U	55 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	510 U	520 U	550 U	580 U	560 U	590 U	550 U
3-Nitroaniline	ug/kg	NS	NS	130 J	260 U	200 J	140 J	280 U	300 U	270 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	51 U	52 U	55 U	58 U	56 U	59 U	55 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	51 U	52 U	55 U	58 U	56 U	59 U	55 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	51 U	52 U	55 U	58 U	56 U	59 U	55 U
4-Methylphenol	ug/kg	340000	31000	790	510	690	350	490	700	55 U
4-Nitroaniline	ug/kg	NS	NS	260 U	260 U	280 U	290 U	280 U	300 U	270 U
4-Nitrophenol	ug/kg	NS	NS	770 U	780 U	830 U	870 U	840 U	890 U	820 U
Acenaphthene	ug/kg	37000000	3400000	26 U	26 U	28 U	29 U	29 U	30 U	28 U
Acenaphthylene	ug/kg	300000000	NS	26 U	23 J	28 U	64	29 U	27 J	12 J
Acetophenone	ug/kg	5000	2000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
Anthracene	ug/kg	30000000	17000000	22 J	22 J	20 J	120	39	28 J	15 J
Atrazine	ug/kg	2400000	210000	260 U	260 U	280 U	290 U	280 U	300 U	270 U
Benzaldehyde	ug/kg	68000000	6100000	260 U	260 U	280 U	290 U	280 U	300 U	270 U
Benzo(a)anthracene	ug/kg	2000	600	79	85	92	340	130	150	75
Benzo(a)pyrene	ug/kg	200	200	68	69	73	**300**	88	120	63
Benzo(b)fluoranthene	ug/kg	2000	600	120	110	120	410	150	180	73
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	58	51	50	210	64	73	49
Benzo(k)fluoranthene	ug/kg	23000	6000	42	48	48	160	55	68	48
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	51 U	52 U	55 U	58 U	56 U	59 U	55 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	51 U	52 U	55 U	58 U	56 U	59 U	55 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	100 J	100 J	210 J	260 J	290	300 J	280 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	260 U	260 U	280 U	290 U	280 U	300 U	270 U
Caprolactam	ug/kg	340000000	31000000	260 U	260 U	280 U	290 U	280 U	300 U	270 U
Carbazole	ug/kg	96000	24000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
Chrysene	ug/kg	230000	62000	110	96	100	320	130	160	84
Dibenzo(a,h)anthracene	ug/kg	200	200	21 J	26 U	14 J	63	23 J	32	21 J
Dibenzofuran	ug/kg	NS	NS	51 U	52 U	55 U	58 U	56 U	59 U	55 U
Diethyl phthalate	ug/kg	550000000	49000000	260 U	260 U	280 U	290 U	280 U	300 U	270 U
Dimethyl phthalate	ug/kg	NS	NS	260 U	260 U	280 U	290 U	280 U	300 U	270 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	260 U	260 U	280 U	290 U	280 U	300 U	270 U

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Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-D-3	9/14/2015 TNT-PS-D-4	9/14/2015 TNT-PS-E-1	9/14/2015 TNT-PS-E-2	9/14/2015 TNT-PS-E-3	9/14/2015 TNT-PS-E-4	9/14/2015 TNT-PS-F-1
Di-n-octyl phthalate	ug/kg	27000000	2400000	260 U	260 U	280 U	290 U	280 U	500	270 U
Fluoranthene	ug/kg	24000000	2300000	160	140	140	780	210	220	100
Fluorene	ug/kg	24000000	2300000	26 U	26 U	28 U	29 U	14 J	30 U	28 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
Hexachlorobenzene	ug/kg	1000	300	26 U	26 U	28 U	29 U	29 U	30 U	28 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	770 U	780 U	830 U	870 U	840 U	890 U	820 U
Hexachloroethane	ug/kg	140000	35000	260 U	260 U	280 U	290 U	280 U	300 U	270 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	51	48	53	190	57	83	48
Isophorone	ug/kg	2000000	510000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
Naphthalene	ug/kg	17000	6000	22 J	26 U	28 U	34	30	30 U	28 U
Nitrobenzene	ug/kg	340000	31000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	51 U	52 U	55 U	58 U	56 U	59 U	55 U
N-nitrosodiphenylamine	ug/kg	390000	99000	51 U	52 U	55 U	58 U	56 U	59 U	55 U
p-Chloroaniline	ug/kg	NS	NS	100 U	100 U	110 U	120 U	110 U	120 U	110 U
Pentachlorophenol	ug/kg	10000	3000	260 U	260 U	280 U	290 U	290 U	300 U	280 U
Phenanthrene	ug/kg	300000000	NS	82	70	63	540	140	79	48
Phenol	ug/kg	210000000	18000000	220	220	210	150	160	210	55 U
Pyrene	ug/kg	18000000	1700000	130	110	130	700	170	190	73

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID*	9/14/2015 TNT-PS-F-2	9/14/2015 TNT-PS-F-3	9/14/2015 TNT-PS-F-4	9/14/2015 TNT-PS-G-1	9/14/2015 TNT-PS-G-2	9/14/2015 TNT-PS-G-3	9/14/2015 TNT-PS-G-4
Explosives and Energetics											
1,2-Dinitrobenzene	ug/kg	NS	NS		1900 U	2200 U	2100 U	2600 U	2100 U	2400 U	2500 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS		1900 U	2200 U	2100 U	2600 U	2100 U	2400 U	2500 U
1,3-Dinitrobenzene	ug/kg	NS	NS		1900 U	2200 U	2100 U	2600 U	2100 U	2400 U	2500 U
1,4-Dinitrobenzene	ug/kg	NS	NS		1900 U	2200 U	2100 U	2600 U	2100 U	2400 U	2500 U
1-Nitronaphthalene	ug/kg	NS	NS		1900 U	2200 U	2100 U	2600 U	2100 U	2400 U	2500 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000		**22000**	**860000**	19000	20000	12000	18000	15000
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700		**18000**	**36000**	**11000**	4600	2700	3700	3000
2-Nitrotoluene	ug/kg	NS	NS		2500 U	2900 U	2800 U	3500 U	2900 U	3200 U	3400 U
3-Nitrotoluene	ug/kg	NS	NS		3100 U	3600 U	3600 U	4300 U	3600 U	3900 U	4200 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700		**24000**	**36000**	**16000**	**7100**	4700	**6200**	4400
4-Nitrotoluene	ug/kg	NS	NS		2500 U	2900 U	2800 U	3500 U	2900 U	3200 U	3400 U
HMX	ug/kg	NS	NS		4700 U	5500 U	5300 U	6500 U	5400 U	5900 U	6400 U
Nitrobenzene	ug/kg	340000	31000		1900 U	2200 U	2100 U	2600 U	2100 U	2400 U	2500 U
Nitroglycerin	ug/kg	NS	NS		38000 U	44000 U	43000 U	52000 U	43000 U	47000 U	51000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS		38000 U	44000 U	43000 U	52000 U	43000 U	47000 U	51000 U
RDX	ug/kg	NS	NS		1900 U	2200 U	2100 U	2600 U	2100 U	2400 U	2500 U
Tetryl	ug/kg	NS	NS		2500 U	2900 U	2800 U	3500 U	2900 U	3200 U	3400 U
General Chemistry											
Total Organic Carbon	ug/kg	NS	NS		20300000	27500000	28800000	34400000	37700000	39200000	43200000
Metals											
Aluminum	ug/kg	NS	78000000		18600000	23000000	16300000	20800000	17100000	20500000	22900000
Antimony	ug/kg	450000	31000		5210	3940	4750	3340 U	3200 U	3390 U	3390 U
Arsenic	ug/kg	19000	19000		2060 J	3670	2180 J	3600	3200 U	2870 J	3710
Barium	ug/kg	59000000	16000000		58500	70700	48200	63100	57600	71600	77500
Beryllium	ug/kg	140000	16000		770	821 J	594 J	666 J	655 J	674 J	796 J
Cadmium	ug/kg	78000	78000		739 U	699 J	776 U	836 U	4000 U	847 U	847 U
Calcium	ug/kg	NS	NS		1010000	1290000	1050000	1540000	1830000	1680000	1590000
Chromium	ug/kg	20000	240000		**23400**	**21200**	19400	19000	**26900**	**20500**	**20800**
Cobalt	ug/kg	590000	1600000		11400	8160	9060	7210	15800	8020	7860
Copper	ug/kg	45000000	3100000		28900	28000	24300	41800	52000	47900	43400
Iron	ug/kg	NS	NS		40700000	31200000	40600000	30000000	51700000	33500000	33400000
Lead	ug/kg	800000	400000		226000	266000	216000	264000	234000	283000	300000
Magnesium	ug/kg	NS	NS		1540000	1620000	1330000	1530000	1580000	1620000	1660000
Manganese	ug/kg	5900000	11000000		210000	240000	231000	225000	283000	261000	244000
Mercury	ug/kg	65000	23000		44.5 J	51.3 J	44.5 J	56.6 J	47.7 J	64.5 J	57.5 J
Nickel	ug/kg	23000000	1600000		19000	13900	22400	15200	32500	16800	16400
Potassium	ug/kg	NS	NS		985000	1160000	850000	1160000	1000000	1110000	1230000
Selenium	ug/kg	5700000	390000		8350	4820	6750	4460	11800	5700	5700
Silver	ug/kg	5700000	390000		2930	486 J	2140	836 U	4070	847 U	847 U
Sodium	ug/kg	NS	NS		63700 J	92500 J	66800 J	59100 J	49900 J	49300 J	69900 J
Thallium	ug/kg	79000	5000		1830 J	5170 U	1490 J	1510 J	2430 J	1790 J	1640 J
Vanadium	ug/kg	1100000	78000		46100	41000	34300	36900	42600	38600	40900
Zinc	ug/kg	110000000	23000000		50500	50400	43200	61300	70000	74100	68600
SVOCs											
1,1-Biphenyl	ug/kg	34000000	3100000		49 U	57 U	52 U	58 U	54 U	57 U	59 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-F-2	9/14/2015 TNT-PS-F-3	9/14/2015 TNT-PS-F-4	9/14/2015 TNT-PS-G-1	9/14/2015 TNT-PS-G-2	9/14/2015 TNT-PS-G-3	9/14/2015 TNT-PS-G-4
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2,4-Dichlorophenol	ug/kg	2100000	180000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1500 U	1700 U	1600 U	1700 U	1600 U	1700 U	1800 U
2,4-Dinitrotoluene	ug/kg	3000	700	510	**1300**	**1000**	**860**	310	**840**	540
2,6-Dinitrotoluene	ug/kg	3000	700	49 U	57 U	260	58 U	54 U	57 U	59 U
2-Chloronaphthalene	ug/kg	NS	NS	49 U	57 U	52 U	57 U	53 U	57 U	58 U
2-Chlorophenol	ug/kg	2200000	310000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	740 U	860 U	780 U	860 U	810 U	860 U	880 U
2-Methylnaphthalene	ug/kg	2400000	230000	25 U	29 U	27 U	29 U	27 U	29 U	30 U
2-Methylphenol	ug/kg	3400000	310000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2-Nitroaniline	ug/kg	23000000	39000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
2-Nitrophenol	ug/kg	NS	NS	49 U	57 U	52 U	58 U	54 U	57 U	59 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	190 J	570 U	520 U	580 U	540 U	570 U	590 U
3-Nitroaniline	ug/kg	NS	NS	250 U	290 U	260 U	160 J	260 J	290	200 J
4-Bromophenyl phenyl ether	ug/kg	NS	NS	49 U	57 U	52 U	58 U	54 U	57 U	59 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	49 U	57 U	52 U	58 U	54 U	57 U	59 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	49 U	57 U	52 U	58 U	54 U	57 U	59 U
4-Methylphenol	ug/kg	340000	31000	49 U	57 U	52 U	2700	2200	4500	3900
4-Nitroaniline	ug/kg	NS	NS	250 U	290 U	260 U	290 U	270 U	290 U	290 U
4-Nitrophenol	ug/kg	NS	NS	740 U	860 U	780 U	860 U	810 U	860 U	880 U
Acenaphthene	ug/kg	37000000	3400000	25 U	29 U	27 U	29 U	27 U	29 U	30 U
Acenaphthylene	ug/kg	300000000	NS	25 U	29 U	27 U	29 U	19 J	38	22 J
Acetophenone	ug/kg	5000	2000	49 U	57 U	52 U	58 U	52 J	57 U	56 J
Anthracene	ug/kg	30000000	17000000	15 J	21 J	11 J	30	20 J	63	25 J
Atrazine	ug/kg	2400000	210000	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Benzaldehyde	ug/kg	68000000	6100000	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Benzo(a)anthracene	ug/kg	2000	600	54	89	57	77	80	180	85
Benzo(a)pyrene	ug/kg	200	200	49	76	47	64	59	130	62
Benzo(b)fluoranthene	ug/kg	2000	600	74	130	90	94	100	170	110
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	38	61	24 J	45	43	82	46
Benzo(k)fluoranthene	ug/kg	23000	6000	35	62	32	46	50	91	51
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	49 U	57 U	52 U	58 U	54 U	57 U	59 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	49 U	57 U	52 U	58 U	54 U	57 U	59 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	250 U	170 J	270 U	290 U	270 U	290 U	300 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Caprolactam	ug/kg	340000000	31000000	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Carbazole	ug/kg	96000	24000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
Chrysene	ug/kg	230000	62000	63	110	65	88	93	170	97
Dibenzo(a,h)anthracene	ug/kg	200	200	21 J	44	27 U	9 J	23 J	40	23 J
Dibenzofuran	ug/kg	NS	NS	49 U	57 U	52 U	58 U	54 U	57 U	59 U
Diethyl phthalate	ug/kg	550000000	49000000	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Dimethyl phthalate	ug/kg	NS	NS	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	250 U	290 U	260 U	290 U	270 U	290 U	290 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-F-2	9/14/2015 TNT-PS-F-3	9/14/2015 TNT-PS-F-4	9/14/2015 TNT-PS-G-1	9/14/2015 TNT-PS-G-2	9/14/2015 TNT-PS-G-3	9/14/2015 TNT-PS-G-4
Di-n-octyl phthalate	ug/kg	27000000	2400000	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Fluoranthene	ug/kg	24000000	2300000	78	160	87	170	140	320	140
Fluorene	ug/kg	24000000	2300000	25 U	29 U	27 U	15 J	27 U	29 U	30 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
Hexachlorobenzene	ug/kg	1000	300	25 U	29 U	27 U	29 U	27 U	29 U	30 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	740 U	860 U	780 U	860 U	810 U	860 U	880 U
Hexachloroethane	ug/kg	140000	35000	250 U	290 U	260 U	290 U	270 U	290 U	290 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	41	63	29	50	44	84	51
Isophorone	ug/kg	2000000	510000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
Naphthalene	ug/kg	17000	6000	25 U	29 U	27 U	27 J	23 J	21 J	27 J
Nitrobenzene	ug/kg	340000	31000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	49 U	57 U	52 U	58 U	54 U	57 U	59 U
N-nitrosodiphenylamine	ug/kg	390000	99000	49 U	57 U	52 U	58 U	54 U	57 U	59 U
p-Chloroaniline	ug/kg	NS	NS	98 U	110 U	100 U	120 U	110 U	110 U	120 U
Pentachlorophenol	ug/kg	10000	3000	250 U	290 U	270 U	290 U	270 U	290 U	300 U
Phenanthrene	ug/kg	300000000	NS	44	68	43	120	68	150	73
Phenol	ug/kg	210000000	18000000	42 J	110	52 U	290	270	320	390
Pyrene	ug/kg	18000000	1700000	62	110	70	130	110	250	110

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-H-1	9/14/2015 TNT-PS-H-2	9/14/2015 TNT-PS-H-3	9/14/2015 TNT-PS-H-4	9/14/2015 TNT-PS-I-1	9/14/2015 TNT-PS-I-2	9/14/2015 TNT-PS-I-3
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2200 U	2100 U	2400 U	2500 U	2500 U	2200 U	2100 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2200 U	2100 U	2400 U	2500 U	2500 U	2200 U	2100 U
1,3-Dinitrobenzene	ug/kg	NS	NS	2200 U	2100 U	2400 U	2500 U	2500 U	2200 U	2100 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2200 U	2100 U	2400 U	2500 U	2500 U	2200 U	2100 U
1-Nitronaphthalene	ug/kg	NS	NS	2200 U	2100 U	2400 U	2500 U	2500 U	2200 U	2100 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	14000	**53000**	17000	20000	**23000**	**950000**	**28000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	3700	**9200**	4600	**5700**	**9800**	**17000**	**20000**
2-Nitrotoluene	ug/kg	NS	NS	2900 U	2800 U	3200 U	3300 U	3300 U	2900 U	2900 U
3-Nitrotoluene	ug/kg	NS	NS	3600 U	3500 U	4000 U	4100 U	4100 U	3600 U	3600 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**6300**	**14000**	**7200**	**9000**	**15000**	**27000**	**24000**
4-Nitrotoluene	ug/kg	NS	NS	2900 U	2800 U	3200 U	3300 U	3300 U	2900 U	2900 U
HMX	ug/kg	NS	NS	5400 U	5300 U	5900 U	6200 U	6100 U	5500 U	5400 U
Nitrobenzene	ug/kg	340000	31000	2200 U	2100 U	2400 U	2500 U	2500 U	2200 U	2100 U
Nitroglycerin	ug/kg	NS	NS	43000 U	42000 U	48000 U	50000 U	49000 U	44000 U	43000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	43000 U	42000 U	48000 U	50000 U	49000 U	44000 U	43000 U
RDX	ug/kg	NS	NS	2200 U	2100 U	2400 U	2500 U	1500 J	2200 U	2100 U
Tetryl	ug/kg	NS	NS	3000 U	2800 U	3400 U	3500 U	3400 U	3000 U	2900 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	29700000	24300000	42600000	24800000	26400000	25600000	28500000
Metals										
Aluminum	ug/kg	NS	78000000	14800000	14100000	15100000	17200000	15900000	15400000	16600000
Antimony	ug/kg	450000	31000	3230 U	3040 U	3170 U	3170 U	3500 U	2900 U	3030 U
Arsenic	ug/kg	19000	19000	2690 J	1570 J	2640 J	2550 J	2620 J	1770 J	2470 J
Barium	ug/kg	59000000	16000000	47900	45400	48100	56400	50000	49700	51900
Beryllium	ug/kg	140000	16000	480 J	496 J	518 J	571 J	535 J	548 J	580 J
Cadmium	ug/kg	78000	78000	808 U	760 U	792 U	794 U	874 U	725 U	757 U
Calcium	ug/kg	NS	NS	1510000	1460000	1350000	1480000	1540000	1630000	1850000
Chromium	ug/kg	20000	240000	14900	19900	18200	18800	18900	**20800**	19100
Cobalt	ug/kg	590000	1600000	6830	10800	8060	11700	7620	9080	8130
Copper	ug/kg	45000000	3100000	31500	38500	35300	37300	33600	34000	34400
Iron	ug/kg	NS	NS	24800000	38200000	31700000	31900000	29600000	34900000	32700000
Lead	ug/kg	800000	400000	228000	217000	215000	239000	232000	232000	241000
Magnesium	ug/kg	NS	NS	1130000	1180000	1210000	1290000	1230000	1240000	1300000
Manganese	ug/kg	5900000	11000000	186000	180000	165000	195000	169000	192000	188000
Mercury	ug/kg	65000	23000	47.3 J	48.4 J	44.1 J	49.2 J	49.4 J	37.8 J	49.2 J
Nickel	ug/kg	23000000	1600000	14500	22600	17700	17100	15000	18900	17000
Potassium	ug/kg	NS	NS	814000	875000	946000	986000	848000	826000	863000
Selenium	ug/kg	5700000	390000	4040	7180	5700	5850	5190	6560	5900
Silver	ug/kg	5700000	390000	808 U	1000	274 J	794 U	874 U	789	757 U
Sodium	ug/kg	NS	NS	48300 J	48800 J	53400 J	47400 J	39600 J	46300 J	46300 J
Thallium	ug/kg	79000	5000	4850 U	1680 J	1330 J	1590 J	5240 U	1560 J	1630 J
Vanadium	ug/kg	1100000	78000	28000	33400	32300	35000	33100	35100	35900
Zinc	ug/kg	110000000	23000000	45400	46900	49700	50900	45300	42200	44600
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	56 U	51 U	54 U	55 U	59 U	50 U	52 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-H-1	9/14/2015 TNT-PS-H-2	9/14/2015 TNT-PS-H-3	9/14/2015 TNT-PS-H-4	9/14/2015 TNT-PS-I-1	9/14/2015 TNT-PS-I-2	9/14/2015 TNT-PS-I-3
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2,4-Dichlorophenol	ug/kg	2100000	180000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1700 U	1500 U	1600 U	1600 U	1800 U	1500 U	1600 U
2,4-Dinitrotoluene	ug/kg	3000	700	**940**	**1200**	700	**790**	540	**910**	**1200**
2,6-Dinitrotoluene	ug/kg	3000	700	410	620	400	55 U	59 U	380	**750**
2-Chloronaphthalene	ug/kg	NS	NS	55 U	50 U	54 U	54 U	58 U	50 U	51 U
2-Chlorophenol	ug/kg	2200000	310000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	830 U	760 U	810 U	820 U	890 U	750 U	780 U
2-Methylnaphthalene	ug/kg	2400000	230000	28 U	26 U	28 U	28 U	30 U	26 U	27 U
2-Methylphenol	ug/kg	3400000	310000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2-Nitroaniline	ug/kg	23000000	39000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
2-Nitrophenol	ug/kg	NS	NS	56 U	51 U	54 U	55 U	59 U	50 U	52 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	560 U	510 U	540 U	550 U	590 U	500 U	520 U
3-Nitroaniline	ug/kg	NS	NS	280 U	300	270 U	270 U	300 U	250 U	260 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	56 U	51 U	54 U	55 U	59 U	50 U	52 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	56 U	51 U	54 U	55 U	59 U	50 U	52 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	56 U	51 U	54 U	55 U	59 U	50 U	52 U
4-Methylphenol	ug/kg	340000	31000	2300	2100	2400	1400	2200	290	480
4-Nitroaniline	ug/kg	NS	NS	280 U	250 U	270 U	270 U	300 U	250 U	260 U
4-Nitrophenol	ug/kg	NS	NS	830 U	760 U	810 U	820 U	890 U	750 U	780 U
Acenaphthene	ug/kg	37000000	3400000	22 J	26 U	28 U	28 U	30 U	23 J	27 U
Acenaphthylene	ug/kg	300000000	NS	33	41	22 J	28 U	30 U	22 J	20 J
Acetophenone	ug/kg	5000	2000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
Anthracene	ug/kg	30000000	17000000	29	65	28	21 J	16 J	24 J	26 J
Atrazine	ug/kg	2400000	210000	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Benzaldehyde	ug/kg	68000000	6100000	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Benzo(a)anthracene	ug/kg	2000	600	100	220	100	79	47	100	91
Benzo(a)pyrene	ug/kg	200	200	87	170	81	62	36	86	62
Benzo(b)fluoranthene	ug/kg	2000	600	130	260	130	110	52	120	130
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	66	140	56	51	39	53	55
Benzo(k)fluoranthene	ug/kg	23000	6000	62	110	59	40	37	61	52
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	56 U	51 U	54 U	55 U	59 U	50 U	52 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	56 U	51 U	54 U	55 U	59 U	50 U	52 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	280 U	130 J	130 J	280 U	300 U	260 U	270 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Caprolactam	ug/kg	340000000	31000000	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Carbazole	ug/kg	96000	24000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
Chrysene	ug/kg	230000	62000	130	210	130	91	57	110	100
Dibenzo(a,h)anthracene	ug/kg	200	200	19 J	31	18 J	26 J	11 J	25 J	18 J
Dibenzofuran	ug/kg	NS	NS	56 U	51 U	54 U	55 U	59 U	50 U	52 U
Diethyl phthalate	ug/kg	550000000	49000000	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Dimethyl phthalate	ug/kg	NS	NS	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	280 U	250 U	270 U	270 U	300 U	250 U	260 U

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Di-n-octyl phthalate	ug/kg	27000000	2400000	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Fluoranthene	ug/kg	24000000	2300000	200	390	180	130	77	160	170
Fluorene	ug/kg	24000000	2300000	28 U	8 J	8 J	28 U	30 U	26 U	27 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
Hexachlorobenzene	ug/kg	1000	300	28 U	26 U	28 U	28 U	30 U	26 U	27 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	830 U	760 U	810 U	820 U	890 U	750 U	780 U
Hexachloroethane	ug/kg	140000	35000	280 U	250 U	270 U	270 U	300 U	250 U	260 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	61	120	47	41	30 J	52	54
Isophorone	ug/kg	2000000	510000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
Naphthalene	ug/kg	17000	6000	28 U	26 U	28 U	28 U	30 U	26 U	27 U
Nitrobenzene	ug/kg	340000	31000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	56 U	51 U	54 U	55 U	59 U	50 U	52 U
N-nitrosodiphenylamine	ug/kg	390000	99000	56 U	51 U	54 U	55 U	59 U	50 U	52 U
p-Chloroaniline	ug/kg	NS	NS	110 U	100 U	110 U	110 U	120 U	100 U	100 U
Pentachlorophenol	ug/kg	10000	3000	280 U	260 U	280 U	280 U	300 U	260 U	270 U
Phenanthrene	ug/kg	300000000	NS	74	240	89	65	41	71	87
Phenol	ug/kg	210000000	18000000	260	240	350	230	180	170	140
Pyrene	ug/kg	18000000	1700000	160	330	150	110	66	140	140

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-I-4	9/14/2015 TNT-PS-J-1	9/14/2015 TNT-PS-J-2	9/14/2015 TNT-PS-J-3	9/14/2015 TNT-PS-J-4	9/14/2015 TNT-PS-K-1	9/14/2015 TNT-PS-K-2
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2500 U	2500 U	2400 U	2500 U	2400 U	2200 U	2400 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2500 U	2000 J	2200 J	3800	2500	2500	2400 J
1,3-Dinitrobenzene	ug/kg	NS	NS	2500 U	2500 U	970 J	2500 U	2400 U	2200 U	2400 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2500 U	2500 U	2400 U	2500 U	2400 U	2200 U	2400 U
1-Nitronaphthalene	ug/kg	NS	NS	2500 U	2500 U	2400 U	2500 U	2400 U	2200 U	2400 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**630000**	**1600000**	**1500000**	**4500000**	**1800000**	**1400000**	**1500000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**92000**	**35000**	**36000**	**38000**	**37000**	**44000**	**75000**
2-Nitrotoluene	ug/kg	NS	NS	3300 U	3300 U	3200 U	3300 U	3200 U	2900 U	3300 U
3-Nitrotoluene	ug/kg	NS	NS	4100 U	4100 U	4000 U	4100 U	4000 U	3700 U	4100 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**110000**	**40000**	**43000**	**47000**	**43000**	**74000**	**120000**
4-Nitrotoluene	ug/kg	NS	NS	3300 U	3300 U	3200 U	3300 U	3200 U	2900 U	3300 U
HMX	ug/kg	NS	NS	6100 U	6100 U	6100 U	6200 U	6000 U	5500 U	6100 U
Nitrobenzene	ug/kg	340000	31000	2500 U	2500 U	2400 U	2500 U	2400 U	2200 U	2400 U
Nitroglycerin	ug/kg	NS	NS	49000 U	49000 U	48000 U	49000 U	48000 U	44000 U	49000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	49000 U	49000 U	48000 U	49000 U	48000 U	44000 U	49000 U
RDX	ug/kg	NS	NS	2500 U	2500 U	2400 U	2500 U	2400 U	2200 U	2400 U
Tetryl	ug/kg	NS	NS	3500 U	3300 U	3200 U	3300 U	3200 U	2900 U	3300 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	36600000	30000000	28700000	41200000	39200000	42500000	45600000
Metals										
Aluminum	ug/kg	NS	78000000	14500000	13800000	18400000	18100000	17200000	18400000	16800000
Antimony	ug/kg	450000	31000	3440 U	1470 J	1810 J	727 J	3380 U	1200 J	1340 J
Arsenic	ug/kg	19000	19000	2220 J	2920 J	3370	1440 J	5770	4820	1820 J
Barium	ug/kg	59000000	16000000	49800	49500	62800	55800	53500	56900	53600
Beryllium	ug/kg	140000	16000	495 J	484 J	593 J	599 J	581 J	609 J	599 J
Cadmium	ug/kg	78000	78000	859 U	821 U	812 U	830 U	845 U	817 U	934 U
Calcium	ug/kg	NS	NS	1330000	792000	1060000	908000	869000	1550000	1730000
Chromium	ug/kg	20000	240000	18600	13800	14100	15100	14400	15900	16300
Cobalt	ug/kg	590000	1600000	8760	3560	4650	4800	4270	4270	4630
Copper	ug/kg	45000000	3100000	30800	21200	25700	26200	24800	26200	30300
Iron	ug/kg	NS	NS	30900000	19200000	21400000	20900000	21200000	22200000	25300000
Lead	ug/kg	800000	400000	212000	167000	236000	224000	190000	267000	230000
Magnesium	ug/kg	NS	NS	1230000	996000	1210000	1320000	1210000	1330000	1440000
Manganese	ug/kg	5900000	11000000	155000	153000	210000	187000	184000	168000	187000
Mercury	ug/kg	65000	23000	47.3 J	34.6 J	63.7 J	57.9 J	35.4 J	53.6 J	36.6 J
Nickel	ug/kg	23000000	1600000	17500	7090	8740	9450	8660	9110	9100
Potassium	ug/kg	NS	NS	805000	559000	650000	695000	664000	770000	791000
Selenium	ug/kg	5700000	390000	5530	2820 J	2850 J	2810 J	2910 J	3600	4260
Silver	ug/kg	5700000	390000	859 U	821 U	812 U	830 U	845 U	817 U	934 U
Sodium	ug/kg	NS	NS	43000 J	31600 J	39700 J	43900 J	40600 J	45000 J	43400 J
Thallium	ug/kg	79000	5000	1370 J	4930 U	4870 U	4980 U	5070 U	4900 U	5600 U
Vanadium	ug/kg	1100000	78000	31900	28600	31000	31700	32700	34000	34100
Zinc	ug/kg	110000000	23000000	38400	26400	38300	33200	32500	35000	88000
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	56 U	55 U	55 U	56 U	58 U	56 U	64 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-I-4	9/14/2015 TNT-PS-J-1	9/14/2015 TNT-PS-J-2	9/14/2015 TNT-PS-J-3	9/14/2015 TNT-PS-J-4	9/14/2015 TNT-PS-K-1	9/14/2015 TNT-PS-K-2
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2,4-Dichlorophenol	ug/kg	2100000	180000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1700 U	1700 U	1700 U	1700 U	1700 U	1700 U	1900 U
2,4-Dinitrotoluene	ug/kg	3000	700	**1300**	**4100**	**3500**	**4500**	**4000**	**3500**	**4100**
2,6-Dinitrotoluene	ug/kg	3000	700	460	**1700**	**1500**	**2100**	**1700**	**3200**	**3100**
2-Chloronaphthalene	ug/kg	NS	NS	56 U	55 U	55 U	56 U	57 U	56 U	63 U
2-Chlorophenol	ug/kg	2200000	310000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	850 U	830 U	830 U	840 U	870 U	850 U	960 U
2-Methylnaphthalene	ug/kg	2400000	230000	29 U	28 U	28 U	29 U	29 U	29 U	32 U
2-Methylphenol	ug/kg	3400000	310000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2-Nitroaniline	ug/kg	23000000	39000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
2-Nitrophenol	ug/kg	NS	NS	56 U	55 U	55 U	56 U	58 U	56 U	64 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	560 U	550 U	550 U	560 U	580 U	560 U	640 U
3-Nitroaniline	ug/kg	NS	NS	220 J	280 U	280 U	280 U	290 U	280 U	320 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	56 U	55 U	55 U	56 U	58 U	56 U	64 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	56 U	55 U	55 U	56 U	58 U	56 U	64 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	56 U	55 U	55 U	56 U	58 U	56 U	64 U
4-Methylphenol	ug/kg	340000	31000	1200	55 U	55 U	56 U	58 U	56 U	64 U
4-Nitroaniline	ug/kg	NS	NS	280 U	280 U	280 U	280 U	290 U	280 U	320 U
4-Nitrophenol	ug/kg	NS	NS	850 U	830 U	830 U	840 U	870 U	850 U	960 U
Acenaphthene	ug/kg	37000000	3400000	15 J	28 U	28 U	29 U	29 U	29 U	32 U
Acenaphthylene	ug/kg	300000000	NS	11 J	28 U	28 U	29 U	29 U	29 U	32 U
Acetophenone	ug/kg	5000	2000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
Anthracene	ug/kg	30000000	17000000	18 J	8 J	10 J	10 J	13 J	11 J	11 J
Atrazine	ug/kg	2400000	210000	280 U	280 U	280 U	280 U	290 U	280 U	320 U
Benzaldehyde	ug/kg	68000000	6100000	280 U	280 U	280 U	280 U	290 U	120 J	320 U
Benzo(a)anthracene	ug/kg	2000	600	77	50	52	66	40	64	67
Benzo(a)pyrene	ug/kg	200	200	61	43	53	70	40	56	71
Benzo(b)fluoranthene	ug/kg	2000	600	86	80	85	95	62	100	130
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	36	40	45	45	31	42	57
Benzo(k)fluoranthene	ug/kg	23000	6000	43	31	51	59	42	47	73
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	56 U	55 U	55 U	56 U	58 U	56 U	64 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	56 U	55 U	55 U	56 U	58 U	56 U	64 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	290 U	280 U	280 U	290 U	290 U	290 U	320 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	280 U	280 U	280 U	280 U	290 U	280 U	320 U
Caprolactam	ug/kg	340000000	31000000	280 U	280 U	280 U	280 U	290 U	280 U	320 U
Carbazole	ug/kg	96000	24000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
Chrysene	ug/kg	230000	62000	80	51	58	71	47	69	81
Dibenzo(a,h)anthracene	ug/kg	200	200	17 J	14 J	11 J	13 J	6 J	22 J	18 J
Dibenzofuran	ug/kg	NS	NS	56 U	55 U	55 U	56 U	58 U	56 U	64 U
Diethyl phthalate	ug/kg	550000000	49000000	280 U	280 U	280 U	280 U	290 U	280 U	320 U
Dimethyl phthalate	ug/kg	NS	NS	280 U	280 U	280 U	280 U	290 U	280 U	320 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	280 U	280 U	280 U	280 U	290 U	280 U	320 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-I-4	9/14/2015 TNT-PS-J-1	9/14/2015 TNT-PS-J-2	9/14/2015 TNT-PS-J-3	9/14/2015 TNT-PS-J-4	9/14/2015 TNT-PS-K-1	9/14/2015 TNT-PS-K-2
Di-n-octyl phthalate	ug/kg	27000000	2400000	280 U	280 U	280 U	280 U	170 J	280 U	320 U
Fluoranthene	ug/kg	24000000	2300000	110	79	94	110	71	110	120
Fluorene	ug/kg	24000000	2300000	29 U	28 U	28 U	29 U	29 U	29 U	32 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
Hexachlorobenzene	ug/kg	1000	300	29 U	28 U	28 U	29 U	29 U	29 U	32 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	850 U	830 U	830 U	840 U	870 U	850 U	960 U
Hexachloroethane	ug/kg	140000	35000	280 U	280 U	280 U	280 U	290 U	280 U	320 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	40	33	38	47	32	53	44
Isophorone	ug/kg	2000000	510000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
Naphthalene	ug/kg	17000	6000	29 U	28 U	28 U	29 U	29 U	29 U	32 U
Nitrobenzene	ug/kg	340000	31000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	56 U	55 U	55 U	56 U	58 U	56 U	64 U
N-nitrosodiphenylamine	ug/kg	390000	99000	56 U	55 U	55 U	56 U	58 U	56 U	64 U
p-Chloroaniline	ug/kg	NS	NS	110 U	110 U	110 U	110 U	120 U	110 U	130 U
Pentachlorophenol	ug/kg	10000	3000	290 U	280 U	280 U	290 U	290 U	290 U	320 U
Phenanthrene	ug/kg	300000000	NS	51	54	52	63	48	62	64
Phenol	ug/kg	210000000	18000000	140	55 U	55 U	56 U	58 U	56 U	64 U
Pyrene	ug/kg	18000000	1700000	89	70	89	100	64	91	110

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-K-3	9/14/2015 TNT-PS-K-4	9/28/2015 TNT-PS-A	9/28/2015 TNT-PS-B	9/28/2015 TNT-PS-C	9/28/2015 TNT-PS-D	9/28/2015 TNT-PS-E
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	2200 U	2400 U	2000 U	1900 U	2200 U	1900 U	2100 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2900	3100 U	2500	2100 U	2600	1900 U	2100 U
1,3-Dinitrobenzene	ug/kg	NS	NS	2200 U	2400 U	2000 U	1400 J	2200 U	1900 U	2100 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2200 U	2400 U	2000 U	1900 U	2200 U	1900 U	2100 U
1-Nitronaphthalene	ug/kg	NS	NS	2200 U	2400 U	2000 U	1900 U	2200 U	1900 U	2100 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**1900000**	**1400000**	**2000000**	**2100000**	**3000000**	12000	15000
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**58000**	**56000**	**43000**	**28000**	**30000**	3700	3900
2-Nitrotoluene	ug/kg	NS	NS	3000 U	3300 U	2600 U	2500 U	3000 U	2500 U	2800 U
3-Nitrotoluene	ug/kg	NS	NS	3700 U	4100 U	3300 U	3200 U	3700 U	3200 U	3400 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**93000**	**95000**	**65000**	**29000**	**30000**	**4900**	**5400**
4-Nitrotoluene	ug/kg	NS	NS	3000 U	3300 U	2600 U	2500 U	3000 U	2500 U	2800 U
HMX	ug/kg	NS	NS	5600 U	6100 U	4900 U	4800 U	5500 U	4800 U	5200 U
Nitrobenzene	ug/kg	340000	31000	2200 U	2400 U	2000 U	1900 U	2200 U	1900 U	2100 U
Nitroglycerin	ug/kg	NS	NS	45000 U	49000 U	39000 U	38000 U	44000 U	38000 U	41000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	45000 U	49000 U	39000 U	38000 U	44000 U	38000 U	41000 U
RDX	ug/kg	NS	NS	2200 U	2400 U	2000 U	1900 U	2200 U	1900 U	2100 U
Tetryl	ug/kg	NS	NS	3000 U	3300 U	2600 U	2500 U	3000 U	2500 U	2800 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	25800000	17400000	18300000	211000000	27400000	18400000	40800000
Metals										
Aluminum	ug/kg	NS	78000000	18200000	20100000	NA	NA	NA	NA	NA
Antimony	ug/kg	450000	31000	1480 J	1470 J	NA	NA	NA	NA	NA
Arsenic	ug/kg	19000	19000	3570	6130	NA	NA	NA	NA	NA
Barium	ug/kg	59000000	16000000	61800	65300	NA	NA	NA	NA	NA
Beryllium	ug/kg	140000	16000	629 J	658 J	NA	NA	NA	NA	NA
Cadmium	ug/kg	78000	78000	755 U	914 U	NA	NA	NA	NA	NA
Calcium	ug/kg	NS	NS	1560000	1770000	NA	NA	NA	NA	NA
Chromium	ug/kg	20000	240000	16100	16000	NA	NA	NA	NA	NA
Cobalt	ug/kg	590000	1600000	4630	4760	NA	NA	NA	NA	NA
Copper	ug/kg	45000000	3100000	27100	27600	NA	NA	NA	NA	NA
Iron	ug/kg	NS	NS	23200000	21900000	NA	NA	NA	NA	NA
Lead	ug/kg	800000	400000	247000	272000	NA	NA	NA	NA	NA
Magnesium	ug/kg	NS	NS	1320000	1410000	NA	NA	NA	NA	NA
Manganese	ug/kg	5900000	11000000	189000	191000	NA	NA	NA	NA	NA
Mercury	ug/kg	65000	23000	48.5 J	45.7 J	NA	NA	NA	NA	NA
Nickel	ug/kg	23000000	1600000	8830	9710	NA	NA	NA	NA	NA
Potassium	ug/kg	NS	NS	726000	821000	NA	NA	NA	NA	NA
Selenium	ug/kg	5700000	390000	3020 J	3290 J	NA	NA	NA	NA	NA
Silver	ug/kg	5700000	390000	755 U	914 U	NA	NA	NA	NA	NA
Sodium	ug/kg	NS	NS	45900 J	45800 J	NA	NA	NA	NA	NA
Thallium	ug/kg	79000	5000	1200 J	5480 U	NA	NA	NA	NA	NA
Vanadium	ug/kg	1100000	78000	33000	33400	NA	NA	NA	NA	NA
Zinc	ug/kg	110000000	23000000	40100	37300	NA	NA	NA	NA	NA
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	53 U	60 U	50 U	49 U	56 U	46 U	49 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-K-3	9/14/2015 TNT-PS-K-4	9/28/2015 TNT-PS-A	9/28/2015 TNT-PS-B	9/28/2015 TNT-PS-C	9/28/2015 TNT-PS-D	9/28/2015 TNT-PS-E
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2,4-Dichlorophenol	ug/kg	2100000	180000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1600 U	1800 U	1500 U	1500 U	1700 U	1400 U	1500 U
2,4-Dinitrotoluene	ug/kg	3000	700	**4400**	**3300**	**3700**	**5000**	**4500**	520	520
2,6-Dinitrotoluene	ug/kg	3000	700	**4500**	**2800**	**1800**	**1500**	**1400**	46 U	49 U
2-Chloronaphthalene	ug/kg	NS	NS	52 U	60 U	49 U	48 U	55 U	45 U	49 U
2-Chlorophenol	ug/kg	2200000	310000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	790 U	900 U	750 U	730 U	840 U	680 U	740 U
2-Methylnaphthalene	ug/kg	2400000	230000	27 U	31 U	25 U	25 U	28 U	23 U	25 U
2-Methylphenol	ug/kg	3400000	310000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2-Nitroaniline	ug/kg	23000000	39000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
2-Nitrophenol	ug/kg	NS	NS	53 U	60 U	50 U	49 U	56 U	46 U	49 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	530 U	600 U	500 U	490 U	560 U	460 U	490 U
3-Nitroaniline	ug/kg	NS	NS	260 U	300 U	250 U	240 U	280 U	230 U	250 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	53 U	60 U	50 U	49 U	56 U	46 U	49 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	53 U	60 U	50 U	49 U	56 U	46 U	49 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	53 U	60 U	50 U	49 U	56 U	46 U	49 U
4-Methylphenol	ug/kg	340000	31000	53 U	60 U	50 U	49 U	56 U	1200	1400
4-Nitroaniline	ug/kg	NS	NS	260 U	300 U	250 U	240 U	280 U	230 U	250 U
4-Nitrophenol	ug/kg	NS	NS	790 U	900 U	750 U	730 U	840 U	680 U	740 U
Acenaphthene	ug/kg	37000000	3400000	27 U	31 U	25 U	25 U	28 U	23 U	25 U
Acenaphthylene	ug/kg	300000000	NS	27 U	31 U	25 U	29	28 U	23 U	25 U
Acetophenone	ug/kg	5000	2000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
Anthracene	ug/kg	30000000	17000000	14 J	13 J	31	18 J	13 J	19 J	15 J
Atrazine	ug/kg	2400000	210000	260 U	300 U	250 U	240 U	280 U	230 U	250 U
Benzaldehyde	ug/kg	68000000	6100000	120 J	150 J	110 J	240 U	280 U	230 U	120 J
Benzo(a)anthracene	ug/kg	2000	600	83	49	100	90	64	71	97
Benzo(a)pyrene	ug/kg	200	200	72	46	90	74	58	52	71
Benzo(b)fluoranthene	ug/kg	2000	600	140	82	140	140	100	95	110
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	60	41	76	66	47	42	57
Benzo(k)fluoranthene	ug/kg	23000	6000	50	39	63	54	51	37	50
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	53 U	60 U	50 U	49 U	56 U	46 U	49 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	53 U	60 U	50 U	49 U	56 U	46 U	49 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	270 U	310 U	250 U	250 U	280 U	230 U	210 J
Butyl benzyl phthalate	ug/kg	14000000	1200000	260 U	300 U	250 U	240 U	280 U	230 U	250 U
Caprolactam	ug/kg	340000000	31000000	260 U	300 U	250 U	240 U	280 U	230 U	250 U
Carbazole	ug/kg	96000	24000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
Chrysene	ug/kg	230000	62000	84	65	110	81	84	80	110
Dibenzo(a,h)anthracene	ug/kg	200	200	18 J	8 J	28	15 J	14 J	20 J	22 J
Dibenzofuran	ug/kg	NS	NS	53 U	60 U	50 U	49 U	56 U	46 U	49 U
Diethyl phthalate	ug/kg	550000000	49000000	260 U	300 U	250 U	240 U	280 U	230 U	250 U
Dimethyl phthalate	ug/kg	NS	NS	260 U	300 U	250 U	240 U	280 U	230 U	250 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	260 U	300 U	250 U	240 U	280 U	230 U	250 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/14/2015 TNT-PS-K-3	9/14/2015 TNT-PS-K-4	9/28/2015 TNT-PS-A	9/28/2015 TNT-PS-B	9/28/2015 TNT-PS-C	9/28/2015 TNT-PS-D	9/28/2015 TNT-PS-E
Di-n-octyl phthalate	ug/kg	27000000	2400000	260 U	300 U	250 U	240 U	280 U	230 U	250
Fluoranthene	ug/kg	24000000	2300000	150	92	170	150	110	110	140
Fluorene	ug/kg	24000000	2300000	27 U	31 U	25 U	25 U	28 U	23 U	25 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
Hexachlorobenzene	ug/kg	1000	300	27 U	31 U	25 U	25 U	28 U	23 U	25 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	790 U	900 U	750 U	730 U	840 U	680 U	740 U
Hexachloroethane	ug/kg	140000	35000	260 U	300 U	250 U	240 U	280 U	230 U	250 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	53	37	64	64	46	44	48
Isophorone	ug/kg	2000000	510000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
Naphthalene	ug/kg	17000	6000	27 U	31 U	25 U	25 U	28 U	23 U	25 U
Nitrobenzene	ug/kg	340000	31000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	53 U	60 U	50 U	49 U	56 U	46 U	49 U
N-nitrosodiphenylamine	ug/kg	390000	99000	53 U	60 U	50 U	49 U	56 U	46 U	49 U
p-Chloroaniline	ug/kg	NS	NS	110 U	120 U	100 U	98 U	110 U	91 U	98 U
Pentachlorophenol	ug/kg	10000	3000	270 U	310 U	250 U	250 U	280 U	230 U	250 U
Phenanthrene	ug/kg	300000000	NS	83	55	89	70	62	50	62
Phenol	ug/kg	210000000	18000000	53 U	60 U	50 U	49 U	56 U	190	130
Pyrene	ug/kg	18000000	1700000	130	82	140	130	100	92	120

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/28/2015 TNT-PS-F	9/28/2015 TNT-PS-G	9/28/2015 TNT-PS-H	9/28/2015 TNT-PS-I	9/28/2015 TNT-PS-J	9/28/2015 TNT-PS-K	10/12/2015 TNT-PS-A-1
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	1800 U	2000 U	2200 U	2200 U	2100 U	2100 U	460 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	1800 U	2000 U	2200 U	2200 U	2600	2700	3600
1,3-Dinitrobenzene	ug/kg	NS	NS	1800 U	2000 U	2200 U	2200 U	960 J	920 J	720
1,4-Dinitrobenzene	ug/kg	NS	NS	1800 U	2000 U	2200 U	2200 U	2100 U	2100 U	460 U
1-Nitronaphthalene	ug/kg	NS	NS	1800 U	2000 U	2200 U	2200 U	2100 U	2100 U	460 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**29000**	20000	**140000**	21000	**1900000**	**2200000**	**2800000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**11000**	2500	**7700**	**8800**	**35000**	**55000**	**53000**
2-Nitrotoluene	ug/kg	NS	NS	2400 U	2700 U	2900 U	2900 U	2900 U	2800 U	620 U
3-Nitrotoluene	ug/kg	NS	NS	3000 U	3400 U	3600 U	3700 U	3600 U	3500 U	770 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**13000**	4700	**10000**	**13000**	**42000**	**86000**	**81000**
4-Nitrotoluene	ug/kg	NS	NS	2400 U	2700 U	2900 U	2900 U	2900 U	2800 U	1400 U
HMX	ug/kg	NS	NS	4500 U	5100 U	5500 U	5500 U	5400 U	5200 U	1200 U
Nitrobenzene	ug/kg	340000	31000	1800 U	2000 U	2200 U	2200 U	2100 U	2100 U	460 U
Nitroglycerin	ug/kg	NS	NS	36000 U	41000 U	44000 U	44000 U	43000 U	42000 U	9300 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	36000 U	41000 U	44000 U	44000 U	43000 U	42000 U	9300 U
RDX	ug/kg	NS	NS	1800 U	2000 U	2200 U	2200 U	2100 U	2100 U	460 U
Tetryl	ug/kg	NS	NS	2400 U	2700 U	2900 U	2900 U	2900 U	2800 U	620 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	31300000	46900000	29300000	21100000	30800000	24000000	23900000
Metals										
Aluminum	ug/kg	NS	78000000	NA	NA	NA	NA	NA	NA	21900000
Antimony	ug/kg	450000	31000	NA	NA	NA	NA	NA	NA	3520 U
Arsenic	ug/kg	19000	19000	NA	NA	NA	NA	NA	NA	2850 J
Barium	ug/kg	59000000	16000000	NA	NA	NA	NA	NA	NA	68900
Beryllium	ug/kg	140000	16000	NA	NA	NA	NA	NA	NA	812 J
Cadmium	ug/kg	78000	78000	NA	NA	NA	NA	NA	NA	208 J
Calcium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	1970000
Chromium	ug/kg	20000	240000	NA	NA	NA	NA	NA	NA	19900
Cobalt	ug/kg	590000	1600000	NA	NA	NA	NA	NA	NA	5530
Copper	ug/kg	45000000	3100000	NA	NA	NA	NA	NA	NA	30700
Iron	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	24600000
Lead	ug/kg	800000	400000	NA	NA	NA	NA	NA	NA	272000
Magnesium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	1760000
Manganese	ug/kg	5900000	11000000	NA	NA	NA	NA	NA	NA	196000
Mercury	ug/kg	65000	23000	NA	NA	NA	NA	NA	NA	41.9 J
Nickel	ug/kg	23000000	1600000	NA	NA	NA	NA	NA	NA	10500
Potassium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	1150000
Selenium	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	3870
Silver	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	951
Sodium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	79200 J
Thallium	ug/kg	79000	5000	NA	NA	NA	NA	NA	NA	5290 U
Vanadium	ug/kg	1100000	78000	NA	NA	NA	NA	NA	NA	39000
Zinc	ug/kg	110000000	23000000	NA	NA	NA	NA	NA	NA	42800
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	47 U	53 U	49 U	50 U	49 U	55 U	300 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/28/2015 TNT-PS-F	9/28/2015 TNT-PS-G	9/28/2015 TNT-PS-H	9/28/2015 TNT-PS-I	9/28/2015 TNT-PS-J	9/28/2015 TNT-PS-K	10/12/2015 TNT-PS-A-1
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2,4-Dichlorophenol	ug/kg	2100000	180000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2,4-Dinitrophenol	ug/kg	1400000	120000	1400 U	1600 U	1500 U	1500 U	1500 U	1600 U	8900 U
2,4-Dinitrotoluene	ug/kg	3000	700	680	520	600	**800**	**4300**	**3200**	**4100**
2,6-Dinitrotoluene	ug/kg	3000	700	220	190	200	50 U	**1400**	**1500**	**1300**
2-Chloronaphthalene	ug/kg	NS	NS	47 U	53 U	49 U	49 U	49 U	54 U	300 U
2-Chlorophenol	ug/kg	2200000	310000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	700 U	800 U	740 U	740 U	740 U	820 U	4500 U
2-Methylnaphthalene	ug/kg	2400000	230000	24 U	27 U	25 U	25 U	25 U	28 U	150 U
2-Methylphenol	ug/kg	3400000	310000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2-Nitroaniline	ug/kg	23000000	39000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
2-Nitrophenol	ug/kg	NS	NS	47 U	53 U	49 U	50 U	49 U	55 U	300 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	470 U	530 U	490 U	500 U	490 U	550 U	3000 U
3-Nitroaniline	ug/kg	NS	NS	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	47 U	53 U	49 U	50 U	49 U	55 U	300 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	47 U	53 U	49 U	50 U	49 U	55 U	300 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	47 U	53 U	49 U	50 U	49 U	55 U	300 U
4-Methylphenol	ug/kg	340000	31000	93	4700	3300	1800	49 U	55 U	300 U
4-Nitroaniline	ug/kg	NS	NS	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
4-Nitrophenol	ug/kg	NS	NS	700 U	800 U	740 U	740 U	740 U	820 U	4500 U
Acenaphthene	ug/kg	37000000	3400000	24 U	27 U	25 U	25 U	25 U	28 U	150 U
Acenaphthylene	ug/kg	300000000	NS	24 U	27 U	25 U	25 U	25 U	28 U	150 U
Acetophenone	ug/kg	5000	2000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
Anthracene	ug/kg	30000000	17000000	13 J	13 J	13 J	19 J	10 J	18 J	150 U
Atrazine	ug/kg	2400000	210000	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
Benzaldehyde	ug/kg	68000000	6100000	230 U	110 J	110 J	110 J	250 U	270 U	1500 U
Benzo(a)anthracene	ug/kg	2000	600	65	72	82	78	66	66	64 J
Benzo(a)pyrene	ug/kg	200	200	53	56	59	61	65	58	57 J
Benzo(b)fluoranthene	ug/kg	2000	600	96	100	110	110	100	90	110 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	43	47	39	52	40	62	68 J
Benzo(k)fluoranthene	ug/kg	23000	6000	28	37	43	48	42	43	43 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	47 U	53 U	49 U	50 U	49 U	55 U	300 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	47 U	53 U	49 U	50 U	49 U	55 U	300 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	140 J	270 U	100 J	100 J	250 U	280 U	1500 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
Caprolactam	ug/kg	340000000	31000000	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
Carbazole	ug/kg	96000	24000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
Chrysene	ug/kg	230000	62000	69	88	91	86	85	70	78 J
Dibenzo(a,h)anthracene	ug/kg	200	200	25	16 J	20 J	21 J	16 J	15 J	32 J
Dibenzofuran	ug/kg	NS	NS	47 U	53 U	49 U	50 U	49 U	55 U	300 U
Diethyl phthalate	ug/kg	550000000	49000000	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
Dimethyl phthalate	ug/kg	NS	NS	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	230 U	270 U	250 U	250 U	250 U	270 U	1500 U

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Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 9/28/2015 TNT-PS-F	9/28/2015 TNT-PS-G	9/28/2015 TNT-PS-H	9/28/2015 TNT-PS-I	9/28/2015 TNT-PS-J	9/28/2015 TNT-PS-K	10/12/2015 TNT-PS-A-1
Di-n-octyl phthalate	ug/kg	27000000	2400000	230 U	270 U	110 J	250 U	250 U	270 U	1700
Fluoranthene	ug/kg	24000000	2300000	100	120	120	140	120	120	110 J
Fluorene	ug/kg	24000000	2300000	24 U	27 U	25 U	25 U	25 U	28 U	150 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
Hexachlorobenzene	ug/kg	1000	300	24 U	27 U	25 U	25 U	25 U	28 U	150 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	700 U	800 U	740 U	740 U	740 U	820 U	4500 U
Hexachloroethane	ug/kg	140000	35000	230 U	270 U	250 U	250 U	250 U	270 U	1500 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	42	32	57	48	47	47	50 J
Isophorone	ug/kg	2000000	510000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
Naphthalene	ug/kg	17000	6000	24 U	27 U	25 U	25 U	25 U	28 U	150 U
Nitrobenzene	ug/kg	340000	31000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	47 U	53 U	49 U	50 U	49 U	55 U	300 U
N-nitrosodiphenylamine	ug/kg	390000	99000	47 U	53 U	49 U	50 U	49 U	55 U	300 U
p-Chloroaniline	ug/kg	NS	NS	94 U	110 U	98 U	99 U	99 U	110 U	600 U
Pentachlorophenol	ug/kg	10000	3000	240 U	270 U	250 U	250 U	250 U	280 U	1500 U
Phenanthrene	ug/kg	300000000	NS	53	61	58	67	75	75	64 J
Phenol	ug/kg	210000000	18000000	120	400	370	270	49 U	55 U	300 U
Pyrene	ug/kg	18000000	1700000	80	92	98	110	100	92	110 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-A-2	10/12/2015 TNT-PS-A-3	10/12/2015 TNT-PS-A-4	10/12/2015 TNT-PS-B-1	10/12/2015 TNT-PS-B-2	10/12/2015 TNT-PS-B-3	10/12/2015 TNT-PS-B-4
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	500 U	450 U	460 U	480 U	460 U	470 U	460 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2700	4300	4200	2500	4000	5800	4000
1,3-Dinitrobenzene	ug/kg	NS	NS	720	640	730	550	940	1500	770
1,4-Dinitrobenzene	ug/kg	NS	NS	500 U	450 U	460 U	480 U	460 U	470 U	460 U
1-Nitronaphthalene	ug/kg	NS	NS	500 U	450 U	460 U	480 U	460 U	470 U	460 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**2300000**	**2400000**	**3600000**	**2100000**	**4000000**	**2400000**	**3100000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**50000**	**50000**	**50000**	**24000**	**22000**	**27000**	**22000**
2-Nitrotoluene	ug/kg	NS	NS	670 U	610 U	610 U	630 U	610 U	620 U	610 U
3-Nitrotoluene	ug/kg	NS	NS	840 U	760 U	760 U	790 U	770 U	780 U	770 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**81000**	**75000**	**78000**	**25000**	**24000**	**27000**	**24000**
4-Nitrotoluene	ug/kg	NS	NS	1100 U	1100 U	1100 U	1100 U	1000 U	2800 U	1000 U
HMX	ug/kg	NS	NS	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1100 U
Nitrobenzene	ug/kg	340000	31000	500 U	450 U	460 U	480 U	460 U	470 U	460 U
Nitroglycerin	ug/kg	NS	NS	10000 U	9100 U	9100 U	9500 U	9200 U	9400 U	9200 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	10000 U	9100 U	9100 U	9500 U	9200 U	9400 U	9200 U
RDX	ug/kg	NS	NS	500 U	450 U	460 U	480 U	460 U	470 U	460 U
Tetryl	ug/kg	NS	NS	670 U	610 U	610 U	630 U	610 U	620 U	610 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	16000000	23300000	19800000	14700000	15000000	15600000	16400000
Metals										
Aluminum	ug/kg	NS	78000000	26000000	20600000	21200000	17600000	18100000	18200000	22300000
Antimony	ug/kg	450000	31000	3880 U	3380 U	3350 U	3390 U	3230 U	3310 U	3460 U
Arsenic	ug/kg	19000	19000	3850 J	2450 J	3570	2240 J	1920 J	2410 J	2530 J
Barium	ug/kg	59000000	16000000	81300	64400	64400	55900	58500	54400	68300
Beryllium	ug/kg	140000	16000	932 J	746 J	793 J	675 J	724 J	823 J	832 J
Cadmium	ug/kg	78000	78000	235 J	157 J	111 J	124 J	129 J	74.5 J	213 J
Calcium	ug/kg	NS	NS	2250000	1640000	1780000	1120000	1230000	2120000	1050000
Chromium	ug/kg	20000	240000	**22000**	18000	**22000**	17000	15700	19200	18700
Cobalt	ug/kg	590000	1600000	6810	5270	5880	4720	5230	5100	5770
Copper	ug/kg	45000000	3100000	35100	28100	30500	26500	27100	28000	34100
Iron	ug/kg	NS	NS	28800000	23900000	24800000	21600000	23400000	23900000	25900000
Lead	ug/kg	800000	400000	304000	269000	262000	211000	211000	202000	278000
Magnesium	ug/kg	NS	NS	1790000	1560000	1580000	1420000	1710000	1480000	1510000
Manganese	ug/kg	5900000	11000000	237000	182000	195000	177000	218000	198000	220000
Mercury	ug/kg	65000	23000	48.1 J	42.9 J	46.9 J	39.8 J	33.6 J	40.1 J	50.0 J
Nickel	ug/kg	23000000	1600000	12800	9510	10200	8470	8240	8270	10100
Potassium	ug/kg	NS	NS	1400000	1100000	1160000	982000	983000	913000	1100000
Selenium	ug/kg	5700000	390000	4210	3540	3750	3620	4210	3700	4020
Silver	ug/kg	5700000	390000	1240	893	1040	1000	960	1040	1060
Sodium	ug/kg	NS	NS	97100 J	74200 J	86500 J	101000 J	114000 J	74000 J	71400 J
Thallium	ug/kg	79000	5000	5820 U	5070 U	5030 U	5080 U	4850 U	4970 U	5190 U
Vanadium	ug/kg	1100000	78000	45000	39000	40900	34500	37100	36500	39900
Zinc	ug/kg	110000000	23000000	51300	37600	40500	38100	43900	36100	42100
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	330 U	290 U	290 U	280 U	280 U	270 U	290 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-A-2	10/12/2015 TNT-PS-A-3	10/12/2015 TNT-PS-A-4	10/12/2015 TNT-PS-B-1	10/12/2015 TNT-PS-B-2	10/12/2015 TNT-PS-B-3	10/12/2015 TNT-PS-B-4
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2,4-Dichlorophenol	ug/kg	2100000	180000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2,4-Dinitrophenol	ug/kg	1400000	120000	9800 U	8600 U	8800 U	8400 U	8300 U	8200 U	8800 U
2,4-Dinitrotoluene	ug/kg	3000	700	**2700**	**3500**	**4700**	**5000**	**6400**	**4500**	**4200**
2,6-Dinitrotoluene	ug/kg	3000	700	**1000**	**1200**	**1500**	**1100**	**1400**	**1000**	**970**
2-Chloronaphthalene	ug/kg	NS	NS	320 U	280 U	290 U	280 U	270 U	270 U	290 U
2-Chlorophenol	ug/kg	2200000	310000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	4900 U	4300 U	4400 U	4200 U	4100 U	4100 U	4400 U
2-Methylnaphthalene	ug/kg	2400000	230000	170 U	150 U	150 U	140 U	140 U	140 U	150 U
2-Methylphenol	ug/kg	3400000	310000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2-Nitroaniline	ug/kg	23000000	39000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
2-Nitrophenol	ug/kg	NS	NS	330 U	290 U	290 U	280 U	280 U	270 U	290 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	3300 U	2900 U	2900 U	2800 U	2800 U	2700 U	2900 U
3-Nitroaniline	ug/kg	NS	NS	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	330 U	290 U	290 U	280 U	280 U	270 U	290 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	330 U	290 U	290 U	280 U	280 U	270 U	290 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	330 U	290 U	290 U	280 U	280 U	270 U	290 U
4-Methylphenol	ug/kg	340000	31000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
4-Nitroaniline	ug/kg	NS	NS	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
4-Nitrophenol	ug/kg	NS	NS	4900 U	4300 U	4400 U	4200 U	4100 U	4100 U	4400 U
Acenaphthene	ug/kg	37000000	3400000	170 U	150 U	150 U	140 U	140 U	140 U	150 U
Acenaphthylene	ug/kg	300000000	NS	170 U	150 U	150 U	28 J	140 U	140 U	150 U
Acetophenone	ug/kg	5000	2000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
Anthracene	ug/kg	30000000	17000000	170 U	150 U	150 U	140 U	140 U	140 U	150 U
Atrazine	ug/kg	2400000	210000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Benzaldehyde	ug/kg	68000000	6100000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Benzo(a)anthracene	ug/kg	2000	600	54 J	71 J	60 J	80 J	61 J	76 J	51 J
Benzo(a)pyrene	ug/kg	200	200	47 J	64 J	63 J	82 J	62 J	47 J	41 J
Benzo(b)fluoranthene	ug/kg	2000	600	58 J	88 J	100 J	100 J	100 J	100 J	70 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	53 J	63 J	150 U	60 J	52 J	34 J	33 J
Benzo(k)fluoranthene	ug/kg	23000	6000	36 J	61 J	57 J	64 J	42 J	38 J	150 U
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	330 U	290 U	290 U	280 U	280 U	270 U	290 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	330 U	290 U	290 U	280 U	280 U	270 U	290 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1700 U	1500 U	1500 U	1400 U	1400 U	1400 U	1500 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Caprolactam	ug/kg	340000000	31000000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Carbazole	ug/kg	96000	24000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
Chrysene	ug/kg	230000	62000	54 J	91 J	76 J	96 J	65 J	73 J	66 J
Dibenzo(a,h)anthracene	ug/kg	200	200	170 U	150 U	150 U	140 U	34 J	140 U	150 U
Dibenzofuran	ug/kg	NS	NS	330 U	290 U	190 J	150 J	190 J	270 U	290 U
Diethyl phthalate	ug/kg	550000000	49000000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Dimethyl phthalate	ug/kg	NS	NS	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-A-2	10/12/2015 TNT-PS-A-3	10/12/2015 TNT-PS-A-4	10/12/2015 TNT-PS-B-1	10/12/2015 TNT-PS-B-2	10/12/2015 TNT-PS-B-3	10/12/2015 TNT-PS-B-4
Di-n-octyl phthalate	ug/kg	27000000	2400000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Fluoranthene	ug/kg	24000000	2300000	82 J	140 J	120 J	130 J	120 J	100 J	95 J
Fluorene	ug/kg	24000000	2300000	170 U	150 U	150 U	140 U	140 U	140 U	150 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
Hexachlorobenzene	ug/kg	1000	300	170 U	150 U	150 U	140 U	140 U	140 U	150 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	4900 U	4300 U	4400 U	4200 U	4100 U	4100 U	4400 U
Hexachloroethane	ug/kg	140000	35000	1600 U	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	43 J	47 J	54 J	55 J	54 J	34 J	150 U
Isophorone	ug/kg	2000000	510000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
Naphthalene	ug/kg	17000	6000	170 U	150 U	150 U	140 U	140 U	140 U	150 U
Nitrobenzene	ug/kg	340000	31000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	330 U	290 U	290 U	280 U	280 U	270 U	290 U
N-nitrosodiphenylamine	ug/kg	390000	99000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
p-Chloroaniline	ug/kg	NS	NS	650 U	570 U	580 U	560 U	550 U	540 U	590 U
Pentachlorophenol	ug/kg	10000	3000	1700 U	1500 U	1500 U	1400 U	1400 U	1400 U	1500 U
Phenanthrene	ug/kg	300000000	NS	45 J	80 J	58 J	58 J	65 J	49 J	45 J
Phenol	ug/kg	210000000	18000000	330 U	290 U	290 U	280 U	280 U	270 U	290 U
Pyrene	ug/kg	18000000	1700000	75 J	120 J	100 J	120 J	98 J	99 J	78 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-C-1	10/12/2015 TNT-PS-C-2	10/12/2015 TNT-PS-C-3	10/12/2015 TNT-PS-C-4	10/12/2015 TNT-PS-D-1	10/12/2015 TNT-PS-D-2	10/12/2015 TNT-PS-D-3
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	500 U	400 U	440 U	440 U	450 U	450 U	410 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	3200	3200	3900	6000	450 U	450 U	410 U
1,3-Dinitrobenzene	ug/kg	NS	NS	500	670	590	870	450 U	450 U	410 U
1,4-Dinitrobenzene	ug/kg	NS	NS	500 U	400 U	440 U	440 U	450 U	450 U	410 U
1-Nitronaphthalene	ug/kg	NS	NS	500 U	400 U	440 U	440 U	450 U	450 U	410 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**1800000**	**2600000**	**2500000**	**4100000**	11000	9500	11000
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**27000**	**34000**	**33000**	**34000**	3100	3500	3700
2-Nitrotoluene	ug/kg	NS	NS	670 U	540 U	580 U	580 U	600 U	600 U	550 U
3-Nitrotoluene	ug/kg	NS	NS	830 U	670 U	730 U	730 U	750 U	750 U	600 J
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**26000**	**31000**	**30000**	**33000**	4200	**4800**	**5300**
4-Nitrotoluene	ug/kg	NS	NS	1100 U	1300 U	470 J	520 J	600 U	600 U	550 U
HMX	ug/kg	NS	NS	1200 U	1000 U	1100 U	1100 U	1100 U	18000	16000
Nitrobenzene	ug/kg	340000	31000	500 U	400 U	440 U	440 U	450 U	450 U	410 U
Nitroglycerin	ug/kg	NS	NS	10000 U	8100 U	8800 U	8800 U	9000 U	9000 U	8300 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	10000 U	8100 U	8800 U	8800 U	9000 U	9000 U	8300 U
RDX	ug/kg	NS	NS	500 U	400 U	210 J	580 U	450 U	450 U	410 U
Tetryl	ug/kg	NS	NS	670 U	540 U	580 U	580 U	600 U	600 U	550 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	25800000	13600000	19700000	16800000	22500000	35600000	20300000
Metals										
Aluminum	ug/kg	NS	78000000	17700000	22800000	21300000	22700000	21500000	18600000	21200000
Antimony	ug/kg	450000	31000	3460 U	3080 U	3100 U	3300 U	3210 U	3140 U	3130 U
Arsenic	ug/kg	19000	19000	3040 J	2800 J	2400 J	2810 J	3210 U	3140 U	3130 U
Barium	ug/kg	59000000	16000000	54100	67700	62200	68000	63800	58400	65600
Beryllium	ug/kg	140000	16000	720 J	843	786	835	861	742 J	861
Cadmium	ug/kg	78000	78000	182 J	178 J	83.7 J	172 J	163 J	69.0 J	185 J
Calcium	ug/kg	NS	NS	965000	998000	990000	1000000	1400000	1460000	1620000
Chromium	ug/kg	20000	240000	19600	18900	17100	18900	**30800**	**25600**	**32800**
Cobalt	ug/kg	590000	1600000	6890	5990	5250	5590	14200	14900	20500
Copper	ug/kg	45000000	3100000	28100	32200	29400	31700	49400	44000	57300
Iron	ug/kg	NS	NS	25300000	25100000	24400000	24500000	51500000	50300000	61200000
Lead	ug/kg	800000	400000	214000	259000	243000	269000	237000	194000	237000
Magnesium	ug/kg	NS	NS	1420000	1600000	1510000	1520000	1580000	1470000	1590000
Manganese	ug/kg	5900000	11000000	205000	212000	197000	203000	223000	230000	255000
Mercury	ug/kg	65000	23000	39.6 J	48.6 J	39.5 J	50.3 J	36.3 J	32.3 J	35.9 J
Nickel	ug/kg	23000000	1600000	8860	10300	9580	10000	28100	29100	41000
Potassium	ug/kg	NS	NS	891000	1070000	1010000	1020000	1370000	1400000	1470000
Selenium	ug/kg	5700000	390000	3460	3550	3400	3460	12100	11100	18800
Silver	ug/kg	5700000	390000	908	1060	1160	921	1960	1840	2190
Sodium	ug/kg	NS	NS	77100 J	66500 J	65500 J	69900 J	84900 J	91700 J	96000 J
Thallium	ug/kg	79000	5000	5190 U	4620 U	4650 U	4950 U	4810 U	4710 U	1200 J
Vanadium	ug/kg	1100000	78000	37500	40300	37300	39500	49100	45300	54100
Zinc	ug/kg	110000000	23000000	50700	45600	39600	42100	64600	67300	72900
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	290 U	250 U	260 U	280 U	270 U	260 U	270 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-C-1	10/12/2015 TNT-PS-C-2	10/12/2015 TNT-PS-C-3	10/12/2015 TNT-PS-C-4	10/12/2015 TNT-PS-D-1	10/12/2015 TNT-PS-D-2	10/12/2015 TNT-PS-D-3
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2,4-Dichlorophenol	ug/kg	2100000	180000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2,4-Dinitrophenol	ug/kg	1400000	120000	8600 U	7600 U	7900 U	8300 U	8000 U	7800 U	8000 U
2,4-Dinitrotoluene	ug/kg	3000	700	**4300**	**4900**	**5600**	**5200**	1300 U	1300 U	1300 U
2,6-Dinitrotoluene	ug/kg	3000	700	**1100**	**1200**	**1500**	**1400**	270 U	260 U	270 U
2-Chloronaphthalene	ug/kg	NS	NS	280 U	250 U	260 U	270 U	260 U	260 U	260 U
2-Chlorophenol	ug/kg	2200000	310000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	4300 U	3800 U	4000 U	4100 U	4000 U	3900 U	4000 U
2-Methylnaphthalene	ug/kg	2400000	230000	150 U	130 U	130 U	140 U	140 U	130 U	140 U
2-Methylphenol	ug/kg	3400000	310000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2-Nitroaniline	ug/kg	23000000	39000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
2-Nitrophenol	ug/kg	NS	NS	290 U	250 U	260 U	280 U	270 U	260 U	270 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	2900 U	2500 U	2600 U	2800 U	2700 U	2600 U	2700 U
3-Nitroaniline	ug/kg	NS	NS	1400 U	1300 U	1300 U	1400 U	1300 U	700 J	1300 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	290 U	250 U	260 U	280 U	270 U	260 U	270 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	290 U	250 U	260 U	280 U	270 U	260 U	270 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	290 U	250 U	260 U	280 U	270 U	260 U	270 U
4-Methylphenol	ug/kg	340000	31000	290 U	250 U	260 U	280 U	1600	980	440
4-Nitroaniline	ug/kg	NS	NS	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
4-Nitrophenol	ug/kg	NS	NS	4300 U	3800 U	4000 U	4100 U	4000 U	3900 U	4000 U
Acenaphthene	ug/kg	37000000	3400000	150 U	130 U	130 U	140 U	140 U	130 U	140 U
Acenaphthylene	ug/kg	300000000	NS	150 U	130 U	130 U	140 U	140 U	130 U	140 U
Acetophenone	ug/kg	5000	2000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
Anthracene	ug/kg	30000000	17000000	150 U	130 U	29 J	140 U	140 U	130 U	140 U
Atrazine	ug/kg	2400000	210000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Benzaldehyde	ug/kg	68000000	6100000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Benzo(a)anthracene	ug/kg	2000	600	46 J	54 J	200	57 J	78 J	66 J	84 J
Benzo(a)pyrene	ug/kg	200	200	43 J	73 J	170	55 J	59 J	48 J	53 J
Benzo(b)fluoranthene	ug/kg	2000	600	58 J	66 J	260	89 J	93 J	80 J	78 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	36 J	56 J	100 J	36 J	54 J	45 J	53 J
Benzo(k)fluoranthene	ug/kg	23000	6000	42 J	55 J	120 J	48 J	51 J	55 J	49 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	290 U	250 U	260 U	280 U	270 U	260 U	270 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	290 U	250 U	260 U	280 U	270 U	260 U	270 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1500 U	1300 U	1300 U	1400 U	1400 U	1300 U	1400 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Caprolactam	ug/kg	340000000	31000000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Carbazole	ug/kg	96000	24000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
Chrysene	ug/kg	230000	62000	51 J	81 J	200	65 J	120 J	77 J	91 J
Dibenzo(a,h)anthracene	ug/kg	200	200	150 U	27 J	130 U	140 U	31 J	29 J	140 U
Dibenzofuran	ug/kg	NS	NS	290 U	250 U	260 U	280 U	270 U	260 U	270 U
Diethyl phthalate	ug/kg	550000000	49000000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Dimethyl phthalate	ug/kg	NS	NS	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-C-1	10/12/2015 TNT-PS-C-2	10/12/2015 TNT-PS-C-3	10/12/2015 TNT-PS-C-4	10/12/2015 TNT-PS-D-1	10/12/2015 TNT-PS-D-2	10/12/2015 TNT-PS-D-3
Di-n-octyl phthalate	ug/kg	27000000	2400000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Fluoranthene	ug/kg	24000000	2300000	80 J	120 J	300	100 J	110 J	120 J	120 J
Fluorene	ug/kg	24000000	2300000	150 U	130 U	130 U	140 U	140 U	130 U	140 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
Hexachlorobenzene	ug/kg	1000	300	150 U	130 U	130 U	140 U	140 U	130 U	140 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	4300 U	3800 U	4000 U	4100 U	4000 U	3900 U	4000 U
Hexachloroethane	ug/kg	140000	35000	1400 U	1300 U	1300 U	1400 U	1300 U	1300 U	1300 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	150 U	55 J	100 J	41 J	43 J	37 J	44 J
Isophorone	ug/kg	2000000	510000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
Naphthalene	ug/kg	17000	6000	150 U	130 U	130 U	140 U	140 U	130 U	140 U
Nitrobenzene	ug/kg	340000	31000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	290 U	250 U	260 U	280 U	270 U	260 U	270 U
N-nitrosodiphenylamine	ug/kg	390000	99000	290 U	250 U	260 U	280 U	270 U	260 U	270 U
p-Chloroaniline	ug/kg	NS	NS	580 U	510 U	530 U	550 U	530 U	520 U	530 U
Pentachlorophenol	ug/kg	10000	3000	1500 U	1300 U	1300 U	1400 U	1400 U	1300 U	1400 U
Phenanthrene	ug/kg	300000000	NS	52 J	72 J	110 J	66 J	75 J	63 J	72 J
Phenol	ug/kg	210000000	18000000	290 U	250 U	260 U	280 U	270 U	170 J	270 U
Pyrene	ug/kg	18000000	1700000	71 J	110 J	280	95 J	100 J	78 J	110 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-D-4	10/12/2015 TNT-PS-E-1	10/12/2015 TNT-PS-E-2	10/12/2015 TNT-PS-E-3	10/12/2015 TNT-PS-E-4	10/12/2015 TNT-PS-F-1	10/12/2015 TNT-PS-F-2
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	420 U	490 U	510 U	430 U	410 U	470 U	420 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	420 U	490 U	510 U	430 U	410 U	1300	420 U
1,3-Dinitrobenzene	ug/kg	NS	NS	420 U	490 U	510 U	430 U	410 U	470 U	420 U
1,4-Dinitrobenzene	ug/kg	NS	NS	560	490 U	510 U	900	410 U	470 U	420 U
1-Nitronaphthalene	ug/kg	NS	NS	420 U	490 U	510 U	430 U	410 U	190 J	420 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	15000	**22000**	17000	11000	**39000**	**2000000**	20000
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**5500**	4700	3900	3400	3900	**14000**	**8600**
2-Nitrotoluene	ug/kg	NS	NS	560 U	650 U	680 U	570 U	540 U	630 U	560 U
3-Nitrotoluene	ug/kg	NS	NS	1500	1200	850 U	710 U	930	1300	740
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**7600**	**6700**	**5800**	**5000**	**5500**	**18000**	**12000**
4-Nitrotoluene	ug/kg	NS	NS	560 U	650 U	680 U	570 U	540 U	640	560 U
HMX	ug/kg	NS	NS	1100 U	1200 U	19000	1100 U	1000 U	1200 U	1000 U
Nitrobenzene	ug/kg	340000	31000	420 U	490 U	510 U	430 U	410 U	470 U	220 J
Nitroglycerin	ug/kg	NS	NS	8500 U	9700 U	10000 U	8600 U	8200 U	9400 U	8400 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	8500 U	9700 U	10000 U	8600 U	8200 U	9400 U	8400 U
RDX	ug/kg	NS	NS	420 U	490 U	510 U	430 U	410 U	470 U	420 U
Tetryl	ug/kg	NS	NS	560 U	650 U	680 U	570 U	540 U	630 U	560 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	28200000	27500000	26800000	29100000	23200000	17400000	22700000
Metals										
Aluminum	ug/kg	NS	78000000	19200000	17900000	16000000	17000000	17200000	20600000	17700000
Antimony	ug/kg	450000	31000	3160 U	3440 U	3380 U	3340 U	2930 U	3280 U	3270 U
Arsenic	ug/kg	19000	19000	3160 U	3440 U	3380 U	3340 U	2930 U	3280 U	3270 U
Barium	ug/kg	59000000	16000000	59200	59200	49400	52500	50000	62200	48000
Beryllium	ug/kg	140000	16000	769 J	708 J	615 J	665 J	681 J	843	716 J
Cadmium	ug/kg	78000	78000	144 J	138 J	203 J	122 J	168 J	128 J	217 J
Calcium	ug/kg	NS	NS	1500000	1320000	1340000	1600000	1290000	1320000	1120000
Chromium	ug/kg	20000	240000	**27200**	**22200**	**22300**	**27600**	**27200**	**26800**	**22000**
Cobalt	ug/kg	590000	1600000	12900	12700	12700	14700	15500	10200	11500
Copper	ug/kg	45000000	3100000	46300	44100	40800	50000	45400	41000	37500
Iron	ug/kg	NS	NS	44800000	45300000	44300000	47200000	50500000	40600000	41600000
Lead	ug/kg	800000	400000	230000	239000	209000	226000	246000	253000	211000
Magnesium	ug/kg	NS	NS	1590000	1390000	1280000	1380000	1310000	1590000	1410000
Manganese	ug/kg	5900000	11000000	232000	210000	184000	216000	176000	239000	199000
Mercury	ug/kg	65000	23000	36.9 J	50.5 J	31.3 J	33.9 J	34.9 J	47.7 J	26.9 J
Nickel	ug/kg	23000000	1600000	25400	23600	25600	28900	31400	20400	22300
Potassium	ug/kg	NS	NS	1290000	1330000	1180000	1420000	1160000	1110000	1000000
Selenium	ug/kg	5700000	390000	9960	9480	8950	10600	12100	5760	9160
Silver	ug/kg	5700000	390000	1770	1500	1560	1790	1800	1690	1800
Sodium	ug/kg	NS	NS	109000 J	102000 J	86600 J	104000 J	75500 J	97100 J	70000 J
Thallium	ug/kg	79000	5000	4740 U	5160 U	5070 U	5010 U	4390 U	4920 U	4900 U
Vanadium	ug/kg	1100000	78000	43700	39800	38200	41300	43400	45800	41400
Zinc	ug/kg	110000000	23000000	57100	56800	55300	67900	62100	54100	64000
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	270 U	290 U	280 U	280 U	250 U	270 U	270 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-D-4	10/12/2015 TNT-PS-E-1	10/12/2015 TNT-PS-E-2	10/12/2015 TNT-PS-E-3	10/12/2015 TNT-PS-E-4	10/12/2015 TNT-PS-F-1	10/12/2015 TNT-PS-F-2
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2,4-Dichlorophenol	ug/kg	2100000	180000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2,4-Dinitrophenol	ug/kg	1400000	120000	8100 U	8700 U	8400 U	8300 U	7500 U	8200 U	8200 U
2,4-Dinitrotoluene	ug/kg	3000	700	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	630 J
2,6-Dinitrotoluene	ug/kg	3000	700	270 U	180 J	220 J	280 U	260	230 J	220 J
2-Chloronaphthalene	ug/kg	NS	NS	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2-Chlorophenol	ug/kg	2200000	310000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	4100 U	4300 U	4200 U	4200 U	3700 U	4100 U	4100 U
2-Methylnaphthalene	ug/kg	2400000	230000	140 U	150 U	140 U	140 U	130 U	140 U	140 U
2-Methylphenol	ug/kg	3400000	310000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2-Nitroaniline	ug/kg	23000000	39000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
2-Nitrophenol	ug/kg	NS	NS	270 U	290 U	280 U	280 U	250 U	270 U	270 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	2700 U	2900 U	2800 U	2800 U	2500 U	2700 U	2700 U
3-Nitroaniline	ug/kg	NS	NS	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	270 U	290 U	280 U	280 U	250 U	270 U	270 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	270 U	290 U	280 U	280 U	250 U	270 U	270 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	270 U	290 U	280 U	280 U	250 U	270 U	270 U
4-Methylphenol	ug/kg	340000	31000	1600	2000	2300	820	360	270 U	270 U
4-Nitroaniline	ug/kg	NS	NS	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
4-Nitrophenol	ug/kg	NS	NS	4100 U	4300 U	4200 U	4200 U	3700 U	4100 U	4100 U
Acenaphthene	ug/kg	37000000	3400000	140 U	150 U	140 U	140 U	130 U	140 U	140 U
Acenaphthylene	ug/kg	300000000	NS	110 J	150 U	140 U	140 U	130 U	140 U	140 U
Acetophenone	ug/kg	5000	2000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
Anthracene	ug/kg	30000000	17000000	320	150 U	140 U	140 U	130 U	140 U	140 U
Atrazine	ug/kg	2400000	210000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Benzaldehyde	ug/kg	68000000	6100000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Benzo(a)anthracene	ug/kg	2000	600	**790**	100 J	140 J	100 J	120 J	64 J	56 J
Benzo(a)pyrene	ug/kg	200	200	**430**	63 J	82 J	79 J	71 J	47 J	35 J
Benzo(b)fluoranthene	ug/kg	2000	600	530	100 J	140	100 J	110 J	80 J	48 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	240	42 J	64 J	55 J	42 J	32 J	31 J
Benzo(k)fluoranthene	ug/kg	23000	6000	350	63 J	72 J	49 J	54 J	40 J	42 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	270 U	290 U	280 U	280 U	250 U	270 U	270 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	270 U	290 U	280 U	280 U	250 U	270 U	270 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1400 U	1500 U	1400 U	1400 U	1300 U	1400 U	1400 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Caprolactam	ug/kg	340000000	31000000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Carbazole	ug/kg	96000	24000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
Chrysene	ug/kg	230000	62000	680	110 J	140 J	120 J	110 J	72 J	57 J
Dibenzo(a,h)anthracene	ug/kg	200	200	67 J	150 U	140 U	140 U	130 U	32 J	140 U
Dibenzofuran	ug/kg	NS	NS	270 U	290 U	280 U	280 U	250 U	270 U	270 U
Diethyl phthalate	ug/kg	550000000	49000000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Dimethyl phthalate	ug/kg	NS	NS	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-D-4	10/12/2015 TNT-PS-E-1	10/12/2015 TNT-PS-E-2	10/12/2015 TNT-PS-E-3	10/12/2015 TNT-PS-E-4	10/12/2015 TNT-PS-F-1	10/12/2015 TNT-PS-F-2
Di-n-octyl phthalate	ug/kg	27000000	2400000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Fluoranthene	ug/kg	24000000	2300000	1500	170	230	130 J	170	120 J	91 J
Fluorene	ug/kg	24000000	2300000	140 U	150 U	140 U	140 U	130 U	140 U	140 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
Hexachlorobenzene	ug/kg	1000	300	140 U	150 U	140 U	140 U	130 U	140 U	140 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	4100 U	4300 U	4200 U	4200 U	3700 U	4100 U	4100 U
Hexachloroethane	ug/kg	140000	35000	1400 U	1400 U	1400 U	1400 U	1200 U	1400 U	1400 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	220	43 J	70 J	49 J	44 J	35 J	34 J
Isophorone	ug/kg	2000000	510000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
Naphthalene	ug/kg	17000	6000	28 J	150 U	140 U	140 U	130 U	140 U	140 U
Nitrobenzene	ug/kg	340000	31000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	270 U	290 U	280 U	280 U	250 U	270 U	270 U
N-nitrosodiphenylamine	ug/kg	390000	99000	270 U	290 U	280 U	280 U	250 U	270 U	270 U
p-Chloroaniline	ug/kg	NS	NS	540 U	580 U	560 U	560 U	500 U	550 U	550 U
Pentachlorophenol	ug/kg	10000	3000	1400 U	1500 U	1400 U	1400 U	1300 U	1400 U	1400 U
Phenanthrene	ug/kg	300000000	NS	990	77 J	130 J	66 J	63 J	68 J	48 J
Phenol	ug/kg	210000000	18000000	270 U	250 J	280 U	280 U	250 U	140 J	270 U
Pyrene	ug/kg	18000000	1700000	1200	150 J	190	130 J	130	89 J	70 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-F-3	10/12/2015 TNT-PS-F-4	10/12/2015 TNT-PS-G-1	10/12/2015 TNT-PS-G-2	10/12/2015 TNT-PS-G-3	10/12/2015 TNT-PS-G-4	10/12/2015 TNT-PS-H-1
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	400 U	430 U	450 U	420 U	430 U	480 U	440 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	400 U	430 U	490	420 U	430 U	480 U	440 U
1,3-Dinitrobenzene	ug/kg	NS	NS	400 U	430 U	450 U	420 U	430 U	480 U	440 U
1,4-Dinitrobenzene	ug/kg	NS	NS	400 U	430 U	610	420 U	430 U	480 U	440 U
1-Nitronaphthalene	ug/kg	NS	NS	400 U	430 U	450 U	420 U	430 U	480 U	440 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**38000**	20000	21000	8900	15000	19000	**33000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**8900**	**7700**	3300	1700	2800	3500	**9200**
2-Nitrotoluene	ug/kg	NS	NS	530 U	570 U	600 U	560 U	570 U	640 U	580 U
3-Nitrotoluene	ug/kg	NS	NS	920	1000	1500	830	710 U	2000	2100
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**11000**	**12000**	4700	3000	4400	**5300**	**11000**
4-Nitrotoluene	ug/kg	NS	NS	480 J	480 J	600 U	560 U	570 U	640 U	580 U
HMX	ug/kg	NS	NS	990 U	1100 U	1100 U	1000 U	1100 U	1200 U	1100 U
Nitrobenzene	ug/kg	340000	31000	400 U	430 U	450 U	420 U	430 U	480 U	440 U
Nitroglycerin	ug/kg	NS	NS	7900 U	8600 U	9100 U	8400 U	8500 U	9600 U	8700 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	7900 U	8600 U	9100 U	8400 U	8500 U	9600 U	8700 U
RDX	ug/kg	NS	NS	400 U	430 U	450 U	420 U	430 U	480 U	530 U
Tetryl	ug/kg	NS	NS	530 U	570 U	600 U	560 U	570 U	640 U	420 J
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	26200000	22100000	20900000	27800000	21000000	27100000	23000000
Metals										
Aluminum	ug/kg	NS	78000000	17600000	19200000	18000000	15300000	27200000	19900000	14200000
Antimony	ug/kg	450000	31000	2830 U	3150 U	3270 U	3240 U	3300 U	3430 U	3170 U
Arsenic	ug/kg	19000	19000	1450 J	3150 U	3270 U	3240 U	3700	3430 U	3170 U
Barium	ug/kg	59000000	16000000	55100	56400	55300	38700	96700	57700	46200
Beryllium	ug/kg	140000	16000	671 J	782 J	697 J	548 J	962	764 J	609 J
Cadmium	ug/kg	78000	78000	206 J	309 J	232 J	82.5 J	157 J	213 J	276 J
Calcium	ug/kg	NS	NS	1100000	1190000	1570000	1300000	1550000	1780000	1510000
Chromium	ug/kg	20000	240000	18900	**26200**	**25700**	19800	**22000**	**23900**	**22300**
Cobalt	ug/kg	590000	1600000	10300	10800	13000	10600	7400	11100	12100
Copper	ug/kg	45000000	3100000	34200	41300	41700	33000	39400	43500	37200
Iron	ug/kg	NS	NS	33400000	41000000	49700000	39900000	35500000	42400000	40100000
Lead	ug/kg	800000	400000	211000	242000	214000	186000	269000	305000	185000
Magnesium	ug/kg	NS	NS	1270000	1410000	1390000	1180000	1940000	1650000	1240000
Manganese	ug/kg	5900000	11000000	214000	216000	191000	154000	218000	220000	169000
Mercury	ug/kg	65000	23000	33.0 J	34.6 J	31.3 J	26.9 J	41.3 J	37.5 J	27.9 J
Nickel	ug/kg	23000000	1600000	17900	21300	25800	21000	16000	22100	25000
Potassium	ug/kg	NS	NS	957000	1010000	1170000	973000	1600000	1350000	969000
Selenium	ug/kg	5700000	390000	6520	6880	10800	8650	5820	8670	7810
Silver	ug/kg	5700000	390000	1420	1610	1980	1870	1540	1890	1660
Sodium	ug/kg	NS	NS	66000 J	74300 J	82700 J	67900 J	102000 J	121000 J	83900 J
Thallium	ug/kg	79000	5000	4240 U	4730 U	4910 U	4850 U	4940 U	5150 U	4760 U
Vanadium	ug/kg	1100000	78000	36300	44700	42600	32800	45900	43100	39900
Zinc	ug/kg	110000000	23000000	51600	55800	55000	48100	58000	64200	47600
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	240 U	270 U	280 U	270 U	280 U	290 U	270 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-F-3	10/12/2015 TNT-PS-F-4	10/12/2015 TNT-PS-G-1	10/12/2015 TNT-PS-G-2	10/12/2015 TNT-PS-G-3	10/12/2015 TNT-PS-G-4	10/12/2015 TNT-PS-H-1
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2,4-Dichlorophenol	ug/kg	2100000	180000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2,4-Dinitrophenol	ug/kg	1400000	120000	7300 U	8100 U	8300 U	8200 U	8400 U	8700 U	8000 U
2,4-Dinitrotoluene	ug/kg	3000	700	500 J	**760 J**	1400 U	1400 U	1400 U	1500 U	1300 U
2,6-Dinitrotoluene	ug/kg	3000	700	230 J	370	280 U	270 U	280 U	200 J	270 U
2-Chloronaphthalene	ug/kg	NS	NS	240 U	270 U	270 U	270 U	280 U	290 U	260 U
2-Chlorophenol	ug/kg	2200000	310000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	3600 U	4000 U	4200 U	4100 U	4200 U	4400 U	4000 U
2-Methylnaphthalene	ug/kg	2400000	230000	120 U	140 U	140 U	140 U	140 U	150 U	140 U
2-Methylphenol	ug/kg	3400000	310000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2-Nitroaniline	ug/kg	23000000	39000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
2-Nitrophenol	ug/kg	NS	NS	240 U	270 U	280 U	270 U	280 U	290 U	270 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	2400 U	2700 U	2800 U	2700 U	2800 U	2900 U	2700 U
3-Nitroaniline	ug/kg	NS	NS	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	240 U	270 U	280 U	270 U	280 U	290 U	270 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	240 U	270 U	280 U	270 U	280 U	290 U	270 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	240 U	270 U	280 U	270 U	280 U	290 U	270 U
4-Methylphenol	ug/kg	340000	31000	240 U	270 U	2500	4500	2000	2000	2900
4-Nitroaniline	ug/kg	NS	NS	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
4-Nitrophenol	ug/kg	NS	NS	3600 U	4000 U	4200 U	4100 U	4200 U	4400 U	4000 U
Acenaphthene	ug/kg	37000000	3400000	120 U	140 U	140 U	140 U	140 U	150 U	140 U
Acenaphthylene	ug/kg	300000000	NS	120 U	140 U	140 U	140 U	140 U	150 U	140 U
Acetophenone	ug/kg	5000	2000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
Anthracene	ug/kg	30000000	17000000	120 U	140 U	140 U	140 U	140 U	150 U	140 U
Atrazine	ug/kg	2400000	210000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Benzaldehyde	ug/kg	68000000	6100000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Benzo(a)anthracene	ug/kg	2000	600	57 J	66 J	48 J	40 J	51 J	35 J	140 U
Benzo(a)pyrene	ug/kg	200	200	45 J	52 J	45 J	33 J	35 J	32 J	140 U
Benzo(b)fluoranthene	ug/kg	2000	600	65 J	110 J	56 J	38 J	63 J	43 J	28 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	34 J	55 J	40 J	140 U	140 U	33 J	140 U
Benzo(k)fluoranthene	ug/kg	23000	6000	30 J	35 J	43 J	140 U	31 J	150 U	140 U
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	240 U	270 U	280 U	270 U	280 U	290 U	270 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	240 U	270 U	280 U	270 U	280 U	290 U	270 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1200 U	1400 U	1400 U	1400 U	1400 U	1500 U	1400 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Caprolactam	ug/kg	340000000	31000000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Carbazole	ug/kg	96000	24000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
Chrysene	ug/kg	230000	62000	60 J	73 J	47 J	41 J	55 J	48 J	140 U
Dibenzo(a,h)anthracene	ug/kg	200	200	120 U	140 U	140 U	140 U	140 U	150 U	140 U
Dibenzofuran	ug/kg	NS	NS	240 U	270 U	280 U	270 U	280 U	290 U	270 U
Diethyl phthalate	ug/kg	550000000	49000000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Dimethyl phthalate	ug/kg	NS	NS	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-F-3	10/12/2015 TNT-PS-F-4	10/12/2015 TNT-PS-G-1	10/12/2015 TNT-PS-G-2	10/12/2015 TNT-PS-G-3	10/12/2015 TNT-PS-G-4	10/12/2015 TNT-PS-H-1
Di-n-octyl phthalate	ug/kg	27000000	2400000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Fluoranthene	ug/kg	24000000	2300000	78 J	120 J	64 J	61 J	81 J	47 J	37 J
Fluorene	ug/kg	24000000	2300000	120 U	140 U	140 U	140 U	140 U	150 U	140 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
Hexachlorobenzene	ug/kg	1000	300	120 U	140 U	140 U	140 U	140 U	150 U	140 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	3600 U	4000 U	4200 U	4100 U	4200 U	4400 U	4000 U
Hexachloroethane	ug/kg	140000	35000	1200 U	1300 U	1400 U	1400 U	1400 U	1500 U	1300 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	31 J	53 J	33 J	140 U	140 U	30 J	140 U
Isophorone	ug/kg	2000000	510000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
Naphthalene	ug/kg	17000	6000	120 U	140 U	140 U	140 U	140 U	150 U	140 U
Nitrobenzene	ug/kg	340000	31000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	240 U	270 U	280 U	270 U	280 U	290 U	270 U
N-nitrosodiphenylamine	ug/kg	390000	99000	240 U	270 U	280 U	270 U	280 U	290 U	270 U
p-Chloroaniline	ug/kg	NS	NS	480 U	540 U	560 U	540 U	560 U	580 U	530 U
Pentachlorophenol	ug/kg	10000	3000	1200 U	1400 U	1400 U	1400 U	1400 U	1500 U	1400 U
Phenanthrene	ug/kg	300000000	NS	37 J	59 J	35 J	33 J	40 J	150 U	140 U
Phenol	ug/kg	210000000	18000000	240 U	270 U	280	310	290	230 J	260 J
Pyrene	ug/kg	18000000	1700000	64 J	95 J	59 J	57 J	75 J	43 J	35 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-H-2	10/12/2015 TNT-PS-H-3	10/12/2015 TNT-PS-H-4	10/12/2015 TNT-PS-I-1	10/12/2015 TNT-PS-I-2	10/12/2015 TNT-PS-I-3	10/12/2015 TNT-PS-I-4
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	460 U	460 U	430 U	410 U	440 U	440 U	430 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	460 U	460 U	430 U	410 U	440 U	440 U	430 U
1,3-Dinitrobenzene	ug/kg	NS	NS	460 U	500	430 U	410 U	440 U	440 U	430 U
1,4-Dinitrobenzene	ug/kg	NS	NS	460 U	460 U	410 J	410 U	440 U	440 U	430 U
1-Nitronaphthalene	ug/kg	NS	NS	460 U	460 U	430 U	410 U	440 U	440 U	190 J
2,4,6-Trinitrotoluene	ug/kg	95000	21000	18000	15000	17000	20000	**64000**	**28000**	**280000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**5300**	4400	4200	**6900**	**10000**	**24000**	**12000**
2-Nitrotoluene	ug/kg	NS	NS	620 U	610 U	570 U	550 U	580 U	580 U	580 U
3-Nitrotoluene	ug/kg	NS	NS	770 U	2000	1500	1200	1600 U	1400	1600
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**7300**	**6100**	**6200**	**13000**	**17000**	**34000**	**16000**
4-Nitrotoluene	ug/kg	NS	NS	620 U	610 U	570 U	550 U	580 U	580 U	580 U
HMX	ug/kg	NS	NS	1200 U	1100 U	1100 U	1000 U	1100 U	1100 U	1100 U
Nitrobenzene	ug/kg	340000	31000	460 U	460 U	430 U	410 U	440 U	440 U	430 U
Nitroglycerin	ug/kg	NS	NS	9300 U	9100 U	8500 U	8300 U	8800 U	8700 U	8700 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	9300 U	9100 U	8500 U	8300 U	8800 U	8700 U	8700 U
RDX	ug/kg	NS	NS	460 U	460 U	430 U	1500 U	440 U	1200 U	1100 U
Tetryl	ug/kg	NS	NS	620 U	540 J	250 J	550 U	580 U	580 U	580 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	25400000	26900000	16200000	31700000	29800000	22600000	17300000
Metals										
Aluminum	ug/kg	NS	78000000	16700000	18600000	15800000	20000000	15400000	16400000	17700000
Antimony	ug/kg	450000	31000	3280 U	3600 U	3260 U	3110 U	3200 U	3250 U	3430 U
Arsenic	ug/kg	19000	19000	3280 U	1210 J	3260 U	1980 J	1320 J	1560 J	1820 J
Barium	ug/kg	59000000	16000000	48700	54900	60300	59600	50700	50300	51800
Beryllium	ug/kg	140000	16000	717 J	775 J	615 J	731 J	611 J	637 J	686 J
Cadmium	ug/kg	78000	78000	207 J	175 J	171 J	149 J	178 J	194 J	168 J
Calcium	ug/kg	NS	NS	1440000	1740000	1470000	1740000	1710000	1490000	1430000
Chromium	ug/kg	20000	240000	**25600**	**23300**	**22500**	18600	**20700**	19800	**23700**
Cobalt	ug/kg	590000	1600000	14500	11000	11200	6690	8640	7390	9230
Copper	ug/kg	45000000	3100000	44700	42100	37600	34700	35300	31800	33200
Iron	ug/kg	NS	NS	50200000	41500000	43300000	29300000	32600000	32400000	34900000
Lead	ug/kg	800000	400000	230000	265000	263000	308000	224000	228000	233000
Magnesium	ug/kg	NS	NS	1270000	1480000	1220000	1460000	1240000	1310000	1340000
Manganese	ug/kg	5900000	11000000	194000	208000	184000	207000	196000	170000	184000
Mercury	ug/kg	65000	23000	33.4 J	34.1 J	32.3 J	29.9 J	27.7 J	24.8 J	25.0 J
Nickel	ug/kg	23000000	1600000	29200	22700	22700	12900	16900	14500	16900
Potassium	ug/kg	NS	NS	1120000	1270000	1050000	1190000	941000	1070000	1010000
Selenium	ug/kg	5700000	390000	9180	6400	7080	3230	5320	5090	7000
Silver	ug/kg	5700000	390000	2200	1790	1800	1320	1480	1420	1490
Sodium	ug/kg	NS	NS	69700 J	101000 J	78500 J	78800 J	79000 J	79200 J	69400 J
Thallium	ug/kg	79000	5000	4920 U	5410 U	4890 U	4670 U	4800 U	4880 U	5150 U
Vanadium	ug/kg	1100000	78000	42300	41100	38200	36800	33500	36300	38100
Zinc	ug/kg	110000000	23000000	59100	60400	55000	50100	42200	40600	42600
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	280 U	300 U	270 U	270 U	270 U	280 U	280 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-H-2	10/12/2015 TNT-PS-H-3	10/12/2015 TNT-PS-H-4	10/12/2015 TNT-PS-I-1	10/12/2015 TNT-PS-I-2	10/12/2015 TNT-PS-I-3	10/12/2015 TNT-PS-I-4
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2,4-Dichlorophenol	ug/kg	2100000	180000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2,4-Dinitrophenol	ug/kg	1400000	120000	8300 U	8900 U	8200 U	8000 U	8200 U	8300 U	8500 U
2,4-Dinitrotoluene	ug/kg	3000	700	1400 U	1500 U	1400 U	1300 U	1400 U	**860 J**	1400 U
2,6-Dinitrotoluene	ug/kg	3000	700	280 U	300 U	150 J	270 U	270 U	380	280 U
2-Chloronaphthalene	ug/kg	NS	NS	270 U	290 U	270 U	270 U	270 U	270 U	280 U
2-Chlorophenol	ug/kg	2200000	310000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	4200 U	4400 U	4100 U	4000 U	4100 U	4200 U	4300 U
2-Methylnaphthalene	ug/kg	2400000	230000	140 U	150 U	140 U	140 U	140 U	140 U	140 U
2-Methylphenol	ug/kg	3400000	310000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2-Nitroaniline	ug/kg	23000000	39000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
2-Nitrophenol	ug/kg	NS	NS	280 U	300 U	270 U	270 U	270 U	280 U	280 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	2800 U	3000 U	2700 U	2700 U	2700 U	2800 U	2800 U
3-Nitroaniline	ug/kg	NS	NS	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	280 U	300 U	270 U	270 U	270 U	280 U	280 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	280 U	300 U	270 U	270 U	270 U	280 U	280 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	280 U	300 U	270 U	270 U	270 U	280 U	280 U
4-Methylphenol	ug/kg	340000	31000	1800	2500	2900	1000	200 J	310	1500
4-Nitroaniline	ug/kg	NS	NS	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
4-Nitrophenol	ug/kg	NS	NS	4200 U	4400 U	4100 U	4000 U	4100 U	4200 U	4300 U
Acenaphthene	ug/kg	37000000	3400000	140 U	150 U	140 U	140 U	140 U	140 U	140 U
Acenaphthylene	ug/kg	300000000	NS	140 U	150 U	140 U	140 U	140 U	140 U	140 U
Acetophenone	ug/kg	5000	2000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
Anthracene	ug/kg	30000000	17000000	140 U	150 U	140 U	140 U	140 U	140 U	140 U
Atrazine	ug/kg	2400000	210000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Benzaldehyde	ug/kg	68000000	6100000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Benzo(a)anthracene	ug/kg	2000	600	62 J	150 U	61 J	28 J	240	97 J	140 U
Benzo(a)pyrene	ug/kg	200	200	45 J	150 U	51 J	140 U	140	63 J	140 U
Benzo(b)fluoranthene	ug/kg	2000	600	75 J	150 U	70 J	31 J	190	110 J	33 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	38 J	150 U	36 J	140 U	73 J	43 J	140 U
Benzo(k)fluoranthene	ug/kg	23000	6000	48 J	150 U	43 J	140 U	120 J	48 J	140 U
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	280 U	300 U	270 U	270 U	270 U	280 U	280 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	280 U	300 U	270 U	270 U	270 U	280 U	280 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1400 U	1500 U	1400 U	1400 U	1400 U	1400 U	1400 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Caprolactam	ug/kg	340000000	31000000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Carbazole	ug/kg	96000	24000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
Chrysene	ug/kg	230000	62000	76 J	150 U	71 J	40 J	220	90 J	30 J
Dibenzo(a,h)anthracene	ug/kg	200	200	140 U	150 U	140 U	140 U	140 U	140 U	140 U
Dibenzofuran	ug/kg	NS	NS	280 U	300 U	270 U	270 U	270 U	280 U	280 U
Diethyl phthalate	ug/kg	550000000	49000000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Dimethyl phthalate	ug/kg	NS	NS	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-H-2	10/12/2015 TNT-PS-H-3	10/12/2015 TNT-PS-H-4	10/12/2015 TNT-PS-I-1	10/12/2015 TNT-PS-I-2	10/12/2015 TNT-PS-I-3	10/12/2015 TNT-PS-I-4
Di-n-octyl phthalate	ug/kg	27000000	2400000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Fluoranthene	ug/kg	24000000	2300000	120 J	36 J	93 J	49 J	250	140 J	41 J
Fluorene	ug/kg	24000000	2300000	140 U	150 U	140 U	140 U	140 U	140 U	140 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
Hexachlorobenzene	ug/kg	1000	300	140 U	150 U	140 U	140 U	140 U	140 U	140 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	4200 U	4400 U	4100 U	4000 U	4100 U	4200 U	4300 U
Hexachloroethane	ug/kg	140000	35000	1400 U	1500 U	1400 U	1300 U	1400 U	1400 U	1400 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	37 J	150 U	39 J	140 U	67 J	39 J	140 U
Isophorone	ug/kg	2000000	510000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
Naphthalene	ug/kg	17000	6000	140 U	150 U	140 U	140 U	140 U	140 U	140 U
Nitrobenzene	ug/kg	340000	31000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	280 U	300 U	270 U	270 U	270 U	280 U	280 U
N-nitrosodiphenylamine	ug/kg	390000	99000	280 U	300 U	270 U	270 U	270 U	280 U	280 U
p-Chloroaniline	ug/kg	NS	NS	550 U	590 U	550 U	540 U	550 U	550 U	570 U
Pentachlorophenol	ug/kg	10000	3000	1400 U	1500 U	1400 U	1400 U	1400 U	1400 U	1400 U
Phenanthrene	ug/kg	300000000	NS	59 J	150 U	29 J	140 U	46 J	64 J	140 U
Phenol	ug/kg	210000000	18000000	230 J	260 J	320	290	270 U	280 U	280 U
Pyrene	ug/kg	18000000	1700000	100 J	35 J	83 J	47 J	200	95 J	35 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-J-1	10/12/2015 TNT-PS-J-2	10/12/2015 TNT-PS-J-3	10/12/2015 TNT-PS-J-4	11/10/2015 TNT-PS-A	11/10/2015 TNT-PS-B	11/10/2015 TNT-PS-C
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	420 U	430 U	400 U	420 U	2700 U	2900 U	2800 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	2800	3400	5500	3100	2400 J	2900 U	2800 U
1,3-Dinitrobenzene	ug/kg	NS	NS	470	470	850	490	2700 U	2900 U	2800 U
1,4-Dinitrobenzene	ug/kg	NS	NS	420 U	430 U	400 U	420 U	2700 U	2900 U	2800 U
1-Nitronaphthalene	ug/kg	NS	NS	420 U	430 U	400 U	420 U	2700 U	2900 U	2800 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**2000000**	**2300000**	**2100000**	**2800000**	**1500000**	**1700000**	**1900000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**58000**	**52000**	**40000**	**51000**	**26000**	**15000**	**19000**
2-Nitrotoluene	ug/kg	NS	NS	560 U	570 U	530 U	560 U	3600 U	3900 U	3800 U
3-Nitrotoluene	ug/kg	NS	NS	690 U	720 U	660 U	690 U	4500 U	4900 U	4700 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**53000**	**58000**	**42000**	**56000**	**40000**	**14000**	**18000**
4-Nitrotoluene	ug/kg	NS	NS	560 U	570 U	530 U	560 U	3600 U	3900 U	3800 U
HMX	ug/kg	NS	NS	1000 U	1100 U	990 U	1000 U	6700 U	7300 U	7100 U
Nitrobenzene	ug/kg	340000	31000	420 U	430 U	400 U	420 U	2700 U	2900 U	2800 U
Nitroglycerin	ug/kg	NS	NS	8300 U	8600 U	7900 U	8300 U	54000 U	59000 U	57000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	8300 U	8600 U	7900 U	8300 U	54000 U	59000 U	57000 U
RDX	ug/kg	NS	NS	420 U	430 U	400 U	420 U	2700 U	2900 U	2800 U
Tetryl	ug/kg	NS	NS	560 U	570 U	530 U	560 U	3600 U	3900 U	3800 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	39000000	12200000	19200000	16300000	7060000	6160000	10400000
Metals										
Aluminum	ug/kg	NS	78000000	17500000	22800000	15000000	15200000	NA	NA	NA
Antimony	ug/kg	450000	31000	3190 U	2720 J	2910 U	2990 U	NA	NA	NA
Arsenic	ug/kg	19000	19000	2370 J	3350	1580 J	3270	NA	NA	NA
Barium	ug/kg	59000000	16000000	50600	68200	46300	53000	NA	NA	NA
Beryllium	ug/kg	140000	16000	669 J	876	619 J	596 J	NA	NA	NA
Cadmium	ug/kg	78000	78000	109 J	676 J	160 J	184 J	NA	NA	NA
Calcium	ug/kg	NS	NS	1090000	1110000	800000	858000	NA	NA	NA
Chromium	ug/kg	20000	240000	14700	19600	13800	13200	NA	NA	NA
Cobalt	ug/kg	590000	1600000	4690	6850	4070	5050	NA	NA	NA
Copper	ug/kg	45000000	3100000	25700	24900	22200	23400	NA	NA	NA
Iron	ug/kg	NS	NS	23900000	27300000	23000000	18600000	NA	NA	NA
Lead	ug/kg	800000	400000	194000	255000	177000	257000	NA	NA	NA
Magnesium	ug/kg	NS	NS	1240000	1640000	1200000	1140000	NA	NA	NA
Manganese	ug/kg	5900000	11000000	190000	235000	159000	170000	NA	NA	NA
Mercury	ug/kg	65000	23000	25.7 J	29.6 J	24.9 J	25.7 J	NA	NA	NA
Nickel	ug/kg	23000000	1600000	7920	10600	6880	7530	NA	NA	NA
Potassium	ug/kg	NS	NS	816000	985000	745000	742000	NA	NA	NA
Selenium	ug/kg	5700000	390000	2190 J	4810	4510	2200 J	NA	NA	NA
Silver	ug/kg	5700000	390000	1110	828 U	1030	885	NA	NA	NA
Sodium	ug/kg	NS	NS	60900 J	74900 J	50700 J	53100 J	NA	NA	NA
Thallium	ug/kg	79000	5000	4790 U	4970 U	4370 U	4490 U	NA	NA	NA
Vanadium	ug/kg	1100000	78000	35100	43000	31600	28600	NA	NA	NA
Zinc	ug/kg	110000000	23000000	33500	46800	27700	34500	NA	NA	NA
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-J-1	10/12/2015 TNT-PS-J-2	10/12/2015 TNT-PS-J-3	10/12/2015 TNT-PS-J-4	11/10/2015 TNT-PS-A	11/10/2015 TNT-PS-B	11/10/2015 TNT-PS-C
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2,4-Dichlorophenol	ug/kg	2100000	180000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2,4-Dinitrophenol	ug/kg	1400000	120000	40000 U	8400 U	7600 U	7600 U	4900 U	4900 U	5000 U
2,4-Dinitrotoluene	ug/kg	3000	700	**3200 J**	**2000**	**2100**	**2600**	**2300**	**3200**	**3700**
2,6-Dinitrotoluene	ug/kg	3000	700	1300 U	450	450	690	670	**800**	**820**
2-Chloronaphthalene	ug/kg	NS	NS	1300 U	280 U	250 U	250 U	160 U	160 U	160 U
2-Chlorophenol	ug/kg	2200000	310000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	20000 U	4200 U	3800 U	3800 U	2500 U	2500 U	2500 U
2-Methylnaphthalene	ug/kg	2400000	230000	680 U	140 U	130 U	130 U	84 U	84 U	85 U
2-Methylphenol	ug/kg	3400000	310000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2-Nitroaniline	ug/kg	23000000	39000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
2-Nitrophenol	ug/kg	NS	NS	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	13000 U	2800 U	2500 U	2500 U	1600 U	1600 U	1700 U
3-Nitroaniline	ug/kg	NS	NS	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
4-Methylphenol	ug/kg	340000	31000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
4-Nitroaniline	ug/kg	NS	NS	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
4-Nitrophenol	ug/kg	NS	NS	20000 U	4200 U	3800 U	3800 U	2500 U	2500 U	2500 U
Acenaphthene	ug/kg	37000000	3400000	680 U	140 U	130 U	130 U	84 U	84 U	85 U
Acenaphthylene	ug/kg	300000000	NS	680 U	140 U	130 U	130 U	84 U	84 U	85 U
Acetophenone	ug/kg	5000	2000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
Anthracene	ug/kg	30000000	17000000	680 U	140 U	130 U	130 U	84 U	84 U	85 U
Atrazine	ug/kg	2400000	210000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Benzaldehyde	ug/kg	68000000	6100000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Benzo(a)anthracene	ug/kg	2000	600	680 U	52 J	28 J	78 J	39 J	43 J	38 J
Benzo(a)pyrene	ug/kg	200	200	680 U	55 J	28 J	74 J	34 J	36 J	32 J
Benzo(b)fluoranthene	ug/kg	2000	600	680 U	77 J	39 J	91 J	61 J	56 J	61 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	680 U	29 J	130 U	39 J	26 J	26 J	24 J
Benzo(k)fluoranthene	ug/kg	23000	6000	680 U	29 J	130 U	51 J	23 J	22 J	25 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	6800 U	1400 U	1300 U	1300 U	840 U	840 U	850 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Caprolactam	ug/kg	340000000	31000000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Carbazole	ug/kg	96000	24000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
Chrysene	ug/kg	230000	62000	680 U	60 J	43 J	76 J	47 J	44 J	52 J
Dibenzo(a,h)anthracene	ug/kg	200	200	680 U	140 U	130 U	130 U	84 U	84 U	85 U
Dibenzofuran	ug/kg	NS	NS	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
Diethyl phthalate	ug/kg	550000000	49000000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Dimethyl phthalate	ug/kg	NS	NS	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 10/12/2015 TNT-PS-J-1	10/12/2015 TNT-PS-J-2	10/12/2015 TNT-PS-J-3	10/12/2015 TNT-PS-J-4	11/10/2015 TNT-PS-A	11/10/2015 TNT-PS-B	11/10/2015 TNT-PS-C
Di-n-octyl phthalate	ug/kg	27000000	2400000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Fluoranthene	ug/kg	24000000	2300000	680 U	66 J	53 J	100 J	69 J	72 J	76 J
Fluorene	ug/kg	24000000	2300000	680 U	140 U	130 U	130 U	84 U	84 U	85 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
Hexachlorobenzene	ug/kg	1000	300	680 U	140 U	130 U	130 U	84 U	84 U	85 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	20000 U	4200 U	3800 U	3800 U	2500 U	2500 U	2500 U
Hexachloroethane	ug/kg	140000	35000	6600 U	1400 U	1300 U	1300 U	820 U	820 U	830 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	680 U	33 J	130 U	42 J	24 J	24 J	25 J
Isophorone	ug/kg	2000000	510000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
Naphthalene	ug/kg	17000	6000	680 U	140 U	130 U	130 U	84 U	84 U	85 U
Nitrobenzene	ug/kg	340000	31000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
N-nitrosodiphenylamine	ug/kg	390000	99000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
p-Chloroaniline	ug/kg	NS	NS	2700 U	560 U	510 U	500 U	330 U	330 U	330 U
Pentachlorophenol	ug/kg	10000	3000	6800 U	1400 U	1300 U	1300 U	840 U	840 U	850 U
Phenanthrene	ug/kg	300000000	NS	680 U	34 J	31 J	39 J	31 J	33 J	45 J
Phenol	ug/kg	210000000	18000000	1300 U	280 U	250 U	250 U	160 U	160 U	170 U
Pyrene	ug/kg	18000000	1700000	680 U	82 J	51 J	95 J	58 J	61 J	61 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 11/10/2015 TNT-PS-D	11/10/2015 TNT-PS-E	11/10/2015 TNT-PS-F	11/10/2015 TNT-PS-G	11/10/2015 TNT-PS-H	11/10/2015 TNT-PS-I	11/10/2015 TNT-PS-J
Explosives and Energetics										
1,2-Dinitrobenzene	ug/kg	NS	NS	4600 U	4600 U	4300 U	4200 U	4600 U	4300 U	4500 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	4600 U	4600 U	4300 U	4200 U	4600 U	4300 U	4500 U
1,3-Dinitrobenzene	ug/kg	NS	NS	4600 U	4600 U	4300 U	4200 U	4600 U	4300 U	4500 U
1,4-Dinitrobenzene	ug/kg	NS	NS	4600 U	4600 U	4300 U	4200 U	4600 U	4300 U	4500 U
1-Nitronaphthalene	ug/kg	NS	NS	4600 U	4600 U	4300 U	4200 U	4600 U	4300 U	4500 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	10000	**260000**	18000	16000	19000	**25000**	**1400000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	2500 J	3700 J	**7100**	2900 J	4600 J	**5800**	**36000**
2-Nitrotoluene	ug/kg	NS	NS	6200 U	6200 U	5700 U	5600 U	6200 U	5700 U	6000 U
3-Nitrotoluene	ug/kg	NS	NS	7700 U	7700 U	7200 U	7000 U	7700 U	7200 U	7600 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	3200 J	3800 J	**8600**	2900 J	**5600 J**	**9100**	**37000**
4-Nitrotoluene	ug/kg	NS	NS	6200 U	6200 U	5700 U	5600 U	6200 U	5700 U	6000 U
HMX	ug/kg	NS	NS	12000 U	12000 U	11000 U	11000 U	12000 U	11000 U	11000 U
Nitrobenzene	ug/kg	340000	31000	4600 U	4600 U	4300 U	4200 U	4600 U	4300 U	4500 U
Nitroglycerin	ug/kg	NS	NS	92000 U	92000 U	86000 U	84000 U	93000 U	86000 U	91000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	92000 U	92000 U	86000 U	84000 U	93000 U	86000 U	91000 U
RDX	ug/kg	NS	NS	4600 U	4600 U	4300 U	4200 U	4600 U	4300 U	4500 U
Tetryl	ug/kg	NS	NS	6200 U	6200 U	5700 U	5600 U	6200 U	5700 U	6000 U
General Chemistry										
Total Organic Carbon	ug/kg	NS	NS	24000000	23500000	14300000	19700000	16900000	16800000	11600000
Metals										
Aluminum	ug/kg	NS	78000000	NA	NA	NA	NA	NA	NA	NA
Antimony	ug/kg	450000	31000	NA	NA	NA	NA	NA	NA	NA
Arsenic	ug/kg	19000	19000	NA	NA	NA	NA	NA	NA	NA
Barium	ug/kg	59000000	16000000	NA	NA	NA	NA	NA	NA	NA
Beryllium	ug/kg	140000	16000	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/kg	78000	78000	NA	NA	NA	NA	NA	NA	NA
Calcium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Chromium	ug/kg	20000	240000	NA	NA	NA	NA	NA	NA	NA
Cobalt	ug/kg	590000	1600000	NA	NA	NA	NA	NA	NA	NA
Copper	ug/kg	45000000	3100000	NA	NA	NA	NA	NA	NA	NA
Iron	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Lead	ug/kg	800000	400000	NA	NA	NA	NA	NA	NA	NA
Magnesium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Manganese	ug/kg	5900000	11000000	NA	NA	NA	NA	NA	NA	NA
Mercury	ug/kg	65000	23000	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/kg	23000000	1600000	NA	NA	NA	NA	NA	NA	NA
Potassium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Selenium	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Silver	ug/kg	5700000	390000	NA	NA	NA	NA	NA	NA	NA
Sodium	ug/kg	NS	NS	NA	NA	NA	NA	NA	NA	NA
Thallium	ug/kg	79000	5000	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/kg	1100000	78000	NA	NA	NA	NA	NA	NA	NA
Zinc	ug/kg	110000000	23000000	NA	NA	NA	NA	NA	NA	NA
SVOCs										
1,1-Biphenyl	ug/kg	34000000	3100000	270 U	270 U	270 U	260 U	270 U	270 U	260 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 11/10/2015 TNT-PS-D	11/10/2015 TNT-PS-E	11/10/2015 TNT-PS-F	11/10/2015 TNT-PS-G	11/10/2015 TNT-PS-H	11/10/2015 TNT-PS-I	11/10/2015 TNT-PS-J
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2,4-Dichlorophenol	ug/kg	2100000	180000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2,4-Dinitrophenol	ug/kg	1400000	120000	8000 U	8000 U	8000 U	7900 U	8000 U	8000 U	7900 U
2,4-Dinitrotoluene	ug/kg	3000	700	1300 U	1300 U	**760 J**	1300 U	1300 U	**980 J**	**4100**
2,6-Dinitrotoluene	ug/kg	3000	700	270 U	190 J	270 U	260 U	250 J	300	**990**
2-Chloronaphthalene	ug/kg	NS	NS	260 U	270 U	260 U	260 U	260 U	270 U	260 U
2-Chlorophenol	ug/kg	2200000	310000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	4000 U	4000 U	4000 U	3900 U	4000 U	4000 U	4000 U
2-Methylnaphthalene	ug/kg	2400000	230000	140 U	140 U	140 U	37 J	140 U	140 U	130 U
2-Methylphenol	ug/kg	3400000	310000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2-Nitroaniline	ug/kg	23000000	39000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
2-Nitrophenol	ug/kg	NS	NS	270 U	270 U	270 U	260 U	270 U	270 U	260 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	2700 U	2700 U	2700 U	2600 U	2700 U	2700 U	2600 U
3-Nitroaniline	ug/kg	NS	NS	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	270 U	270 U	270 U	260 U	270 U	270 U	260 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	270 U	270 U	270 U	260 U	270 U	270 U	260 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	270 U	270 U	270 U	260 U	270 U	270 U	260 U
4-Methylphenol	ug/kg	340000	31000	3600	2800	200 J	4800	6100	1300	260 U
4-Nitroaniline	ug/kg	NS	NS	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
4-Nitrophenol	ug/kg	NS	NS	4000 U	4000 U	4000 U	3900 U	4000 U	4000 U	4000 U
Acenaphthene	ug/kg	37000000	3400000	140 U	140 U	140 U	130 U	140 U	140 U	130 U
Acenaphthylene	ug/kg	300000000	NS	140 U	140 U	140 U	130 U	140 U	140 U	130 U
Acetophenone	ug/kg	5000	2000	270 U	270 U	270 U	170 J	150 J	270 U	260 U
Anthracene	ug/kg	30000000	17000000	140 U	140 U	140 U	26 J	140 U	140 U	130 U
Atrazine	ug/kg	2400000	210000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Benzaldehyde	ug/kg	68000000	6100000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Benzo(a)anthracene	ug/kg	2000	600	73 J	75 J	78 J	84 J	96 J	85 J	65 J
Benzo(a)pyrene	ug/kg	200	200	52 J	61 J	67 J	58 J	71 J	55 J	48 J
Benzo(b)fluoranthene	ug/kg	2000	600	86 J	95 J	100 J	110 J	110 J	97 J	77 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	47 J	36 J	40 J	41 J	52 J	38 J	30 J
Benzo(k)fluoranthene	ug/kg	23000	6000	46 J	52 J	46 J	43 J	50 J	54 J	42 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	270 U	270 U	270 U	260 U	270 U	270 U	260 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	270 U	270 U	270 U	260 U	270 U	270 U	260 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	1400 U	1400 U	1400 U	1300 U	1400 U	1400 U	1300 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Caprolactam	ug/kg	340000000	31000000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Carbazole	ug/kg	96000	24000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
Chrysene	ug/kg	230000	62000	86 J	96 J	96 J	93 J	110 J	84 J	72 J
Dibenzo(a,h)anthracene	ug/kg	200	200	140 U	140 U	140 U	130 U	140 U	140 U	130 U
Dibenzofuran	ug/kg	NS	NS	270 U	270 U	270 U	260 U	270 U	270 U	260 U
Diethyl phthalate	ug/kg	550000000	49000000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Dimethyl phthalate	ug/kg	NS	NS	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 11/10/2015 TNT-PS-D	11/10/2015 TNT-PS-E	11/10/2015 TNT-PS-F	11/10/2015 TNT-PS-G	11/10/2015 TNT-PS-H	11/10/2015 TNT-PS-I	11/10/2015 TNT-PS-J
Di-n-octyl phthalate	ug/kg	27000000	2400000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Fluoranthene	ug/kg	24000000	2300000	130 J	140	140	160	140	130 J	120 J
Fluorene	ug/kg	24000000	2300000	140 U	140 U	140 U	130 U	140 U	140 U	130 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
Hexachlorobenzene	ug/kg	1000	300	140 U	140 U	140 U	130 U	140 U	140 U	130 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	4000 U	4000 U	4000 U	3900 U	4000 U	4000 U	4000 U
Hexachloroethane	ug/kg	140000	35000	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	38 J	34 J	45 J	43 J	42 J	39 J	29 J
Isophorone	ug/kg	2000000	510000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
Naphthalene	ug/kg	17000	6000	140 U	140 U	140 U	140	140 U	140 U	130 U
Nitrobenzene	ug/kg	340000	31000	270 U	270 U	270 U	260 U	270 U	270 U	140 J
n-Nitrosodi-n-propylamine	ug/kg	300	200	270 U	270 U	270 U	260 U	270 U	270 U	260 U
N-nitrosodiphenylamine	ug/kg	390000	99000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
p-Chloroaniline	ug/kg	NS	NS	530 U	540 U	530 U	520 U	530 U	540 U	530 U
Pentachlorophenol	ug/kg	10000	3000	1400 U	1400 U	1400 U	1300 U	1400 U	1400 U	1300 U
Phenanthrene	ug/kg	300000000	NS	76 J	71 J	60 J	94 J	65 J	60 J	68 J
Phenol	ug/kg	210000000	18000000	270 U	270 U	270 U	260 U	270 U	270 U	260 U
Pyrene	ug/kg	18000000	1700000	100 J	98 J	110 J	130 J	120 J	110 J	95 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	**11/10/2015 TNT-PS-K**
			Sample Date Sample ID	
Explosives and Energetics				
1,2-Dinitrobenzene	ug/kg	NS	NS	2900 U
1,3,5-Trinitrobenzene	ug/kg	NS	NS	1200 J
1,3-Dinitrobenzene	ug/kg	NS	NS	2900 U
1,4-Dinitrobenzene	ug/kg	NS	NS	2900 U
1-Nitronaphthalene	ug/kg	NS	NS	2900 U
2,4,6-Trinitrotoluene	ug/kg	95000	21000	**1200000**
2-Amino-4,6-dinitrotoluene	ug/kg	61000	4700	**36000**
2-Nitrotoluene	ug/kg	NS	NS	3800 U
3-Nitrotoluene	ug/kg	NS	NS	4800 U
4-Amino-2,6-dinitrotoluene	ug/kg	61000	4700	**57000**
4-Nitrotoluene	ug/kg	NS	NS	3800 U
HMX	ug/kg	NS	NS	7200 U
Nitrobenzene	ug/kg	340000	31000	2900 U
Nitroglycerin	ug/kg	NS	NS	58000 U
Pentaerythritol Tetranitrate	ug/kg	NS	NS	58000 U
RDX	ug/kg	NS	NS	2900 U
Tetryl	ug/kg	NS	NS	3800 U
General Chemistry				
Total Organic Carbon	ug/kg	NS	NS	6890000
Metals				
Aluminum	ug/kg	NS	78000000	NA
Antimony	ug/kg	450000	31000	NA
Arsenic	ug/kg	19000	19000	NA
Barium	ug/kg	59000000	16000000	NA
Beryllium	ug/kg	140000	16000	NA
Cadmium	ug/kg	78000	78000	NA
Calcium	ug/kg	NS	NS	NA
Chromium	ug/kg	20000	240000	NA
Cobalt	ug/kg	590000	1600000	NA
Copper	ug/kg	45000000	3100000	NA
Iron	ug/kg	NS	NS	NA
Lead	ug/kg	800000	400000	NA
Magnesium	ug/kg	NS	NS	NA
Manganese	ug/kg	5900000	11000000	NA
Mercury	ug/kg	65000	23000	NA
Nickel	ug/kg	23000000	1600000	NA
Potassium	ug/kg	NS	NS	NA
Selenium	ug/kg	5700000	390000	NA
Silver	ug/kg	5700000	390000	NA
Sodium	ug/kg	NS	NS	NA
Thallium	ug/kg	79000	5000	NA
Vanadium	ug/kg	1100000	78000	NA
Zinc	ug/kg	110000000	23000000	NA
SVOCs				
1,1-Biphenyl	ug/kg	34000000	3100000	160 U

Table 6 - Analytical Data Summary

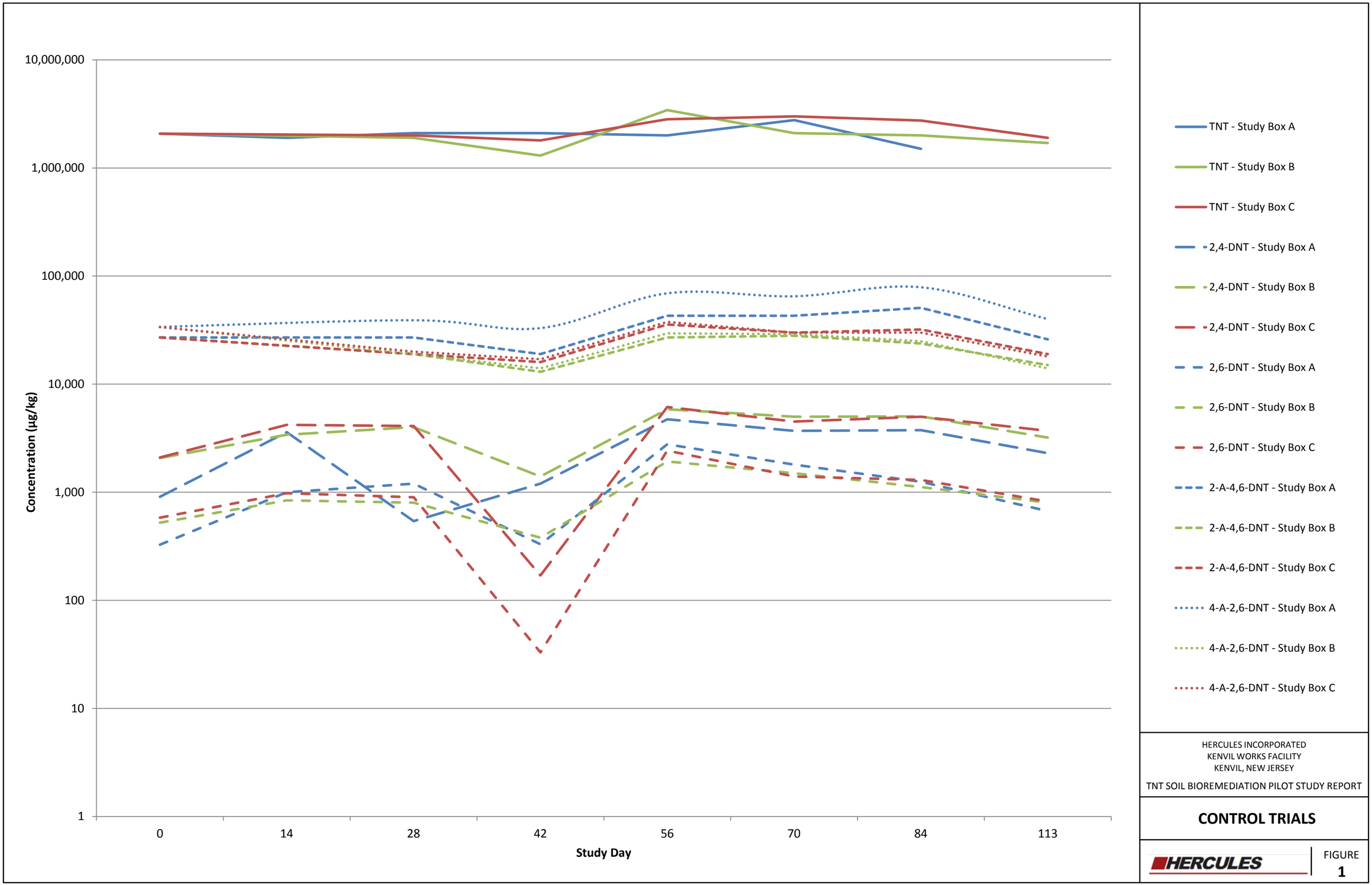
Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* **11/10/2015** *Sample ID* **TNT-PS-K**
2,2-Oxybis(1-Chloropropane)	ug/kg	67000	23000	160 U
2,4,5-Trichlorophenol	ug/kg	68000000	6100000	160 U
2,4,6-Trichlorophenol	ug/kg	74000	19000	160 U
2,4-Dichlorophenol	ug/kg	2100000	180000	160 U
2,4-Dimethylphenol	ug/kg	14000000	1200000	160 U
2,4-Dinitrophenol	ug/kg	1400000	120000	4900 U
2,4-Dinitrotoluene	ug/kg	3000	700	**2600**
2,6-Dinitrotoluene	ug/kg	3000	700	**820**
2-Chloronaphthalene	ug/kg	NS	NS	160 U
2-Chlorophenol	ug/kg	2200000	310000	160 U
2-Methyl-4,6-dinitrophenol	ug/kg	68000	6000	2500 U
2-Methylnaphthalene	ug/kg	2400000	230000	84 U
2-Methylphenol	ug/kg	3400000	310000	160 U
2-Nitroaniline	ug/kg	23000000	39000	160 U
2-Nitrophenol	ug/kg	NS	NS	160 U
3,3-Dichlorobenzidine	ug/kg	4000	1000	1600 U
3-Nitroaniline	ug/kg	NS	NS	820 U
4-Bromophenyl phenyl ether	ug/kg	NS	NS	160 U
4-Chloro-3-Methylphenol	ug/kg	NS	NS	160 U
4-Chlorophenyl phenyl ether	ug/kg	NS	NS	160 U
4-Methylphenol	ug/kg	340000	31000	160 U
4-Nitroaniline	ug/kg	NS	NS	820 U
4-Nitrophenol	ug/kg	NS	NS	2500 U
Acenaphthene	ug/kg	37000000	3400000	84 U
Acenaphthylene	ug/kg	300000000	NS	84 U
Acetophenone	ug/kg	5000	2000	160 U
Anthracene	ug/kg	30000000	17000000	84 U
Atrazine	ug/kg	2400000	210000	820 U
Benzaldehyde	ug/kg	68000000	6100000	820 U
Benzo(a)anthracene	ug/kg	2000	600	40 J
Benzo(a)pyrene	ug/kg	200	200	28 J
Benzo(b)fluoranthene	ug/kg	2000	600	55 J
Benzo(g,h,i)perylene	ug/kg	30000000	380000000	27 J
Benzo(k)fluoranthene	ug/kg	23000	6000	20 J
bis(2-Chloroethoxy)methane	ug/kg	NS	NS	160 U
bis(2-Chloroethyl)ether	ug/kg	2000	400	160 U
bis(2-Ethylhexyl)phthalate	ug/kg	140000	35000	840 U
Butyl benzyl phthalate	ug/kg	14000000	1200000	820 U
Caprolactam	ug/kg	340000000	31000000	820 U
Carbazole	ug/kg	96000	24000	160 U
Chrysene	ug/kg	230000	62000	43 J
Dibenzo(a,h)anthracene	ug/kg	200	200	84 U
Dibenzofuran	ug/kg	NS	NS	160 U
Diethyl phthalate	ug/kg	550000000	49000000	820 U
Dimethyl phthalate	ug/kg	NS	NS	820 U
Di-n-butyl phthalate	ug/kg	68000000	6100000	820 U

Table 6 - Analytical Data Summary

Chemical	*Units*	*Non-Residential SRS (NJDEP)*	*Residential SRS (NJDEP)*	*Sample Date* / *Sample ID* 11/10/2015 TNT-PS-K
Di-n-octyl phthalate	ug/kg	27000000	2400000	820 U
Fluoranthene	ug/kg	24000000	2300000	67 J
Fluorene	ug/kg	24000000	2300000	84 U
Hexachloro-1,3-butadiene	ug/kg	25000	6000	160 U
Hexachlorobenzene	ug/kg	1000	300	84 U
Hexachlorocyclopentadiene	ug/kg	110000	45000	2500 U
Hexachloroethane	ug/kg	140000	35000	820 U
Indeno(1,2,3-cd)pyrene	ug/kg	2000	600	30 J
Isophorone	ug/kg	2000000	510000	160 U
Naphthalene	ug/kg	17000	6000	20 J
Nitrobenzene	ug/kg	340000	31000	160 U
n-Nitrosodi-n-propylamine	ug/kg	300	200	160 U
N-nitrosodiphenylamine	ug/kg	390000	99000	160 U
p-Chloroaniline	ug/kg	NS	NS	330 U
Pentachlorophenol	ug/kg	10000	3000	840 U
Phenanthrene	ug/kg	300000000	NS	44 J
Phenol	ug/kg	210000000	18000000	160 U
Pyrene	ug/kg	18000000	1700000	57 J

Notes:
NJDEP = New Jersey Department of Environmental Protectior
SRS = Soil Remediation Standarc
NA = Not analyzed
NS = No screening level available
U = Constituent not detected, assoicated value is laboratory detection limi
J = Estimated concentration
ug/kg = Microgram per kilogram
Bold indicates a concentration above Residential SRS
Bold and Shade indicates a concentration above Non-residential SRS

FIGURES



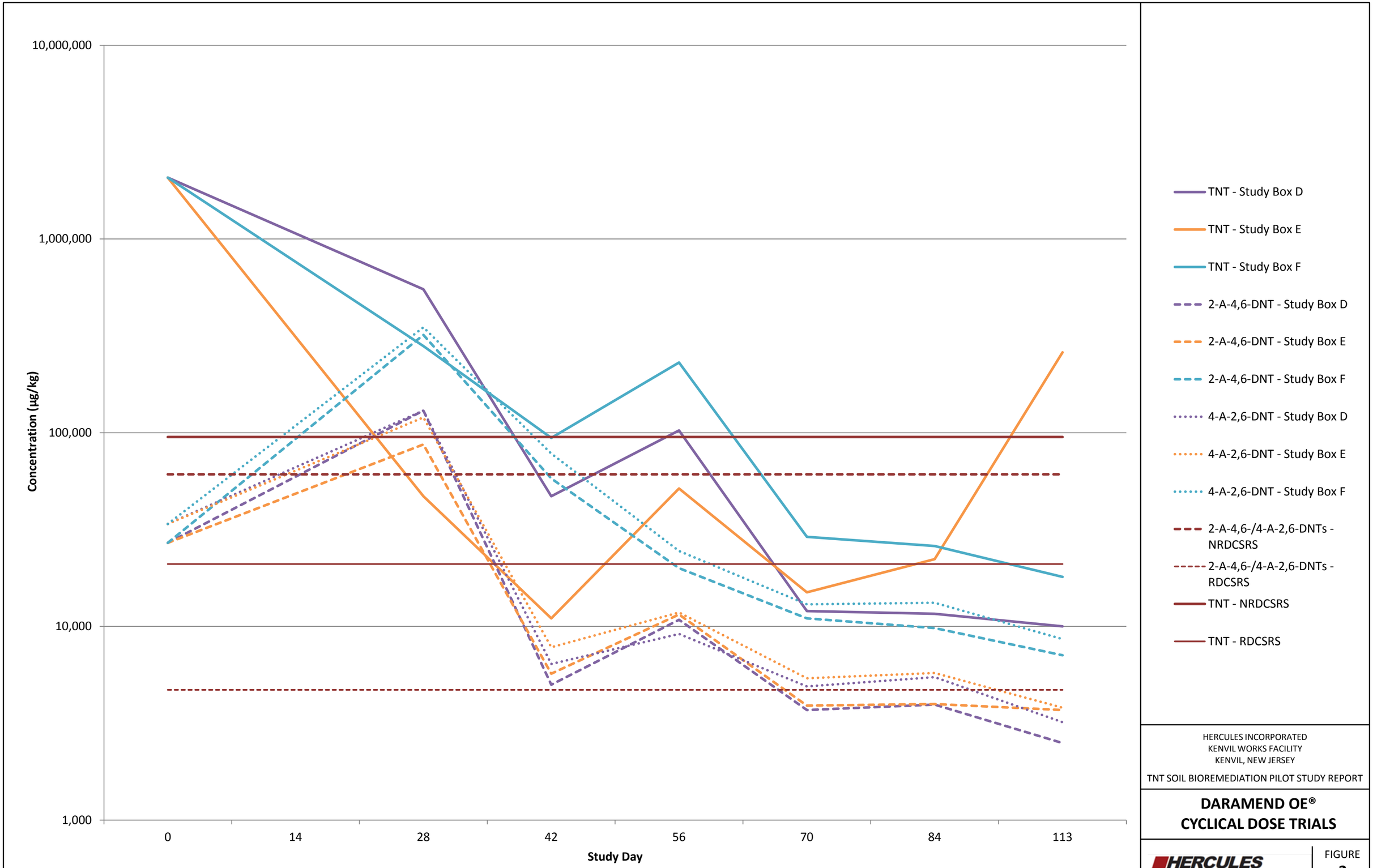
HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

CONTROL TRIALS

HERCULES

FIGURE
1



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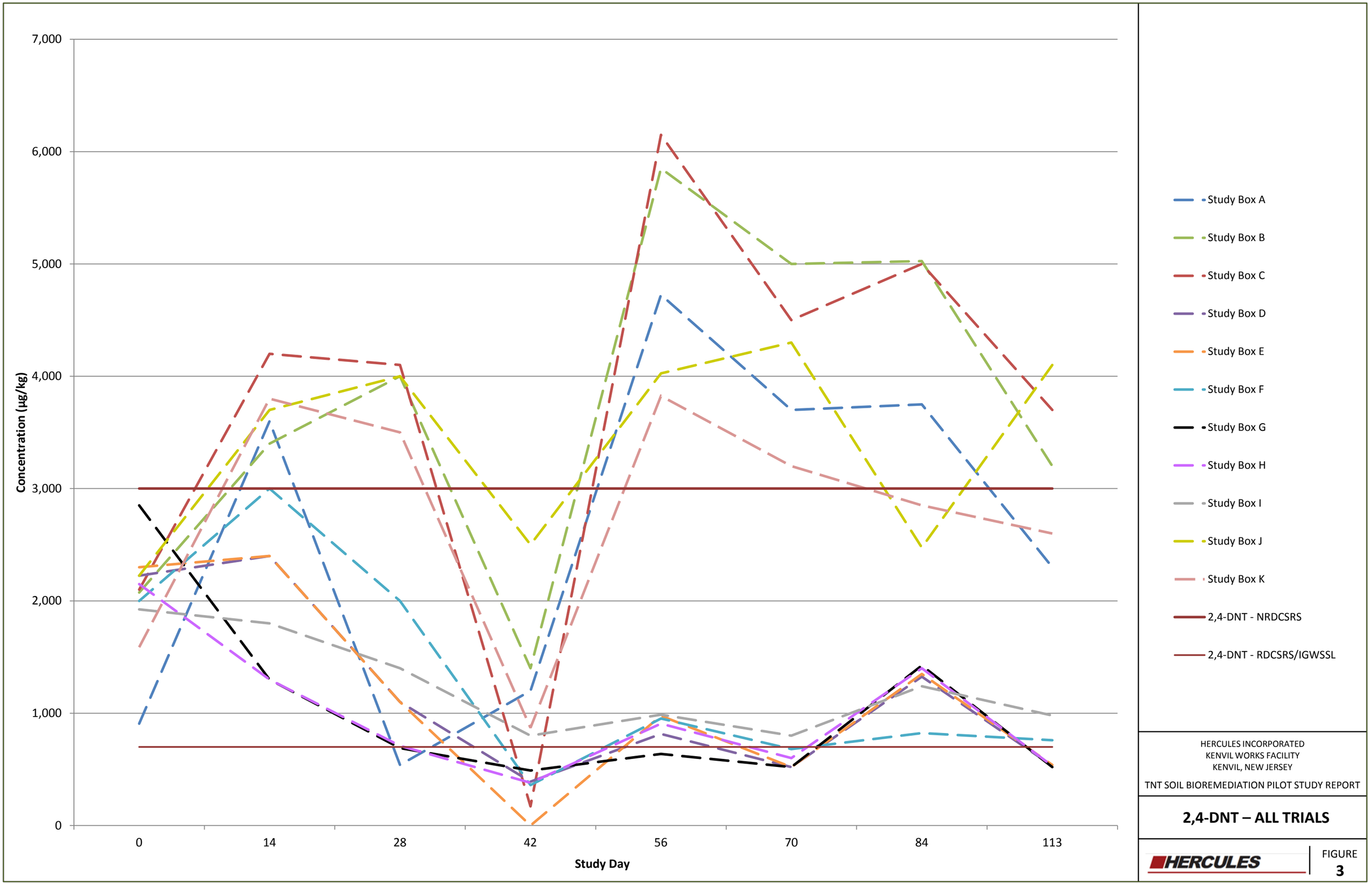
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

DARAMEND OE®
CYCLICAL DOSE TRIALS

HERCULES

FIGURE
2



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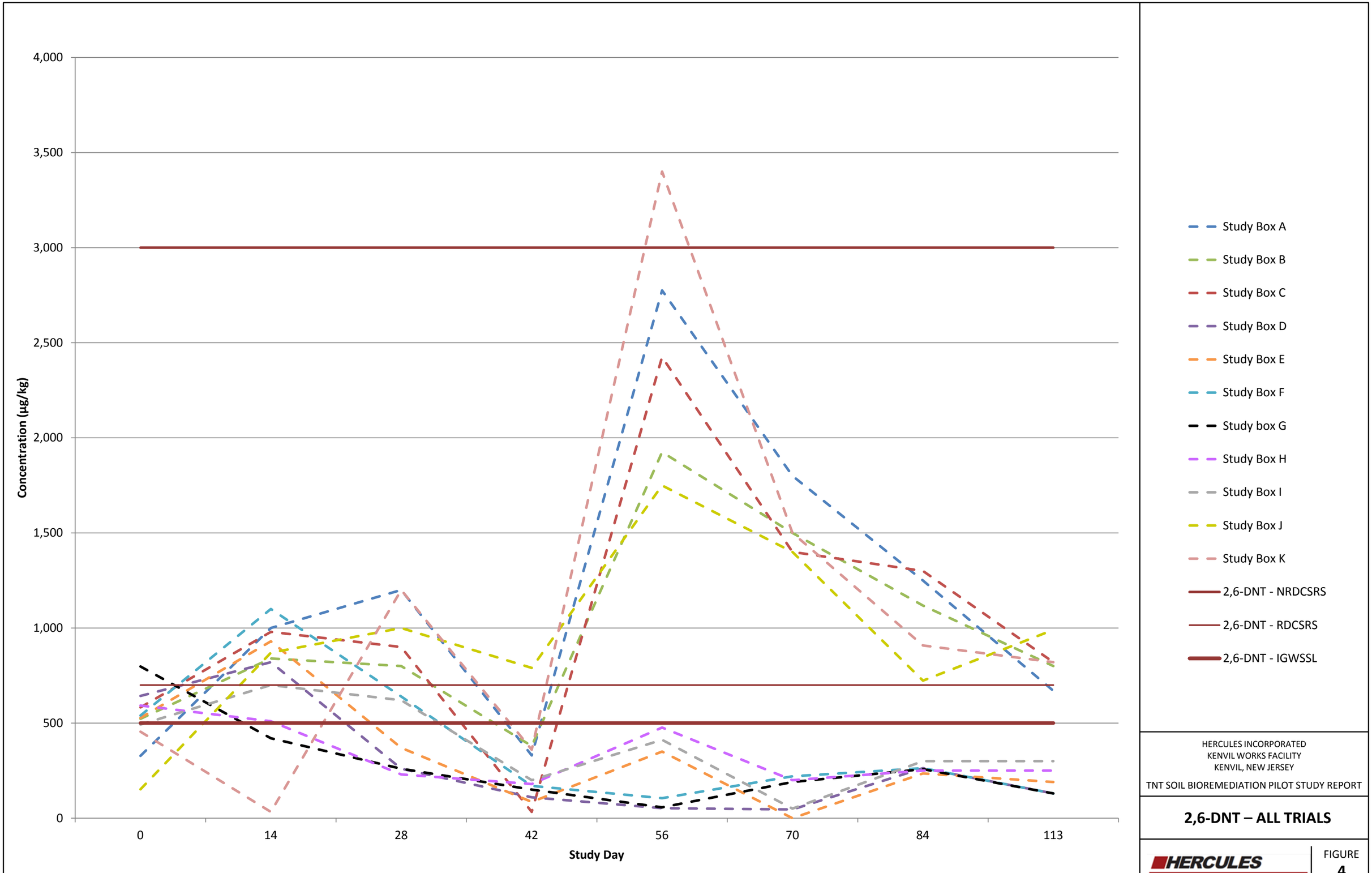
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

2,4-DNT – ALL TRIALS

HERCULES

FIGURE
3



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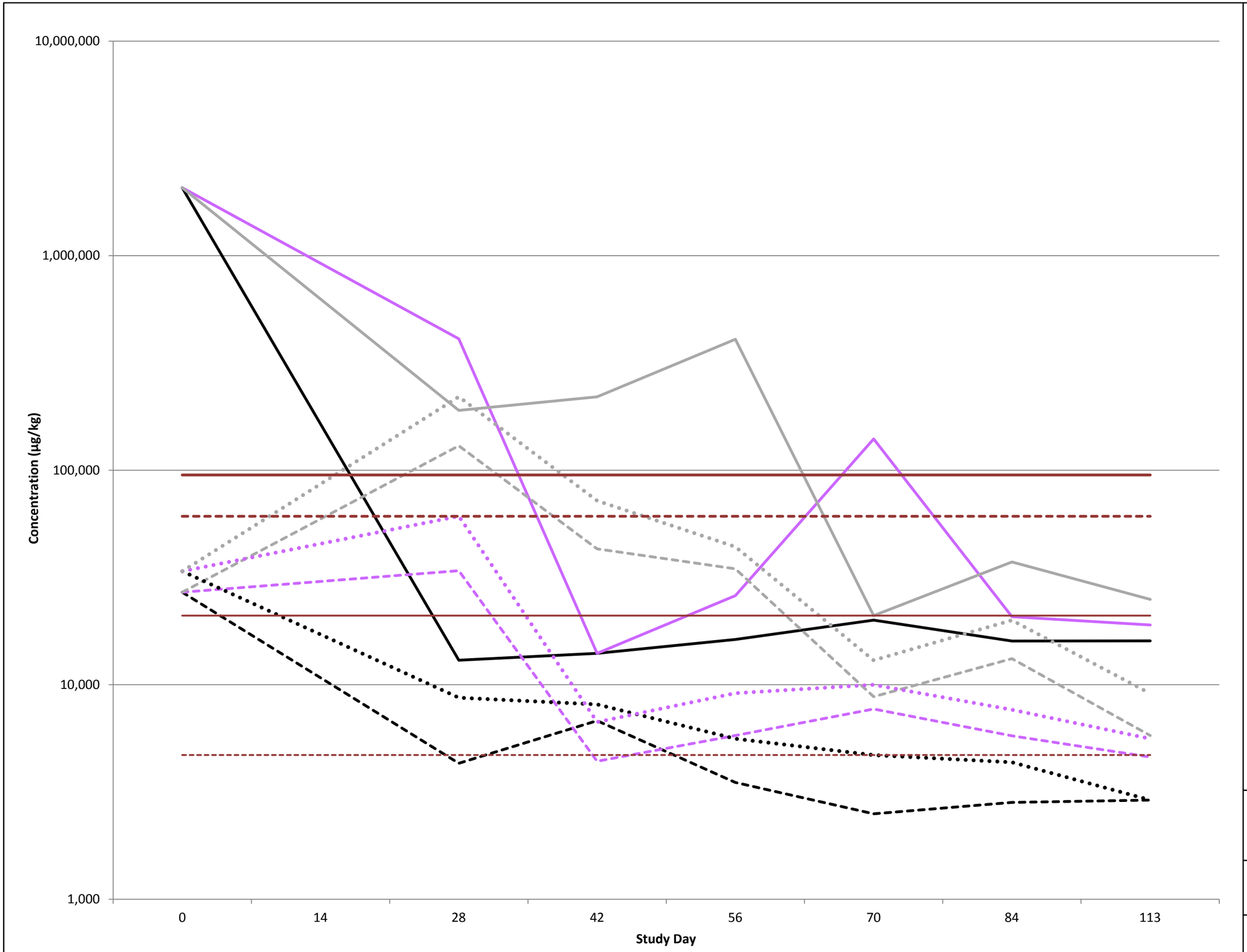
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

2,6-DNT – ALL TRIALS

HERCULES

FIGURE
4



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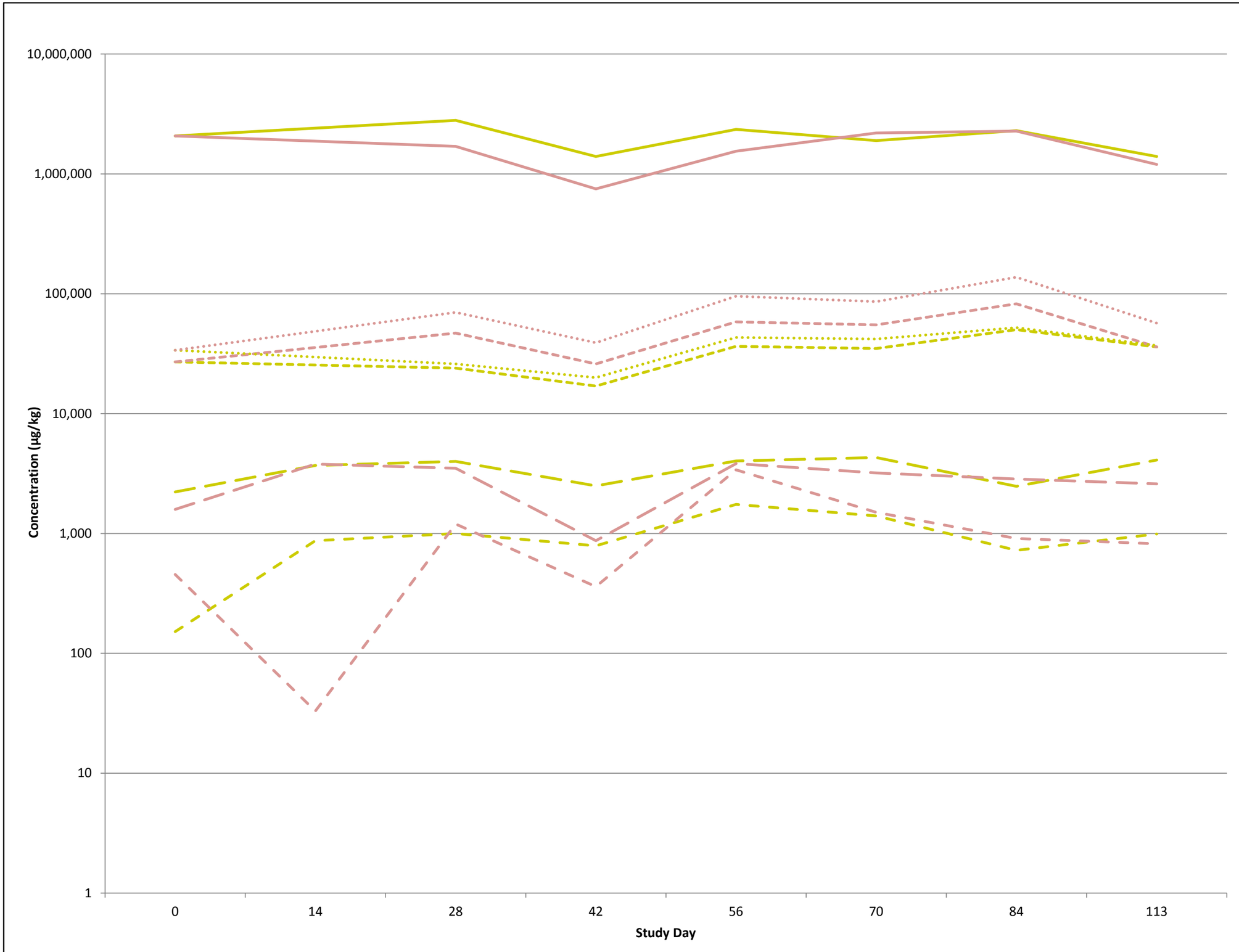
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

DARAMEND OE®
SINGLE DOSE TRIALS

HERCULES

FIGURE
5



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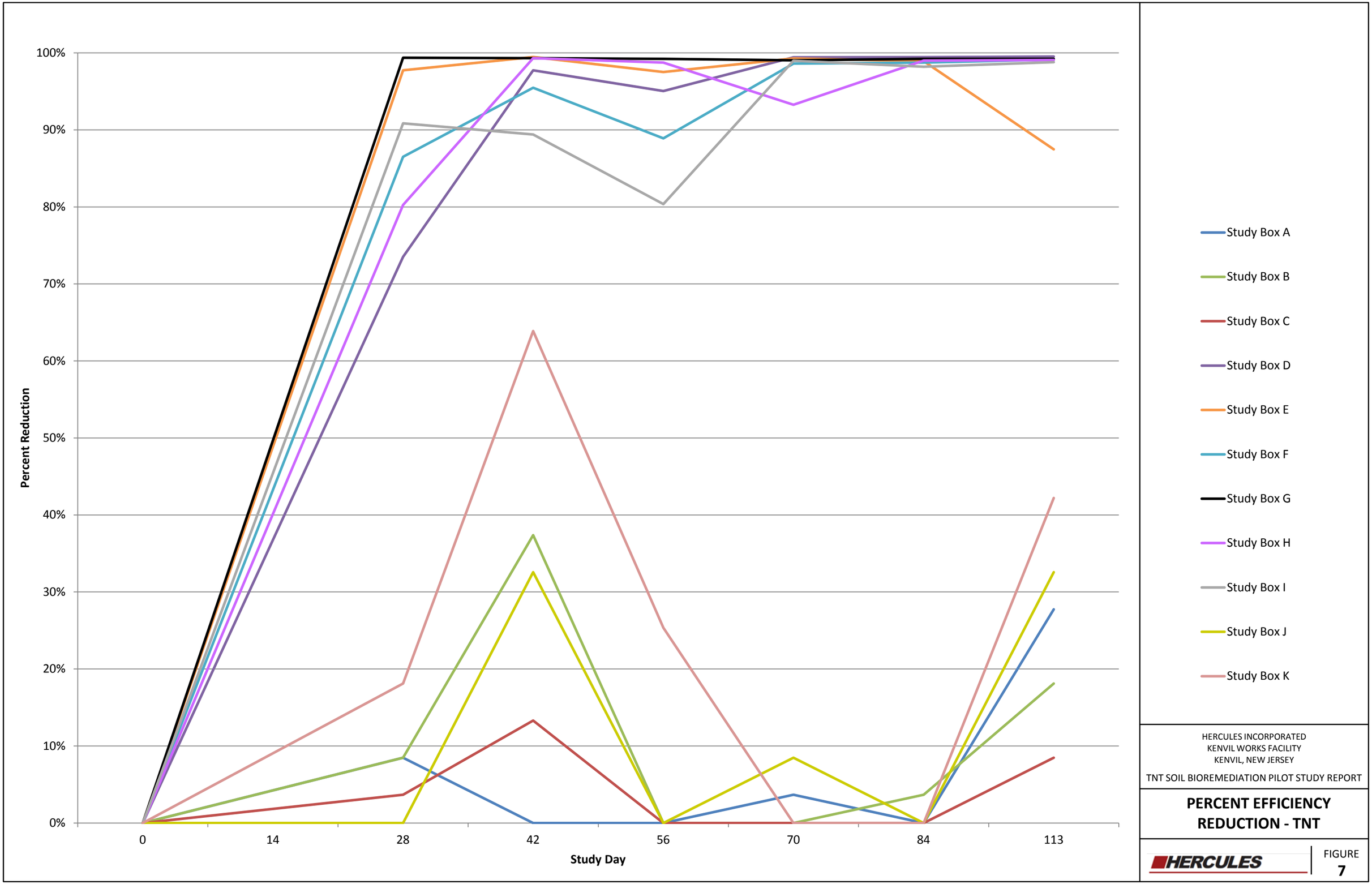
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

COURSE CELLULOSE COMPOSTING TRIALS

HERCULES

FIGURE
6



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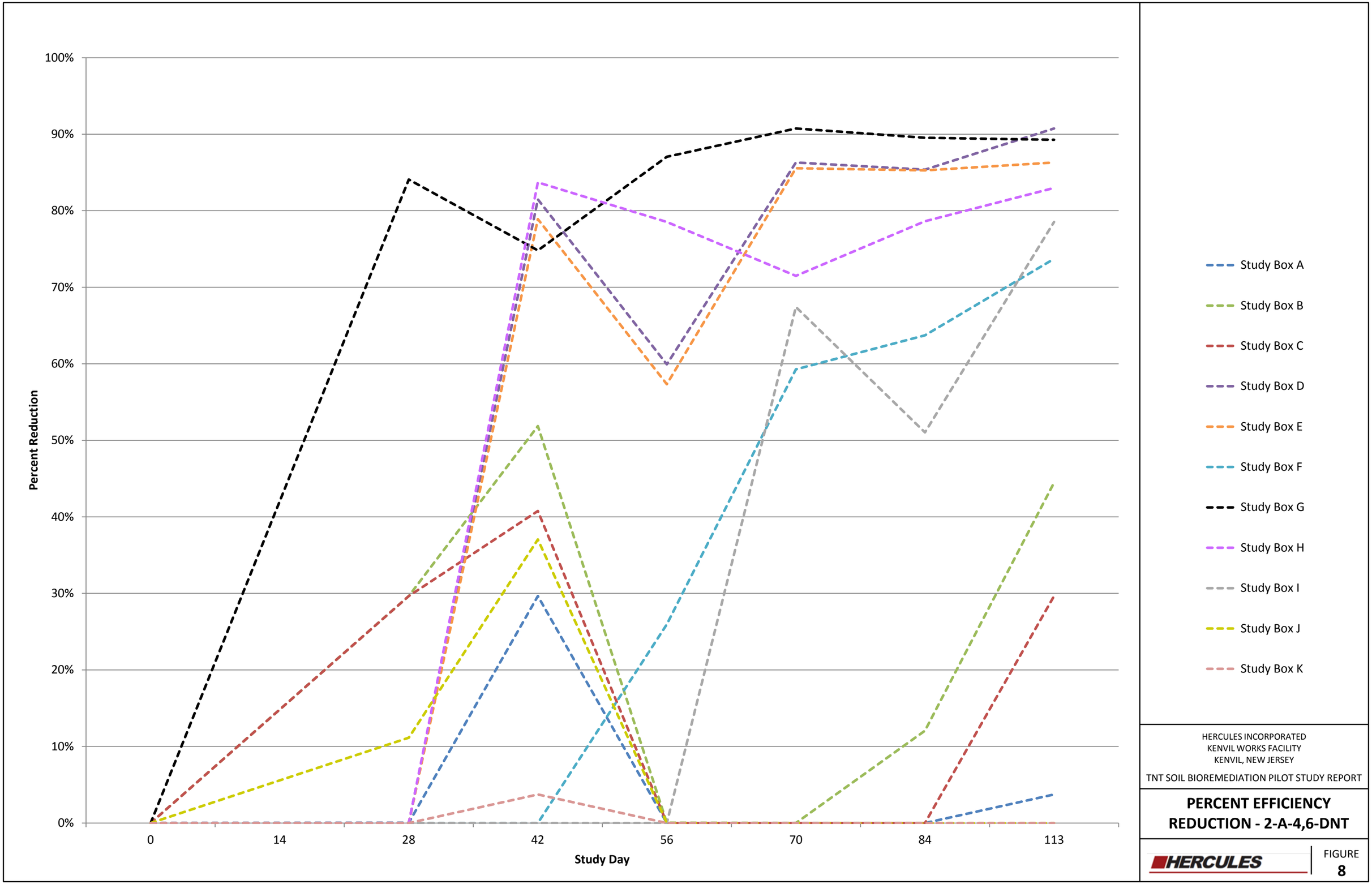
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

PERCENT EFFICIENCY REDUCTION - TNT

HERCULES

FIGURE
7



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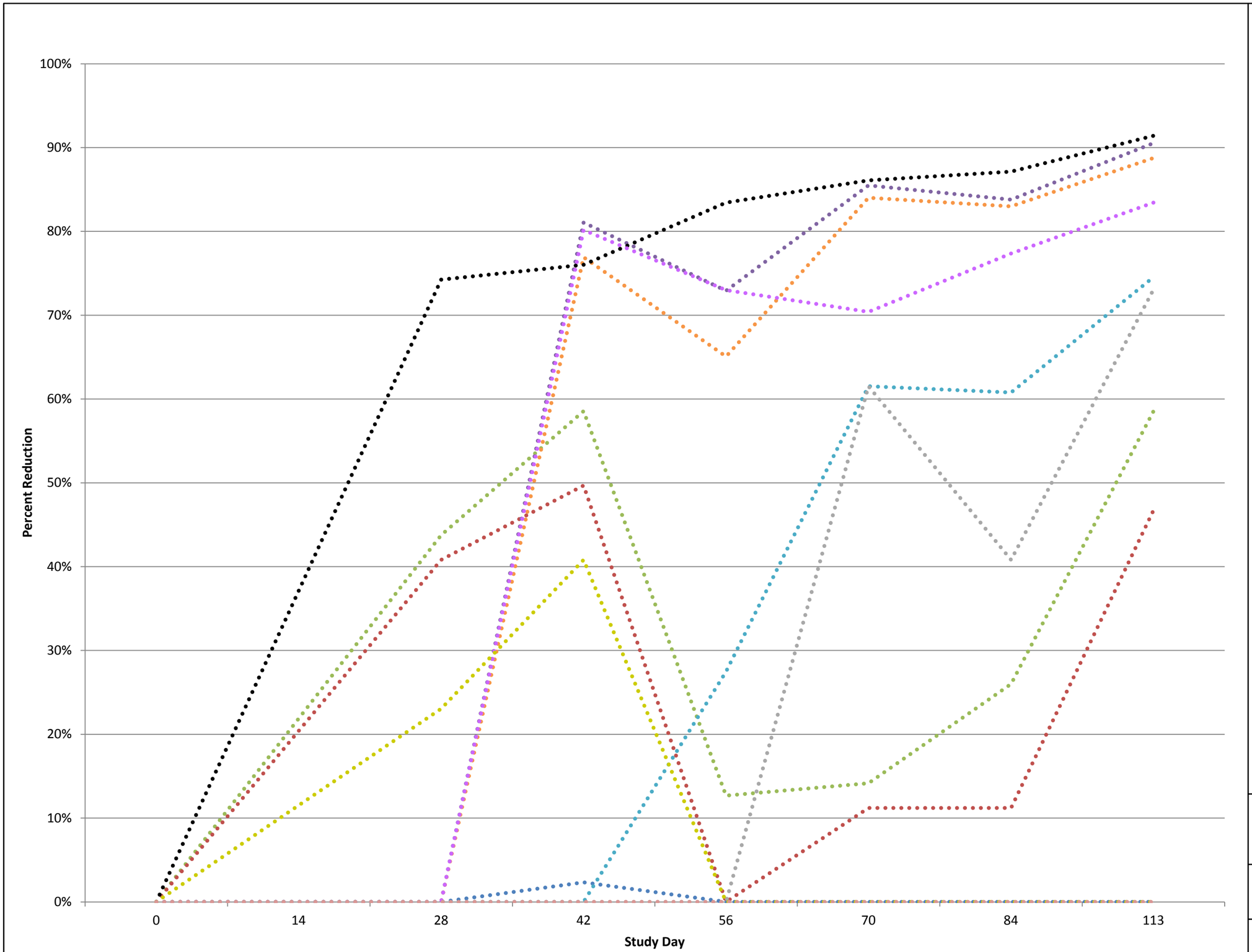
KENVIL, NEW JERSEY

TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

PERCENT EFFICIENCY REDUCTION - 2-A-4,6-DNT

HERCULES

FIGURE
8



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TNT SOIL BIOREMEDIATION PILOT STUDY REPORT

PERCENT EFFICIENCY REDUCTION - 4-A-2,6-DNT

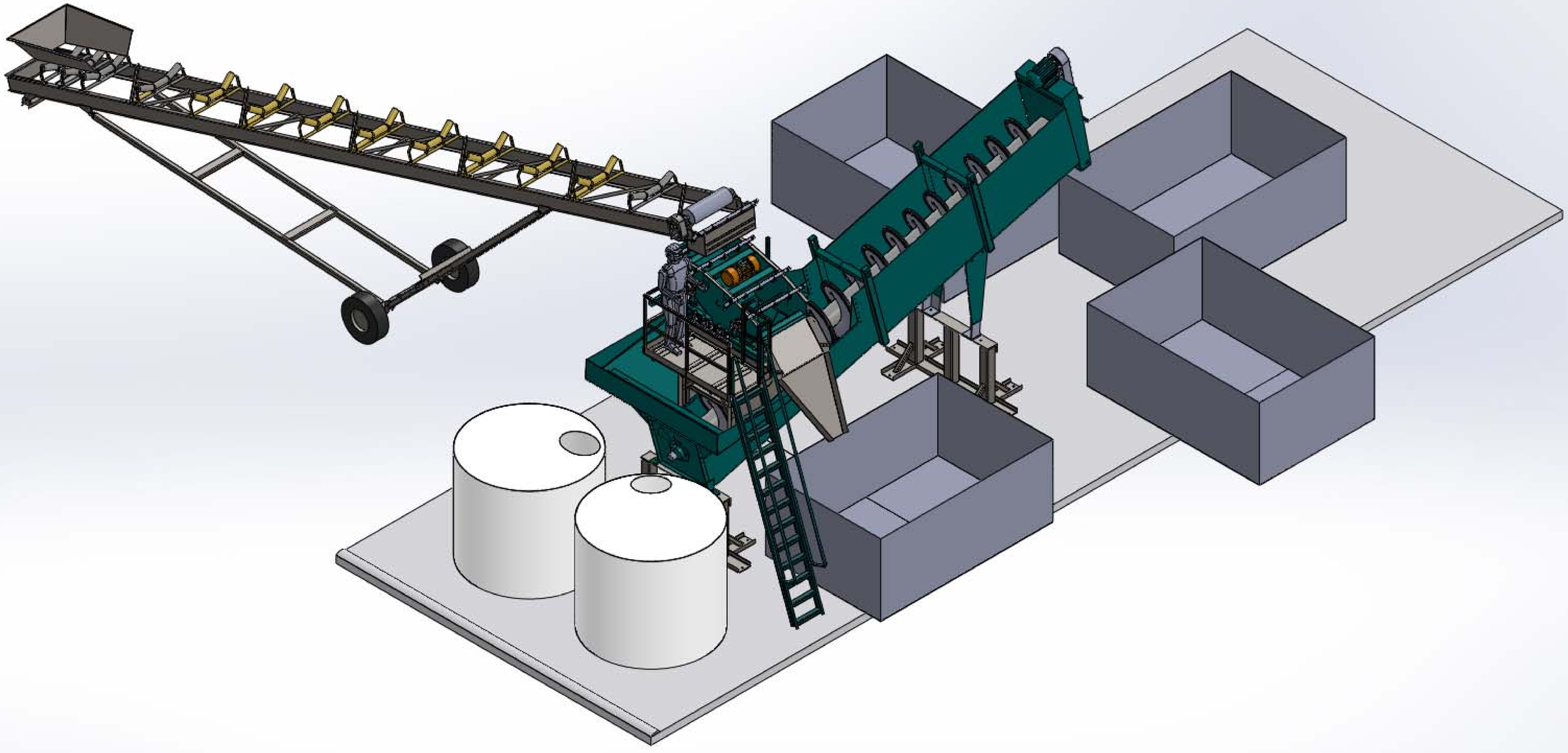
HERCULES

FIGURE
9

APPENDICES

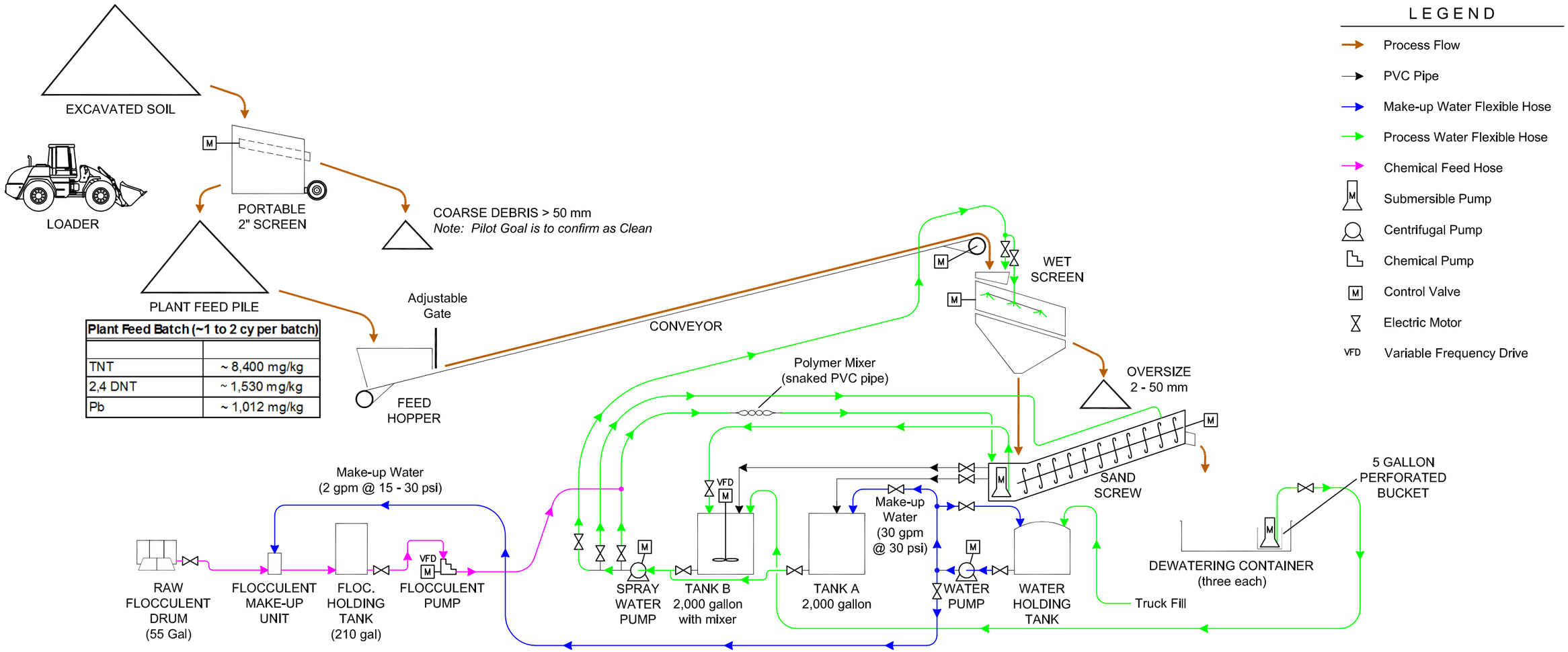
Appendix A

Pilot Plant Layout



Appendix B

Process Flow and Mass Balance Diagram



Plant Feed Batch (~1 to 2 cy per batch)	
TNT	~ 8,400 mg/kg
2,4 DNT	~ 1,530 mg/kg
Pb	~ 1,012 mg/kg

LEGEND

- Process Flow
- PVC Pipe
- Make-up Water Flexible Hose
- Process Water Flexible Hose
- Chemical Feed Hose
- M — Submersible Pump
- Centrifugal Pump
- Chemical Pump
- M — Control Valve
- Electric Motor
- VFD — Variable Frequency Drive

Cycle Time Estimation

Feed Cycle Time	15 min
Flocculation Cycle Time	15 min
Settling & Decantation Time	15 min
Empty out & Prep Time	15 min
Total Estimated Time per Batch	60 min

Batch Design Details

Batch Size	1.8	cy
Density	1.4	ton/cy (estimate)
Feed (moist)	2.52	tons
Feed Moisture	15%	by weight (estimate)
Feed (dry)	2.14	tons
Oversize 2-50 mm	0.64	tons dry
Sand & Fines	1.50	tons dry
Moisture Product	40%	by weight (estimate)
Sand & Fines Product	2.50	tons moist
Density	1.3	ton/cy (estimate)
Sand & Fines product	1.9	cy moist

Soil Particle Size Parameters

Oversize 2-50 mm	30%		input
Sand 0.105 - 2.0 mm	40%		input
Fines < 0.105 mm	30%		input
Total (=100%)	**100%**		

Water Balance Design

Target Slurry Density	8%	solids by weight	input
Total mass of fines (<0.105 mm)	0.6	tons	calc
Total water mass	8.0	tons	calc
Total water volume	1932	gallons	calc
"Feed Cycle" Time	15	minutes	input
Flowrate to wet screen	129	gpm	calc
Soil Conveyor Feed Rate	10	tph	calc

PRELIMINARY FOR REVIEW

REV.	DATE	DESCRIPTION	DRAWN	APR'VD.
1	6/17/2015	General Update	dmk	eg/cs
0	5/4/2015	Initial Release	dmk	eg/cs

DATE: 6/17/2015 | PROJECT MANAGER: C. SEWARD | PROCESS ENGINEER: E. GROENENDIJK
DRAWN: D. KEYSER | LEAD DESIGN ENGINEER: CS & EG | CHECKED:

Flow Sheet and Mass Balance
Bioremediation Soil Preparation Pilot
Hercules Incorporated - Kenvil Works Facility

DRAWING NO. P1
REVISION 1

Appendix C

Project Photographs

Project Photographs

TNT Soil Bioremediation Pilot Study Report
Kenvil Works Facility
Kenvil, Morris County, New Jersey

Photo: 1

Date:
April 09, 2015

Description:
TNT crystals in pre-processed pilot source material

Location:
Facility TNT Area

Photo: 2

Date:
June 29, 2015

Description:
Pilot source material excavation

Location:
Pilot source material excavation area C-2

Photo: 3

Date:
July 01, 2015

Description:
Oversize (>2”) dry screening of pilot source material

Location:
Pilot study area

Project Photographs

TNT Soil Bioremediation Pilot Study Report
Kenvil Works Facility
Kenvil, Morris County, New Jersey

Photo: 4

Date:
July 9, 2015

Description:
Study boxes in foreground and ≤2 mm soil separation system in background

Location:
Pilot study area

Photo: 5

Date:
July 16, 2015

Description:
Sand screw and wet screening feed material generation

Location:
Pilot study area

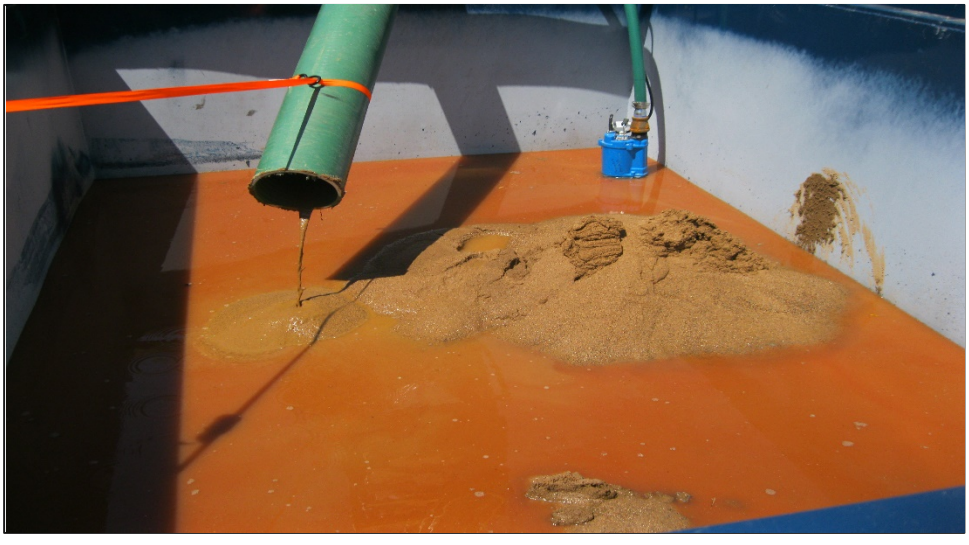


Photo: 6

Date:
July 16, 2015

Description:
Feed material in study bin

Location:
Pilot study area

Project Photographs

TNT Soil Bioremediation Pilot Study Report
Kenvil Works Facility
Kenvil, Morris County, New Jersey

Photo: 7

Date:
September 8, 2015

Description:
Study box monitoring

Location:
Pilot study area, study box D

Photo: 8

Date:
September 14, 2015

Description:
Study box sampling

Location:
Pilot study area

Photo: 9

Date:
November 10, 2015

Description:
Study box winterization

Location:
Pilot study area

Appendix D

Field Data Sheets

LFR

Sheet _____ of _____ Date: 7/20/15

Project # _____

Computed by: _____

Project Ashland Hercules

Checked by: _____

Subject TNT Pilot Study

Approved by: _____

	BOX	REDOX #1	REDOX #2	Temp °C
1	K	~~208.1~~ 174.4	~~209.5~~ 164.6	28.8
2	I	~~210.6~~ 140.6	133.1	29.0
3	H	166.5	167.0	28.1
4	G	177.6	204.2	27.4
5	B	199.9	206.2	27.5
6	J	230.4	215.6	29.6
7	F	224.5	246.3	28.1
8	E	234.3	220.8	30.0
9	D	252.7	253.6	29.4
10	C	227.7	123.6	27.3
11	A	207.1	190.4	26.8

LFR

Sheet _____ of _____ Date: 7/21/15

Project # _____

Computed by: _____

Checked by: _____

Approved by: _____

Project Ashland Hercules

Subject TNT Pilot Study

Redox and Temperature

10:00 – 11:00 am 21-07-2015

BOX ID	Redox 1 mV	Redox 2 mV	Temp °C
A	174.7	165.5	26.4
K	151.4	144.7	25.0
I	-225.4	-216.3	25.2
H	-161.4	-163.8	25.0
G.	102.6	60.5	24.9
B	165.1	182.6	24.9
J	204.1	221.1	25.5
F	221.2	212.8	26.5
E	186.5	168.2	27.9
C	265.9	210.9	24.5
D	304.5	267.8	27.0

LFR

Sheet ____ of ____ Date: 7/24/15

Project # ____

Computed by: ____

Project Ashland Hercules

Checked by: ____

Subject TNT Pilot Study

Approved by: ____

Buffer = 7.0 Reading 7.00

Box K: Buffer Standard Check = 7.03 after pH on Box K

Box	pH #1	pH #2	pH #3
K.	6.24	6.60	6.49
I.	6.49	6.43	
H.	5.92	5.89	5.83
G.	5.26	5.25	
B.	5.48	5.19	4.75
J	4.93	5.00	
F	5.20	5.15	
E	4.99	5.05	
D	4.74	4.66	
C	5.45	5.23	
A (Box #1)	5.42	5.39	

* Buffer After Box G = 7.04
Box J = 7.09

LFR

Sheet 1 of 1 Date: 7/22/15

Project #

Computed by: S. Lemoine

Project Ashland/Hercoles

Checked by:

Subject Box Field Reading

Approved by:

BOX ID	REDOX 1 mV	REDOX 2 mV	pH 1	pH 2	Temp °C	Redox/pH Time
A	159.2	148.3	6.59	6.60	21.9	846/928
K	97.1	93.3	6.53	6.40	21.3	849/930
I	-141.2	-58.9	5.27	5.06	23.2	855/932
H	-211.4	-173.9	5.09	5.05	22.7	858/935
G	-239.8	-230.8	5.24	5.25	22.0	900/936
B	44.3	96.6	5.22	5.19	22.8	902/938
J	119.0	79.9	4.94	4.89	21.0	905/940
F	-194.7	-169.6	5.15	5.27	22.3	915/942
E	-39.9	-0.9	5.29	5.26	22.7	918/945
D	-148.1	-156.3	4.92	4.97	22.4	922/950
C	91.2	96.9	5.27	5.30	22.3	925/952

@921
pH check: 6.98
@939
7.02

Field Data Collection Log Sheet

Staff Name: S. Manning
Date: 7/27/15
Study Day: 7

Weather Past Week: Hot, Mid Humidity
Changes in Conditions:
Cycle: Mid 1st

Container	pH (two field samples per box)		Redox (ORP) (two field samples per box)		Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.68	6.52	93.7	88.4	OK	23.0
K	7.02	6.71/6.81	40.6	48.4	OK	22.5
I	7.55	7.29/7.34	-294.6	-292.8	OK	22.9
H	7.64	7.46	-198.4	-295.6	-266.8/OK	23.2
G	6.87	6.52/7.02	-374.8	-308.6	-224.8/OK	22.9
B	5.44	5.23	182.8	189.4	OK	22.9
J	5.04	4.92	156.8	170.0	OK	23.5
F	6.50	6.21/6.54	-83.5	-108.4	OK	23.8
E	6.30	6.92/6.53	-93.2	-107.6	OK	23.6
D	5.89	5.44/5.42	-20.3	-36.4	OK	24.7
C	5.33	5.11	200.0	208.4	OK	23.7

Quality Control Section

pH Pre- Check (7.0 buffer) 6.98

pH Check - Post Box 1 (7.0 buffer) 6.96

pH Check - Post Box 5 (7.0 buffer) 6.95

Field Data Collection Log Sheet

Staff Name: S. Manning
Date: 8/3/15
Study Day: 2

Weather Past Week: Hot + Humid
Changes in Conditions: Dryer
Cycle: 2

Container	pH (two field samples per box, one contingency)	Redox (ORP) (two field samples per box, one contingency)			Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)	
A	6.71/6.45/6.45/6.66/6.47	59.6	69.8		Moist/Satu	20.5	1030
K	6.60/6.39/6.61/6.39/6.38	52.4	37.4		Moist	21.3	1020
I	6.02/5.87/6.15/5.92/6.05	-291.3	-312.8		Moist	22.4	1010
H	6.66/6.02/5.69/6.25/6.35	-170.3	-174.8		Moist/Dry	21.9	1000
G	6.40/5.56/5.60/6.26/6.18	-382.9	-377.4		Moist/Dry	21.8	0950
B	5.33/[illegible]/5.34/5.27/5.19	174.2	212.6	198.3	Moist/Dry	23.1	0945
J	5.83/5.31/5.26/5.21/5.18	241.6	200.4	197.3	Moist/Dry	21.9	0940
F	5.62/5.41/5.40/5.53/5.51	-152.1	-177.6		Moist/Dry	20.4	7:30
E	5.24/5.44/5.45/5.51/5.57	-143.9	-193.1	-134.8	Moist/Dry	19.6	735
D	5.55/5.51/5.51/5.48/5.48	-171.4	-243.5	-221.3	Moist/Dry	21.5	740
C	5.35/5.31/5.29/5.17/5.37	189.4	186.4		Moist/Dry	22.5	0930

Quality Control Section

pH Pre- Check (7.0 buffer) 6.98

pH Check - Post Box 1 (7.0 buffer) 6.96

pH Check - Post Box 5 (7.0 buffer) 6.95

General Observations

lower pH Readings from the sump side of the Box, Small "Gnats" swarming surface of Dare mend Boxes. 50 gal added to B, C, D, E, F, G, H, I, J, 25 gal added to I + K

Field Data Collection Log Sheet

Staff Name: S. Manning
Date: 8/10/15
Study Day: 3

Weather Past Week: 90s ~~cool~~ Dry
Changes in Conditions: Slightly cooler
Cycle: 2nd

Container	pH (two field samples per box, one contingency)			Redox (ORP) (two field samples per box, one contingency)			Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	7.0	6.84		31.2	48.9		Dry	22.7
K	6.68	6.80		-2.2	-18.4			22.0
I	7.24	7.25		-122.3	-101.4			23.1
H	6.55	6.95	6.81	88.1	74.5			23.6
G	7.30	7.30		19.3	28.7			23.4
B	5.24	5.12		181.3	154.4	192.8		22.5
J	4.87	4.22	4.41	208.4	199.3			22.5
F	5.07	6.50	6.31	-17.4	-8.4			22.4
E	6.33	6.16		-114.6	-154.2	-131.3		23.3
D	6.01	6.29		-37.4	-51.6			23.4
C	6.16	5.99		193.0	178.6			22.6

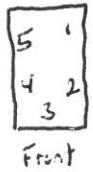
Quality Control Section

pH Pre- Check (7.0 buffer) 6.99
pH Check - Post Box 1 (7.0 buffer) 6.96
pH Check - Post Box 5 (7.0 buffer) 6.95

General Observations

S Lemoine
8/17/15

Cycle #3
Study Day: 29



	pH 1	2	3	4	5	ORP (mV) 1	2	3	4	5	Soil Moisture	Soil Temp °C
A	6.77	6.54	6.52	6.45	6.48	157.1	92.8	115.1	117.1	88.7	Moist, No standing water not Cracked	25.1
K	6.75	6.48	7.34	7.01	7.18	40.3	47.4	53.7	75.8	61.1	Wet, standing water	24.1
I	7023	7.28	7.31	6.82	7.20	-117.8	-122.2	-113.9	-57.2	-89.7	Dry Cracked	23.8
H	7.22	6.64	5.69	6.85	7.30	59.2	-135.2	-300	-143.7	-141.8	Dry, Cracked	23.7
G	6.92	6.71	6.97	7.26	7.10	6.9	16.5	26.2	-150.2	-238	Dry, Cracked	25.1
B	5.01	5.04	4.39	4.74	4.68	192.5	209.7	221.4	214.1	224.5	Dry, cracked	22.6
J*	5.22	4.98	4.77	4.69	5.00	153.4	213.9	258.1	290.4	248.3		22.0
1 Bag F	7.18	7.08	7.24	7.06	7.45	-121.8	-31.5	49.1	14.9	95.0		21.4
1 SBag E	5.98	5.98	6.59	6.45	6.01	-171.8	-174.1	-167.0	-146.0	-189.8		20.8
2 Bags D	7.17	5.70	5.73	5.54	5.70	450.1	-49.2	-102.5	-119.7	-174.8		22.2
C*	5.46	5.11	5.21	5.18	5.23	259.8	270.7	278.8	252.6	198.9		22.1

pH start: 6.98
MID: 6.98
END 7.01

Field Data Collection Log Sheet

Staff Name: S Marrero
Date: 8/24/15
Study Day: 6

Weather Past Week: 80°-90° Sunny
Changes in Conditions: Slightly cooler
Cycle: 3rd

Container	pH (two field samples per box, one contingency)			Redox (ORP) (two field samples per box, one contingency)			Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.62	6.71		13.7	62.4		OK	27.2
K	6.70	6.81		60.1	44.2		OK	24.9
I	6.72	6.72		-168.3	-246.3	-197.4	OK	25.5
H	6.81	6.75		-159.6	-344.1	-282.8	Slightly dry	25.7
G	7.22	7.04		133.4	131.7		Slightly dry	24.4
B	4.99	4.87		122.1	144.7		OK	26.8
J	6.06	5.02	5.19	124.7	128.9		OK	26.1
F	5.54	5.70		-166.3	-151.3		OK	25.9
E	5.49	5.61		-452.7	-441.9		OK	25.4
D	5.75	5.58		-330.4	-319.7		OK	26.0
C	5.20	4.72	4.89	86.6	93.1		OK	26.2

Quality Control Section

pH Pre- Check (7.0 buffer): 7.0
pH Check - Post Box 1 (7.0 buffer): 6.98
pH Check - Post Box 5 (7.0 buffer): 6.97

General Observations

Field Data Collection Log Sheet

Staff Name: S. Manning
Date: 8/24/15
Study Day: 5

Weather Past Week: 80-90° Sunny
Changes in Conditions: Slightly Cooler
Cycle: 3rd

Container	~~pH~~ Redox w/ add. H_2O (~~two field samples per box, one contingency~~)			Redox (ORP) (two field samples per box, one contingency)			~~H_2O Added~~ Soil Moisture Content (visual assessment, all piles)	~~Soil Temperature~~ Depth To H_2O (all piles) (Sump)
A				20.8	18.3			22"
K				-44.3	28.9	-51.9		20"
I				-288.4	-192.9	-279.5		25"
H	-328.1	-333.5		-382.2	-399.0		25 gal	23"
G	101.9	87.2		88.2	143.1	71.2	25 gal	20"
B				68.1	60.2			20"
J				73.4	62.8			18"
F				-284.1	-271.8			24"
E				-394.3	-402.3			23"
D				-91.4	-471.4	-455.8		18"
C				214.8	208.1			23"

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

12" Below Grade
all sump measurements taken From the Rim of the Box

D

Surface 0-6"

5 1
4 2
3

Field Data Collection Log Sheet

Staff Name: S. Lemaire
Date: 8/31/15
Study Day: 43

Weather Past Week: Dry, Sunny, Hot
Changes in Conditions:
Cycle: 4

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature °C (all piles)
A	6.96	6.77	6.87	6.53	6.48	81.9	59.9	62.5	33.5	-30.8	DRY	24.1
K	6.90	7.41	6.75	6.48	6.42	93.2	86.2	-46.2	107.6	49.8		24.2
I	5.83	6.03	6.06	5.83	5.87	-169.1	-202.8	-71.1	98.9	-157.9		23.2
H	7.51	5.86	6.55	6.77	6.02	-122.9	-65.7	-15.1	-485.8	-97.5		23.9
G	7.77	7.45	7.40	7.58	7.53	-100.5	-72.9	32.0	98.5	~~-142.8~~	44.9	21.2
B	4.86	4.89	4.81	4.90	4.87	176.1	195.1	177.0	200.7	168.8		22.3
J	4.90	4.89	4.87	4.87	4.88	154.0	133.7	154.6	153.8	139.9		23.2
F	7.30	7.22	6.89	6.83	6.73	-48.4	-75.5	-161.5	-225.8	-174.8		22.2
E	5.39	5.39	5.45	5.40	5.40	-127.8	~~-127.7~~	-420.8	-352.6	-237.6		21.6
D	5.32	5.65	5.74	5.62	5.53	-76.6	-121.3	-125.4	-148.7	-125.2		21.7
C	5.16	5.20	5.18	4.97	5.06	172.3	209.2	222.4	225.8	127.1		21.7

Quality Control Section

pH Pre- Check (7.0 buffer) 6.96
pH Check - Post Box 1 (7.0 buffer) 6.99
pH Check - Post Box 5 (7.0 buffer) 6.99

General Observations

Under Surface 6"-12"

Field Data Collection Log Sheet

Staff Name: S Lemoine
Date: 8/31/15
Study Day:

Weather Past Week: DN
Changes in Conditions:
Cycle: 4

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A						36.7	42.2	48.0	51.5	9.5		22.8
K						141.7	89.2	46.5	59.7	39.7		21.7
I						-60.2	-152.7	-163.6	-67.0	-150.4		22.9
H						-145.5	-436.0	34.8	-32.9	43.1		22.6
G						-137.7	-425.5	-94.5	-142.6	-267.4		22.3
B						187.4	171.7	197.3	168.9	148.2		21.8
J						146.1	151.0	155.5	132.4	147.7		22.3
F						-49.2	-61.1	-110.4	-33.4	-98.4		22.1
E						-30.8	-19.8	-156.9	-80.6	-270.8		21.6
D						-86.7	-126.4	-42.4	-173.6	-174.2		23.1
C						164.3	170.1	183.4	170.2	157.6		23.5

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

After Mixing & adding Water

100 Gal/Box

5 1
4 2
3

Field Data Collection Log Sheet

Staff Name: SLemoine
Date: 8/3/15
Study Day: 43

Weather Past Week: DRY
Changes in Conditions:
Cycle: 4

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency) 1 2 3 4 5				Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles) °C
A						~~145.9~~					
K										100 Gal added	
I											
H											
G											
B											
J						181.7	200.6	214.3	199.0	215.1	25.2
F						-27.6	~~80.5~~	~~-44.5~~	-115.7	-118.0	26.0
E						-144.6	-142.0	-199.5	-143.3	-161.9	24.8
D						-92.8	-123.4	-74.7	-120.5	-133.1	25.0
C						145.9	148.7	171.8	125.9	127.3	25.2

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Surface/Shallow ORP

5 1
4 3 2

Field Data Collection Log Sheet

Staff Name: Steve Lemoine
Date: 9/8/15
Study Day: 50

Weather Past Week: Hot, Humid
Changes in Conditions:
Cycle:

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	~~5.81~~ 6.65	7.06	6.84	6.62	6.49	-52.0	100.9	65.5	-14.8	102.6	wet standing water	26.1
K	6.30	7.20	7.33	7.06	6.78	54.4	5.8	37.8	18.2	26.5		23.1
I	7.19	6.08	6.39	6.52	6.80	-174.6	-92.7	-192.6	-167.3	-186.7		23.4
H	7.30	6.46	6.89	6.69	7.05	-243.5	-250.4	-219.8	-238.1	-252.4		23.2
G	7.67	6.83	6.89	6.71	6.72	-240.8	-243.6	-61.8	-240.0	-243.6		21.0
B	5.23	4.99	4.99	5.03	4.92	125.9	151.0	153.2	142.9	136.3		24.3
J	4.75	4.78	4.84	4.97	4.84	184.7	133.8	120.9	120.2	111.9		24.1
F	5.19	5.52	5.52	5.47	5.47	-36.5	-120.8	-115.2	-150.1	-194.8		20.7
E	5.49	5.61	5.38	5.15	5.68	-159.8	-165.9	-175.5	-174.2	-173.5		20.1
D	5.12	5.51	5.54	5.51	5.52	-250.8	-176.5	-109.6	-179.6	-167.7		21.6
C	5.81	5.12	4.92	4.78	4.77	160.2	164.2	146.7	148.3	144.3		22.2

Quality Control Section

pH Pre- Check (7.0 buffer) 7.02
pH Check - Post Box 1 (7.0 buffer) 7.01
pH Check - Post Box 5 (7.0 buffer) 6.98

General Observations

BOX A Dry & cracked on surface, No water in Sump

Deep (6"-12") ORP

Field Data Collection Log Sheet

Staff Name: Steve Lemoine
Date: 9/8/15
Study Day: 80

Weather Past Week: Hot, Humid
Changes in Conditions:
Cycle:

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A						133.3	94.3	102.0	-15.2	97.3		21.9
K						51.7	65.3	46.0	57.5	49.7		25.6
I						-130.1	-77.1	-157.1	-250.6	-182.6		23.2
H						-167.7	~~146.3~~ -150.8		-187.5	-171.6		22.7
G						-145.6	-139.8	-73.0	-258.8	-186.5		21.2
B						150.8	160.2	175.8	175.8	162.8		24.0
J						160.1	136.1	123.0	120.5	117.8		23.8
F						-108.8	-136.0	-142.3	-160.5	-130.9		20.9
E						-170.1	-151.2	-64.7	-159.2	-201.4		22.1
D						-144.2	-181.1	-175.6	-99.7	-169.1		21.8
C						142.6	157.8	145.2	133.4	128.7		23.0

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Surface

5 1
4 3 2

Field Data Collection Log Sheet

Staff Name: S. Lemoine + J. spradlin
Date: 04/14/15
Study Day: 57

Weather Past Week: Wet 2.5 days, Dry/Hot 4.5 days
Changes in Conditions:
Cycle: start of 5

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.13	6.28	6.17	6.34	6.27	33.4	33.0	56.4	9.6	90.4	wet, standing water ~2"	17.6
K	6.77	6.53	6.93	6.64	6.76	14.2	22.6	12.1	36.0	20.1		18.9
I	6.89	7.19	6.84	7.23	7.10	-264.8	-221.8	-173.1	-174.8	-168.5		17.7
H	7.13	7.11	7.17	7.17	6.84	-200.2	-240.8	-162.1	-243.0	-25.26		15.7
G	7.26	6.96	6.94	7.09	7.14	-472.5	-330	-246.7	-306.5	-240.8		15.8
B	5.30	5.28	5.31	5.32	5.33	154.7	148.3	140.6	155.6	177.0		15.7
J	5.37	5.29	5.44	5.33	5.25	169.5	148.8	155.4	150.4	139.4		15.5
F	5.93	5.77	5.63	5.59	5.86	48 -93.7	-98.7	-15.7	-99.6	-113.8		16.2
E	5.83	5.25	5.23	5.45	5.51	-174.6	-175.6	-173.0	-185.6	-178.7		17.0
D	5.57	5.71	5.62	5.19	5.16	-118.2	-160.3	-157.8	-164.2	-181.7		15.6
C	5.93	5.39	5.37	5.17	5.12	171.1	168.3	165.2	181.6	194.1		16.0°C

Quality Control Section

pH Pre- Check (7.0 buffer) 7.00

pH Check - Post Box 1 (7.0 buffer) 7.07

pH Check - Post Box 5 (7.0 buffer) 7.02

General Observations

6"-12" Below Surface

5 1
4 3 2

Field Data Collection Log Sheet

Staff Name: S Lamoine & J Spradlin
Date: 9/14/15
Study Day: 57

Weather Past Week:
Changes in Conditions:
Cycle: start of 5

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A						43.6	70.6	33.2	-14.8	67.0		17.2
K						12.5	21.6	32.0	31.6	20.4		18.1
I						-143.1	-165.9	-168.5	-33.4	-354.2		16.8
H						-144.2	-208.1	-205.0	-228.6	-207.0		16.3
G						-204.5	-267.1	-174.0	-149.5	-213.5		15.7
B						167.1	146.5	146.2	183.4	152.0		15.4
J						153.1	132.5	134.8	147.2	137.3		18.0
F						-91.5	-102.6	-105.4	-74.8	-126.5		16.8
E						-163.3	-146.5	-147.5	-184.6	-184.4		17.1
D						-150.8	-159.8	-131.7	-386.2	-176.9		18.0
C						150.6	151.8	150.6	145.7	174.1		17.2

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Post Mixing

5 1
4 3 2

Field Data Collection Log Sheet

Staff Name: S. LeMoine
Date: 9/14/15
Study Day: 57

Weather Past Week:
Changes in Conditions:
Cycle: Start #5

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
5U A C						3.2	41.5	17.2	6.4	4.4		~~20~~ 21.8
K D						-126.1	-144.8	-157.8	-114.5	-153.3		20.3
F						-160.2	-157.1	-166.4	-160.2	-163.2		19.8
H F						-151.4	-135.4	-219.1	-155.3	-137.2		19.7
G J					161.0	~~-93.6~~	172.5	182.5	179.9	183.3		20.8
B												
J												
F												
E												
D												
C												

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Surface

5 1
4 3 2

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 9/21/15
Study Day: 63

Weather Past Week: Dry, cooler
Changes in Conditions:
Cycle: Mid Cycle 5

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.64	6.81	6.67	6.74	6.88	84.3	72.2	68.7	90.1	79.2	wet, Less standing	water 17.1
K	6.75	6.73	6.70	6.81	6.53	50.6	45.1	24.8	48.1	55.4	Dry, Less Moist	15.6
I	6.19	6.49	7.08	7.20	6.34	-141.8	-165.8	-41.8	~~-218.7~~ -216.2	-186.4	↓	15.3
H	6.69	6.88	7.04	6.99	7.03	-120.6	-366.5	-102.2	-205.5	-224.5		14.8
G	7.26	7.37	7.39	7.71	7.60	-193.3	38.7	81.8	15.7	-215.8	↓	14.4
B	4.57	4.87	4.68	4.59	4.91	237.4	251.2	237.1	241.8	231.6		14.7
J	5.14	4.97	5.20	5.18	5.09	151.2	142.9	148.4	152.3	146.7	wet, standing water	14.5
F	5.22	5.30	5.20	5.28	5.18	-450.2	-458.5	-426.7	-408.9	-422.6	↓	15.2
E	5.08	5.14	5.14	5.09	5.11	-151.3	-168.2	-162.4	-176.6	-164.4	↓	15.8
D	4.93	4.98	5.10	5.12	5.08	-76.1	-77.7	-130.1	-90.6	-161.1	wet, standing water	15.8
C	5.11	5.12	5.14	4.99	5.12	183.2	163.2	132.9	141.2	121.6	Wet, standing water	16.8

Quality Control Section

pH Pre- Check (7.0 buffer) 6.98
pH Check - Post Box 1 (7.0 buffer) 6.99
pH Check - Post Box 5 (7.0 buffer) 6.97

General Observations

6"-12" Below Surface

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 9/21/15
Study Day: 63

Weather Past Week: Dry, Cooler
Changes in Conditions:
Cycle: Mid Cycle 5

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A						194.2	95.2	88.4	106.4	101.2		
K						70.7	48.7	62.3	52.4	64.8		18.6
I						-445.6	-147.6	-116.8	-167.5	-120.8		16.9
H						-133.9	-119.6	-8.9	-149.7	-149.5		17.6
G						-169.8	-85.3	-62.0	-268.7	-199.8		17.4
B						214.5	213.6	184.0	192.3	215.8		18.7
J						143.3	149.2	168.5	158.7	138.3		17.8
F						-74.6	-167.7	-69.5	-361.4	-46.3		19.1
E						-165.9	-166.7	-174.4	-172.8	-168.4		16.8
D						-98.8	-114.8	-82.4	-83.9	-149.6		19.1
C						162.7	158.6	150.5	110.4	82.4		16.9

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Surface

5 1
4 2
3

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 9/28/15
Study Day: 71

Weather Past Week: Dry, Cooler
Changes in Conditions:
Cycle: Start of ~~7~~ 6

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.90	6.73	6.84	6.55	6.45	64.3	34.8	29.7	22.0	58.7	Dry	17.2
K	7.21	7.11	6.78	7.03	6.91	15.8 ~~-117.6~~	17.9 ~~-101.4~~	21.2 ~~-113.1~~	32.4 ~~-218.1~~	41.8 ~~-248.7~~ SC	Slight Standing water	16.9
I	5.59	6.05	5.38	5.31	5.75	-248.0	-251.6	-218.1	-164.5	-181.8	Slightly Moist	16.8
H	5.65	5.42	6.37	5.78	6.05	-189.2	-202.4	-164.5	-172.7	-161.1	Dry	16.8
G	5.75	7.50	6.02	5.85	5.95	-184.6	-176.8	-159.7	-202.7	-281.4	Moist	16.6
B	5.32	5.32	5.28	5.24	5.30	188.4	162.7	192.4	181.4	183.8	Dry	16.7
J	5.32	5.46	5.35	5.26	5.25	145.8	152.7	138.7	139.6	154.8	Slightly moist	16.9
F	5.40	5.49	5.43	5.34	5.53	-87.4	-101.2	-79.4	-116.4	-108.7	Dry	17.1
E	5.42	5.00	5.19	5.12	5.33	-189.3	-145.5	-124.4	-181.4	-192.4	Slight standing water	17.02
D	5.13	5.47	5.88	5.72	5.55	-131.8	-123.3	-164.3	-132.8	-181.2	Dry	-16.7
C	5.74	5.26	5.19	5.20	5.23	154.1	163.6	173.2	174.5	151.4	Standing Water	17.0

Quality Control Section

pH Pre- Check (7.0 buffer) 6.96

pH Check - Post Box 1 (7.0 buffer) 6.98

pH Check - Post Box 5 (7.0 buffer) 6.99

General Observations

6"-12" Below Surface

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 4/28/15
Study Day: 71

Weather Past Week: Dry, Cooler
Changes in Conditions:
Cycle: Start of 5th

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A						54.8	26.7	11.7	19.8	31.2		17.3
K						30.8	41.2	37.6	21.8	16.7		17.0
I						-117.6	-101.4	-113.1	-218.9	-248.7		17.2
H						-156.3	-189.2	-194.2	-113.2	-212.8		16.9
G						-149.4	-215.6	-257.1	-277.2	-301.8		16.6
B						167.1	151.4	150.2	161.1	180.7		16.9
J						149.1	138.7	113.6	151.1	139.6		16.9
F						-74.3	-81.2	-103.2	-64.9	-118.4		17.1
E						-140.8	-118.4	-154.2	-152.1	-162.8		16.7
D						-185.6	-50.2	-182.7	-164.2	-162.7		16.8
C						151.4	159.0	178.7	168.4	153.7		17.9

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Post Turn / Water Add.

5 1
4 3 2

Field Data Collection Log Sheet

Staff Name: S. LeMoine
Date: 9/25/15
Study Day: 71

Weather Past Week: Dry Cooler
Changes in Conditions:
Cycle: Start of 6

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A												
K						22.4	18.4	41.8	9.3	11.8		17.4
I						-122.2	-116.4	-109.6	-149.8	-140.3		16.4
H						-148.7	-151.2	-162.7	-129.3	-139.8		16.8
G						-202.8	-238.7	-222.8	-281.2	-198.7		16.7
B						141.2	129.2	138.7	151.2	118.7		16.8
J						119.8	137.9	109.3	161.1	122.8		~~17.0~~ 17.7
F						-101.2	-83.7	-78.4	-111.8	-92.3		17.3
E						-153.6	-119.4	-162.3	-118.7	-126.7		17.1
D						-178.4	-118.4	-162.7	-148.3	-181.2		17.2
C						153.8	172.8	138.7	159.3	182.7		17.1

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Surface

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 10/5/15
Study Day: 77

Weather Past Week: Wet, Cool
Changes in Conditions:
Cycle: Mid-6

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.53	6.53	6.57	6.48	6.51	19.4	21.6	36.8	59.8	37.4	wet, standing water	14.8
K	6.52	6.57	6.62	6.61	6.59	51.8	42.7	50.3	19.4	26.3		14.9
I	5.75	5.67	5.70	5.62	5.67	-164.8	-119.3	-148.7	-153.7	-199.2		15.1
H	5.23	5.61	5.40	5.27	5.33	-238.7	-241.8	-216.1	-198.7	-225.5		14.8
G	5.27	5.16	5.24	5.27	5.17	-228.8	-231.8	-225.8	-239.8	-216.8		15.3
B	5.72	5.80	5.83	5.90	5.92	162.4	148.3	153.6	123.6	140.0		15.1
J	5.54	5.62	5.70	5.37	5.50	169.7	145.8	179.7	131.6	129.3		14.3
F	5.50	5.42	5.51	5.28	5.67	-99.2	-56.7	-101.3	-117.8	-120.3		13.2
E	5.47	5.48	5.37	5.49	5.43	-149.7	-150.4	-166.3	-178.4	-189.1		14.6
D	5.23	5.50	5.49	5.42	5.67	-234.3	-169.7	-112.5	-211.3	-200.1		15.9
C	5.62	5.42	5.51	5.73	5.37	148.3	184.2	163.4	177.3	151.1		15.1

Quality Control Section

pH Pre- Check (7.0 buffer) 6.98
pH Check - Post Box 1 (7.0 buffer) 6.99
pH Check - Post Box 5 (7.0 buffer) 7.02

General Observations

ORP
6"-1' below Surface

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 10/5/15
Study Day: 77

Weather Past Week: Wet, cool
Changes in Conditions:
Cycle: Mid-6

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A						116.4	89.3	13.3	68.4	82.3		15.2
K						48.3	51.1	51.3	62.3	50.4		15.2
I						-182.3	-116.3	-97.3	-88.3	-101.1		15.2
H						-140.3	-166.1	-184.3	-119.8	-132.8		15.2
G						-151.6	-161.3	-204.8	-184.3	-148.6		15.1
B						192.7	158.3	166.7	129.8	177.1		14.2
J						179.8	153.8	118.9	112.7	116.7		14.0
F						-138.7	-128.4	-142.8	-122.7	-162.7		14.0
E						-177.4	-158.2	-191.2	-159.7	-162.4		14.9
D						-164.8	-177.4	-185.4	-192.4	-166.4		15.7
C						162.7	192.4	153.4	99.8	148.6		15.8

Quality Control Section

pH Pre- Check (7.0 buffer) ~~6.98~~ 6.98sc

pH Check - Post Box 1 (7.0 buffer)

pH Check - Post Box 5 (7.0 buffer)

General Observations

Surface

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 10/12/15
Study Day: 84

Weather Past Week: Dry Cooler, much cooler @ night
Changes in Conditions:
Cycle: End of 6

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.42	6.56	6.57	6.81	6.42	51.5	51.4	20.4	21.3	26.7	wet, 2" stand. water	8.6
K	6.44	6.78	7.24	6.87	6.92	48.6	63.2	73.8	64.2	74.3	wet, some stand. water	10.8
I	5.36	5.34	6.02	5.46	5.37	-103.1	-90.8	2.6	-149.1	-114.8		10.7
H	5.81	5.63	5.74	555	5.48	-113.4	-86.6	-142.7	-107.0	109.7		10.2
G	5.37	5.61	5.53	5.14	5.21	-132.2	-113.0	-21.8	-84.2	-427.4		9.9
B	5.79	5.67	5.44	5.15	5.39	212.7	191.1	199.0	201.3	187.9		9.7
J	5.62	5.62	5.77	5.34	5.26	163.3	158.2	174.6	153.7	152.6		9.2
F	5.69	5.38	5.17	5.23	5.14	-47.9	-11.3	-74.3	-77.1	-79.5		9.1
E	5.13	5.29	5.30	5.18	5.26	-54.4	-86.4	-46.7	-79.7	-58.3		8.3
D	5.70	5.67	5.40	5.51	5.72	-214.3	-100.6	-147.9	-82.3	-116.4		9.6
C	5.59	5.40	5.19	5.23	5.10	162.5	114.0	208.6	178.4	182.3		8.9

Quality Control Section

pH Pre- Check (7.0 buffer) 7.01

pH Check - Post Box 1 (7.0 buffer) 7.02

pH Check - Post Box 5 (7.0 buffer) 7.01

General Observations

6"-12" Below Surface

5	1
4	2
3	

Field Data Collection Log Sheet

Staff Name: S. Lemoine
Date: 10/12/15
Study Day: 84

Weather Past Week: Dry Cooler, much cooler @ night
Changes in Conditions:
Cycle: End of 6

Container	pH (five per box this week only)					Redox (ORP) (two field samples per box, one contingency)					Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A						45.7	23.7	62.7	44.1	19.2		10.9
K						50.2	51.2	59.7	32.4	65.0		11.6
I						-117.4	-96.0	-112.9	-82.4	-133.3		13.0
H						-132.0	-116.8	-138.2	-114.8	-106.5		12.8
G						-156.9	-157.9	-107.8	-116.8	-98.6		10.4
B						204.6	197.3	200.7	186.7	199.4		12.5
J						165.7	170.8	153.4	168.3	160.3		11.3
F						-94.3	-97.0	-106.6	-86.6	-91.2		11.9
E						-79.3	-82.4	-71.9	-52.1	-116.8		11.9
D						-81.2	-79.4	-103.6	-148.7	-162.7		13.1
C						162.5	190.1	184.6	164.4	167.2		14.3

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

Surface

Field Data Collection Log Sheet

Staff Name: S. Lemoine & L. Everett
Date: 11/10/15
Study Day: 30 Day Post-Study

Weather Past Week: Cool, Bins covered
Changes in Conditions: Cooler
Cycle: 30 Day Post-Study

Container	pH (two field samples per box, one contingency)			Redox (ORP) (two field samples per box, one contingency)			Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A	6.40	6.44	6.48	92.8	158.6	121.9	Wet some standing H2O	10.1
K	6.46	6.51	6.44	77.6	72.6			9.8
I	6.44	6.48	6.50	-149.7	-163.8	-167.8		9.9
H	5.29	5.30	5.28	-227.9	-230.8	-118.7		10.1
G	5.23	5.13	5.19	-281.6	-174.1	-138.0		10.2
B	5.58	5.64	5.63	206.8	185.4	236.2		10.1
J	5.71	5.74	5.80	173.5	170.3	164.5		9.6
F	5.25	5.23	5.32	-52.7	-129.4	-108.3		10.1
E	5.29	5.21	5.23	-152.5	-145.8	-164.9		9.5
D	5.22	5.34	5.28	-140.1	-130.5	-162.8		11.5
C	6.24	6.18	6.19	186.8	189.8	192.7		10.8

All Boxes covered

Quality Control Section

pH Pre- Check (7.0 buffer) 6.98
pH Check - Post Box 1 (7.0 buffer) 6.99
pH Check - Post Box 5 (7.0 buffer) 6.99

General Observations

6"-1' Below Surface

Field Data Collection Log Sheet

Staff Name: S. Lemoine & L. Everett
Date: 11/10/15
Study Day: 30 Day Post-Study

Weather Past Week: Cool, Bins covered
Changes in Conditions: Cooler
Cycle: 30 Day Post-Study

Container	pH (two field samples per box, one contingency)			Redox (ORP) (two field samples per box, one contingency)			Soil Moisture Content (visual assessment, all piles)	Soil Temperature (all piles)
A				116.8	94.7	116.9		
K				79.6	74.1	89.9		
I				-164.8	-184.3	-171.4		
H				-258.7	-216.4	-204.3		
G				-271.4	-259.3	-208.5		
B				119.8	184.7	274.1		
J				119.4	164.6	152.8		
F				-69.8	-51.4	-116.4		
E				-162.4	-174.6	-164.3		
D				-148.6	-151.1	-132.3		
C				192.4	116.4	182.3		

Quality Control Section

pH Pre- Check (7.0 buffer) _____

pH Check - Post Box 1 (7.0 buffer) _____

pH Check - Post Box 5 (7.0 buffer) _____

General Observations

_____

_____

_____

_____

ATTACHMENTS

Attachment 1

Soil Erosion and Sediment Control Plan approved by Morris County Soil Conservation District

ARCADIS U.S., Inc.
640 Freedom Road Business
Center Suite 310
King of Prussia
Pennsylvania 19406
Tel 484 688 0378
www.arcadis-us.com

ENVIRONMENT

Joseph Dunn
Roxbury Inspector
Morris County Soil Conservation District
30 Schuyler Place
Morristown, NJ 07960

Subject:
Application for Soil Erosion and Sediment Control Certification
Hercules Incorporated – Former Kenvil Works Facility
Roxbury Township, Morris County, New Jersey

Date:
May 27, 2015

Contact:
James McLaughlin

Phone:
484.688.0378

Email:
james.mclaughlin@arcadis-us.com

Our ref:
NJ007000.NJ70

Dear Mr. Dunn:

On behalf of Hercules Incorporated (Hercules), a wholly-owned subsidiary of Ashland Incorporated, ARCADIS U.S., Inc, (ARCADIS) has prepared the enclosed application for a Soil Erosion and Sediment Control Plan (SESCP) Certification for the Kenvil Works Facility (the Facility) located in Kenvil[1], Morris County, New Jersey. This SESCP application addresses a bioremediation pilot study (pilot study) associated with a former manufacturing area (project area) of the Facility. These activities will result in soil surface disturbances that require compliance with New Jersey Administrative Code 2:90 - Standards for Soil Erosion and Sediment Control in New Jersey.

This letter provides an overview of the Facility and proposed pilot study activities, and presents the soil erosion and sediment control measures proposed to address disturbances. The following items supplement the information provided in this letter and are included as part of this application for SESCP Certification:

- Completed SESCP application and application fees (ARCADIS check no. 162366, in the amount of $1,100, calculated using the proposed disturbance of approximately 1.5 acres of Category D land).

[1] Kenvil is an unincorporated community within Roxbury Township

- Ownership Disclosure Affidavit
- SESCP drawings (1 x set of 4 figures; Figure 1 through 4)

BACKGROUND

The Facility occupies 1,200 acres along Howard Boulevard, about 0.5 miles northwest of the center of Kenvil, Morris County, New Jersey (Figure 1). Pilot study activities will occupy a small area (approximately 65,678 square feet [1.5 acres]) within Block 6701, Lot 1 in Roxbury Township.

Approximately 800 acres of the Facility supported former manufacturing operations. The remaining 400 acres are undeveloped areas between process units and around the perimeter of the Facility; these undeveloped areas acted as buffers between the former active portions of the Facility and the surrounding community. The project area is located in the southwest corner of the Facility and includes a work area, three material source areas, and access routes between them for the transport of materials. This area represents one of the earliest developed portions of the Facility with manufacturing operations beginning operation in 1871. During this long operational history site related materials inadvertently escaped the manufacturing buildings and require remediation. As part of this study bioremediation is being evaluated as a possible remedial option and will be tested at the pilot scale. . Figure 2 provides a Site Plan of the project area that includes current site features and discusses the general scope of work (i.e. vegetation clearing, excavation, soil separation, soil segregation, and soil stockpiling). The results of pilot study activities addressed in this SESCP application will inform future remedial efforts within this area.

BIOREMEDIATION PILOT STUDY ACTIVITIES

Pilot study activities include the following:

- Vegetation clearing and grubbing, and surface cover improvements within work area (Figure 2)

- Soil excavation from the source areas

- Soil processing and stockpiling for the pilot study within the work area.

Pilot study activities will be conducted within upland areas throughout the project area (Figure 2). Vegetation clearing is anticipated to be minimal and limited predominantly to herbaceous grasses, and occasional shrubs and saplings. No trees will be removed as a part of vegetation clearing activities. Vegetation clearing will be minimized wherever possible.

To minimize disturbances, existing paved and gravel roadways will be used for worker access within the project area. In absence of paved roadways to the excavation areas, areas will be accessed using a front-end loader with pneumatic tires. Unimproved roadways capable of supporting heavy equipment exist throughout the work area and will be used whenever possible. The number of trips between the work area and excavation areas will be minimized. Temporary disturbance to vegetation will be minimal, with no long term affects expected.

A flat work surface will be constructed to support soil separation equipment and heavy machinery, as well as soil stockpiling for the duration of the pilot study. The ground surface will be graded and covered with a non-woven geotextile fabric. Approximately six inches of sand and one foot of stone (3/4 inch, clean) will be placed over the geotextile to provide a stable working surface. The work surface will be permeable allowing precipitation to drain and thus not create any stormwater runoff. Figure 3 presents the location of the work area and Figure 4 presents details of the work area surface.

Soil will be excavated to depths up to 3 feet below ground surface (bgs) using a front end loader from discrete locations. Excavated soil (approximately 150 cubic yards [cy]) will be transported via front-end loader to the work area and stockpiled. Stockpiled soil will be screened in the work area to remove material greater than 2 inches. The <2 inch fraction will remain stockpiled in the work area, while the oversized material will be returned to the excavations. Stockpiled material will be covered with plastic tarps when not in use.

A pilot-scale physical soil separation plant will be used to generate bioremediation feed material needed to support the pilot study. The soil separation process will use a closed loop water system that contains approximately 4,000 gallons of water. Following soil separation, process water will be contained in tanks onsite and used as a source of irrigation water to maintain the bioremediation test piles at an appropriate moisture level for optimal biodegradation to occur. .

The pilot study will consist of 11 soil treatments which will each consist of an 8 cy soil pile. Each pile will be placed in its own 11 cy steel, open-top, roll-off container. The roll-off containers effectively segregate the soil from the work area surface and contain any runoff. Soil and water in each roll off box will be contained during the duration of the study.

The pilot test will be terminated at the end of a 12 week treatment. Pile monitoring will continue at 30, 60, and 120 days beyond the end of the treatment period to evaluate degradation progress of residuals without pile management. Following the completion of bioremediation activities, treated soils that have constituent concentrations less than New Jersey Department of Environmental Protection's (NJDEP's) Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) and Impact to Groundwater Soil Remediation Standards (IGWSRS) will be returned to the excavation areas and compacted in 2-foot lifts. Soil that has constituent concentrations greater than NRDCSRS or IGWSRS will remain in the work area and undergo additional treatment to facilitate reuse. Excess stockpiled material may remain covered within the work area for the duration of the study to support additional testing in 2016.

At the conclusion of the study, the equipment will be demobilized and/or stored in structures onsite. Ground surface improvements in the work area will remain in place to support future pilot test activities.

SOIL EROSION AND SEDIMENT CONTROL MEASURES

The proposed SESC measures within the project area and soil excavation areas are presented on Figure 3. To mitigate potential for soil erosion and transport, silt fence with wattles and/or strawbales/haybales will be placed around the work area and each excavation. After the pilot study is completed, each source area will be backfilled with the treated material. All disturbed areas will be seeded and mulched at the conclusion of the bioremediation activities.

Figure 3 presents the SESCP and notes for the project area. Soil erosion and sediment control concerns identified for this project will be addressed by the following measures:

- The weather conditions will be monitored on a daily basis. Construction activities will be planned and sequenced to avoid disturbing soil when significant rainfall is occurring or is imminent.

- The soil excavation areas have mild-medium slopes, and the work area is flat, with minimal or no elevation change. Primary sources of hydrology to the project area are precipitation, and surface flow from adjacent upland areas. No stormwater drainage inlets are present within the project area.

- Soil erosion from the work area and each excavation area will be controlled by wattles and/or silt fence and straw bales placed around each area as shown in Figure 3. The details of the control measures to be used on the project are presented on the SESCP drawings (Figure 4).

- Additional wattles/and or silt fence will be placed around any material piles not contained in a roll-off container for the duration of the pilot study.

- Care will be taken to ensure all soil remains within each container during turning and watering that will occur at regular intervals.

- Roll-off containers will be de-watered after heavy rain events using a submersible pump. Any reclaimed water will be returned to the process water tank for use as irrigation water.

- Soil erosion and sediment control measures will be inspected on a routine basis. Required maintenance that results from these routine inspections will be performed as soon as practical. Perimeter controls (wattles, strawbales/haybales, silt fence, etc.) will be maintained for the entire duration of the bioremediation activities.

SCHEDULE AND CONSTRUCTION SEQUENCE

Contingent upon receiving applicable permits required to conduct the field work, ARCADIS intends to initiate mobilization and implementation of the proposed work on June 15, 2015. ARCADIS will notify Morris County Soil Conservation District 72-hours prior to initiation of land disturbances. The proposed sequence of activities is as follows:

1. Mobilize equipment to Facility and install wattles/silt fence around the work area as shown on Figure 3
2. Clear vegetation
3. Work surface construction (i.e., grading, geotextile fabric installation, stone cover) in the work area

4. Source area excavation and initial size screening
5. Soil separation and segregation
6. Soil stockpiling in roll-off containers for the duration of the pilot test
7. Return soils to source areas
8. Site cleanup and demobilization.

These activities will occur between June 1 and October 30, 2015. Should additional bioremediation testing be necessary, material may remain in the field on the work surface through spring and summer of 2016. SESC measures will be maintained until the study materials and equipment are demobilized from the work area.

Adverse weather has the potential to impact this schedule. Should these conditions occur, the Morris County Soil Conservation District will be notified of the delays and will be provided a revised anticipated completion date. Any soil erosion and sediment control installed during the above-listed activities will remain in-place until the proposed pilot study activities have been completed.

Please review the enclosed application and support documents. If you have any questions or require clarification of the information included with this submission, please contact me at (484) 688-0378.

Sincerely,

ARCADIS U.S., Inc.

James McLaughlin
Project Manager

Copies:
Ed Meeks – Hercules Incorporated
Mark Foley, WSP Group
Scott Larew – Kennedy/Jenks Consultants
Suzy Weber – ARCADIS U.S., Inc.
Mitch Wacksman – ARCADIS U.S., Inc.

162366

ARCADIS

630 Plaza Drive, Suite 600 • Highlands Ranch, Colorado 80129
Tel 720/344-3500 • Fax 720/344-3535

Bank of America, N.A.
70-2328/719 IL

CHECK DATE

May 22, 2015

PAY One Thousand One Hundred and 00/100

AMOUNT

$1,100.00

TO MORRIS COUNTY SOIL CONSERVATION DISTRICT
30 SCHUYLER PLACE
MORRISTOWN, NJ 07960

ARCADIS

MP

VOID AFTER 90 DAYS

Security Check features included. Details on back.

⑈162366⑈ ⑆071923284⑆ 876503044 2⑈

ARCADIS

630 Plaza Drive, Suite 600 • Highlands Ranch, Colorado 80129 Tel 720/344-3500 • Fax 720/344-3535

EMILY BUSINESS FORMS 800.392.6018 VISION

162366

Check Date: 5/22/2015

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
05222015	5/22/2015	2059263	$1,100.00			$1,100.00
MORRIS COUNTY SOIL CONSERVATION		TOTAL	$1,100.00			$1,100.00
204 - AP DISB (CHECKS) - 3		0045399				

APPENDIX A2

REQUIREMENTS, GUIDELINES AND PROCEDURES FOR
PREPARING AND IMPLEMENTING "STANDARDS FOR SOIL EROSION AND
SEDIMENT CONTROL IN NEW JERSEY"

An application for certification of a soil erosion and sediment control plan shall include the following items.

1. One copy of the complete subdivision, site plan or construction permit application, including key map as submitted to the municipality (Architectural drawings and building plans and specifications not required.) which includes the following:
   a. Location of present and proposed drains and culverts with their discharge capacities and velocities and support computations and identification of conditions below outlets.
   b. Delineation of any area subject to flooding from the 100-year storm in compliance with the Flood Plains Act (NJSA 58:16A) or applicable municipal zoning.
   c. Delineating of streams, wetlands, pursuant to NJSA 13:9B and other significant natural features within the project area.
   d. Soils and other natural resource information used. (Delineation of the project site on soil map is desirable utilizing the USDA Web Soil Survey.)
   e. Land cover and use of area adjacent to the land disturbance.
   f. All hydraulic and hydrologic data, describing existing and proposed watershed conditions and HEC HMS, HEC RAS, TR-55 and similar models, and other electronic input files, if used, of existing and proposed conditions and a completed copy of the Hydraulic and Hydrologic Data Base Summary Form, SSCC 251 HDF1.

2. Up to four copies of the soil erosion and sediment control plan* at the same scale as the site plan submitted to the municipality or other land use approval agency to include the following: (This information shall be detailed on the plat)
   a. Proposed sequence of development including duration of each phase in the sequence.
   b. Site grading plan showing delineation of land areas to be disturbed including proposed cut and fill areas together with existing and proposed profiles of these areas (an interim grading-erosion control plan may be required for large sites with extensive cuts and fills).
   c. Contours at a two foot (or smaller) interval, showing present and proposed ground elevation.
   d. Locations of all streams and existing and proposed drains and culverts.
   e. Stability analysis of areas below all points of stormwater discharge which demonstrates a stable condition will exist or there will be no degradation of the existing condition.
   f. Location and detail of all proposed erosion and sediment control structures including profiles, cross sections, appropriate notes, and supporting computations.
   g. Location and detail of all proposed nonstructural methods of soil stabilization including types and rates of lime, fertilizer, seed, and mulch to be applied.
   h. Control measures for non-growing season stabilization of exposed areas where the establishment of vegetation is planned as the final control measure.
   i. For residential development - control measures to apply to dwelling construction on individual lots and notation that such control measures shall apply to subsequent owners if title is conveyed. This notation shall be shown on the final plat.
   j. Plans with a notation for maintenance of permanent soil erosion and sediment control measures and facilities during and after construction, also indicating who shall have responsibility for such maintenance.

Appropriate fees. (As adopted by the individual district.)

Additional items as may be required.

*Individual districts may require modifications in the above list.

New Jersey Natural Resources Conservation Program

For District Use Only

APPLICATION FOR SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION

The enclosed soil erosion and sediment control plan and supporting information are submitted for certification pursuant to the Soil Erosion and Sediment Control Act, Chapter 251, P.L. 1975 as amended (NJSA 4:24-39 et. seq.) An application for certification of a soil erosion and sediment control plan shall include the items listed on the reverse side of this form.

Name of Project: Kenvil Works Facility		Project Location: Municipality: Kenvil, Township of Roxbury	
Project Street Address: 100 Howard Boulevard		Block: 6701	Lot: 1
Project Owner(s) Name: Hercules Incorporated c/o Ed Meeks		Email: edmeeks@ashland.com	Phone #: 302-995-3433 Fax #:
Project Owner(s) Street Address (No P.O. Box Numbers): 500 Hercules Road, Building 8139/7		City: Wilmington	State: DE Zip: 19808
Total Area of Project (Acres)	Total Area or Land to be Disturbed (Acres): 1.1	No. Dwelling or other Units: NA	Fee: $ 1,100
Plans Prepared by*: Gary M. Wroblewski, P.E.			Phone #: 609.860.0590 Fax #: 609.860.0491
Street Address: 8 South River Road		City: Cranbury	State: NJ Zip: 08512

*(Engineering related items of the Soil Erosion and Sediment Control Plan **MUST** be prepared by or under the direction of and be sealed by a Professional Engineer or Architect licensed in the State of New Jersey, in accordance with NJAC 13:27-6.1 et. seq.)

Agent Responsible During Construction: ARCADIS U.S., Inc.			Email:
Street Address: 8 South River Road			
City: Cranbury	State: NJ	Zip: 08512	Phone: 609.860.0590 Fax #: 609.860.0491

The applicant hereby certifies that all soil erosion and sediment control measures are designed in accordance with current **Standards for Soil Erosion and Sediment Control In New Jersey** and will be installed in accordance with those Standards and the plan as approved by the Soil Conservation District and agrees as follows:

1. To notify the District in writing at least 48 hours in advance of any land disturbance activity. Failure to provide such notification may result in additional inspection fees.
2. To notify the District upon completion of the Project (Note: No certificate of occupancy can be granted until a report of compliance is issued by the District.
3. To maintain a copy of the certified plan on the project site during construction.
4. To allow District agents to go upon project lands for inspection.
5. That any conveyance of this project or portion thereof prior to its completion will transfer full responsibility for compliance with the certified plan to any subsequent owners.
6. To comply with all terms and conditions of this application and certified plan including payment of all fees prescribed by the district fee schedule hereby incorporated by reference.

The applicant hereby acknowledges that structural measures contained in the Soil Erosion and Sediment Control Plan are reviewed for adequacy to reduce offsite soil erosion and sedimentation and not for adequacy of structural design. The applicant shall retain full responsibility for any damages which may result from any construction activity notwithstanding district certification of the subject soil erosion and sediment control plan. It is understood that approval of the plan submitted with this application shall be valid only for the duration of the initial project approval granted by the municipality. All municipal renewals of this project will require submission and approval by the district. In no case shall the approval extend beyond three and one half years at which time resubmission and certification will be required. Soil Erosion and Sediment Control Plan certification is limited to the controls specified in the plan. It is not authorization to engage in the proposed land use unless such use has been previously approved by the municipality or other controlling agency. It is further understood that all documents, site plans, design reports etc. submitted to the district shall be made available to the public (upon request) pursuant to the Open Public Records Act, N.J.S.A. 47:1A-1 et seq.

1. Applicant Certification* Signature: [signature] Date: 5/27/15 Applicant Name (Print) Edward D Meeks	3. Plan determined complete: Signature of District Official: _____ Date: _____
2. Receipt of fee, plan and supporting documents is hereby acknowledged: Signature of District Official: _____ Date: _____	4. Plan certified, denied or other actions noted above. Special Remarks: Signature of District Official: _____ Date: _____

***If other than project owner, written authorization of owner must be attached.**

SSCC251 AP10 1/2014

SOIL CONSERVATION DISTRICT
ADDENDUM TO APPLICATION

APPLICATION BY CORPORATION, PARTNERSHIP OR ORGANIZATION

OWNERSHIP DISCLOSURE AFFIDAVIT

Soil Conservation District requests that all applicants submit a complete list of ownership for purposes of determining conflicts of interest between the applicant and the board of members or their professionals. Attach Rider if necessary.

Disclosure of owners of organization and property subject to application. Any organization making an application for development under this act shall list the names and addresses of all members, stockholders, or individual partners (collectively, "interest holders"), including any other organization holding at least a 10% ownership interest in the organization, and shall also identify the owner of the property subject to the application, including any organization holding at least a 10% ownership interest in the property.

Listing of names and addresses of interest holders of applicant and owner organization.
If an organization owns an interest equivalent to 10% or more of another organization , subject to the disclosure requirements hereinabove described, that organization shall list the names and addresses of its interest holders holding 10% or greater interest in the organization.

Disclosure of all officers and trustees of a non-profit organization. A non -profit organization filing an application of development under this act shall list the names and addresses of all officers and trustees of the non-profit organization.

This disclosure requirement is continuing during the Certification period and transfer of ownership of more than 10% must be disclosed.

Organization or non-profit organization failing to disclose: fine. Any organization or non-profit organization failing to disclose in accordance with this act shall be subject to a fine of $1,000 to $10,000, which shall be recoverable in the name of the municipality in any court of record in the State in a summary manner pursuant to the "Penalty Enforcement Law" (N.J.S.A. 2A:58-1 et seq.)

Name and Address of Applicant:

Hercules Incorporated
500 Hercules Road, Building 8139/7
Wilmington, DE 19808

(If Corporation, Name and Address of Registered Agent and Officers, Trustees):

Stockholders / Members / Partners:

I certify that the above statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

Beth S DiMeo
BETH S. DIMEO
NOTARY PUBLIC
STATE OF DELAWARE
My commission expires Oct. 31, 2016

Date

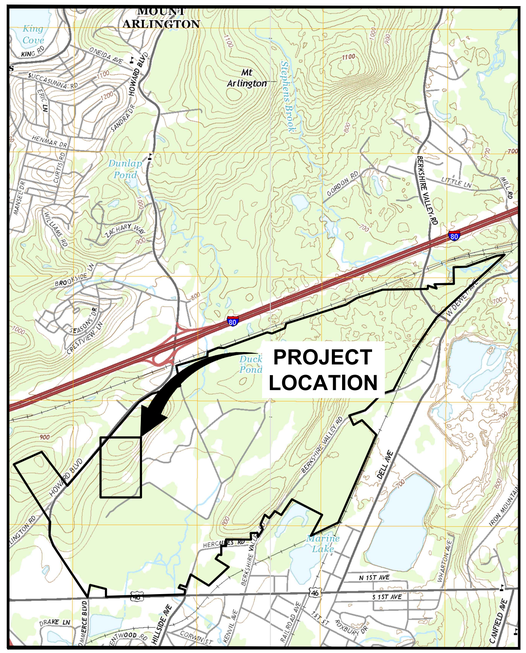
Edward D Meeks
Remediation Project Manager
Print Name of Authorized Signatory & Title

Authorized Signature

CONTRACT DRAWINGS

APPLICATION FOR SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION

TNT RESIDUAL
SOIL BIOREMEDIATION PILOT STUDY



REFERENCE: BASE MAP USGS 7.5 MINUTE QUADRANGLE., STANHOPE, NEW JERSEY & DOVER, NJ 2014

LOCATION MAP

0 2000' 4000'

GRAPHIC SCALE

NEW JERSEY

DATE ISSUED / DATE REVISED

MAY 2015

KENVIL WORKS FACILITY
MORRIS COUNTY, NEW JERSEY

ARCADIS

ARCADIS U.S., INC.

GARY M. WROBLEWSKI, P.E.
N.J. PROFESSIONAL ENGINEER LIC. NO. 24GE04007400

INDEX TO DRAWINGS

1 COVER SHEET/SITE LOCATION MAP
2 SITE PLAN AND SCOPE OF WORK
3 SOIL EROSION AND SEDIMENT CONTROL PLAN
4 CONSTRUCTION/EROSION AND SEDIMENT CONTROL PLAN DETAILS

CITY: CRANBURY-NJ DIV/GROUP: ENVCAD DB: T.FATTO LD: T.FATTO PIC: PM: E.HAGGERTY TM: E.MEYER LYR: ON OFF REF
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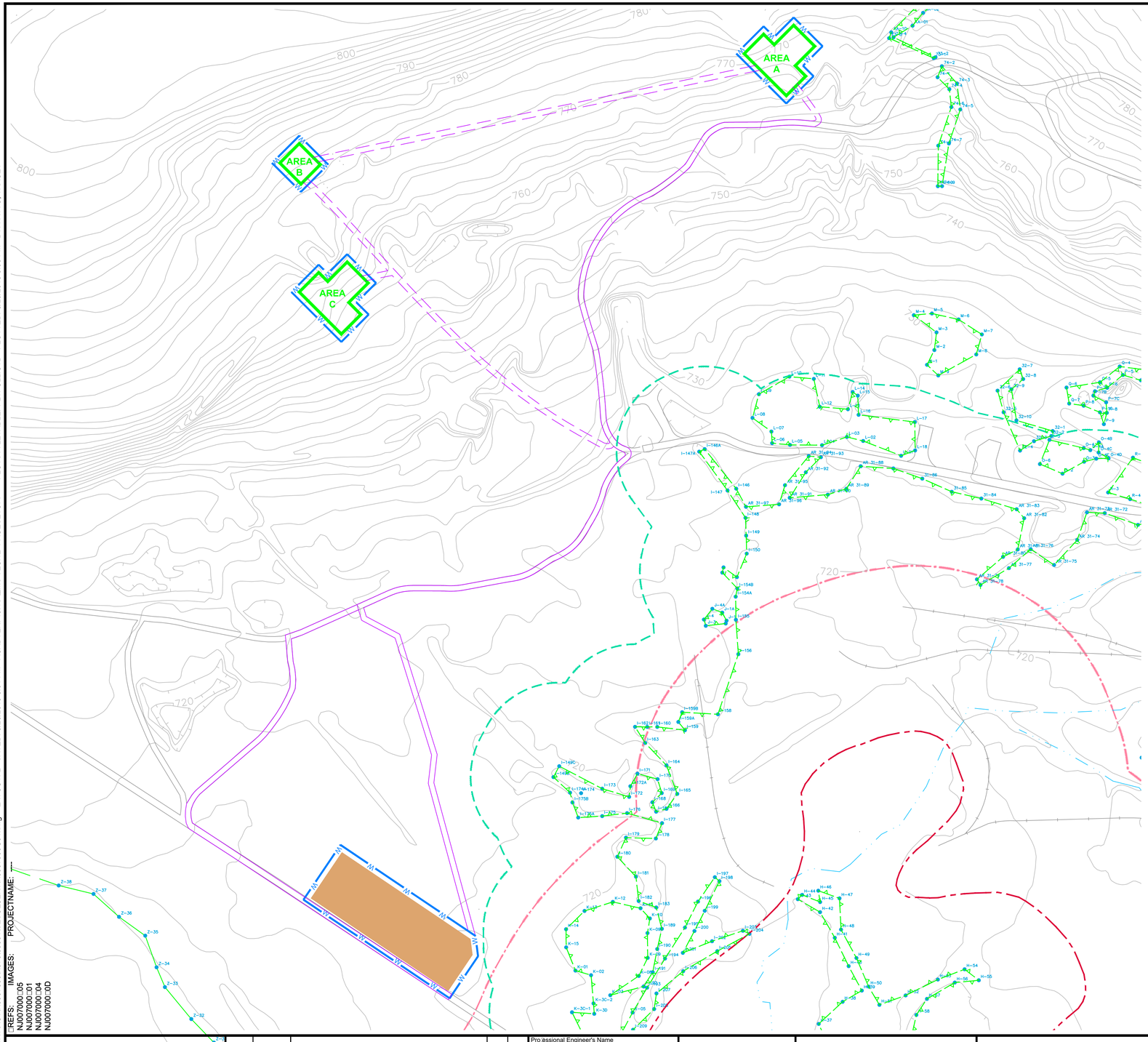

LEGEND:

- PROPERTY BOUNDARY
- TOPOGRAPHIC CONTOURS
- PAVED ROAD
- UNPAVED ROAD
- RAILROAD
- ACCESS ROUTES WITHIN EXISTING ROADWAY
- TEMPORARY ACCESS ROUTES
- POTENTIAL BOG TURTLE HABITAT
- BOG TURTLE CONSERVATION ZONE
- WETLAND BOUNDARY
- 150-FOOT WETLAND TRANSITION AREA
- WETLAND FLAG LOCATION
- EXCAVATION/MATERIAL SOURCE AREAS
- WORK AREA (STAGING/LAYDOWN)
- WATTLES AND/OR SILT FENCE AND STRAW BALE

NOTES:

1. PROPOSED SCOPE OF WORK INCLUDES TNT RESIDUAL SOIL BIOREMEDIATION PILOT STUDY ACTIVITIES. VEGETATION CLEARING TEMPORARY EXCAVATIONS, SOIL SEPARATION, AND STOCKPILING WILL BE CONDUCTED AS PART OF THE ACTIVITIES.
2. ALL SOIL-RELATED WORK WILL BE CONDUCTED IN ACCORDANCE WITH THE N.J.A.C. 2:90 STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY. EVERY EFFORT SHALL BE MADE TO PREVENT EROSION OR SPREADING OF DISTURBED MATERIAL. SOIL DISTURBANCE ACTIVITIES WILL BE AVOIDED DURING SIGNIFICANT RAINSTORM.
3. SURFACE COVER THROUGHOUT PROJECT AREA IS PREDOMINANTLY HERBACEOUS. NO TREES WILL BE DISTURBED AS PART OF THE VEGETATION CLEARING ACTIVITIES WITHIN THE SOURCE AREAS, TEMPORARY ACCESS ROUTES LOCATED OUTSIDE OF THE EXISTING PAVED ROADWAYS, AND WORK AREA. VEGETATION CLEARING WILL ONLY BE REQUIRED IN THE STAGING/LAYDOWN AREA.
4. TOTAL TEMPORARY DISTURBANCES WITHIN THE PROJECT AREA ARE APPROXIMATELY 50,000 SQ. FT./1.1 ACRE.
5. WETLAND BOUNDARIES WERE DELINEATED IN 2011 AND VERIFIED ON JANUARY 2. 2015 BY ARCADIS STAFF TRAINED IN WETLAND DELINEATION CONSISTENT WITH DEFINITIONS PROVIDED AT 33 CFR 328.3(A)(1-8), THE 1987/89 WETLAND MANUALS, AND THE 2012 REGIONAL SUPPLEMENT.
6. COORDINATE SYSTEM IS NEW JERSEY STATE PLAN NAD 83 (FEET).
7. WETLANDS DELINEATED WITHIN THE PROJECT AREA MEET THE DEFINITION OF EXCEPTIONAL RESOURCE VALUE WETLANDS, REQUIRING A 150-FOOT TRANSITION AREA.
8. JURISDICTIONAL BOUNDARIES SHALL BE CONSIDERED DRAFT UNTIL REVIEW AND APPROVAL BY NJDEP.

SOURCE:

BASEMAP INFORMATION FROM ELECTRONIC FILES PROVIDED BY ASHLAND, INC., TITLED: SITE PLAN.DWG AND TOPO.DWG

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NJ007000□01
NJ007000□04
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0 100' 200'
GRAPHIC SCALE

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	B□	C□d

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Pro□essional Engineer's Name: **Gary M. Wroblewski, P.E.**
Pro□essional Engineer's No.: 24GE04007400
State: New Jerse□ | Date Signed: | Pro□ect Mgr.: JM
Designed □□ □□□ | Drawn □□ TLF | Chec□ed □□ □□□

ARCADIS

ARCADIS U.S., INC.
NEW JERSEY ENGINEERING CERTIFICATE OF AUTHORI□ATION NUMBER 24GA27939600

KENVIL WORKS FACILTY ● MORRIS COUNTY, NEW JERSEY
APPLICATION FOR SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION

SITE PLAN AND SCOPE OF WORK

-

ARCADIS Pro□ect No.
NJ00700.NJ00.00001

Date Iss□ed / Date Revised
MAY 2015

ARCADIS
□SOUTH RIVER ROAD
CRANBURY, NEW JERSEY
TEL. 609.□60.0590

2

CITY: CRANBURY-NJ DIV/GROUP: ENVCAD DB: T.FATTO LD: T.FATTO PIC: PM:J.McLAUGHLIN TM: LYR:ON□□OFF□REF□
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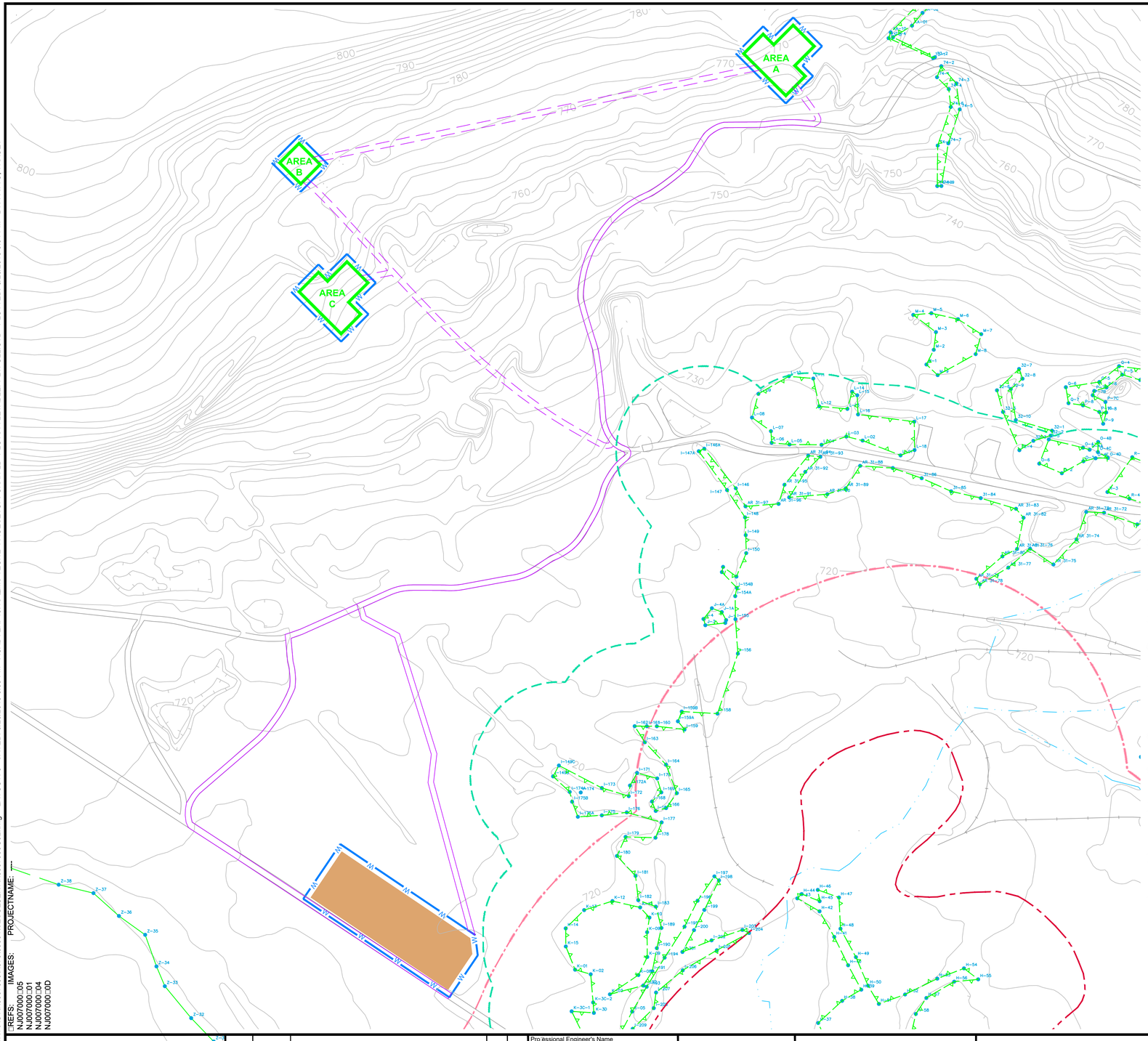
NJ007000□0D



LEGEND:

- PROPERTY BOUNDARY
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- EXCAVATION/MATERIAL SOURCE AREAS
- WORK AREA (STAGING/LAYDOWN)
- WATTLES AND/OR SILT FENCE AND STRAW BALE (W)

SOIL EROSION AND SEDIMENT CONTROL NOTES:

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE N.J.A.C. 2:20 STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. AT LEAST 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING, SHALL BE GIVEN TO THE MORRIS COUNTY SOIL CONSERVATION DISTRICT AND A PRE–CONSTRUCTION MEETING SCHEDULED.
2. ALL DISTURBED AREAS WILL BE SEEDED AND MULCHED AT THE CONCLUSION OF PILOT STUDY ACTIVITIES.
3. PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. TNT CONCENTRATIONS IN SOIL IN PORTIONS OF THE PROJECT AREA PRECLUDE VEGETATIVE GROWTH.
4. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, CRITICAL AREAS (STEEP SLOPES, SANDY SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL BE SEEDED.
5. PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE "STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER".
6. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SO THAT STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE PROJECT AND WILL BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT. MAINTENANCE/REPAIRS TO DAMAGED OR MALFUNCTIONING CONTROLS SHALL BE PERFORMED IMMEDIATELY UPON DISCOVERY. ENGINEER SHALL INSPECT AND APPROVE OF MAINTENANCE/REPAIRS PRIOR TO RESUMING WORK.
8. EXCAVATED SOIL WILL BE TEMPORARILY RELOCATED TO THE WORK AREA FOR SOIL SEPARATION AND STOCKPILING. SOILS WILL BE BACKFILLED INTO SOURCE AREA AFTER COMPLETION OF PILOT STUDY.
9. A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARTHEN ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL AND CHART FOR DIMENSIONS.
10. PAVED ROADWAYS WILL BE KEPT CLEAN.
11. DEWATERING ACTIVITIES WILL BE CONDUCTED AS PART OF THE SOIL SEPARATION ACTIVITIES WITHIN THE WORK AREA. DEWATERING WILL OCCUR IN CONTAINMENT STRUCTURES. WATER REMOVED DUE TO DEWATERING ACTIVITIES WILL BE CONTAINERIZED IN PROCESS WATER TANKS FOR USE AS IRRIGATION WATER.
12. NO SEDIMENT BASINS ARE PRESENT AT THE SITE.
13. SOIL STOCKPILES WILL BE COVERED WITH TARPS AND SUPPLEMENTAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AROUND THE PERIMETER OF SOIL STOCKPILES WITHIN THE WORK AREA TO PREVENT MIGRATION OF SEDIMENT.
14. LOCATION OF STABILIZED CONSTRUCTION ENTRANCES, ACCESS ROADS, AND WORK AREA, MAY BE MODIFIED AS NECESSARY AND WITH PRIOR APPROVAL BY THE ENGINEER, TO FACILITATE EXCAVATION AND STOCKPILING ACTIVITIES.

NOTES:

1. PROPOSED SCOPE OF WORK INCLUDES VEGETATION CLEARING, TEMPORARY EXCAVATIONS, SOIL SEPARATION, AND STOCKPILING.
2. ALL SOIL–RELATED WORK WILL BE CONDUCTED IN ACCORDANCE WITH THE N.J.A.C. 2:90 STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY. EVERY EFFORT SHALL BE MADE TO PREVENT EROSION OR SPREADING OF DISTURBED MATERIAL. SOIL DISTURBANCE ACTIVITIES WILL BE AVOIDED DURING SIGNIFICANT RAINSTORM.
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SOURCE:

BASEMAP INFORMATION FROM ELECTRONIC FILES PROVIDED BY ASHLAND, INC., TITLED: SITE PLAN.DWG AND TOPO.DWG

0 100' 200'
GRAPHIC SCALE

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No.	Date	Revisions	B□	C□d

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Pro□essional Engineer's Name: **Gary M. Wroblewski, P.E.**
Pro□essional Engineer's No.: 24GE04007400

State	Date Signed	Pro□ect Mgr.
New Jerse□		JM
Designed □□	Drawn □□	Chec□ed □□
□□□	TLF	□□□

ARCADIS

ARCADIS U.S., INC.
NEW JERSEY ENGINEERING CERTIFICATE OF AUTHORI□ATION NUMBER 24GA27939600

KENVIL WORKS FACILTY ● MORRIS COUNTY, NEW JERSEY

APPLICATION FOR SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION

SOIL EROSION AND SEDIMENT CONTROL PLAN

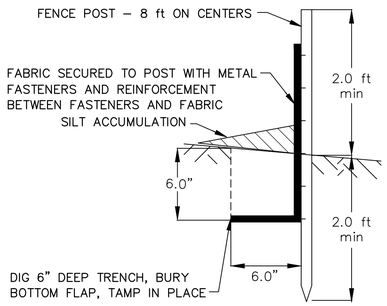
-

ARCADIS Pro□ect No.
NJ00700.NJ00.00001

Date Iss□ed / Date Revised
MAY 2015

ARCADIS
□SOUTH RIVER ROAD
CRANBURY, NEW JERSEY
TEL. 609.□60.0590

3

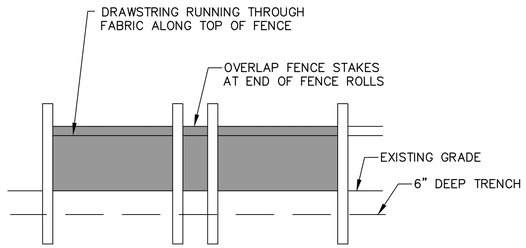


NOTES:

1. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE SILT FENCE.
2. THE SILT FENCE WILL REMAIN IN PLACE UNTIL RESTORATION IS COMPLETE AND VEGETATION HAS BEEN ESTABLISHED.
3. SILT FENCE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

SILT FENCE DETAIL 1

NOT TO SCALE



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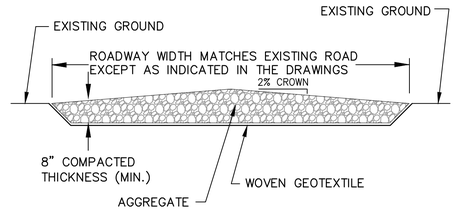
SILT FENCE DETAIL 2

NOT TO SCALE



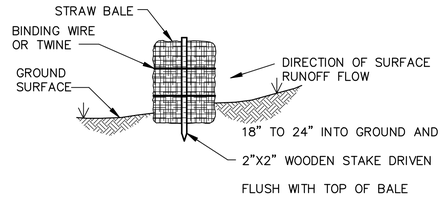
PROFILE

CONSTRUCTION SPECIFICATIONS:

1. WIDTH: CONSTRUCTED ROADWAY WIDTH EQUALS THE EXISTING GRAVEL ROADWAY.
2. SUBBASE: COMPACTED TO THE SATISFACTION OF THE ENGINEER PRIOR TO PLACEMENT OF GEOTEXTILE. ANY DELETERIOUS MATERIALS PRESENT IN THE SUBBASED SHALL BE REMOVED PRIOR TO COMPACTION.
3. GEOTEXTILE: GEOTEX 125ST® OR 135ST OR APPROVED EQUAL.
4. GRAVEL: DGA OR QUARRY PROCESS MATERIAL.

CONSTRUCTION ACCESS WAY PROFILE DETAIL (IF REQUIRED)

NOT TO SCALE



STRAW BALE DETAIL

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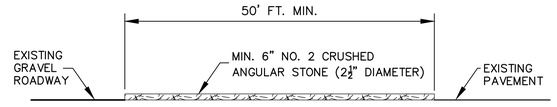
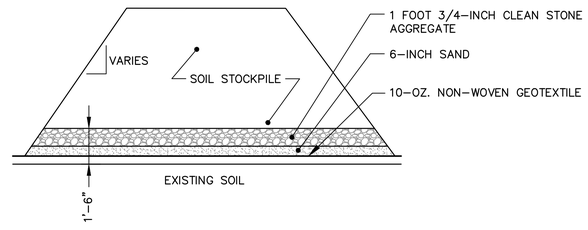


TRACKING PAD DETAIL (IF REQUIRED)

NOT TO SCALE

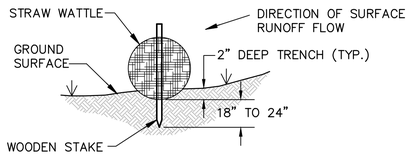


NOTES:

1. A 10–OZ NON–WOVEN GEOTEXTILE (MIRAFI 1100N OR APPROVED EQUAL) SHALL BE PLACED ON THE BOTTOM OF THE STAGING AREA AND ANCHORED WITHIN THE TEMPORARY WORK AREA.
2. SURFACE OF THE STAGING AREA SHALL BE GRADED AT A ZERO PERCENT SLOPE.
3. APPROXIMATELY ONE FOOT OF STONE (3/4 INCH, CLEAN) WILL BE PLACED OVER THE GEOTEXTILE TO PROVIDE A STABLE WORKING SURFACE BEFORE VEHICULAR TRAFFIC/EQUIPMENT IS ALLOWED ON THE LINEAR SURFACE.
4. SOIL STOCKPILES SHALL BE COVERED WITH A 20–MIL LINER AT THE END OF EACH WORK DAY AND WHENEVER THE STOCKPILE IS NOT TO BE DISTURBED DURING CONSTRUCTION OPERATIONS.

SOIL STOCKPILING/TEMPORARY WORK AREA DETAIL

NOT TO SCALE



WATTLE DETAIL

NOT TO SCALE

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Pro□essional Engineer's Name: **Gary M. Wroblewski, P.E.**
Pro□essional Engineer's No.: 24GE04007400

State	Date Signed	Pro□ect Mgr.
New Jerse□		JM
Designed □□	Drawn □□	Chec□ed □□
JM	TLF	MW

ARCADIS

ARCADIS U.S., INC.
NEW JERSEY ENGINEERING CERTIFICATE OF AUTHORI□ATION NUMBER 24GA27939600

KENVIL WORKS FACILTY • MORRIS COUNTY, NEW JERSEY
APPLICATION FOR SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION

CONSTRUCTION/EROSION AND SEDIMENT CONTROL PLAN DETAILS

-

ARCADIS Pro□ect No.
NJ00700.NJ00.00001

Date Iss□ed / Date Revised
MAY 2015

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□SOUTH RIVER ROAD
CRANBURY, NEW JERSEY
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MORRIS COUNTY SOIL CONSERVATION DISTRICT

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Ph.: 973-285-2953
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SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION

In accordance with the "Soil Erosion and Sediment Control Act", Chapter 251, Public Laws of 1975, the Morris County Soil Conservation District hereby certifies the subject plan does conform to the standards for Soil Erosion and Sediment Control in New Jersey promulgated pursuant to the Act.

Name of Project: Kenvil Works Facility

Street and Municipality: Roxbury Township

Block: 6701 Lot(s): 1 Application No: 2015-9660

NOTE: FAILURE TO COMPLY WITH ANY OF THE PROVISIONS OUTLINED BELOW WILL RESULT IN A DISTRICT ENFORCEMENT ACTION AND ADDITIONAL FEES FOR REPEATED SERVICES

All revision of the subject plan, Engineer's Project No. NJ007000.NJ70.00001 , Original Plan Date: May 1, 2015, Last Plan Revision Date: June 5, 2015 , after certification will void this approval and must be forwarded to this office.

Any conveyance of the project (or portion thereof) will transfer full responsibility for compliance to subsequent owner(s). This District must be notified in writing of any change of ownership.

A written notification indicating the start of land disturbance must be submitted to this District 72 hours in advance.

Prior to the issuance of a "Certificate of Occupancy" by the municipality, the "Soil Erosion and Sediment Control Act", N.J.S.A. 4:24-49 requires this District issue a "Report of Compliance" with the provisions of the certified plan for permanent measures to control soil erosion and sedimentation.

This certification is limited to the controls in this plan. It is not authorization to engage in the proposed land use unless such use has been previously approved by the municipality or other controlling agency.

MORRIS COUNTY SOIL
CONSERVATION DISTRICT

CERTIFICATION DATE: June 24, 2015 _____
Chair or Representative

EXPIRATION DATE: December 24, 2018

Member – New Jersey Association of Conservation Districts
National Association of Conservation Districts

CERTIFICATION LETTER
Cc: Applicant, Design Professional, Municipal: Construction Code Official, Engineer, Land Use Board, Environmental Commission

Attachment 2

In-Situ Waste Characterization Memo

In-Situ Waste Characterization Memo
Bioremediation Pilot Study
Hercules Kenvil Works Facility
Kenvil, New Jersey

PROJECT BACKGROUND

On behalf of Hercules Incorporated (Hercules), a wholly owned subsidiary of Ashland Inc., ARCADIS U.S., Inc. (ARCADIS) has prepared this memorandum to provide background on in-situ waste characterization and determination activities conducted in support of a bioremediation pilot study (pilot study) associated with a former 2,4,6-trinitrotoluene (TNT)/ dynamite manufacturing area (Project area) of the Kenvil Works Facility (Facility). The Facility occupies 1,059 acres along Howard Boulevard, in Kenvil, Morris County, New Jersey. Pilot study activities will occupy a small area in the southwest corner of the Facility.

Approximately 800 acres of the Facility supported former manufacturing operations. The remaining 400 acres are undeveloped areas between process units and around the perimeter of the Facility; these undeveloped areas acted as buffers between the former active portions of the Facility and the surrounding community. The Project area represents one of the earliest developed portions of the Facility, with manufacturing operations beginning operation in 1871 and ceasing in 1996.

Hercules conducted numerous site investigation and remedial investigation activities from 2003 through 2014 in the Project area. Based on the investigation findings, site-related constituents, including TNT, attributed to historical manufacturing operations were detected in soil and groundwater. TNT source material was distributed throughout the top few feet of soil throughout much of the Project area. Other relevant site-related constituents detected in the Project area included 2,4-dinitrotoluene and 2,6-dinitrotoluene (DNT, a degradation product of TNT) and lead. In 2013, Hercules increased focus on the development of a remedial action strategy and evaluated the bioremediation of TNT during a bench-scale TNT soil separation treatability study. Based on the findings of the treatability study, bioremediation was presented as a viable option for remediation of TNT in soil. Bioremediation will be further evaluated on a pilot scale to be conducted during the summer/fall of 2015. The pilot scale design will consider scalability, such that study conditions (e.g., pile size, surface area-to-volume ratio) mimic or represent those that can be used for planning for future full-scale implementation.

In accordance with Section 1.2 of SW-846 Method 1311 (Toxicity Characteristic Leachate Procedure [TCLP]), analytical data generated from historical site investigation and remedial investigation activities were screened using the "Rule of 20" to identify constituents detected in study area soil samples with concentrations unlikely to exceed a regulatory level (Maximum Concentrations of Contaminants for the Toxicity Characteristic, as presented in 40 CFR 261.24). TNT and 2,6-dinitrotoluene have no associated regulatory levels and were excluded from the evaluation. Screening identified 2,4-dinitrotoluene and lead in study area soil samples at concentrations requiring TCLP analysis to support waste characterization. As such, TCLP analysis for SVOCs (including 2,4-dinitrotoluene) and metals (including lead) was conducted.

As described in ARCADIS's In-Situ Waste Characterization Plan dated May 29, 2014 (Appendix A), waste characterization sampling activities were conducted to achieve the following objectives:

- Confirm the homogeneity of the soil structure in target sampling areas within the TNT/Dynamite Area as identified in the historical site investigation and remedial investigation dataset;
- Characterize up to 2,400 cubic yards of material in target sampling areas (sampling area footprint to a depth of 3 feet below ground surface);
- Identify target sampling area soils that would meet the definition of non-hazardous waste upon excavation; and
- Identify target sampling area soils that would meet the definition of hazardous waste upon excavation, and associated permitting requirements for pilot study activities.

The remainder of this document summarizes the sampling process and results to characterize soil in support of the bioremediation pilot study.

CHARACTERIZATION PROCESS

The in-situ waste characterization process summarized herein has been coordinated through a licensed site remediation professional (LSRP) and conducted in accordance with the New Jersey Department of Environmental Protection (NJDEP's) Technical Requirements for Site Remediation (TRSR), New Jersey Administrative Code (N.J.A.C.) 7:26E, ARCADIS's In-Situ Waste Characterization Plan dated May 29, 2014, and ARCADIS's Response to NJDEP Comments on the In-Situ Waste Characterization Plan dated March 19, 2015. The characterization process meets the requirements regarding waste characterization soil sampling established in Appendix 1 of NJDEP's Waste Classification Request Form (HWM-009) and NJDEP's Field Sampling Procedures Manual (NJDEP 2005).

In order to characterize the Project area, three sampling locations were chosen. These areas were given the designations "A", "B", and "C". These areas are located at the base of the ridgeline that borders the site to the west in a disturbed area where former TNT production occurred (Figure 1). These areas were divided into either two (Area B) or three (Area A and Area C) approximately 2,700 square ft. (sq. ft.) subareas (52 ft. by 52 ft.) (Figures 2 through 4). These areas were the source of soil used in the 2013 bench-scale TNT soil separation treatability study, and represent some of the highest historical concentrations of TNT detected on-site and were targeted in the in-situ waste characterization process as a conservative approach.

Samples were composited from discrete samples collected at random depths for TCLP analysis to support characterization of soil prior to excavation, and identify regulatory permitting to facilitate compliant implementation of the pilot study.

SAMPLING PROCEDURE

The sampling design to characterize the Project area utilized a real-time TNT screen for distinct depths while onsite in order to determine the number of samples to collect. A 10-ft. by 10 ft. grid was established over each subarea, with each grid square representing a possible sample location. Each grid square was given a number. Microsoft Excel was used as a random number generator in order to determine which of

these sample locations was sampled. The first sample location based on the random number generator was excavated to three feet below ground surface with a backhoe. The one, two and three-ft. intervals were screened with an EXPRAY test kit to determine the presence of TNT.

The sampling approach was to increase the number of composite samples relative to how deep TNT was detected with the EXPRAY kit. This approach ensured that the number of samples collected was proportional to the volume of soil being characterized, such that sampling occurred at a frequency of one discrete sample to every 20 cubic yards of material requiring characterization. If TNT was detected with the EXPRAY kit in the:

- 1 ft. interval, five discrete samples were composited into one sample for laboratory analysis for the entire 52 ft. by 52 ft. subarea
- 2 ft. interval, the 52 ft. by 52 ft. subarea was subdivided in half (1,350 sq. ft. each). Five discrete samples were composited into one sample for laboratory analysis for both subsections. Resulting in a total of two composite samples for that subarea.
- 3 ft. interval, the 52 ft. by 52 ft. subarea was subdivided into three sections (900 sq. ft. each) and 5 discrete samples were composited into one sample for laboratory analysis for each of the three subsections resulting in a total of three composite samples for that subarea.

The depth at which each discrete sample was collected was determined by another random number generator that produced a depth in inches.

In total 25 discrete samples were composited into five samples for laboratory analysis in Area A. Fifteen discrete samples were composited into three samples for laboratory analysis in Area B. Twenty-five discrete samples were composited into five samples for laboratory analysis in Area C. The sample locations are shown on Figures 2 through 4. The discrete sample IDs, results of field TNT screen and sample depth of each discrete sample is presented on Table 1. Lab samples were submitted to Lancaster Labs for analysis via USEPA Method 1311, RCRA Characteristics, USEPA Method 8330, USEPA Method 8270, and USEPA Method SW-846 6010B. Once sampling was complete, soil sample excavations were backfilled with the remaining excavated material.. The analytical results are summarized on Table 2.

WASTE DETERMINATION

Based on the information presented below, the U.S. Environmental Protection Agency's (USEPA's) Six-Step Hazardous Waste Identification Flow Chart (per 40 CFR 261) was conducted to complete the waste determination for the Project area (https://www.fedcenter.gov/assistance/facilitytour/hazardous/whatis/flowchart/index.cfm), as follows:

Step 1 – Is Your Material a Solid Waste?	Yes – Material is soil.
Step 2 – Is Your Solid Waste Excluded from Hazardous Waste Regulations?	No – Solid waste in the Project area does not meet any of the potentially applicable exclusion criteria.
Step 3 – Is Your Solid Waste a Listed Waste?	No – Although TNT, DNT, and lead are present in soil in the Project area, the soil in the Project area is not considered a listed waste as the materials are not present in the form of a "commercial chemical product". Based on process knowledge, the former Hercules Kenvil Works Facility has one F-, K- or P-listed waste area which is known as the Red Water Lagoon. Commercial chemical products generated during the manufacturer of TNT are known to have been stockpiled in the Red Water Lagoon.
Step 4 – Is your Waste a Characteristic Waste?	Yes – Concentrations of lead in one of the 13 TCLP samples exceed the criteria when compared to Table 1 of CFR261.24. All other samples were below standards. Soil in the Project area does not exhibit any of the following criteria: • Ignitability – material is a non-liquid that is not capable of causing a fire at current concentrations • Corrosivity – pH of the waste is not less than 2 or greater than 12.5 • Reactivity – waste does not meet any of the these criteria
Step 5 – Is Your Solid Waste Subject to the Mixture Rule?	No – there are no listed hazardous wastes known or expected to be present in the waste (See Step 3).
Step 6 – Is Your Solid Waste Subject to the Derived From Rule?	No – the waste is not derived from the treatment storage or disposal of a hazardous waste.

Based on the investigation conducted at the Project area (as described above) and the analysis per USEPA's Six-Step Hazardous Waste Identification Flow Chart, soil in the majority of the Project area has been determined to be a non-hazardous waste based on the representative characterization sampling and lack of sample results exceeding criteria. The one exception to this is the sample collected from B1-2 which exceeded the CFR261.24 standard for lead. This area will not be included in the pilot study.

Enclosures:

Table 1 – TNT/ Dynamite Areas A, B, and C – Waste Characterization Composite Soil Sample Field Observations

Table 2 – TNT/ Dynamite Areas A, B, and C – Waste Characterization Composite Soil Sample Analytical Results

Figure 1 – TNT/ Dynamite Areas A, B, and C – Historic Soil Sample Locations with Lead Results

Figure 2 – TNT/ Dynamite Area A – Waste Characterization Composite Soil Analytical Results Detections Only

Figure 3 – TNT/ Dynamite Area B – Waste Characterization Composite Soil Analytical Results Detections Only

Figure 4 – TNT/ Dynamite Area C – Waste Characterization Composite Soil Analytical Results Detections Only

Appendix A - In-Situ Waste Characterization Plan (ARCADIS 2014)

Appendix B – Waste Characterization Composite Soil Sample Field Notes

Appendix C – Laboratory Reports

ARCADIS

Tables

Table 1
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Field bservations
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Subsample ID	TNT Screen Interval	TNT bserved	Sample Depth
A1-1			
A1-26	1	No	9
	2	No	
	3	No	
A1-8	1	No	4
	2	No	
	3	No	
A1-30	1	Some	2
	2	Minimal	
	3	No	
A1-23	1	Yes	12
	2	Minimal	
	3	No	
A1-25	1	Yes	10
	2	Yes	
	3	Yes	
A2-1			
A2-18	1	Minimal	10
	2	No	
	3	No	
A2-17	1	Yes	2
	2	Minimal	
	3	Yes	
A2-10	1	No	4
	2	No	
	3	No	
A2-19	1	No	10
	2	No	
	3	No	
A2-7	1	No	6
	2	No	
	3	No	
A3-1			
A3-15	1	Yes	--
	2	Yes	
	3	Yes	
A3-8	1	Minimal	4
	2	No	
	3	No	
A3-9	1	Yes	20
	2	Yes	
	3	No	
A3-28	1	Minimal	33
	2	No	
	3	Yes	
A3-23	1	Yes	1
	2	Yes	
	3	No	

Table 1
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Field bservations
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Subsample ID	TNT Screen Interval	TNT bserved	Sample Depth
A3-2			
A3-25	1	No	36
	2	Some	
	3	No	
A3-19	1	No	8
	2	No	
	3	No	
A3-13	1	No	22
	2	No	
	3	No	
A3-21	1	No	6
	2	No	
	3	Yes	
A3-25	1	No	12
	2	No	
	3	No	
A3-3			
A3-6	1	Yes	34
	2	No	
	3	Yes	
A3-5	1	Yes	12
	2	Yes	
	3	Yes	
A3-10	1	Some	36
	2	Yes	
	3	Yes	
A3-17	1	Some	3
	2	Yes	
	3	Yes	
A3-30	1	No	5
	2	No	
	3	No	
B1-1			
B1-8	1	No	3
	2	No	
	3	No	
B1-3	1	No	34
	2	No	
	3	Yes	
B1-2	1	No	21
	2	No	
	3	No	
B1-14	1	Some	12
	2	Minimal	
	3	No	

Table 1
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Field bservations
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Subsample ID	TNT Screen Interval	TNT bserved	Sample Depth
B1-2			
B1-10	1	No	8
	2	No	
	3	No	
B1-27	1	No	3
	2	No	
	3	No	
B1-22	1	No	16
	2	No	
	3	No	
B1-6	1	No	30
	2	No	
	3	No	
B1-18	1	No	2
	2	No	
	3	No	
B1-20	1	No	28
	2	No	
	3	No	
B2-1			
B2-10	1	No	10
	2	No	
	3	No	
B2-7	1	No	7
	2	No	
	3	No	
B2-23	1	No	2
	2	No	
	3	No	
B2-21	1	No	6
	2	No	
	3	No	
B2-20	1	--	3
	2	--	
	3	--	
C1-1			
C1-16	1	No	10
	2	No	
	3	No	
C1-17	1	No	8
	2	No	
	3	No	
C1-5	1	No	12
	2	No	
	3	No	
C1-1	1	No	5
	2	No	
	3	No	
C1-27	1	No	3
	2	No	
	3	No	

Table 1
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Field bservations
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Subsample ID	TNT Screen Interval	TNT bserved	Sample Depth
C3-1			
C3-7	1	Yes	24
	2	Yes	
	3	Yes	
C3-9	1	Yes	10
	2	No	
	3	Yes	
C3-20	1	Minimal	4
	2	No	
	3	No	
C3-14	1	No	18
	2	No	
	3	No	
C3-13	1	No	36
	2	No	
	3	No	
C2-1			
C2-21	1	No	25
	2	Minimal	
	3	Minimal	
C2-8	1	No	34
	2	No	
	3	Minimal	
C2-19	1	Yes	11
	2	--	
	3	No	
C2-28	1	No	19
	2	No	
	3	No	
C2-10	1	Yes	5
	2	No	
	3	No	
C2-2			
C2-3	1	--	2
	2	--	
	3	--	
C2-13	1	--	30
	2	--	
	3	--	
C2-20	1	--	9
	2	--	
	3	--	
C2-7	1	--	36
	2	--	
	3	--	
C2-25	1	--	12
	2	--	
	3	--	

Table 1
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Field bservations
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Subsample ID	TNT Screen Interval	TNT bserved	Sample Depth
C2-3			
C2-22	1	--	36
	2	--	
	3	--	
C2-17	1	--	7
	2	--	
	3	--	
C2-11	1	--	12
	2	--	
	3	--	
C2-30	1	--	10
	2	--	
	3	--	
C2-29	1	--	25
	2	--	
	3	--	

Notes
= feet
= inches
-- = Not available

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	A1-1 4/17/2015	A2-1 4/17/2015	A3-1 4/17/2015	A3-2 4/17/2015	A3-3 4/17/2015	B1-1 4/17/2015
TCLP Semi-volatiles (SW8270C)									
1,4-Dichlorobenzene	106-46-7	7.5	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
2,4,5-Trichlorophenol	95-95-4	400	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
2,4,6-Trichlorophenol	88-06-2	2	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
2,4-Dinitrotoluene	121-14-2	0.13	mg/l	0.044 J	0.009 J	0.044 J	0.009 J	0.016 J	0.050 U
2-Methylphenol	95-48-7	--	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
4-Methylphenol	106-44-5	--	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Hexachloro-1,3-butadiene	87-68-3	0.5	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Hexachlorobenzene	118-74-1	0.13	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Hexachloroethane	67-72-1	3	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Nitrobenzene	98-95-3	2	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Pentachlorophenol	87-86-5	100	mg/l	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Pyridine	110-86-1	5	mg/l	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
TCLP Metals (SW6010B)									
Arsenic	7440-38-2	5	mg/l	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Barium	7440-39-3	100	mg/l	0.897	0.696	0.627	0.631	0.661	0.530
Cadmium	7440-43-9	1	mg/l	0.0013 J	0.00099 J	0.00062 J	0.00035 J	0.00045 J	0.00054 J
Chromium	7440-47-3	5	mg/l	0.0015 J	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.0014 J
Lead	7439-92-1	5	mg/l	1.79	2.03	1.48	0.202	0.887	4.56
Mercury	7439-97-6	0.2	mg/l	0.00020 U	0.000082 J	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Selenium	7782-49-2	1	mg/l	0.0200 U	0.0058 J	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Silver	7440-22-4	5	mg/l	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Metals (Method 6010B)									
Lead	7439-92-1	--	mg/kg	350 [588]	290	217	39.8	125	462
General Chemistry									
Ignitability	ARC-IGNIT	<=140 degrees F	--	Non-Ignitable	Non-Ignitable	Non-Ignitable	Non-Ignitable	Non-Ignitable	Non-Ignitable
Corrosivity - pH	ARC-pH	<= pH 2 and >= pH 12.5	SU	5.90	4.65	5.11	4.70	4.93	5.90
Sufide Reactivity	ARC-SUREA	500	mg/kg	160 U	160 U	160 U	160 U	160 U	160 U
Cyanide Reactivity	ARC-CYREA	250	mg/kg	59.3 U	57.5 U	57.5 U	58.0 U	59.8 U	59.2 U
Percent Moisture	ARC-Moist	--	%	NA	NA	NA	13.2	NA	10.3
DNT (Method 8270)									
2,4-Dinitrotoluene	121-14-2	--	ug/kg	2300 [2700]	790	1500	210	1700	120 J
2,6-Dinitrotoluene	606-20-2	--	ug/kg	270 [290]	230	440	46	660	39

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	A1-1 4/17/2015	A2-1 4/17/2015	A3-1 4/17/2015	A3-2 4/17/2015	A3-3 4/17/2015	B1-1 4/17/2015
Explosives & Energetics (Method 8330)									
1,2-Dinitrobenzene	528-29-0	--	ug/kg	300 U[300 U]	290 U	300 U	350 U	300 U	330 U
1,3,5-Trinitrobenzene	99-35-4	--	ug/kg	9500 [4500]	290 U	870	350 U	1100	330 U
1,3-Dinitrobenzene	99-65-0	--	ug/kg	1600 [250 J]	290 U	1100	350 U	140 J	330 U
1,4-Dinitrobenzene	100-25-4	--	ug/kg	300 U[300 U]	290 U	300 U	350 U	300 U	330 U
1-Nitronaphthalene	86-57-7	--	ug/kg	300 U[300 U]	290 U	300 U	350 U	300 U	330 U
2,4,6-Trinitrotoluene	118-96-7	--	ug/kg	17000000 [460000]	96000	770000	17000	480000	18000
2-Amino-4,6-dinitrotoluene	35572-78-2	--	ug/kg	7800 [3200]	6600	8900	930	5700	690
2-Nitrotoluene	88-72-2	--	ug/kg	400 U[400 U]	380 U	400 U	460 U	400 U	450 U
3-Nitrotoluene	99-08-1	--	ug/kg	660 [500 U]	480 U	500 U	580 U	370 J	560 U
4-Amino-2,6-dinitrotoluene	19406-51-0	--	ug/kg	9400 [5400]	6800	8600	1100	3600	1400
4-Nitrotoluene	99-99-0	--	ug/kg	640 U[400 U]	380 U	400 U	460 U	400 U	450 U
HMX	2691-41-0	--	ug/kg	750 U[750 U]	710 U	750 U	860 U	750 U	840 U
Nitrobenzene	98-95-3	--	ug/kg	300 U[300 U]	290 U	300 U	350 U	300 U	330 U
Nitroglycerin	55-63-0	--	ug/kg	6000 U[6000 U]	5700 U	6000 U	6900 U	6000 U	6700 U
Pentaerythritol Tetranitrate	78-11-5	--	ug/kg	6000 U[6000 U]	5700 U	6000 U	6900 U	6000 U	6700 U
RDX	121-82-4	--	ug/kg	300 U[300 U]	290 U	300 U	350 U	410 U	330 U
Tetryl	479-45-8	--	ug/kg	400 U[400 U]	380 U	400 U	460 U	400 U	450 U
TICs Semi-volatiles (Method 8270)									
(3BETA)-STIGMAST-5-EN-3-OL	83-46-5	--	ug/kg	600 J	550 J	NA	320 J	350 J	850 J
1,1,4a-Trimethyl-5,6-dimethy	1000193-60-8	--	ug/kg	NA	NA	NA	NA	NA	NA
1-Docosanol	661-19-8	--	ug/kg	NA	NA	NA	530 J	NA	NA
1-Docosanol, methyl ether	ARC-1DSME	--	ug/kg	[700 J]	420 J	NA	NA	NA	NA
1-Docosene	1599-67-3	--	ug/kg	NA	670 J	NA	NA	NA	NA
1-Heneicosanol	15594-90-8	--	ug/kg	NA	NA	NA	NA	NA	NA
1-Heneicosyl formate	77899-03-7	--	ug/kg	NA	NA	390 J	NA	NA	NA
1-Heptacosanol	2004-39-9	--	ug/kg	660 J	NA	NA	400 J	NA	NA
1-Hexacosene	18835-33-1	--	ug/kg	NA	NA	NA	NA	NA	NA
1-Idododecane	4292-19-7	--	ug/kg	380 J	NA	NA	NA	NA	NA
1-Iodohexadecane	544-77-4	--	ug/kg	NA	NA	NA	NA	190 J	NA
1-Nonadecanol	1454-84-8	--	ug/kg	NA	260 J	NA	NA	NA	NA
1-Nonadecene	18435-45-5	--	ug/kg	NA	NA	NA	NA	NA	670 J
2-(Tetradecycloxy)ethanol	2136-70-1	--	ug/kg	NA	NA	540 J	NA	NA	NA
2,2,4a,6a,8a,9,12b,14a-Octamethyl-	53013-35-7	--	ug/kg	NA	NA	NA	NA	NA	NA
2,6-Dinitro-4-methylphenol	609-93-8	--	ug/kg	NA	NA	NA	NA	320 J	NA
2-Amino-1,5-duhydro-4H-imidazol-4-one	503-86-6	--	ug/kg	NA	5600 J	NA	NA	NA	NA

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	A1-1 4/17/2015	A2-1 4/17/2015	A3-1 4/17/2015	A3-2 4/17/2015	A3-3 4/17/2015	B1-1 4/17/2015
2-Amino-4,6-dinitrotoluene	35572-78-2	--	ug/kg	1300 J[5000 J]	2700 J	4200 J	950 J	1700 J	880 J
2-Bromo dodecane	13187-99-0	--	ug/kg	NA	NA	NA	NA	NA	NA
2-Chloropropyl fumaric acid	ARC-2CPFA	--	ug/kg	NA	NA	NA	NA	NA	190 J
2-Octadecyl-propane-1,3-diol	5337-61-1	--	ug/kg	NA	NA	NA	NA	NA	NA
3,5-Dinitroaniline	618-87-1	--	ug/kg	590 J	NA	NA	NA	NA	NA
3-Eicosene, (E)-	74685-33-9	--	ug/kg	NA	NA	NA	NA	NA	990 J
3-Methyl-4-(methoxycarbonyl)	1000104-10-8	--	ug/kg	NA	NA	NA	NA	NA	NA
4-((1E)-3-Hydroxy-1-propenyl	1000297-95-5	--	ug/kg	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	--	ug/kg	2300 J[6300 J]	5600 J	5000 J	1500 J	2700 J	1900 J
5,7-Dintro(1H)indazole	31208-76-1	--	ug/kg	NA	NA	230 J	NA	770 J	NA
5-Eicosene, (E)-	74685-30-6	--	ug/kg	NA	200 J	NA	NA	NA	NA
9-11-Dihydoxy-4-methyldotriacontan-3-one	28808-36-8	--	ug/kg	NA	NA	NA	NA	NA	250 J
Benzanthrone	82-05-3	--	ug/kg	300 J	NA	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	--	ug/kg	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	--	ug/kg	NA	NA	NA	NA	NA	NA
Benzo(e)pyrene	192-97-2	--	ug/kg	NA	260 J	NA	NA	NA	NA
Benzo(j)fluoranthene	205-82-3	--	ug/kg	NA	NA	NA	NA	160 J	NA
Benzo(k)fluoranthene	207-08-9	--	ug/kg	NA	NA	NA	NA	NA	270 J
Chrysene	218-01-9	--	ug/kg	NA	NA	NA	NA	NA	NA
Clionasterol	83-47-6	--	ug/kg	[1400 J]	NA	350 J	NA	NA	NA
Cyclohexadecane	295-65-8	--	ug/kg	230 J	NA	NA	NA	NA	NA
Cyclotetracosane	297-03-0	--	ug/kg	NA	NA	NA	NA	NA	NA
Cyclotetradecane	295-17-0	--	ug/kg	NA	880 J	NA	NA	320 J	NA
Diacetone Alcohol	123-42-2	--	ug/kg	820 JBA	NA	740 JBA	NA	970 JBA	960 JBA
dl-.alpha.-Tocopherol	10191-41-0	--	ug/kg	NA	NA	NA	NA	NA	NA
ERGOST-5-EN-3BETA-OL	474-62-4	--	ug/kg	380 J	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	--	ug/kg	NA	410 J	NA	NA	180 J	NA
Friedelan-3-one	559-74-0	--	ug/kg	NA	NA	NA	NA	NA	NA
Fumaric Acid	1000348-57-2	--	ug/kg	NA	NA	NA	NA	NA	200 J
Guanidine	113-00-8	--	ug/kg	NA	NA	NA	940 J	NA	NA
Heneicosane	629-94-7	--	ug/kg	NA	240 J	NA	NA	NA	NA
Hentriacontane	630-04-6	--	ug/kg	NA	350 J	420 J	150 J	NA	NA
Heptacosane	593-49-7	--	ug/kg	[880 J]	NA	NA	NA	NA	NA
Heptadecane, 9-octyl	7225-64-1	--	ug/kg	420 J	NA	NA	NA	NA	NA
Heptadecyl heptafluorobutyrate	959085-66-6	--	ug/kg	NA	NA	NA	NA	NA	NA
Heptadecyl trifluoroacetate	1000351-87-0	--	ug/kg	NA	NA	NA	NA	NA	NA

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	A1-1 4/17/2015	A2-1 4/17/2015	A3-1 4/17/2015	A3-2 4/17/2015	A3-3 4/17/2015	B1-1 4/17/2015
Heptafluorobutyric acid, pen	959261-23-5	--	ug/kg	NA	NA	NA	NA	NA	NA
Hexacosane	630-01-3	--	ug/kg	NA	NA	240 J	NA	NA	NA
Hexacosyl heptafluorobutyrat	1000351-83-3	--	ug/kg	NA	NA	NA	NA	NA	NA
Hexadecanoic Acid	57-10-3	--	ug/kg	NA	290 J	NA	NA	NA	NA
Isobutyl octade oxalic acid	ARC-IBOOA	--	ug/kg	[1000 J]	NA	NA	NA	NA	NA
N-Hexadecane	544-76-3	--	ug/kg	[1200 J]	NA	NA	NA	NA	NA
Nonadecane	629-92-5	--	ug/kg	NA	NA	NA	NA	NA	NA
Nonadecyl pentafluoropropion	1000351-88-8	--	ug/kg	NA	NA	NA	NA	NA	NA
Octadecane	593-45-3	--	ug/kg	[770 J]	NA	NA	NA	NA	NA
Octadecane, 1-(ethenyloxy)-	930-02-9	--	ug/kg	NA	NA	NA	NA	NA	NA
Octadecyl trifluoroacetate	79392-43-1	--	ug/kg	NA	NA	NA	NA	NA	NA
Pentafluoropropionic acid, hexzdecyl ester	6222-07-7	--	ug/kg	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	--	ug/kg	NA	NA	NA	NA	NA	NA
Stigmasterol	83-48-7	--	ug/kg	NA	170 J	NA	NA	NA	260 J
Sulfurous acid, octadecyl 2-	1000309-12-7	--	ug/kg	NA	NA	NA	NA	NA	NA
Tetracosane	646-31-1	--	ug/kg	NA	NA	220 J	NA	NA	NA
Tetracosanoic acid	557-59-5	--	ug/kg	NA	160 J	NA	NA	NA	NA
Tetracosyl heptafluorobutyra	1000351-83-7	--	ug/kg	NA	NA	NA	NA	NA	NA
Total SVOC TICs	ARC-TSVOCTICs	--	ug/kg	100000 JBA[33000 J]	48000 J	180000 JBA	20000 J	130000 JBA	23000 JBA
Tricosyl trifluoroacetate	1000351-75-1	--	ug/kg	NA	NA	NA	NA	NA	NA
Tridecanoic acid	638-53-9	--	ug/kg	NA	NA	NA	NA	NA	240 J
Triphenylene	217-59-4	--	ug/kg	NA	NA	NA	NA	NA	NA
Unknown	UNKSEMIVOA1	--	ug/kg	450 J[1400 J]	410 J	430 J	440 J	1000 J	440 J
Unknown	UNKSEMIVOA10	--	ug/kg	NA	NA	NA	NA	NA	NA
Unknown	UNKSEMIVOA11	--	ug/kg	NA	NA	NA	NA	NA	NA
Unknown	UNKSEMIVOA12	--	ug/kg	NA	NA	NA	NA	NA	NA
Unknown	UNKSEMIVOA13	--	ug/kg	NA	NA	NA	NA	NA	NA
Unknown	UNKSEMIVOA2	--	ug/kg	320 J[1300 J]	300 J	300 J	NA	500 J	400 J
Unknown	UNKSEMIVOA3	--	ug/kg	280 J[1300 J]	160 J	160 J	NA	300 J	340 J
Unknown	UNKSEMIVOA4	--	ug/kg	200 J[1000 J]	150 J	NA	NA	NA	240 J
Unknown	UNKSEMIVOA5	--	ug/kg	200 J[990 J]	NA	NA	NA	NA	240 J
Unknown	UNKSEMIVOA6	--	ug/kg	180 J[970 J]	NA	NA	NA	NA	240 J
Unknown	UNKSEMIVOA7	--	ug/kg	[800 J]	NA	NA	NA	NA	230 J
Unknown	UNKSEMIVOA8	--	ug/kg	[670 J]	NA	NA	NA	NA	210 J
Unknown	UNKSEMIVOA9	--	ug/kg	[480 J]	NA	NA	NA	NA	NA
Unknown Alcohol	UNKALCOHOL1	--	ug/kg	410 J	150 J	790 J	NA	NA	NA

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	A1-1 4/17/2015	A2-1 4/17/2015	A3-1 4/17/2015	A3-2 4/17/2015	A3-3 4/17/2015	B1-1 4/17/2015
Unknown Alcohol	UNKALCOHOL2	--	ug/kg	180 J	NA	NA	NA	NA	NA
Unknown alkane	UNKALKANE1	--	ug/kg	720 J[1200 J]	NA	400 J	NA	NA	270 J
Unknown alkane	UNKALKANE2	--	ug/kg	[1000 J]	NA	NA	NA	NA	NA
Unknown Amide	UNKVAMIDE	--	ug/kg	NA	NA	NA	160 J	NA	NA
Unknown Amine	UNKAMINE	--	ug/kg	NA	NA	660 J	NA	NA	NA
Unknown aromatic	UNKAROMATIC1	--	ug/kg	90000 J[3600 J]	28000 J	130000 J	15000 J	120000 J	12000 J
Unknown aromatic	UNKAROMATIC2	--	ug/kg	200 J[600 J]	NA	34000 J	NA	740 J	NA
Unknown aromatic	UNKAROMATIC3	--	ug/kg	NA	NA	560 J	NA	620 J	NA
Unknown aromatic	UNKAROMATIC4	--	ug/kg	NA	NA	300 J	NA	570 J	NA
Unknown aromatic	UNKAROMATIC5	--	ug/kg	NA	NA	240 J	NA	380 J	NA
Unknown Organic Acid	UNKSVORGACID1	--	ug/kg	370 J	170 J	350 J	NA	330 J	NA
Unknown Organic Acid	UNKVORGACID2	--	ug/kg	200 J	NA	NA	NA	NA	NA
UNKNOWN PAH	UNKSVPAH1	--	ug/kg	NA	NA	NA	NA	560 J	NA
Vitamin E	59-02-9	--	ug/kg	230 J	NA	NA	NA	NA	NA

Notes:

1. Waste Classification Hazardous Level from Waste Classification HWM-009 (6/22/09) - Appendix 3

Shaded Indicates value is above the Waste Classification Hazardous Level
J Indicates an estimated value.
-- No published criteria available.
ND The compound was analyzed for but not detected.
NA The compound was not analyzed.
mg/L milligrams per liter
mg/kg milligrams per kilogram
ug/kg micrograms per kilogram
Non-Ignitable The sample did not spontaneously ignite when exposed to air or water; the sample did not ignite by friction; the sample vapors did not ignite when exposed to a flame using a closed cup
[ ] Brackets indicate a duplicate sample.

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	B1-2 4/20/2015	B2-1 4/20/2015	C1-1 4/20/2015	C2-1 4/20/2015	C2-2 4/20/2015	C2-3 4/20/2015	C3-1 4/20/2015
TCLP Semi-volatiles (SW8270C)										
1,4-Dichlorobenzene	106-46-7	7.5	mg/l	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2,4,5-Trichlorophenol	95-95-4	400	mg/l	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2,4,6-Trichlorophenol	88-06-2	2	mg/l	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2,4-Dinitrotoluene	121-14-2	0.13	mg/l	0.025 U	0.025 U	0.025 U	0.031	0.008 J	0.011 J	0.037
2-Methylphenol	95-48-7	--	mg/l	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
4-Methylphenol	106-44-5	--	mg/l	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Hexachloro-1,3-butadiene	87-68-3	0.5	mg/l	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Hexachlorobenzene	118-74-1	0.13	mg/l	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Hexachloroethane	67-72-1	3	mg/l	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Nitrobenzene	98-95-3	2	mg/l	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Pentachlorophenol	87-86-5	100	mg/l	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Pyridine	110-86-1	5	mg/l	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
TCLP Metals (SW6010B)										
Arsenic	7440-38-2	5	mg/l	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Barium	7440-39-3	100	mg/l	0.786	0.319	0.101	0.0712	0.0971	0.210	0.126
Cadmium	7440-43-9	1	mg/l	0.00072 J	0.00069 J	0.00052 J	0.0050 U	0.0050 U	0.0050 U	0.00064 J
Chromium	7440-47-3	5	mg/l	0.0150 U	0.0021 J	0.0021 J	0.0020 J	0.0014 J	0.0015 J	0.0019 J
Lead	7439-92-1	5	mg/l	17.6	0.171	0.157	0.784	0.528	0.713	0.121
Mercury	7439-97-6	0.2	mg/l	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Selenium	7782-49-2	1	mg/l	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Silver	7440-22-4	5	mg/l	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Metals (Method 6010B)										
Lead	7439-92-1	--	mg/kg	781	52.1	47.3	82.8 [172]	71.2	157	36.5
General Chemistry										
Ignitability	ARC-IGNIT	<=140 degrees F	--	Non-Ignitable	Non-Ignitable	Non-Ignitable	Non-Ignitable	Non-Ignitable	Non-Ignitable	Non-Ignitable
Corrosivity - pH	ARC-pH	<= pH 2 and >= pH 12.5	SU	7.20	5.14	5.39	4.56 [4.54]	4.59	4.81	5.01
Sufide Reactivity	ARC-SUREA	500	mg/kg	160 U	160 U	160 U	160 U[160 U]	160 U	160 U	160 U
Cyanide Reactivity	ARC-CYREA	250	mg/kg	58.9 U	59.3 U	59.2 U	57.8 U[58.6 U]	57.4 U	59.6 U	57.5 U
Percent Moisture	ARC-Moist	--	%	18.7	18.3	15.2	NA	NA	NA	NA
DNT (Method 8270)										
2,4-Dinitrotoluene	121-14-2	--	ug/kg	680	200 U	190 U	370 [500]	130 J	360	180
2,6-Dinitrotoluene	606-20-2	--	ug/kg	47	40 U	39 U	180 [210]	45	120	54

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	B1-2 4/20/2015	B2-1 4/20/2015	C1-1 4/20/2015	C2-1 4/20/2015	C2-2 4/20/2015	C2-3 4/20/2015	C3-1 4/20/2015
Explosives & Energetics (Method 8330)										
1,2-Dinitrobenzene	528-29-0	--	ug/kg	320 U	370 U	350 U	290 U[270 U]	300 U	300 U	300 U
1,3,5-Trinitrobenzene	99-35-4	--	ug/kg	320 U	370 U	350 U	290 U[270 U]	300 U	300 U	300 U
1,3-Dinitrobenzene	99-65-0	--	ug/kg	320 U	370 U	350 U	290 U[120 J]	300 U	300 U	300 U
1,4-Dinitrobenzene	100-25-4	--	ug/kg	320 U	370 U	350 U	290 U[270 U]	300 U	300 U	300 U
1-Nitronaphthalene	86-57-7	--	ug/kg	320 U	370 U	350 U	330 U[270 U]	300 U	300 U	300 U
2,4,6-Trinitrotoluene	118-96-7	--	ug/kg	350	370 U	1200	280000 [1000000]	87000	30000	150000
2-Amino-4,6-dinitrotoluene	35572-78-2	--	ug/kg	380	150 J	1100	5600 [4900]	860	700	6600
2-Nitrotoluene	88-72-2	--	ug/kg	430 U	490 U	470 U	380 U[360 U]	400 U	400 U	400 U
3-Nitrotoluene	99-08-1	--	ug/kg	530 U	610 U	590 U	480 U[450 U]	500 U	500 U	500 U
4-Amino-2,6-dinitrotoluene	19406-51-0	--	ug/kg	830	400 J	1700	5800 [6000]	880	810	5500
4-Nitrotoluene	99-99-0	--	ug/kg	430 U	490 U	470 U	380 U[360 U]	400 U	400 U	400 U
HMX	2691-41-0	--	ug/kg	800 U	920 U	880 U	710 U[680 U]	750 U	750 U	750 U
Nitrobenzene	98-95-3	--	ug/kg	320 U	370 U	350 U	290 U[270 U]	300 U	300 U	300 U
Nitroglycerin	55-63-0	--	ug/kg	6400 U	7300 U	7100 U	5700 U[5500 U]	6000 U	6000 U	6000 U
Pentaerythritol Tetranitrate	78-11-5	--	ug/kg	6400 U	7300 U	7100 U	5700 U[5500 U]	6000 U	6000 U	6000 U
RDX	121-82-4	--	ug/kg	320 U	370 U	350 U	290 U[270 U]	300 U	300 U	300 U
Tetryl	479-45-8	--	ug/kg	430 U	490 U	470 U	380 U[360 U]	400 U	400 U	400 U
TICs Semi-volatiles (Method 8270)										
(3BETA)-STIGMAST-5-EN-3-OL	83-46-5	--	ug/kg	NA	750 J	600 J	NA[NA]	540 J	750 J	NA
1,1,4a-Trimethyl-5,6-dimethy	1000193-60-8	--	ug/kg	NA	NA	300 J	NA[NA]	NA	NA	NA
1-Docosanol	661-19-8	--	ug/kg	NA	2000 J	NA	NA[NA]	NA	NA	NA
1-Docosanol, methyl ether	ARC-1DSME	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
1-Docosene	1599-67-3	--	ug/kg	NA	NA	NA	NA[NA]	660 J	NA	NA
1-Heneicosanol	15594-90-8	--	ug/kg	NA	NA	NA	NA[NA]	390 J	670 J	NA
1-Heneicosyl formate	77899-03-7	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
1-Heptacosanol	2004-39-9	--	ug/kg	NA	180 J	NA	NA[NA]	140 J	NA	NA
1-Hexacosene	18835-33-1	--	ug/kg	NA	NA	NA	NA[NA]	NA	900 J	NA
1-Idododecane	4292-19-7	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
1-Iodohexadecane	544-77-4	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
1-Nonadecanol	1454-84-8	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
1-Nonadecene	18435-45-5	--	ug/kg	NA	NA	NA	810 J[NA]	NA	NA	NA
2-(Tetradecycloxy)ethanol	2136-70-1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
2,2,4a,6a,8a,9,12b,14a-Octamethyl-	53013-35-7	--	ug/kg	NA	NA	210 J	NA[NA]	NA	NA	NA
2,6-Dinitro-4-methylphenol	609-93-8	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
2-Amino-1,5-duhydro-4H-imidazol-4-one	503-86-6	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	B1-2 4/20/2015	B2-1 4/20/2015	C1-1 4/20/2015	C2-1 4/20/2015	C2-2 4/20/2015	C2-3 4/20/2015	C3-1 4/20/2015
2-Amino-4,6-dinitrotoluene	35572-78-2	--	ug/kg	NA	NA	180 J	1400 J[1600 J]	NA	2500 J	2300 J
2-Bromo dodecane	13187-99-0	--	ug/kg	NA	NA	210 J	NA[NA]	NA	NA	NA
2-Chloropropyl fumaric acid	ARC-2CPFA	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
2-Octadecyl-propane-1,3-diol	5337-61-1	--	ug/kg	NA	NA	NA	NA[NA]	NA	190 J	NA
3,5-Dinitroaniline	618-87-1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
3-Eicosene, (E)-	74685-33-9	--	ug/kg	250 J	NA	NA	NA[NA]	NA	NA	NA
3-Methyl-4-(methoxycarbonyl)	1000104-10-8	--	ug/kg	NA	NA	NA	NA[NA]	NA	250 J	NA
4-((1E)-3-Hydroxy-1-propenyl	1000297-95-5	--	ug/kg	NA	NA	NA	NA[NA]	NA	170 J	NA
4-Amino-2,6-dinitrotoluene	19406-51-0	--	ug/kg	370 J	NA	400 J	280 J[560 J]	520 J	2600 J	2000 J
5,7-Dintro(1H)indazole	31208-76-1	--	ug/kg	NA	NA	NA	400 J[240 J]	NA	NA	NA
5-Eicosene, (E)-	74685-30-6	--	ug/kg	NA	NA	340 J	NA[NA]	NA	NA	NA
9-11-Dihydoxy-4-methyldotriacontan-3-one	28808-36-8	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Benzanthrone	82-05-3	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Benzo(a)pyrene	50-32-8	--	ug/kg	NA	NA	NA	NA[NA]	180 J	NA	NA
Benzo(b)fluoranthene	205-99-2	--	ug/kg	NA	NA	440 J	NA[NA]	140 J	NA	NA
Benzo(e)pyrene	192-97-2	--	ug/kg	NA	NA	250 J	NA[NA]	NA	NA	NA
Benzo(j)fluoranthene	205-82-3	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Chrysene	218-01-9	--	ug/kg	NA	NA	200 J	NA[NA]	NA	NA	NA
Clionasterol	83-47-6	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	870 J
Cyclohexadecane	295-65-8	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Cyclotetracosane	297-03-0	--	ug/kg	NA	NA	NA	NA[310 J]	NA	NA	820 J
Cyclotetradecane	295-17-0	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Diacetone Alcohol	123-42-2	--	ug/kg	960 JAB	970 JAB	780 JAB	800 JAB[850 JAB]	720 JAB	790 JAB	720 JAB
dl-.alpha.-Tocopherol	10191-41-0	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	200 J
ERGOST-5-EN-3BETA-OL	474-62-4	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Fluoranthene	206-44-0	--	ug/kg	NA	NA	310 J	NA[NA]	NA	NA	NA
Friedelan-3-one	559-74-0	--	ug/kg	320 J	NA	NA	NA[NA]	NA	NA	NA
Fumaric Acid	1000348-57-2	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Guanidine	113-00-8	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Heneicosane	629-94-7	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Hentriacontane	630-04-6	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	1800 J
Heptacosane	593-49-7	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	440 J
Heptadecane, 9-octyl	7225-64-1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Heptadecyl heptafluorobutyrate	959085-66-6	--	ug/kg	NA	NA	1100 J	NA[NA]	NA	NA	NA
Heptadecyl trifluoroacetate	1000351-87-0	--	ug/kg	NA	640 J	NA	NA[NA]	NA	1500 J	NA

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	B1-2 4/20/2015	B2-1 4/20/2015	C1-1 4/20/2015	C2-1 4/20/2015	C2-2 4/20/2015	C2-3 4/20/2015	C3-1 4/20/2015
Heptafluorobutyric acid, pen	959261-23-5	--	ug/kg	NA	NA	NA	320 J[NA]	NA	NA	NA
Hexacosane	630-01-3	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Hexacosyl heptafluorobutyrat	1000351-83-3	--	ug/kg	NA	NA	NA	NA[690 J]	NA	NA	NA
Hexadecanoic Acid	57-10-3	--	ug/kg	NA	NA	170 J	NA[NA]	NA	NA	150 J
Isobutyl octade oxalic acid	ARC-IBOOA	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
N-Hexadecane	544-76-3	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Nonadecane	629-92-5	--	ug/kg	NA	NA	NA	NA[140 J]	NA	NA	230 J
Nonadecyl pentafluoropropion	1000351-88-8	--	ug/kg	510 J	NA	NA	NA[NA]	NA	NA	NA
Octadecane	593-45-3	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Octadecane, 1-(ethenyloxy)-	930-02-9	--	ug/kg	310 J	NA	NA	NA[NA]	NA	NA	NA
Octadecyl trifluoroacetate	79392-43-1	--	ug/kg	NA	NA	NA	NA[NA]	1500 J	NA	NA
Pentafluoropropionic acid, hexzdecyl ester	6222-07-7	--	ug/kg	NA	180 J	NA	NA[NA]	NA	NA	NA
Pyrene	129-00-0	--	ug/kg	NA	NA	NA	NA[NA]	140 J	NA	NA
Stigmasterol	83-48-7	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Sulfurous acid, octadecyl 2-	1000309-12-7	--	ug/kg	NA	NA	NA	NA[430 J]	NA	NA	NA
Tetracosane	646-31-1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Tetracosanoic acid	557-59-5	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Tetracosyl heptafluorobutyra	1000351-83-7	--	ug/kg	NA	NA	620 J	NA[NA]	NA	NA	NA
Total SVOC TICs	ARC-TSVOCTICs	--	ug/kg	3800 JAB	7800 JAB	11000 JAB	7000 JAB[49000 JAB	15000 JAB	130000 JAB	69000 JAB
Tricosyl trifluoroacetate	1000351-75-1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	2000 J
Tridecanoic acid	638-53-9	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Triphenylene	217-59-4	--	ug/kg	NA	NA	180 J	NA[NA]	NA	NA	NA
Unknown	UNKSEMIVOA1	--	ug/kg	340 J	370 J	1400 J	12000 J[42000 J]	8300 J	120000 J	55000 J
Unknown	UNKSEMIVOA10	--	ug/kg	NA	160 J	NA	NA[140 J]	NA	180 J	180 J
Unknown	UNKSEMIVOA11	--	ug/kg	NA	NA	NA	NA[NA]	NA	180 J	150 J
Unknown	UNKSEMIVOA12	--	ug/kg	NA	NA	NA	NA[NA]	NA	140 J	NA
Unknown	UNKSEMIVOA13	--	ug/kg	NA	NA	NA	NA[NA]	NA	140 J	NA
Unknown	UNKSEMIVOA2	--	ug/kg	320 J	360 J	1100 J	740 J[510 J]	360 J	640 J	560 J
Unknown	UNKSEMIVOA3	--	ug/kg	220 J	250 J	640 J	NA[420 J]	300 J	370 J	350 J
Unknown	UNKSEMIVOA4	--	ug/kg	220 J	250 J	390 J	NA[200 J]	230 J	290 J	290 J
Unknown	UNKSEMIVOA5	--	ug/kg	NA	230 J	320 J	NA[170 J]	210 J	280 J	290 J
Unknown	UNKSEMIVOA6	--	ug/kg	NA	190 J	270 J	NA[160 J]	150 J	250 J	240 J
Unknown	UNKSEMIVOA7	--	ug/kg	NA	170 J	200 J	NA[160 J]	140 J	250 J	230 J
Unknown	UNKSEMIVOA8	--	ug/kg	NA	170 J	190 J	NA[160 J]	NA	200 J	220 J
Unknown	UNKSEMIVOA9	--	ug/kg	NA	170 J	NA	NA[150 J]	NA	200 J	200 J
Unknown Alcohol	UNKALCOHOL1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA

Table 2
TNT/ Dynamite Areas A, B, and C - Waste Characterization Composite Soil Sample Analytical Results
In-Situ Waste Characterization Memo
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Location ID: / Date Collected:	CAS No	Waste Classification Hazardous Level (Shaded)	Units	B1-2 4/20/2015	B2-1 4/20/2015	C1-1 4/20/2015	C2-1 4/20/2015	C2-2 4/20/2015	C2-3 4/20/2015	C3-1 4/20/2015
Unknown Alcohol	UNKALCOHOL2	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown alkane	UNKALKANE1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown alkane	UNKALKANE2	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown Amide	UNKVAMIDE	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown Amine	UNKAMINE	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown aromatic	UNKAROMATIC1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown aromatic	UNKAROMATIC2	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown aromatic	UNKAROMATIC3	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown aromatic	UNKAROMATIC4	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown aromatic	UNKAROMATIC5	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown Organic Acid	UNKSVORGACID1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Unknown Organic Acid	UNKVORGACID2	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
UNKNOWN PAH	UNKSVPAH1	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA
Vitamin E	59-02-9	--	ug/kg	NA	NA	NA	NA[NA]	NA	NA	NA

Notes:

1. Waste Classification Hazardous Level from Waste Classification HWM-009 (6/22/09) - Appendix 3

Shaded Indicates value is above the Waste Classification Hazardous
J Indicates an estimated value.
-- No published criteria available.
ND The compound was analyzed for but not detected.
NA The compound was not analyzed.
mg/L milligrams per liter
mg/kg milligrams per kilogram
ug/kg micrograms per kilogram
Non-Ignitable The sample did not spontaneously ignite when exposed to a by friction; the sample vapors did not ignite when exposed to
[ ] Brackets indicate a duplicate sample.

ARCADIS

Figures

TP-R-B10-2/B10-509-7
201
TP-R-B10-2/B10-509-8
337
TP-R-B10-2/B10-509-2
770
TP-R-B10-2/B10-509-3
199
SB-R-C10-01
26.7
TP-R-B10-508-4
4090
C10-466-02
3070
TP-R-B10-508-3
16.5
C10-432-02
107
SB-R-B10-02
234
B10-3-03
111
C10-438-05
29.6
C10-432-01
96.8
B10-3-01
213
C10-438-01
34.4
TP-R-B10-2/B10-509-4
209
B10-20-01
8400
TP-R-B10-508-2
240
C10-2179-03
603
AREA A4
AREA A2
AREA A3
C10-2176-02
377
TP-R-B10-505-3
69.3
TP-R-B10-6-1
990
TP-R-B10-508-1
269
TP-R-B10-2/B10-509-5
137
SD-C10-2-01
57
TP-R-B10-505-2
802
B10-506-02
250
TP-R-B10-2/B10-509-6
617
TP-R-B10-505-4
527
TP-R-B10-505-5
775
B10-506-04
21.7
TP-R-B10-2/B10-509-1
60.5
TP-R-B10-505-1
276
B10-503-02
162
B10-7-10
658
B10-503-06
244
TP-R-B10-501-1
1880
B10-7-02
1080
B10-503-01
25.1
B10-2178-05
318
B10-4-01
41.7
TP-R-B10-502-1
8.31
TP-R-B10-502-2
216
B10-4-02
11.6
B10-656-02
7.3
SB-R-B11-03
35.7
A11-570-05
227
TP-R-A11-504-1
1350
B11-523-01
72.4
A11-570-01
36.7
B11-602C-08
858
B11-2-03
26.6
TP-R-A11-504-3
587
B11-523-03
279
TP-R-A11-2-1
15.4
TP-R-A11-504-2
88.1
A11-1-04
579
TP-R-A11-2-2
184
A11-1-01
1250
B11-2044-03
63.8
C11-30-06
159
SB-R-B11-01
242
B11-2044-06
489
C11-7-02
57.2
TP-R-A11-7-1
13300
A11-3-03
305
TP-R-A11-7-2
1510
B11-2044-05
74.5
B11-2044C-01
30.6
SB-R-A11-01
28.9
C12-418-04
17.3
TP-R-A11-4-2
3790
A11-3-05
136
TP-R-A11-4-1
6.68
A11-8-03
14.1
B11-663-06
128
SB-R-C12-02
16.1
TP-R-A11-5-2
77.9
AREA D1
B11-663-04
176
SB-R-B12-04
19.7
AREA D2
A11-8-02
13.9
B11-2044C-05
24.5
TP-R-A11-5-1
411
SB-R-A12-04
22
AREA C1
A12-7-04
26.9
B12-237-01
1540
A12-8-05
1290
AREA C2
A12-7-03
75.7
AREA C3
B12-450-03
158
SD-B13-1-01
44.4
SB-R-B13-03
12
SB-R-B13-04
38.4
SD-B13-3-01
3260
TP-R-B13-1-4
47.4
B13-8-04
21.7
B13-8-05
75.1
TP-R-B13-1-5
658
TP-R-B13-1-3
243
TP-R-B13-1-1
352
TP-R-B13-1-2
247
C13-2-05
10.1
SB-R-B13-02
74.2
TP-R-B13-2-3
8.49
SB-R-B13-01
8.86
TP-R-B13-2-2
42.9
TP-R-B13-2-7
121
TP-R-B13-2-4
6.15
TP-R-B13-2-9
171
B13-724-01
67
TP-R-B13-2-8
104
B13-757-04
69.2
B13-682-04
82.5
B13-682-03
156
B13-682-06
74.5
TP-R-B13-2-6
16.1
B13-724-05
24.4
C13-1-17
21.4
SD-B13-2-01
12.4
TP-R-B13-2-5
6.99
SB-R-B14-01
8.53
C13-133-05
9.3
D13-273B-04
11.6
C13-133-03
23
SB-R-D14-01
59.4

LEGEND:

SOIL SAMPLE LOCATION

LEAD RESULTS (mg/kg):

- < 100 (LESS THAN TCLP 20x RULE)
- 100 - 600 (GREATER THAN TCLP 20x RULE, LESS THEN 95 UCL)
- 600 - 1,000
- 1,000 - 10,000
- > 10,000
- NEGATIVE EXPRAY TEST FOR TNT
- POSITIVE EXPRAY TEST FOR TNT
- SITE BOUNDARY
- REMEDIAL AREA
- ROAD
- STREAM/WATER FEATURE
- AREAL EXTENT EXCEEDING IGWSRS
- AREAL EXTENT EXCEEDING NRDCSRS
- AREAL EXTENT EXCEEDING RDCSRS
- INFERRED AREAL EXTENT EXCEEDING IGWSRS
- INFERRED AREAL EXTENT EXCEEDING NRDCSRS
- INFERRED AREAL EXTENT EXCEEDING RDCSRS
- SAMPLING AREA
- WATER
- AREA OF PRESUMED ECOLOGICAL RISK

0 100 200 Feet

GRAPHIC SCALE

NOTES:

1. 2011 NAIP IMAGERY OBTAINED FROM ESRI IMAGE SERVICE.
2. BASEMAP INFORMATION FROM ELECTRONIC FILE PROVIDED BY ASHLAND, INC. TITLED: "SITE PLAN.DWG"
3. OPERATIONAL AREAS DIGITIZED FROM MWH, REMEDIAL INVESTIGATION REPORT, HERCULES INCORPORATED KENVIL WORKS FACILITY, FIGURE TITLED: "SEDIMENT SAMPLE LOCATION MAP", FIGURE D-1.
4. LEAD DATA SOURCE: MWH, REMEDIAL INVESTIGATION REPORT, HERCULES INCORPORATED KENVIL WORKS FACILITY (2007).

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

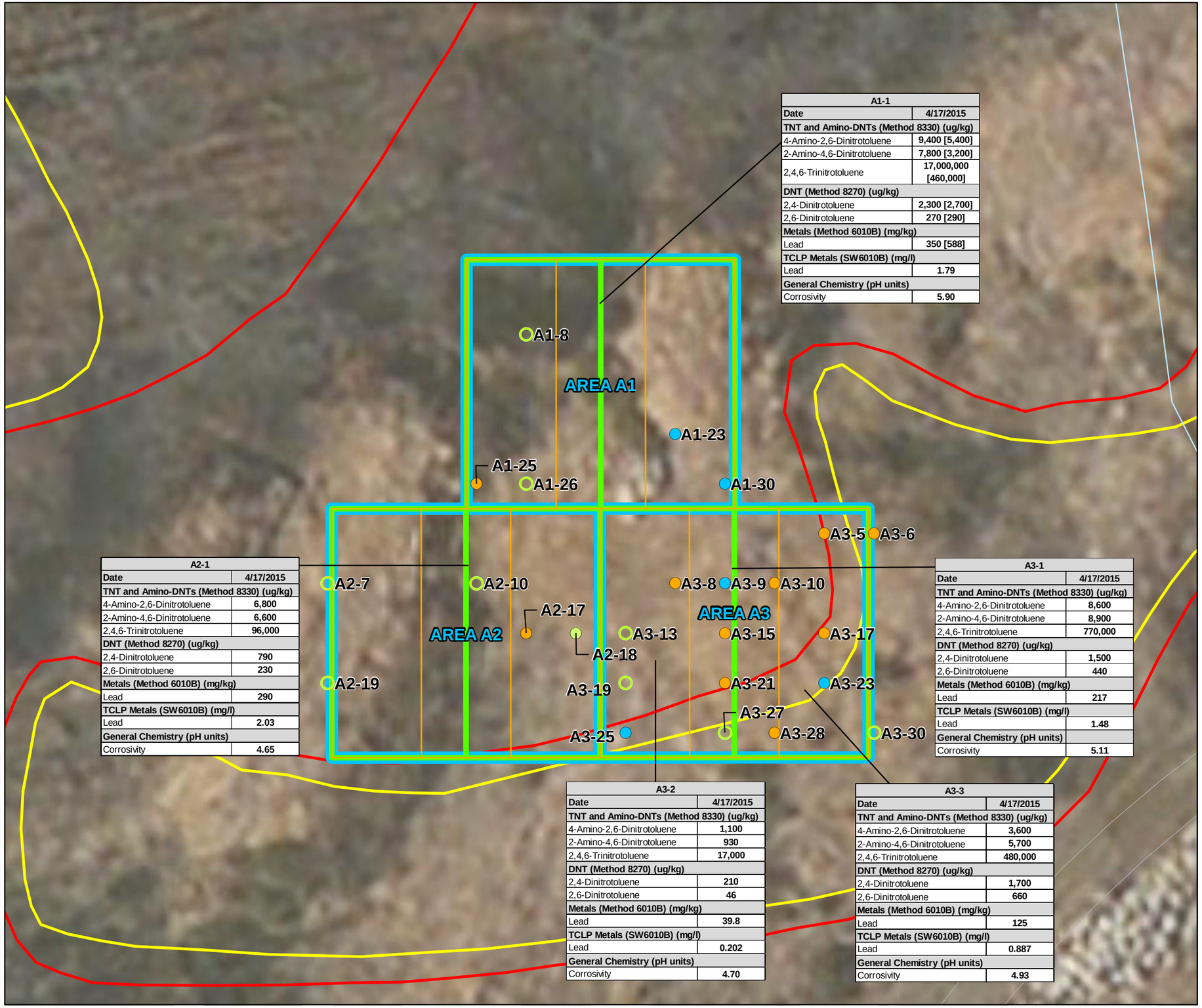
IN-SITU WASTE CHARACTERIZATION MEMO

TNT/ DYNAMITE AREAS A, B, AND C - HISTORIC SOIL SAMPLE LOCATIONS WITH LEAD RESULTS

ARCADIS

FIGURE
1

City: SYR Div/Group: SED Created By: JRAPP Last Saved By: jrapp
Ashland-Kenvil, NJ (NJ003000.NJ62.00008)
Q:\Ashland\Kenvil_NJ\In_Situ_WasteCharacterizationMemo\mxd\SurfaceLocations_TNTArea_Lead_v2.mxd 9/10/2015 1:38:43 PM



A1-1	
Date	**4/17/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**9,400 [5,400]**
2-Amino-4,6-Dinitrotoluene	**7,800 [3,200]**
2,4,6-Trinitrotoluene	**17,000,000 [460,000]**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**2,300 [2,700]**
2,6-Dinitrotoluene	**270 [290]**
Metals (Method 6010B) (mg/kg)	
Lead	**350 [588]**
TCLP Metals (SW6010B) (mg/l)	
Lead	**1.79**
General Chemistry (pH units)	
Corrosivity	**5.90**

A2-1	
Date	**4/17/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**6,800**
2-Amino-4,6-Dinitrotoluene	**6,600**
2,4,6-Trinitrotoluene	**96,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**790**
2,6-Dinitrotoluene	**230**
Metals (Method 6010B) (mg/kg)	
Lead	**290**
TCLP Metals (SW6010B) (mg/l)	
Lead	**2.03**
General Chemistry (pH units)	
Corrosivity	**4.65**

A3-1	
Date	**4/17/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**8,600**
2-Amino-4,6-Dinitrotoluene	**8,900**
2,4,6-Trinitrotoluene	**770,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**1,500**
2,6-Dinitrotoluene	**440**
Metals (Method 6010B) (mg/kg)	
Lead	**217**
TCLP Metals (SW6010B) (mg/l)	
Lead	**1.48**
General Chemistry (pH units)	
Corrosivity	**5.11**

A3-2	
Date	**4/17/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**1,100**
2-Amino-4,6-Dinitrotoluene	**930**
2,4,6-Trinitrotoluene	**17,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**210**
2,6-Dinitrotoluene	**46**
Metals (Method 6010B) (mg/kg)	
Lead	**39.8**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.202**
General Chemistry (pH units)	
Corrosivity	**4.70**

A3-3	
Date	**4/17/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**3,600**
2-Amino-4,6-Dinitrotoluene	**5,700**
2,4,6-Trinitrotoluene	**480,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**1,700**
2,6-Dinitrotoluene	**660**
Metals (Method 6010B) (mg/kg)	
Lead	**125**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.887**
General Chemistry (pH units)	
Corrosivity	**4.93**

LEGEND:

- POSITIVE EXPRAY TEST FOR TNT AT 1 FT
- POSITIVE EXPRAY TEST FOR TNT AT 2 FT
- POSITIVE EXPRAY TEST FOR TNT AT 3 FT
- NEGATIVE EXPRAY TEST FOR TNT
- ROAD
- STREAM/WATER FEATURE
- AREAL EXTENT EXCEEDING NRDCSRS
- AREAL EXTENT EXCEEDING RDCSRS
- 900 SQ. FT. SAMPLING AREA
- 1350 SQ. FT. SAMPLING AREA
- 2700 SQ. FT. SAMPLING AREA
- AREA OF PRESUMED ECOLOGICAL RISK

TNT and Amino-DNTs (Method 8330) (ug/kg)	Waste Classification Hazardous Level (Shaded)
4-Amino-2,6-Dinitrotoluene	--
2-Amino-4,6-Dinitrotoluene	--
2,4,6-Trinitrotoluene	--
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	--
2,6-Dinitrotoluene	--
Metals (Method 6010B) (mg/kg)	
Lead	--
TCLP Metals (SW6010B) (mg/l)	
Lead	5
General Chemistry (pH units)	
Corrosivity	<= pH 2 and >= pH 12.5

0 20 40 Feet

GRAPHIC SCALE

NOTES:

1. 2011 NAIP IMAGERY OBTAINED FROM ESRI IMAGE SERVICE.
2. BASEMAP INFORMATION FROM ELECTRONIC FILE PROVIDED BY ASHLAND, INC. TITLED: "SITE PLAN.DWG"
3. OPERATIONAL AREAS DIGITIZED FROM MWH, REMEDIAL INVESTIGATION REPORT, HERCULES INCORPORATED KENVIL WORKS FACILITY, FIGURE TITLED: "SEDIMENT SAMPLE LOCATION MAP", FIGURE D-1.

µg/kg = MICROGRAMS PER KILOGRAM
mg/kg = MILLIGRAMS PER KILOGRAM
mg/l = MILLIGRAMS PER LITER
J = ESTIMATED CONCENTRATIONS
DUPLICATE RESULTS ARE PRESENTED IN BRACKETS [ ]

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

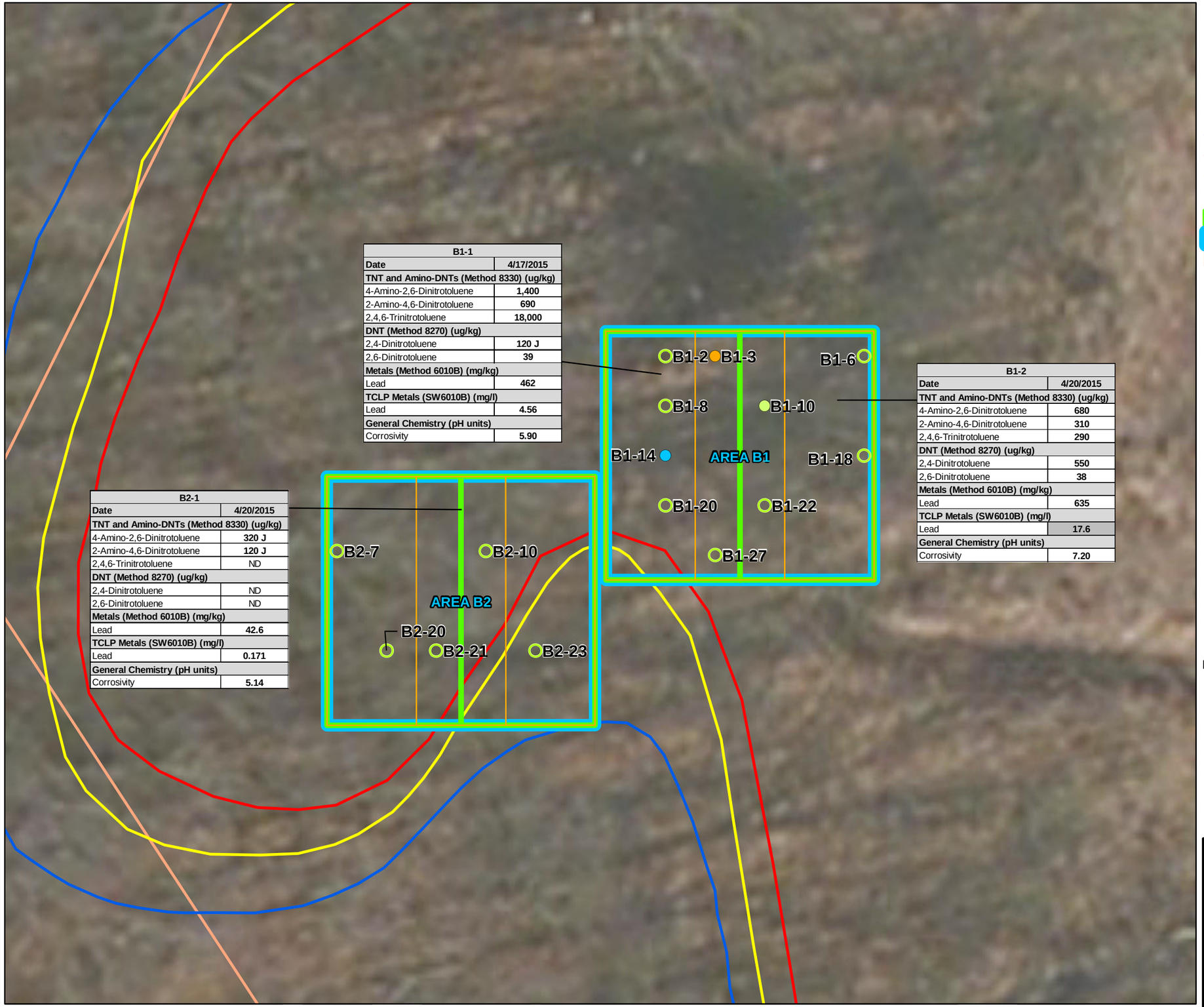
IN-SITU WASTE CHARACTERIZATION MEMO

TNT/ DYNAMITE AREA A - WASTE CHARACTERIZATION COMPOSITE SOIL ANALYTICAL RESULTS DETECTIONS ONLY

ARCADIS

FIGURE 2

City: SYR Div/Group: SED Created By: JRAPP Last Saved By: jrapp
Ashland-Kenvil, NJ (NJ003000.NJ62.00008)
Q:\Ashland\Kenvil_NJ\In_Situ_WasteCharacterizationMemo\mxd\SurfaceLocations_TNTArea_TNTResults_ZoomA_databox_V2.mxd 9/10/2015 12:41:18 PM



B1-1	
Date	**4/17/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**1,400**
2-Amino-4,6-Dinitrotoluene	**690**
2,4,6-Trinitrotoluene	**18,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**120 J**
2,6-Dinitrotoluene	**39**
Metals (Method 6010B) (mg/kg)	
Lead	**462**
TCLP Metals (SW6010B) (mg/l)	
Lead	**4.56**
General Chemistry (pH units)	
Corrosivity	**5.90**

B2-1	
Date	**4/20/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**320 J**
2-Amino-4,6-Dinitrotoluene	**120 J**
2,4,6-Trinitrotoluene	ND
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Metals (Method 6010B) (mg/kg)	
Lead	**42.6**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.171**
General Chemistry (pH units)	
Corrosivity	**5.14**

B1-2	
Date	**4/20/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**680**
2-Amino-4,6-Dinitrotoluene	**310**
2,4,6-Trinitrotoluene	**290**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**550**
2,6-Dinitrotoluene	**38**
Metals (Method 6010B) (mg/kg)	
Lead	**635**
TCLP Metals (SW6010B) (mg/l)	
Lead	**17.6**
General Chemistry (pH units)	
Corrosivity	**7.20**

LEGEND:

- POSITIVE EXPRAY TEST FOR TNT AT 1 FT
- POSITIVE EXPRAY TEST FOR TNT AT 2 FT
- POSITIVE EXPRAY TEST FOR TNT AT 3 FT
- NEGATIVE EXPRAY TEST FOR TNT
- AREAL EXTENT EXCEEDING IGWSRS
- AREAL EXTENT EXCEEDING NRDCSRS
- AREAL EXTENT EXCEEDING RDCSRS
- 900 SQ. FT. SAMPLING AREA
- 1350 SQ. FT. SAMPLING AREA
- 2700 SQ. FT. SAMPLING AREA
- AREA OF PRESUMED ECOLOGICAL RISK

TNT and Amino-DNTs (Method 8330) (ug/kg)	Waste Classification Hazardous Level (Shaded)
4-Amino-2,6-Dinitrotoluene	--
2-Amino-4,6-Dinitrotoluene	--
2,4,6-Trinitrotoluene	--
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	--
2,6-Dinitrotoluene	--
Metals (Method 6010B) (mg/kg)	
Lead	--
TCLP Metals (SW6010B) (mg/l)	
Lead	5
General Chemistry (pH units)	
Corrosivity	<= pH 2 and >= pH 12.5

0 20 40 Feet

GRAPHIC SCALE

NOTES:

1. 2011 NAIP IMAGERY OBTAINED FROM ESRI IMAGE SERVICE.
2. BASEMAP INFORMATION FROM ELECTRONIC FILE PROVIDED BY ASHLAND, INC. TITLED: "SITE PLAN.DWG"
3. OPERATIONAL AREAS DIGITIZED FROM MWH, REMEDIAL INVESTIGATION REPORT, HERCULES INCORPORATED KENVIL WORKS FACILITY, FIGURE TITLED: "SEDIMENT SAMPLE LOCATION MAP", FIGURE D-1.

µg/kg = MICROGRAMS PER KILOGRAM
mg/kg = MILLIGRAMS PER KILOGRAM
mg/l = MILLIGRAMS PER LITER
J = ESTIMATED CONCENTRATIONS
DUPLICATE RESULTS ARE PRESENTED IN BRACKETS [ ]

HERCULES INCORPORATED
KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

IN-SITU WASTE CHARACTERIZATION MEMO

TNT/ DYNAMITE AREA B - WASTE CHARACTERIZATION COMPOSITE SOIL ANALYTICAL RESULTS DETECTIONS ONLY

ARCADIS

FIGURE 3

City: SYR Div/Group: SED Created By: J.RAPP Last Saved By: jrapp
Ashland-Kenvil, NJ (NJ003000.NJ62.00008)
Q:\Ashland\Kenvil_NJ\In_Situ_WasteCharacterizationMemo\mxd\SurfaceLocations_TNTArea_TNTResults_ZoomB_databox_V2.mxd 9/10/2015 12:39:49 PM

C1-1	
Date	**4/20/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**1,500**
2-Amino-4,6-Dinitrotoluene	**910**
2,4,6-Trinitrotoluene	**1,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Metals (Method 6010B) (mg/kg)	
Lead	**40.1**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.157**
General Chemistry (pH units)	
Corrosivity	**5.39**

C2-2	
Date	**4/20/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**880**
2-Amino-4,6-Dinitrotoluene	**860**
2,4,6-Trinitrotoluene	**87,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**130 J**
2,6-Dinitrotoluene	**45**
Metals (Method 6010B) (mg/kg)	
Lead	**71.2**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.528**
General Chemistry (pH units)	
Corrosivity	**4.59**

C2-1	
Date	**4/20/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**5,800 [6,000]**
2-Amino-4,6-Dinitrotoluene	**5,600 [4,900]**
2,4,6-Trinitrotoluene	**280,000 [1,000,000]**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**370 [500]**
2,6-Dinitrotoluene	**180 [210]**
Metals (Method 6010B) (mg/kg)	
Lead	**82.8 [172]**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.784**
General Chemistry (pH units)	
Corrosivity	**4.56 [4.54]**

C2-3	
Date	**4/20/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**810**
2-Amino-4,6-Dinitrotoluene	**700**
2,4,6-Trinitrotoluene	**30,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**360**
2,6-Dinitrotoluene	**120**
Metals (Method 6010B) (mg/kg)	
Lead	**157**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.713**
General Chemistry (pH units)	
Corrosivity	**4.81**

C3-1	
Date	**4/20/2015**
TNT and Amino-DNTs (Method 8330) (ug/kg)	
4-Amino-2,6-Dinitrotoluene	**5,500**
2-Amino-4,6-Dinitrotoluene	**6,600**
2,4,6-Trinitrotoluene	**150,000**
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	**180**
2,6-Dinitrotoluene	**54**
Metals (Method 6010B) (mg/kg)	
Lead	**36.5**
TCLP Metals (SW6010B) (mg/l)	
Lead	**0.121**
General Chemistry (pH units)	
Corrosivity	**5.01**

LEGEND:

- POSITIVE EXPRAY TEST FOR TNT AT 1 FT
- POSITIVE EXPRAY TEST FOR TNT AT 2 FT
- POSITIVE EXPRAY TEST FOR TNT AT 3 FT
- NEGATIVE EXPRAY TEST FOR TNT
- SAMPLING LOCATION NOT TESTED WITH EXPRAY
- AREAL EXTENT EXCEEDING IGWSRS
- AREAL EXTENT EXCEEDING NRDCSRS
- AREAL EXTENT EXCEEDING RDCSRS
- 900 SQ. FT. SAMPLING AREA
- 1350 SQ. FT. SAMPLING AREA
- 2700 SQ. FT. SAMPLING AREA
- AREA OF PRESUMED ECOLOGICAL RISK

TNT and Amino-DNTs (Method 8330) (ug/kg)	Waste Classification Hazardous Level (Shaded)
4-Amino-2,6-Dinitrotoluene	--
2-Amino-4,6-Dinitrotoluene	--
2,4,6-Trinitrotoluene	--
DNT (Method 8270) (ug/kg)	
2,4-Dinitrotoluene	--
2,6-Dinitrotoluene	--
Metals (Method 6010B) (mg/kg)	
Lead	--
TCLP Metals (SW6010B) (mg/l)	
Lead	5
General Chemistry (pH units)	
Corrosivity	<= pH 2 and >= pH 12.5

0 20 40 Feet

GRAPHIC SCALE

NOTES:

1. 2011 NAIP IMAGERY OBTAINED FROM ESRI IMAGE SERVICE.
2. BASEMAP INFORMATION FROM ELECTRONIC FILE PROVIDED BY ASHLAND, INC. TITLED: "SITE PLAN.DWG"
3. OPERATIONAL AREAS DIGITIZED FROM MWH, REMEDIAL INVESTIGATION REPORT, HERCULES INCORPORATED KENVIL WORKS FACILITY, FIGURE TITLED: "SEDIMENT SAMPLE LOCATION MAP", FIGURE D-1.

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J = ESTIMATED CONCENTRATIONS
DUPLICATE RESULTS ARE PRESENTED IN BRACKETS [ ]

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KENVIL WORKS FACILITY
KENVIL, NEW JERSEY

IN-SITU WASTE CHARACTERIZATION MEMO

TNT/ DYNAMITE AREA C - WASTE CHARACTERIZATION COMPOSITE SOIL ANALYTICAL RESULTS DETECTIONS ONLY

ARCADIS

FIGURE 4

City: SYR Div/Group: SED Created By: J.RAPP Last Saved By: jrapp
Ashland-Kenvil, NJ (NJ003000.NJ62.00008)
Q:\Ashland\Kenvil_NJ\In_Situ_WasteCharacterizationMemo\mxd\SurfaceLocations_TNTArea_TNTResults_ZoomC_databox_V2.mxd 9/10/2015 12:42:55 PM

ARCADIS

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ENVIRONMENT

Robert Confer
Chief – Bureau of Landfill and Hazardous Waste Permitting
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
401 E. State Street (401-02C)
Trenton, NJ 08625-0420

Subject:
In-Situ Waste Characterization Plan
Former Hercules Kenvil Works Facility
Kenvil, Morris County, New Jersey
PID No. 000741

Date:
May 29, 2014

Contact:
Scott M. Larew

Phone:
609.366.9087

Email:
scott.larew
@arcadis-us.com

Our ref:
NJ007000.NJ69

Dear Mr. Confer:

On behalf of Hercules Incorporated (Hercules), ARCADIS prepared this *In-situ Waste Characterization Plan* (work plan) in support of a bioremediation pilot study at the Former Hercules Kenvil Works Facility in Kenvil, Morris County, New Jersey (the site). This work plan presents a brief background of the site and the scope of the bioremediation pilot study, and outlines a waste characterization sampling approach consistent with applicable New Jersey Department of Environmental Protection (NJDEP) guidance.

The remedial program at the site is coordinated through a licensed site remediation professional (LSRP) and conducted in accordance with NJDEP's Technical Requirements for Site Remediation (TRSR), New Jersey Administrative Code (N.J.A.C.) 7:26E. This work plan meets the requirements regarding waste characterization soil sampling established in Appendix 1 of NJDEP's Waste Classification Request Form (HWM-009) and NJDEP's Field Sampling Procedures Manual (NJDEP 2005).

The site occupies approximately 1,200 acres along Howard Boulevard, about 0.5 miles northwest of the center of Kenvil, in Morris County, New Jersey. The site began operation in 1871 and initially manufactured dynamite to support iron ore mining operations in the surrounding area. Through the early and middle parts of the 20th century, Hercules expanded its manufacturing operations to meet the growing economic need for explosives and propellants. In the final years of operation,

smokeless powder was the primary product, and was produced by Alliant under a site lease agreement from 1995 to 1996. The facility ceased operation in 1996. Hercules, a wholly-owned subsidiary of Ashland, Inc. and the current property owner, remains responsible for the remediation and closure of the site.

Hercules conducted a site investigation/remedial investigation (SI/RI) spanning 2003 through 2006, with supplemental sampling conducted in 2009 (groundwater only) and 2014 (soil and groundwater). As part of the RI, Hercules prioritizing areas of the site requiring some form of active remediation based on constituent types/concentrations, complexity, and schedule/duration of the presumptive remedy. In 2009, Hercules initiated focused investigation of the degradation of 2,4,6-trinitrotoluene (TNT) in soil and groundwater in the TNT/Dynamite Area to develop a remedial action strategy. Initial study results indicated that source removal and monitored natural attenuation represented a plausible remedy. TNT source material is distributed throughout the top few feet of soil throughout much of the TNT/Dynamite Area. Other relevant constituents of concern (COCs) in this area include 2,4- and 2,6-dinitrotoluene (DNT, a degradate of TNT) and lead.

In 2013, a bench-scale TNT soil separation treatability study evaluated the effectiveness of separating solid phase TNT from site soil. Approximately 240 pounds of soil were collected from representative areas of the TNT/Dynamite Area to support the treatability work. Treatability study results indicated that separation, and segregation, were effective; and certain of the resulting material streams required additional treatment to meet NJDEP's Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) and requirements for beneficial reuse onsite (NJDEP 2011). The technical report summarizing the results of the TNT soil separation treatability study identified options for the additional treatment needed to reduce concentrations of TNT and its breakdown products to at or below NRDCSRS.

Bioremediation was presented as a viable option requiring further study in the treatability study report. In response, Hercules developed a pilot study to evaluate bioremediation of the material streams requiring further treatment as identified in the treatability study. Pilot study design requires consideration of scalability, such that study conditions (e.g., pile size, surface area-to-volume ratio) mimic or represent those that would be used during full-scale treatment. As a result, the pilot study requires the excavation, processing and sampling of approximately 350 cubic yards of material from within the TNT/Dynamite Area.

During bioremediation pilot study work plan preparation, the project team reviewed existing information and institutional knowledge in support of a waste determination and regulatory compliance. Preliminary screening of constituent concentrations in soil using the 20X rule identified the potential for toxicity characteristics for lead and 2,4-dinitrotoluene to drive waste classification. Waste characterization sampling will refine the results of the preliminary screen and facilitate completing the waste determination for materials that will support the pilot study. This information will also support regulatory compliance planning for full-scale implementation.

The objectives of the sampling program are as follows:

- Confirm the homogeneity of the soil structure in target sampling areas within the TNT/Dynamite Area as identified in the SI/RI dataset

- Characterize up to 2,400 cubic yards of material in target sampling areas (sampling area footprint to a depth of 3 feet below ground surface)

- Identify target sampling area soils that meet would meet the definition of non-hazardous waste upon excavation

- Identify target sampling area soils that would meet the definition of hazardous waste upon excavation, and associated permitting requirements for pilot study activities

The remainder of this document outlines a sampling program to characterize soil in support of the bioremediation pilot study.

SAMPLING PLAN

Proposed soil excavation to support the pilot study focuses on three areas identified and sampled during the TNT treatability study. The three areas (Area A, Area B, and Area C) occur at the base of the ridgeline that borders the site to the west in a disturbed area where former TNT production operations occurred (demolished between 1997 and 2003). Soil in these areas are generally similar, consisting of glacial till comingled with debris. SI/RI data and field test kits used during soil sampling for treatability testing in the three sampling areas indicates that the depth of TNT in soil ranges from 1 foot to 3 feet below ground surface (ft bgs).

Each of the three sampling areas will be subdivided into subareas approximately 2,700 square feet (sq ft) in size, resulting in 8 subareas (three each in Areas A and C, and two in Area B). A 10-foot by 10-foot grid will be established over the sampling area and 5 grid cells within each subarea will be selected at random using a GIS-based random number generator.

A shovel pit will be excavated in each of the selected grid cells. Depth of excavation will be based on the presence of TNT evaluated qualitatively in the field via the EXPRAY test kit ("presence" defined as a strong signature response on the test strip)[1]. Sampling and additional subdivision will occur based on the depth of positive TNT test kit results as follows:

TNT occurs only in the 0 to 1 ft bgs interval: the subarea will remain at 2,700 sq ft and a sample will be collected from each of the 5 selected grid cells to create a 5-part composite sample representative of the 100 cubic yards of soil (2,700 square feet to a depth of 1 ft bgs equals 2,700 cubic feet [100 cubic yards])

TNT occurs in the 0 to 2 ft bgs interval: the subarea will be further divided into two equal areas (1,350 sq ft each) and five random grid cells will be selected in each area (i.e., additional random grid cells to bring the total number in each subarea to five). The shovel pit and TNT test kit process will be repeated to identify the vertical extent of TNT in each grid cell. Assuming that TNT is only present to a depth of 2 ft bgs, a sample will be collected from each of the 5 selected grid cells to create a 5-part composite sample representative of 100 cubic yards of soil (1,350 sq ft to a depth of 2 ft bgs equals 2,700 cubic feet [100 cubic yards]). If TNT is present at dpeths greater than 2 ft bgs, the sampling scheme outlined below will be used.

TNT occurs throughout the 0 to 3 foot bgs interval: the subarea will be further divided into three equal areas (900 sq ft each) and five random grid cells will be selected in each area (i.e., additional random grid cells to bring the total number in each subarea to five). A sample will be collected from each of the 5 selected grid cells to create a

[1] TNT presence/relative concentrations are used to identify the extents of excavation and waste characterization soil sampling areas/subareas because TNT is the focus of the bioremediation pilot study and primary COC in the area of study. Co-located DNT and lead will be evaluated concurrently, but are not the primary focus of the pilot study. The final remedy will address TNT, DNT and lead (and other constituents, as needed) to achieve remedial action objectives.

5-part composite sample representative of 100 cubic yards of soil (900 sq ft to a depth of 3 ft bgs equals 2,700 cubic feet [100 cubic yards]).

The depth of discrete samples collected from each grid cell will be selected randomly using a random number generator. A number ranging from zero to the total depth in inches will be selected to represent the depth interval from which the sample will be collected. For example, the random number 14 represents a depth of 14 inches.

Based on this approach, a minimum of 8 and a maximum of 24 waste characterization samples will be collected to evaluate approximately 800 and 2,400 cubic yards of soil, respectively. Each 5-part composite will represent 100 cubic yards of soil, taking into account spatial variability in both the horizontal and vertical planes.

Samples will be submitted to Lancaster Laboratories for the following Resource Conservation and Recovery Act (RCRA) characteristic analyses:

- Ignitability
- Corrosivity
- Reactivity
- Toxicity (Method 1311 - Toxicity Characteristic Leaching Procedure [TCLP] for RCRA 8 Metals and RCRA Semivolatiles)

In addition to the waste characterization analyses listed above, co-located samples will be analyzed for TNT and DNT by SW-846 8330, and lead by SW-846 6010B to better understand the correlation between total concentrations in soil and leachable concentrations generated by the TCLP analysis.

Upon receipt of the analytical data, Hercules will tabulate the results and develop a Waste Determination.

SCHEDULE

The bioremediation pilot study is designed to take advantage of the natural heat of summer to facilitate the biological degradation process. Soil piles need to be in the

field no later than July 28. Approximately 5 weeks are required to excavate and separate the soil into the fractions needed to support the study. As such, Hercules respectfully requests approval of this work plan no later than June 16, 2014 to allow field sampling and analysis, and site mobilization to occur before the week of June 23, 2014.

Hercules appreciates your review of this work plan. Please contact Scott Larew of ARCADIS at 609.366.9087 or scott.larew@arcadis-us.com with questions.

Sincerely,

ARCADIS U.S., Inc.

Scott M. Larew
Project Manager

Copies:
Dr. Shin Chang – NJDEP
Zafar Billah – NJDEP
Edward Meeks – Hercules
Mark Foley – WSP Environmental
David Polter – ARCADIS
Mitch Wacksman - ARCADIS

Appendix

aste ara ter at o o pos te
o a p e e otes

A1-8

14:25 — 1' no TNT, 2' no TNT, 3' no TNT } PID 0 — sample @ 4"

location: 748096.62, 452927.06

some concrete pieces observed in the pit around 2'

A1-30

14:35 — 1' some TNT obs, 2' minimal TNT obs, 3' no TNT obs. } PID 0 — sample @ 2"

location: 748070.65, 452961.78

a few ~~minimal~~ small pieces of concrete @ 1 and 2'

A1-23

14:42 — 1' TNT obs. - good amnt, 2' minimal TNT obs, 3' no TNT obs. } PID 0 — sample @ 12"

location 748080.35, 452952.01

med-brown fine-med sand w/ some small pebbles & black chunks that look like charcoal

A1-25

14:50 — 1' TNT obs, 2' a lot of TNT obs, 3' a lot of TNT obs } PID 0 — sample @ 10"

location 748068.79, 452915.97 ft E

some rebar observed @ 1.5'

Majority of TNT seemed to be within 1' although it was obs to 3' in the last test pit sampled.

[sample time]

A2-1

Sample depth (inches)	sample locations	ID
10	A2-10	A2-1
10 ~~2~~ ORD	A2-19	
4	A2-18	
6	A2-~~17~~	
2 10 ORD	A2-17	

A2-1

A2-17

13:35
1' TNT observed, PID: 0
2' minimal TNT
3' TNT observed

sample depth @ 2"

location: 748040.76, 452922.02

A2-10

13:45
1' no TNT
2' no TNT
3' no TNT obs.

PID all 0

Sample @ 4"

location 748047.41, 452906.13

A2-19

13:55
1' no TNT obs
2' no TNT obs
3' no TNT obs.

PID all 0

Sample @ 10"

location: 748028.69, 452884.33

A2-~~4~~ 7

14:00
1' no TNT obs
2' no TNT
3' no TNT

PID all 0

sample @ 6"

location: 748046.96 452885.03

A3-1

A3-8 — 3ft total

1' minimal TNT; PID 0 — sample @ 4"
2' TNT observed ; PID 0
3' TNT observed ; PID all 0 (most observed @ 3')
location: 748049.27, 452950.80

A3-9 — 10:25 — 3ft total

1' TNT obs
2' TNT obs. PID all 0 — sample @ 20"
3' no TNT,
location: 748053.77, 452961.74

A3-28 — 10:38 — 3ft total

1' minimal TNT obs — Sample @ 33'
2' no TNT obsv. PID all 0
3' TNT obs
location: 748020.23ft N, 452965.61ft E
Stained to hit refuse @ 3'

A3-23 — 10:50 — 3ft total

1' TNT obs
2' TNT obs. PID all 0 — sample @ 1"
3' no TNT obs
location: 748037.40, 452979.88 ft

[sample time 10:55]

A3-2

A3-25

10:58
total: 3'

1' no TNT
2' some TNT — PID all 0 — sample @ 36"
3' no TNT

location: 748021.87, 452942.74

A3-19

11:03

1' no TNT
2' no TNT — PID all 0 — sample @ 8"
3' no TNT

location 748030.91, 452939.24 ft

A3-13

11:10

1' no TNT
2' no TNT — PID all 0 — sample @ 22"
3' no TNT

location: 748036.3011 N, 452944.56 ft

A3-21

11:15

1' no TNT
2' no TNT observed — PID all 0 — sample @ 6"
3' TNT observed (a lot)

location: 748034.78 ft N, 452956.43 ft E
~~no~~ iron pipe and debris @ 2'

A3-27

11:25

1' no TNT
2' no TNT — PID all 0 — sample @ 12"
3' no TNT observed

location: 748021.48, 452957.05

[sample time 11:35]

A3-3

A3-6

11:35
1' TNT observed
2' no TNT observed
3' TNT observed
} PID all 0

location: 748056.17, 452992.62

Sample @ ~~25"~~ 34"

(anomaly nearby - avoided ~2 ft away)

A3-5

11:42
1' TNT observed (lots)
2' TNT observed
3' lots of TNT observed
} PID all 0

location 748058.76, 452979.46

Sample @ 12"

lots of wood observed in the pit; most TNT observed so far

A3-10

11:50
1' some TNT observed
2' TNT observed (fair amt)
3' TNT observed
} PID all 0

location 748050.10, 452969.56

Sample @ ~~29~~ 20" 36"

@ 3' broken pipe observed; PID: 1.4

A3-17

12:00
1' some TNT obs.
2' TNT (fair amt) obs
3' lots of TNT obs
} PID all

location 748042.53, 452978.92

Sample a 3"

@ 2.75' broken pipe observed

A3-30

1' no TNT obs
2' no TNT obs.
3' ~~no~~ some TNT obs
} PID all 0

location 748025.05, 452788.16

Sample @ 5"

[sample time 1220]

Sample depth inches	Sample locations	comp. Sample ID
10:10 5	A3-15	
4	A3-8	
20	A3-9	A3-1
33	A3-28	
1	A3-23	
36	A3-25	
8	A3-19	
22	A3-13	A3-2
6	A3-21	
12	A3-27	
25	A3-6	
12	A3-5	
29	A3-10	A3-3
3	A3-17	
5	A3-30	

1 composite

A3-15 - 5
17 - 4
21 - 20
23 - 33
25 - 1

2 comp

A3-18 6
13 20
19 21
25 27

5 - 36
13 - 8
17 - 22
30 - 6

Total sample volume 60 ounces
@ each location 6 ounces

B1-8

15:35
1' no TNT
2' no TNT
3' no TNT
location: 747352.40, 452494.51

Sample @ 3"

B1-3

15:40
1' no TNT obs.
2' no TNT obs
3' TNT observed
location 747355.28, 452500.34
some debris/cement @ 3'

sample @ ~~4"~~ 34"

B1-2

1550
1' no TNT obs.
2' no TNT obs.
3' no TNT obs
location: 747351.61, 452496.60

Sample @ 21"

B1-~~0~~ 14

16:00
1 some TNT (very small)
2 ~~no TNT obs.~~ (very smdl amt of TNT)
3 no TNT obs.
location 747325.56, 452488.74

Sample @ 12"

(Sample time 16:05)

Ashland - Kenvil

B1-27 @ 8:10
location 747311.84, 452497.04
sample @ ~~6"~~ 12"
PID all 0
no TNT @ 1, 2 or 3'
total depth - 3'

B1-22 @ 8:30
location 747328.15, 452505.49
sample @ 4'
PID all 0
concrete
debris and wood observed, brick fragments to 2.5'
Sample @ 16"
no TNT @ 1, 2 or 3'

Project / Client Ashland - Kenvil

B1-6 @ 8:45
location 747348.15
sample @ 30" 452531.86
total depth 3'
TNT 1' } no TNT
2'
3'
PID all 0
concrete and brick
observed to 3 ft.

B1-18 @ 9:00
location ~~747332~~ 747320.17
sample @ 2" 452533.87
total depth 3' 6"
TNT @ none
brick & rubble
observed

B1-20 @ 9:20
location
sample @ 28"
no TNT 747325.91
452492.76

Location _____ Date 4/20/15

Project / Client Ashland - Kenvil

B2-10 9:35
location 747313.47, 452451.08
TNT - none observed 1, 2 or 3'
3-4" organic material
@ top, bricks + debris con. to 3'
Sample @ 10"

B2-7
location ~~747334.~~
747323.34
452443.89
no TNT
sample @ ~~[illegible]~~ 7"

tree roots + brick/conc

B2-23
location 747284.87,
no TNT obs 452465.88
Sample @ 2"

Location _____ Date 4/20/15

Project / Client Ashland - Kenvil

B2-21
location 747295.02
452451.67
sample @ 6"
organic soil
rubble
no TNT

B2-20
location 747288.91
452447.11
rubble throughout
hit refusal @ 3"
2.45'
sample @ 3"

C1-16
location 747215.16, 452671.80
no TNT obs @ 1, 2, 3'
rubble/brick to 3'
sample @ 10"

Location: _____ Date 9/20/15

Project / Client Ashland-Kenvil

C1-17 @ 11:20
747220.71, 952677.98
total depth - 3'
TNT: none @ 1, 2, 3'
sample @ 8"
rubble & brick

C1-5 @ 11:35
location: 747233.44, 952620.03
total depth
TNT - none @ 1, 2 or 3
sample @ 12"
rubble & brick to 3'
sand - coarse med brown

C1-1 @ 11:45
location 747294.93, 952649.78
total depth 3'
NO TNT
broken pipe @ 3'
minimal rubble
sample @ 8"

Location: _____ Date 9/20/15

Project / Client Ashland - Kenvil

C1-27 @ 12:00
747191.60, 747206.93
no TNT obs. 952667.16
total depth 3'
minimal brick / rubble
sample @ 3"

C3-7 @ 12:20
small amounts of TNT observed @ 1, 2 and 3'
hole unstable & collapsing, soil very moist / wet
sample @ 24"
747166.30, 952658.67
wood pieces and some concrete debris / rubble

C3-9 @ 13:30
location 747179.91, 952693.40
TNT @ 1 (purple) and 3' (red)
Sample @ 10"
some debris & brick chips to ~2ft.

Location _____ Date 4/20/15

Project / Client Ashland-Kenvil

C3-20

loc - 747160.88, 452607.59

sample a 4" soil

tot. depth ~~2.5~~ 3.0 (refusal b/c of rock

no TNT observed ~~very~~ min. soil

possibly very minimal TNT @ 1 ft.

C3-14

No TNT observed

- hole very soft, moist, collapsing

no debris observed

Sample @ 18"

74173.18 452691.43

C3-13

749158.89, 452673.80

Sample @ 36" soil

no TNT @ 1, 2, 3'

some TNT observed @ 2'

Location _____ Date 4/20/15

Project / Client Ashland-Kenvil

hole collapsing, very wet

no debris observed

C2-21

- very small amount of TNT observed @ 2' and 3'

none @ 1 ft

location 747164.75, 452641.32

Sample @ 25"

debris observed (bricks/cete)

to 2', extremely wet @ bottom

C2-8

location 747

debris (bricks - pieces throughout)

very wet @ bottom

very minimal amount observed @ 3'

none @ 1' and 2'

Sample @ 34'

Location

Date 4/20/15

Project / Client Ashland-Kenvil

C2-19
747144.69, 452616.57
a very small amount of both TNT
and DNT obs. @ 1'
nothing observed @ 3
debris (brick pieces & cement)
throughout
sample @ 11"

C2-28
747131.40, 452638.19
no TNT obsv. @ 1, 2 or 3'
very minimal surface debris
in upper 2 ft
sample @ 19"

C2-10
747169.60, 452637.62
TNT (alot obs @ 1')
none @ 3', and none - very
tiny amt @ 2
(ran out of spray)
sample @ 5"
very wet, hit a broken pipe a
2 ft, photo possibly

Location

Date 4/20/15

Project / Client Ashland-Kenvil

was still transporting
water to areas in C3

Composite C2-1
(dup & MS/MSD)

C2-3
wood planks @ 0.5 ft
brick & debris
sample @ 2" TD: 1 ft
747178.15, 452632.72
(no Exspray left)

C2-13 16:30
747155.80, 452616.25
sample @ 30"
bricks & debris to 3'
(no Exspray) TD - 3 ft

C2-20 16:40
747 2 ft (GPS died)
sample @ 9" TD - 1'
bricks & debris

Location _____ Date 4/20/15

Project / Client Ashland-Kenvil

C2-7
Sample @ 36"
bricks & debris to 3ft
TD-3

C2-25
Sample @ 12"
crushed brick & debris to 1ft
TD-1ft

[Composite sample C2-2]

C2-22
sample @ 36"
bricks & debris to 3'
TD-3'

C2-17
Sample @ 7"
no debris observed
TD-1'

C2-11
Sample @ 12"
TD-1'
-minimal debris obs

Location _____ Date 4/20/15

Project / Client Ashland-Kenvil

C2-30
no debris observed
TD-1'; sample @ 10"

C2-29

TD-3', sample @ 25"
some debris obs. to 3'

[Composite sample C2-3]

Sample	Time	
B1-2	9:30	
B2-1	10:45	
C1-1	12:20	
C2-1	1600	*MS/MSD & DUP (041015)
C2-2	1655	
C3-1	1500	
C2-3	1715	

ARCADIS

Appendix C

Laboratory Reports

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

April 29, 2015

Project: Kenvil Treatability Study

Submittal Date: 04/17/2015
Group Number: 1554339
SDG: KVM37
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
A3-1 Composite Soil Sample	7852522
A3-1 Composite Soil Sample	7852523
A3-2 Composite Soil Sample	7852525
A3-2 Composite Soil Sample	7852526
A3-3 Composite Soil Sample	7852528
A3-3 Composite Soil Sample	7852529
A2-1 Composite Soil Sample	7852531
A2-1 Composite Soil Sample	7852532
A1-1 Composite Soil Sample	7852534
A1-1(MS) Composite Soil Sample	7852535
A1-1(MSD) Composite Soil Sample	7852536
A1-1(DUP) Composite Soil Sample	7852537
A1-1 Composite Soil Sample	7852538
DUP(041715) Composite Soil Sample	7852540
FB(041715) Grab Water Sample	7852541
B1-1 Composite Soil Sample	7852542
B1-1 Composite Soil Sample	7852543

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO Ashland Attn: Ed Meeks

ELECTRONIC COPY TO	Arcadis U.S, Inc.	Attn: Suzy Weber
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: Kim Abbott
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: Sharon Clouse
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: Valerie Kull

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: A3-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852522
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 10:55 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

31ASR SDG#: KVM37-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	1,500	67	170	1
10727	2,6-Dinitrotoluene	606-20-2	440	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,600	150	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,900	100	300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	100	300	1
06918	1,3-Dinitrobenzene	99-65-0	1,100	100	300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	180	300	1
06918	HMX	2691-41-0	N.D.	250	750	1
06918	Nitrobenzene	98-95-3	N.D.	100	300	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	6,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	100	300	1
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	1
06918	3-Nitrotoluene	99-08-1	N.D.	250	500	1
06918	4-Nitrotoluene	99-99-0	N.D.	200	400	1
06918	PETN	78-11-5	N.D.	2,000	6,000	1
06918	RDX	121-82-4	N.D.	130	300	1
06918	Tetryl	479-45-8	N.D.	160	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	870	100	300	1
06918	2,4,6-Trinitrotoluene	118-96-7	770,000	10,000	30,000	100
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	217	0.485	1.46	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.2	57.5	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	5.11	0.0100	0.0100	1
	The pH was measured in water at 16.6 C.					

*=This limit was used in the evaluation of the final result

Sample Description: A3-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852522
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 10:55 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

31ASR SDG#: KVM37-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 5.11 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 12:55	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/22/2015 20:49	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/23/2015 22:58	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 19:12	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15110104201A	04/21/2015 11:41	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15112054201A	04/22/2015 18:50	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15111039401A	04/21/2015 19:15	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: A3-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852522
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 10:55 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

31ASR SDG#: KVM37-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01121	Reactivity	SW-846 Chapter 7.3	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

31ASR

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7852522
Sample wt/vol: 30.0 (g/mL) g Lab File ID: od1042.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 22 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	2.745	740	JBA
2.	Unknown Aromatic	8.439	240	J
3.	Unknown Aromatic	8.674	130000	J
4.	Unknown Aromatic	8.710	34000	J
5.	Unknown Alkane	8.939	400	J
6.	Unknown Alcohol	9.110	790	J
7.	Unknown Aromatic	9.274	300	J
8.	Unknown	9.333	430	J
9. 19406-51-0	p-Toluidine, 3,5-dinitro-	9.533	5000	J
10.	Unknown Amine	9.586	660	J
11. 35572-78-2	Benzenamine, 2-methyl-3,5-di	9.745	4200	J
12.	Unknown Aromatic	9.863	560	J
13. 31208-76-1	5,7-Dinitro-1H-indazole	10.821	230	J
14. 77899-03-7	1-Heneicosyl formate	11.463	390	J
15. 2136-70-1	Ethanol, 2-(tetradecyloxy)-	12.086	540	J
16. 630-01-3	Hexacosane	12.686	240	J
17. 630-04-6	Hentriacontane	13.286	420	J
18.	Unknown Organic Acid	13.327	350	J
19. 646-31-1	Tetracosane	13.880	220	J
20. 83-47-6	.gamma.-Sitosterol	13.986	350	J
21.	Unknown	14.104	160	J
22.	Unknown	14.256	300	J
23.				
24. SVOCTIC	Total SVOC TICs		180000	JBA
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: A3-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852523
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 10:55 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

31NVE SDG#: KVM37-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.005	0.050	1
00949	2,4-Dinitrotoluene	121-14-2	0.044 J	0.005	0.050	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.005	0.050	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.005	0.050	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.050	1
00949	2-Methylphenol	95-48-7	N.D.	0.005	0.050	1
00949	4-Methylphenol	106-44-5	N.D.	0.010	0.050	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.005	0.050	1
00949	Pentachlorophenol	87-86-5	N.D.	0.015	0.13	1
00949	Pyridine	110-86-1	N.D.	0.010	0.050	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.005	0.050	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.005	0.050	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.627	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00062 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0013	0.0150	1
07055	Lead	7439-92-1	1.48	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15113WAE026	04/24/2015 14:06	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15113WAE026	04/24/2015 03:45	Sherry L Morrow	1
07035	Arsenic	SW-846 6010B	1	151135705001	04/24/2015 09:55	Eric L Eby	1
07046	Barium	SW-846 6010B	1	151135705001	04/24/2015 09:55	Eric L Eby	1

*=This limit was used in the evaluation of the final result

Sample Description: A3-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852523
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 10:55 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

31NVE SDG#: KVM37-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151135705001	04/24/2015 09:55	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	151135705001	04/24/2015 09:55	Eric L Eby	1
07055	Lead	SW-846 6010B	1	151135705001	04/24/2015 09:55	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	151135705001	04/24/2015 09:55	Eric L Eby	1
07066	Silver	SW-846 6010B	1	151145705003	04/27/2015 16:00	Suzanne M Will	1
00259	Mercury	SW-846 7470A	1	151135713001	04/24/2015 11:32	Parker D Lindstrom	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151135705001	04/23/2015 22:00	Annamaria Kuhns	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	2	151145705003	04/27/2015 07:38	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151135713001	04/24/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15112-2486-094 7B	04/22/2015 12:20	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: A3-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852525
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 11:35 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

32ASR SDG#: KVM37-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	210	77	190	1
10727	2,6-Dinitrotoluene	606-20-2	46	19	38	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,100	170	460	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	930	120	350	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	350	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	350	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	350	1
06918	HMX	2691-41-0	N.D.	290	860	1
06918	Nitrobenzene	98-95-3	N.D.	120	350	1
06918	Nitroglycerin	55-63-0	N.D.	2,300	6,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	350	1
06918	2-Nitrotoluene	88-72-2	N.D.	230	460	1
06918	3-Nitrotoluene	99-08-1	N.D.	290	580	1
06918	4-Nitrotoluene	99-99-0	N.D.	230	460	1
06918	PETN	78-11-5	N.D.	2,300	6,900	1
06918	RDX	121-82-4	N.D.	150	350	1
06918	Tetryl	479-45-8	N.D.	180	460	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	120	350	1
06918	2,4,6-Trinitrotoluene	118-96-7	17,000	120	350	1
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	39.8	0.565	1.69	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.3	58.0	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	4.70	0.0100	0.0100	1
	The pH was measured in water at 18.4 C.					

*=This limit was used in the evaluation of the final result

Sample Description: A3-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852525
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 11:35 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

32ASR SDG#: KVM37-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 4.70 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	13.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 13:18	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/22/2015 21:31	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 19:22	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15110104201A	04/21/2015 11:44	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15112054201A	04/22/2015 18:50	Daniel S Smith	1

*=This limit was used in the evaluation of the final result

Sample Description: A3-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852525
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 11:35 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

32ASR SDG#: KVM37-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01122	Sulfide (Reactivity)	SW-846 9034	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	15114820004A	04/24/2015 20:37	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

32ASR

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7852525
Sample wt/vol: 30.1 (g/mL) g Lab File ID: od1043.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: 13.2 Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 10 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 113-00-8	Guanidine	2.745	940	J
2.	Unknown Aromatic	8.522	15000	J
3.	Unknown Amide	9.069	160	J
4. 19406-51-0	p-Toluidine, 3,5-dinitro-	9.480	1500	J
5. 35572-78-2	Benzenamine, 2-methyl-3,5-di	9.686	950	J
6. 2004-39-9	1-Heptacosanol	11.463	400	J
7. 661-19-8	Behenic alcohol	12.092	530	J
8. 630-04-6	Hentriacontane	13.286	150	J
9.	Unknown	13.745	440	J
10. 83-46-5	.beta.-Sitosterol	13.986	320	J
11.				
12. SVOCTIC	Total SVOC TICs		20000	J
13.				
14.				
15.				
16.				
17.				
18.				
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30.				

page 1 of 1

FORM I SV-1

Sample Description: **A3-2 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852526
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 11:35 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

32NVE SDG#: KVM37-05

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.005	0.050	1
00949	2,4-Dinitrotoluene	121-14-2	0.009 J	0.005	0.050	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.005	0.050	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.005	0.050	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.050	1
00949	2-Methylphenol	95-48-7	N.D.	0.005	0.050	1
00949	4-Methylphenol	106-44-5	N.D.	0.010	0.050	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.005	0.050	1
00949	Pentachlorophenol	87-86-5	N.D.	0.015	0.13	1
00949	Pyridine	110-86-1	N.D.	0.010	0.050	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.005	0.050	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.005	0.050	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.631	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00035 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0013	0.0150	1
07055	Lead	7439-92-1	0.202	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15113WAE026	04/24/2015 15:56	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15113WAE026	04/24/2015 03:45	Sherry L Morrow	1
07035	Arsenic	SW-846 6010B	1	151135705001	04/24/2015 10:44	Eric L Eby	1
07046	Barium	SW-846 6010B	1	151135705001	04/24/2015 10:44	Eric L Eby	1

*=This limit was used in the evaluation of the final result

Sample Description: A3-2 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852526
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 11:35 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

32NVE SDG#: KVM37-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151135705001	04/24/2015 10:44	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	151135705001	04/24/2015 10:44	Eric L Eby	1
07055	Lead	SW-846 6010B	1	151135705001	04/24/2015 10:44	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	151135705001	04/24/2015 10:44	Eric L Eby	1
07066	Silver	SW-846 6010B	1	151145705003	04/27/2015 16:40	Suzanne M Will	1
00259	Mercury	SW-846 7470A	1	151135713001	04/24/2015 11:53	Parker D Lindstrom	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151135705001	04/23/2015 22:00	Annamaria Kuhns	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	2	151145705003	04/27/2015 07:38	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151135713001	04/24/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15112-2486-094 7B	04/22/2015 12:20	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: A3-3 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852528
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 12:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

33ASR SDG#: KVM37-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	1,700		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	660		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,600		150	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,700		100	300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		100	300	1
06918	1,3-Dinitrobenzene	99-65-0	140	J	100	300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		230	300	1
06918	HMX	2691-41-0	N.D.		250	750	1
06918	Nitrobenzene	98-95-3	N.D.		100	300	1
06918	Nitroglycerin	55-63-0	N.D.		2,000	6,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		100	300	1
06918	2-Nitrotoluene	88-72-2	N.D.		200	400	1
06918	3-Nitrotoluene	99-08-1	370	J	250	500	1
06918	4-Nitrotoluene	99-99-0	N.D.		200	400	1
06918	PETN	78-11-5	N.D.		2,000	6,000	1
06918	RDX	121-82-4	N.D.		410	410	1
06918	Tetryl	479-45-8	N.D.		160	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,100		100	300	1
06918	2,4,6-Trinitrotoluene	118-96-7	480,000		5,000	15,000	50
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	125		0.485	1.46	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**		**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.		19.9	59.8	1
	40 CFR 261.21						
00542	Ignitability	n.a.	See Below				1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.						
	SW-846 9034		**mg/kg**		**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.		53.6	160	1
	SW-846 9045C modified		**Std. Units**		**Std. Units**	**Std. Units**	
00394	pH	n.a.	4.93		0.0100	0.0100	1

*=This limit was used in the evaluation of the final result

Sample Description: A3-3 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852528
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 12:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

33ASR SDG#: KVM37-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 9045C modified**		**Std. Units**	**Std. Units**	**Std. Units**	
	The pH was measured in water at 19.1 C.					
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 4.93 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 13:41	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/22/2015 22:14	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/23/2015 23:40	James H Place	50
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 19:25	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15110104201A	04/21/2015 11:45	Joseph E McKenzie	1

*=This limit was used in the evaluation of the final result

Sample Description: A3-3 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852528
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 12:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

33ASR SDG#: KVM37-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00542	Ignitability	40 CFR 261.21	1	15112054201A	04/22/2015 18:50	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

33ASR

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7852528
Sample wt/vol: 30.2 (g/mL) g Lab File ID: od1044.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 20 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	2.746	970	JBA
2.	Unknown Aromatic	7.292	570	J
3.609-93-8	Phenol, 4-methyl-2,6-dinitro	7.981	320	J
4.	Unknown Aromatic	8.439	380	J
5.	Unknown Aromatic	8.634	120000	J
6.	Unknown	8.975	1000	J
7.	Unknown Organic Acid	9.098	330	J
8.	Unknown	9.245	500	J
9.	Unknown	9.404	300	J
10.19406-51-0	p-Toluidine, 3,5-dinitro-	9.498	2700	J
11.	Unknown Aromatic	9.575	740	J
12.35572-78-2	Benzenamine, 2-methyl-3,5-di	9.710	1700	J
13.	Unknown Aromatic	9.851	620	J
14.206-44-0	Fluoranthene	10.057	180	J
15.31208-76-1	5,7-Dinitro-1H-indazole	10.816	770	J
16.295-17-0	Cyclotetradecane	12.092	320	J
17.205-82-3	Benzo[j]fluoranthene	12.386	160	J
18.544-77-4	Hexadecane, 1-iodo-	13.286	190	J
19.	Unknown PAH	13.745	560	J
20.83-46-5	.beta.-Sitosterol	13.980	350	J
21.				
22.SVOCTIC	Total SVOC TICs		130000	JBA
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: **A3-3 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852529
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 12:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

33NVE SDG#: KVM37-08

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.005	0.050	1
00949	2,4-Dinitrotoluene	121-14-2	0.016 J	0.005	0.050	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.005	0.050	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.005	0.050	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.050	1
00949	2-Methylphenol	95-48-7	N.D.	0.005	0.050	1
00949	4-Methylphenol	106-44-5	N.D.	0.010	0.050	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.005	0.050	1
00949	Pentachlorophenol	87-86-5	N.D.	0.015	0.13	1
00949	Pyridine	110-86-1	N.D.	0.010	0.050	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.005	0.050	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.005	0.050	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.661	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00045 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0013	0.0150	1
07055	Lead	7439-92-1	0.887	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15113WAE026	04/24/2015 16:18	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15113WAE026	04/24/2015 03:45	Sherry L Morrow	1
07035	Arsenic	SW-846 6010B	1	151135705001	04/24/2015 10:47	Eric L Eby	1
07046	Barium	SW-846 6010B	1	151135705001	04/24/2015 10:47	Eric L Eby	1

*=This limit was used in the evaluation of the final result

Sample Description: A3-3 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852529
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 12:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

33NVE SDG#: KVM37-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151135705001	04/24/2015 10:47	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	151135705001	04/24/2015 10:47	Eric L Eby	1
07055	Lead	SW-846 6010B	1	151135705001	04/24/2015 10:47	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	151135705001	04/24/2015 10:47	Eric L Eby	1
07066	Silver	SW-846 6010B	1	151145705003	04/27/2015 16:42	Suzanne M Will	1
00259	Mercury	SW-846 7470A	1	151135713001	04/24/2015 11:55	Parker D Lindstrom	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151135705001	04/23/2015 22:00	Annamaria Kuhns	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	2	151145705003	04/27/2015 07:38	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151135713001	04/24/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15112-2486-094 7B	04/22/2015 12:20	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: A2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852531
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 14:00 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

21ASR SDG#: KVM37-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	790	67	170	1
10727	2,6-Dinitrotoluene	606-20-2	230	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,800	140	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,600	95	290	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	95	290	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	95	290	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	95	290	1
06918	HMX	2691-41-0	N.D.	240	710	1
06918	Nitrobenzene	98-95-3	N.D.	95	290	1
06918	Nitroglycerin	55-63-0	N.D.	1,900	5,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.	95	290	1
06918	2-Nitrotoluene	88-72-2	N.D.	190	380	1
06918	3-Nitrotoluene	99-08-1	N.D.	240	480	1
06918	4-Nitrotoluene	99-99-0	N.D.	190	380	1
06918	PETN	78-11-5	N.D.	1,900	5,700	1
06918	RDX	121-82-4	N.D.	120	290	1
06918	Tetryl	479-45-8	N.D.	150	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	95	290	1
06918	2,4,6-Trinitrotoluene	118-96-7	96,000	950	2,900	10
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	290	0.485	1.46	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.2	57.5	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	4.65	0.0100	0.0100	1
	The pH was measured in water at 19.3 C.					

*=This limit was used in the evaluation of the final result

Sample Description: A2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852531
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 14:00 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

21ASR SDG#: KVM37-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 4.65 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 14:04	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/22/2015 22:56	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/24/2015 00:22	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 19:28	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15110104201A	04/21/2015 11:46	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15112054201A	04/22/2015 18:50	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15111039401A	04/21/2015 19:15	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: A2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852531
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 14:00 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

21ASR SDG#: KVM37-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01121	Reactivity	SW-846 Chapter 7.3	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

21ASR

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7852531
Sample wt/vol: 30.0 (g/mL) g Lab File ID: od1045.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.503-86-6	4H-Imidazol-4-one, 2-amino-1	4.416	5600	J
2.	Unknown Aromatic	8.563	28000	J
3.19406-51-0	p-Toluidine, 3,5-dinitro-	9.510	5600	J
4.57-10-3	n-Hexadecanoic acid	9.586	290	J
5.35572-78-2	Benzenamine, 2-methyl-3,5-di	9.722	2700	J
6.206-44-0	Fluoranthene	10.051	410	J
7.1454-84-8	n-Nonadecanol-1	10.786	260	J
8.295-17-0	Cyclotetradecane	11.457	880	J
9.1599-67-3	1-Docosene	12.086	670	J
10.557-59-5	Tetracosanoic acid	12.310	160	J
11.192-97-2	Benzo[e]pyrene	12.398	260	J
12.	Unknown Organic Acid	13.233	170	J
13.630-04-6	Hentriacontane	13.292	350	J
14.1000333-91-9	1-Docosanol, methyl ether	13.321	420	J
15.	Unknown Ketone	13.357	150	J
16.	Unknown Alcohol	13.721	150	J
17.	Unknown	13.751	300	J
18.83-48-7	Stigmasterol	13.804	170	J
19.629-94-7	Heneicosane	13.886	240	J
20.74685-30-6	5-Eicosene, (E)-	13.933	200	J
21.83-46-5	.beta.-Sitosterol	13.986	550	J
22.	Unknown	14.104	160	J
23.	Unknown	14.262	410	J
24.				
25.SVOCTIC	Total SVOC TICs		48000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: A2-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852532
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 14:00 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

21NVE SDG#: KVM37-11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.005	0.050	1
00949	2,4-Dinitrotoluene	121-14-2	0.009 J	0.005	0.050	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.005	0.050	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.005	0.050	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.050	1
00949	2-Methylphenol	95-48-7	N.D.	0.005	0.050	1
00949	4-Methylphenol	106-44-5	N.D.	0.010	0.050	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.005	0.050	1
00949	Pentachlorophenol	87-86-5	N.D.	0.015	0.13	1
00949	Pyridine	110-86-1	N.D.	0.010	0.050	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.005	0.050	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.005	0.050	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.696	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00099 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0013	0.0150	1
07055	Lead	7439-92-1	2.03	0.0047	0.0150	1
07036	Selenium	7782-49-2	0.0058 J	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000082 J	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15113WAE026	04/24/2015 16:40	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15113WAE026	04/24/2015 03:45	Sherry L Morrow	1
07035	Arsenic	SW-846 6010B	1	151135705001	04/24/2015 10:50	Eric L Eby	1
07046	Barium	SW-846 6010B	1	151135705001	04/24/2015 10:50	Eric L Eby	1

*=This limit was used in the evaluation of the final result

Sample Description: A2-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852532
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 14:00 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

21NVE SDG#: KVM37-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151135705001	04/24/2015 10:50	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	151135705001	04/24/2015 10:50	Eric L Eby	1
07055	Lead	SW-846 6010B	1	151135705001	04/24/2015 10:50	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	151135705001	04/24/2015 10:50	Eric L Eby	1
07066	Silver	SW-846 6010B	1	151145705003	04/27/2015 16:45	Suzanne M Will	1
00259	Mercury	SW-846 7470A	1	151135713001	04/24/2015 11:57	Parker D Lindstrom	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151135705001	04/23/2015 22:00	Annamaria Kuhns	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	2	151145705003	04/27/2015 07:38	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151135713001	04/24/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15112-2486-094 7B	04/22/2015 12:20	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: A1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852534
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11ASR SDG#: KVM37-13BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	2,300	67	170	1
10727	2,6-Dinitrotoluene	606-20-2	270	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	9,400	150	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,800	100	300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	100	300	1
06918	1,3-Dinitrobenzene	99-65-0	1,600	100	300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	100	300	1
06918	HMX	2691-41-0	N.D.	250	750	1
06918	Nitrobenzene	98-95-3	N.D.	100	300	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	6,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	100	300	1
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	1
06918	3-Nitrotoluene	99-08-1	660	250	500	1
06918	4-Nitrotoluene	99-99-0	N.D.	640	640	1
06918	PETN	78-11-5	N.D.	2,000	6,000	1
06918	RDX	121-82-4	N.D.	130	300	1
06918	Tetryl	479-45-8	N.D.	160	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	9,500	100	300	1
06918	2,4,6-Trinitrotoluene	118-96-7	17,000,000	250,000	750,000	2500
	Reporting limits were raised due to interference from the sample matrix.					
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.					
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	350	0.500	1.50	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.8	59.3	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1

*=This limit was used in the evaluation of the final result

Sample Description: A1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852534
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11ASR SDG#: KVM37-13BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 9045C modified**		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH The pH was measured in water at 16.9 C.	n.a.	5.90	0.0100	0.0100	1
	SW-846 Chapter 7					
00496	Corrosivity The pH of the sample is 5.90 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.	n.a.	See Below			1
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".	n.a.	See Below			1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 14:27	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/22/2015 23:39	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/24/2015 15:59	James H Place	2500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 18:49	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15110104201A	04/21/2015 11:48	Joseph E McKenzie	1

*=This limit was used in the evaluation of the final result

Sample Description: A1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852534
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11ASR SDG#: KVM37-13BKG

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00542	Ignitability	40 CFR 261.21	1	15112054201A	04/22/2015 18:50	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

11ASR

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7852534
Sample wt/vol: 30.0 (g/mL) g Lab File ID: od1046.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	2.746	820	JBA
2.	Unknown Aromatic	8.645	90000	J
3.	Unknown	9.257	200	J
4.19406-51-0	p-Toluidine, 3,5-dinitro-	9.516	2300	J
5.618-87-1	Benzenamine, 3,5-dinitro-	9.580	590	J
6.35572-78-2	Benzenamine, 2-methyl-3,5-di	9.716	1300	J
7.	Unknown Aromatic	9.851	200	J
8.82-05-3	7H-Benz[de]anthracen-7-one	11.563	300	J
9.2004-39-9	1-Heptacosanol	12.086	660	J
10.	Unknown	12.704	450	J
11.	Unknown	13.233	280	J
12.7225-64-1	Heptadecane, 9-octyl-	13.292	420	J
13.	Unknown Alcohol	13.321	410	J
14.59-02-9	Vitamin E	13.398	230	J
15.	Unknown Organic Acid	13.533	200	J
16.474-62-4	Campesterol	13.721	380	J
17.	Unknown Alkane	13.751	720	J
18.	Unknown	13.804	200	J
19.4292-19-7	Dodecane, 1-iodo-	13.886	380	J
20.295-65-8	Cyclohexadecane	13.927	230	J
21.83-46-5	.beta.-Sitosterol	13.986	600	J
22.	Unknown Alcohol	14.021	180	J
23.	Unknown	14.104	320	J
24.	Unknown	14.168	180	J
25.	Unknown Organic Acid	14.257	370	J
26.				
27.SVOCTIC	Total SVOC TICs		100000	JBA
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: A1-1(MS) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852535
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11ASR SDG#: KVM37-13MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	3,700	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	1,900	17	33	1
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	21,000	140	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	12,000	95	290	1
06918	1,2-Dinitrobenzene	528-29-0	8,900	95	290	1
06918	1,3-Dinitrobenzene	99-65-0	5,900	95	290	1
06918	1,4-Dinitrobenzene	100-25-4	9,100	95	290	1
06918	HMX	2691-41-0	4,600	240	710	1
06918	Nitrobenzene	98-95-3	5,000	95	290	1
06918	Nitroglycerin	55-63-0	19,000	1,900	5,700	1
06918	1-Nitronaphthalene	86-57-7	6,600	95	290	1
06918	2-Nitrotoluene	88-72-2	4,500	190	380	1
06918	3-Nitrotoluene	99-08-1	4,900	240	480	1
06918	4-Nitrotoluene	99-99-0	4,200	190	380	1
06918	PETN	78-11-5	19,000	1,900	5,700	1
06918	RDX	121-82-4	4,900	120	290	1
06918	Tetryl	479-45-8	13,000	150	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	11,000	95	290	1
06918	2,4,6-Trinitrotoluene	118-96-7	11,000,000	240,000	710,000	2500
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	416	0.500	1.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 14:50	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/23/2015 00:21	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/24/2015 16:42	James H Place	2500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 18:59	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: A1-1(MSD) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852536
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11ASR SDG#: KVM37-13MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	3,700	67	170	1
10727	2,6-Dinitrotoluene	606-20-2	1,900	17	33	1
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,700	140	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,200	95	290	1
06918	1,2-Dinitrobenzene	528-29-0	9,000	95	290	1
06918	1,3-Dinitrobenzene	99-65-0	5,400	95	290	1
06918	1,4-Dinitrobenzene	100-25-4	8,900	95	290	1
06918	HMX	2691-41-0	4,500	240	710	1
06918	Nitrobenzene	98-95-3	4,800	95	290	1
06918	Nitroglycerin	55-63-0	19,000	1,900	5,700	1
06918	1-Nitronaphthalene	86-57-7	9,700	95	290	1
06918	2-Nitrotoluene	88-72-2	4,900	190	380	1
06918	3-Nitrotoluene	99-08-1	5,200	240	480	1
06918	4-Nitrotoluene	99-99-0	4,500	190	380	1
06918	PETN	78-11-5	19,000	1,900	5,700	1
06918	RDX	121-82-4	4,900	120	290	1
06918	Tetryl	479-45-8	4,800	150	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	6,000	95	290	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,100,000	240,000	710,000	2500
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	378	0.500	1.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 15:13	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/23/2015 01:46	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/24/2015 17:24	James H Place	2500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 19:02	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: A1-1(DUP) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852537
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11ASR SDG#: KVM37-13DUP

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	347	0.500	1.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 18:56	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: **A1-1 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852538
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11NVE SDG#: KVM37-14

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.005	0.050	1
00949	2,4-Dinitrotoluene	121-14-2	0.044 J	0.005	0.050	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.005	0.050	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.005	0.050	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.050	1
00949	2-Methylphenol	95-48-7	N.D.	0.005	0.050	1
00949	4-Methylphenol	106-44-5	N.D.	0.010	0.050	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.005	0.050	1
00949	Pentachlorophenol	87-86-5	N.D.	0.015	0.13	1
00949	Pyridine	110-86-1	N.D.	0.010	0.050	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.005	0.050	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.005	0.050	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.897	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.0013 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0015 J	0.0013	0.0150	1
07055	Lead	7439-92-1	1.79	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15113WAE026	04/24/2015 17:02	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15113WAE026	04/24/2015 03:45	Sherry L Morrow	1
07035	Arsenic	SW-846 6010B	1	151135705001	04/24/2015 10:54	Eric L Eby	1
07046	Barium	SW-846 6010B	1	151135705001	04/24/2015 10:54	Eric L Eby	1

*=This limit was used in the evaluation of the final result

Sample Description: A1-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852538
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 15:20 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

11NVE SDG#: KVM37-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151135705001	04/24/2015 10:54	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	151135705001	04/24/2015 10:54	Eric L Eby	1
07055	Lead	SW-846 6010B	1	151135705001	04/24/2015 10:54	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	151135705001	04/24/2015 10:54	Eric L Eby	1
07066	Silver	SW-846 6010B	1	151145705003	04/27/2015 16:48	Suzanne M Will	1
00259	Mercury	SW-846 7470A	1	151135713001	04/24/2015 11:59	Parker D Lindstrom	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151135705001	04/23/2015 22:00	Annamaria Kuhns	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	2	151145705003	04/27/2015 07:38	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151135713001	04/24/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15112-2486-094 7B	04/22/2015 12:20	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: DUP(041715) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852540
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AKDUP SDG#: KVM37-16FD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	2,700		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	290		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,400		150	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,200		100	300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		100	300	1
06918	1,3-Dinitrobenzene	99-65-0	250	J	100	300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		100	300	1
06918	HMX	2691-41-0	N.D.		250	750	1
06918	Nitrobenzene	98-95-3	N.D.		100	300	1
06918	Nitroglycerin	55-63-0	N.D.		2,000	6,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		100	300	1
06918	2-Nitrotoluene	88-72-2	N.D.		200	400	1
06918	3-Nitrotoluene	99-08-1	N.D.		250	500	1
06918	4-Nitrotoluene	99-99-0	N.D.		200	400	1
06918	PETN	78-11-5	N.D.		2,000	6,000	1
06918	RDX	121-82-4	N.D.		130	300	1
06918	Tetryl	479-45-8	N.D.		160	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,500		100	300	1
06918	2,4,6-Trinitrotoluene	118-96-7	460,000		10,000	30,000	100
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	588		0.485	1.46	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 15:36	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/23/2015 02:28	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/24/2015 03:12	James H Place	100

*=This limit was used in the evaluation of the final result

Sample Description: DUP(041715) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852540
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AKDUP SDG#: KVM37-16FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 19:31	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AKDUP

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7852540
Sample wt/vol: 30.2 (g/mL) g Lab File ID: od1049.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 21 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Aromatic	8.692	3600	J
2.		Unknown Carboxylic Acid	8.733	1400	J
3.		Unknown	8.763	480	J
4.		Unknown	8.798	970	J
5.		Unknown	8.816	990	J
6.		Unknown Ketone	8.898	1300	J
7.		Unknown Alkane	8.945	1200	J
8.		Unknown Aromatic	8.963	600	J
9.	19406-51-0	p-Toluidine, 3,5-dinitro-	9.639	6300	J
10.	35572-78-2	Benzenamine, 2-methyl-3,5-di	9.833	5000	J
11.	1000333-91-9	1-Docosanol, methyl ether	11.463	700	J
12.	1000309-38-3	Oxalic acid, isobutyl octade	12.086	1000	J
13.	544-76-3	Hexadecane	12.692	1200	J
14.	593-49-7	Heptacosane	13.298	880	J
15.		Unknown Alkane	13.327	1000	J
16.		Unknown	13.757	1300	J
17.	593-45-3	Octadecane	13.892	770	J
18.	83-47-6	.gamma.-Sitosterol	13.992	1400	J
19.		Unknown	14.115	800	J
20.		Unknown	14.174	670	J
21.		Unknown	14.268	1000	J
22.					
23.	SVOCTIC	Total SVOC TICs		33000	J
24.					
25.					
26.					
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: FB(041715) Grab Water Sample
Ashland Kenvil

LL Sample # WW 7852541
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 16:00 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AKFBK SDG#: KVM37-17FB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	6	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.6	1	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/l**	**ug/l**	**ug/l**	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	0.30	0.60	1
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	0.20	0.60	1
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	N.D.	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.20	0.60	1
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.80	1
06916	1,3,5-Trinitrobenzene	99-35-4	N.D.	0.20	0.60	1
06916	2,4,6-Trinitrotoluene	118-96-7	N.D.	0.20	0.60	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0047	0.0150	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
04678	TCL SW846 8270C Water	SW-846 8270C	1	15108WAB026	04/22/2015 16:48	Holly B Ziegler	1
00813	BNA Water Extraction	SW-846 3510C	1	15108WAB026	04/19/2015 18:45	Nicholas W Shroyer	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	151090005A	04/22/2015 15:52	James H Place	1
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	151090005A	04/20/2015 15:15	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: FB(041715) Grab Water Sample
Ashland Kenvil

LL Sample # WW 7852541
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 16:00 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AKFBK SDG#: KVM37-17FB

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	151101848005	04/21/2015 22:14	Elaine F Stoltzfus	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151101848005	04/21/2015 10:16	James L Mertz	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AKFBK

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) WATER Lab Sample ID: 7852541
Sample wt/vol: 223 (g/mL) mL Lab File ID: dd0636.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/22/15
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SVOCTIC	Total SVOC TICs		0	U
2.					
3.					
4.					
5.					
6.					
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page 1 of 1

FORM I SV-1

Sample Description: B1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852542
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 16:05 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

B1ASR SDG#: KVM37-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	120	J	74	180	1
10727	2,6-Dinitrotoluene	606-20-2	39		18	37	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,400		170	450	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	690		110	330	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		110	330	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		110	330	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		110	330	1
06918	HMX	2691-41-0	N.D.		280	840	1
06918	Nitrobenzene	98-95-3	N.D.		110	330	1
06918	Nitroglycerin	55-63-0	N.D.		2,200	6,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.		110	330	1
06918	2-Nitrotoluene	88-72-2	N.D.		220	450	1
06918	3-Nitrotoluene	99-08-1	N.D.		280	560	1
06918	4-Nitrotoluene	99-99-0	N.D.		220	450	1
06918	PETN	78-11-5	N.D.		2,200	6,700	1
06918	RDX	121-82-4	N.D.		140	330	1
06918	Tetryl	479-45-8	N.D.		180	450	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		110	330	1
06918	2,4,6-Trinitrotoluene	118-96-7	18,000		110	330	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	462		0.546	1.64	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**		**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.		19.7	59.2	1
	40 CFR 261.21						
00542	Ignitability	n.a.	See Below				1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.						
	SW-846 9034		**mg/kg**		**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.		53.6	160	1
	SW-846 9045C modified		**Std. Units**		**Std. Units**	**Std. Units**	
00394	pH	n.a.	5.90		0.0100	0.0100	1
	The pH was measured in water at 18.2 C.						

*=This limit was used in the evaluation of the final result

Sample Description: B1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852542
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 16:05 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

B1ASR SDG#: KVM37-18

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 5.90 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	10.3	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15108SLA026	04/21/2015 15:58	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15108SLA026	04/19/2015 09:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151080017A	04/23/2015 03:11	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151080017A	04/20/2015 12:40	Kerrie A Freeburn	1
06955	Lead	SW-846 6010B	1	151125708001	04/23/2015 19:35	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151125708001	04/22/2015 20:51	Annamaria Kuhns	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15110104201A	04/21/2015 11:51	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15112054201A	04/22/2015 18:50	Daniel S Smith	1

*=This limit was used in the evaluation of the final result

Sample Description: B1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7852542
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 16:05 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

B1ASR SDG#: KVM37-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01122	Sulfide (Reactivity)	SW-846 9034	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15111039401A	04/21/2015 19:15	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15110112101A	04/20/2015 07:50	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	15114820004A	04/24/2015 20:37	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B1ASR

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7852542
Sample wt/vol: 30.3 (g/mL) g Lab File ID: od1050.d
Level: (low/med) LOW Date Received: 04/17/15
% Moisture: 10.3 Decanted: (Y/N) Date Extracted: 04/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 22 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	2.757	960	JBA
2.	Unknown Aromatic	8.522	12000	J
3.19406-51-0	p-Toluidine, 3,5-dinitro-	9.486	1900	J
4.638-53-9	Tridecanoic acid	9.581	240	J
5.35572-78-2	Benzenamine, 2-methyl-3,5-di	9.692	880	J
6.1000348-57-1	Fumaric acid, 2-chloropropyl	10.786	190	J
7.18435-45-5	1-Nonadecene	11.457	670	J
8.74685-33-9	3-Eicosene, (E)-	12.086	990	J
9.207-08-9	Benzo[k]fluoranthene	12.398	270	J
10.	Unknown	12.704	240	J
11.28808-36-8	3-Dotriacontanone, 9,11-dihy	13.292	250	J
12.1000348-57-2	Fumaric acid, 2-chloropropyl	13.321	200	J
13.	Unknown	13.557	240	J
14.	Unknown	13.727	440	J
15.	Unknown	13.751	230	J
16.83-48-7	Stigmasterol	13.804	260	J
17.	Unknown Alkane	13.927	270	J
18.83-46-5	.beta.-Sitosterol	13.986	850	J
19.	Unknown	14.074	210	J
20.	Unknown	14.116	240	J
21.	Unknown	14.157	340	J
22.	Unknown	14.263	400	J
23.				
24.SVOCTIC	Total SVOC TICs		23000	JBA
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: **B1-1 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852543
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 16:05 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

B1NVE SDG#: KVM37-19

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.005	0.050	1
00949	2,4-Dinitrotoluene	121-14-2	N.D.	0.005	0.050	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.005	0.050	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.005	0.050	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.050	1
00949	2-Methylphenol	95-48-7	N.D.	0.005	0.050	1
00949	4-Methylphenol	106-44-5	N.D.	0.010	0.050	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.005	0.050	1
00949	Pentachlorophenol	87-86-5	N.D.	0.015	0.13	1
00949	Pyridine	110-86-1	N.D.	0.010	0.050	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.005	0.050	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.005	0.050	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.530	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00054 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0014 J	0.0013	0.0150	1
07055	Lead	7439-92-1	4.56	0.0235	0.0750	5
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15113WAE026	04/24/2015 17:24	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15113WAE026	04/24/2015 03:45	Sherry L Morrow	1
07035	Arsenic	SW-846 6010B	1	151135705001	04/24/2015 10:57	Eric L Eby	1
07046	Barium	SW-846 6010B	1	151135705001	04/24/2015 10:57	Eric L Eby	1

*=This limit was used in the evaluation of the final result

Sample Description: **B1-1 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7852543
LL Group # 1554339
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/17/2015 16:05 by KL

Submitted: 04/17/2015 19:18
Reported: 04/29/2015 10:42

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

B1NVE SDG#: KVM37-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151135705001	04/24/2015 10:57	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	151135705001	04/24/2015 10:57	Eric L Eby	1
07055	Lead	SW-846 6010B	1	151135705001	04/27/2015 16:29	Katlin N Cataldi	5
07036	Selenium	SW-846 6010B	1	151135705001	04/24/2015 10:57	Eric L Eby	1
07066	Silver	SW-846 6010B	1	151145705003	04/27/2015 16:51	Suzanne M Will	1
00259	Mercury	SW-846 7470A	1	151135713001	04/24/2015 12:01	Parker D Lindstrom	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151135705001	04/23/2015 22:00	Annamaria Kuhns	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	2	151145705003	04/27/2015 07:38	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151135713001	04/24/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15112-2486-094 7B	04/22/2015 12:20	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1554339
Reported: 04/29/2015 10:42

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15108SLA026	Sample number(s): 7852522,7852525,7852528,7852531,7852534-7852536,7852540,7852542								
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	106		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	100		83-120		
Batch number: 15108WAB026	Sample number(s): 7852541								
2,4-Dinitrotoluene	N.D.	1.	5	ug/l	102	104	77-124	2	30
2,6-Dinitrotoluene	N.D.	0.5	1	ug/l	101	104	80-119	3	30
Batch number: 15113WAE026	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543								
1,4-Dichlorobenzene	N.D.	0.003	0.005	mg/l	64		56-106		
2,4-Dinitrotoluene	N.D.	0.005	0.025	mg/l	90		77-124		
Hexachlorobenzene	N.D.	0.0005	0.003	mg/l	88		73-118		
Hexachlorobutadiene	N.D.	0.003	0.005	mg/l	64		42-110		
Hexachloroethane	N.D.	0.005	0.025	mg/l	55		43-108		
2-Methylphenol	N.D.	0.003	0.005	mg/l	77		66-112		
4-Methylphenol	N.D.	0.003	0.005	mg/l	66		56-109		
Nitrobenzene	N.D.	0.003	0.005	mg/l	80		77-119		
Pentachlorophenol	N.D.	0.005	0.025	mg/l	96		50-121		
Pyridine	N.D.	0.010	0.025	mg/l	41		22-96		
2,4,5-Trichlorophenol	N.D.	0.003	0.005	mg/l	84		76-116		
2,4,6-Trichlorophenol	N.D.	0.003	0.005	mg/l	87		75-117		
Batch number: 151080017A	Sample number(s): 7852522,7852525,7852528,7852531,7852534-7852536,7852540,7852542								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	93		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	92		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	98		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	109		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	95		83-122		
HMX	N.D.	250.	750	ug/kg	70		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	103		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	88		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	101		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	92		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	97		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	93		80-122		
PETN	N.D.	2,000.	6,000	ug/kg	96		64-121		
RDX	N.D.	130.	300	ug/kg	102		84-122		
Tetryl	N.D.	160.	400	ug/kg	107		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	100		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	103		82-133		
Batch number: 151090005A	Sample number(s): 7852541								

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1554339
Reported: 04/29/2015 10:42

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
4-Amino-2,6-Dinitrotoluene	N.D.	0.30	0.60	ug/l	93	98	83-129	6	30
2-Amino-4,6-Dinitrotoluene	N.D.	0.20	0.60	ug/l	90	94	74-115	5	30
1,2-Dinitrobenzene	N.D.	0.20	0.60	ug/l	95	97	76-145	2	30
1,3-Dinitrobenzene	N.D.	0.20	0.60	ug/l	109	112	85-115	3	30
1,4-Dinitrobenzene	N.D.	0.20	0.60	ug/l	92	95	85-115	3	30
HMX	N.D.	0.65	2.0	ug/l	82	85	67-123	4	30
Nitrobenzene	N.D.	0.20	0.60	ug/l	102	106	80-115	3	30
Nitroglycerin	N.D.	5.2	15	ug/l	92	94	78-115	2	30
1-Nitronaphthalene	N.D.	0.20	0.60	ug/l	87	93	85-121	7	30
2-Nitrotoluene	N.D.	0.25	0.75	ug/l	92	97	77-115	5	30
3-Nitrotoluene	N.D.	0.40	1.2	ug/l	100	103	83-118	3	30
4-Nitrotoluene	N.D.	0.60	1.2	ug/l	94	98	84-115	5	30
PETN	N.D.	6.0	18	ug/l	91	93	86-115	3	30
RDX	N.D.	0.20	0.50	ug/l	102	104	77-115	3	30
Tetryl	N.D.	0.40	0.80	ug/l	97	97	53-116	0	30
1,3,5-Trinitrobenzene	N.D.	0.20	0.60	ug/l	99	101	83-115	2	30
2,4,6-Trinitrotoluene	N.D.	0.20	0.60	ug/l	99	101	83-115	3	30
Batch number: 151101848005	Sample number(s): 7852541								
Lead	N.D.	0.0047	0.0150	mg/l	101		80-120		
Batch number: 151125708001	Sample number(s): 7852522,7852525,7852528,7852531,7852534-7852537,7852540,7852542								
Lead	N.D.	0.500	1.50	mg/kg	100		80-120		
Batch number: 151135705001	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543								
Arsenic	N.D.	0.0072	0.0200	mg/l	112		80-120		
Barium	0.00063 J	0.00033	0.0050	mg/l	102		80-120		
Cadmium	N.D.	0.00033	0.0050	mg/l	104		80-120		
Chromium	N.D.	0.0013	0.0150	mg/l	102		80-120		
Lead	N.D.	0.0047	0.0150	mg/l	99		80-120		
Selenium	N.D.	0.0048	0.0200	mg/l	119		80-120		
Batch number: 151135713001	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543								
Mercury	N.D.	0.00005	0.00020	mg/l	114		80-120		
		0							
Batch number: 151145705003	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543								
Silver	N.D.	0.0018	0.0050	mg/l	115		80-120		
Batch number: 15110104201A	Sample number(s): 7852522,7852525,7852528,7852531,7852534,7852542								
Cyanide (Reactivity)	N.D.	20.0	60.0	mg/kg	89		77-113		
Batch number: 15110112101A	Sample number(s): 7852522,7852525,7852528,7852531,7852534,7852542								
Sulfide (Reactivity)	N.D.	53.6	160	mg/kg	89		68-94		
Batch number: 15111039401A	Sample number(s): 7852522,7852525,7852528,7852531,7852534,7852542								
Corrosivity					100		89-110		
pH					100		95-105		
Batch number: 15114820004A	Sample number(s): 7852525,7852542								
Moisture					100		99-101		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1554339
Reported: 04/29/2015 10:42

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15108SLA026	Sample number(s): 7852522,7852525,7852528,7852531,7852534-7852536,7852540,7852542 UNSPK: 7852534								
2,4-Dinitrotoluene	86	81	37-149	2	30				
2,6-Dinitrotoluene	97	100	54-134	3	30				
Batch number: 15113WAE026	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543 UNSPK: 7852523								
1,4-Dichlorobenzene	67	63	51-108	7	30				
2,4-Dinitrotoluene	99	101	51-145	2	30				
Hexachlorobenzene	91	68*	71-119	30	30				
Hexachlorobutadiene	68	59	44-113	15	30				
Hexachloroethane	61	55	32-120	9	30				
2-Methylphenol	82	79	27-132	4	30				
4-Methylphenol	70	70	13-128	0	30				
Nitrobenzene	89	79	50-143	12	30				
Pentachlorophenol	118	99	23-140	18	30				
Pyridine	36	39	20-91	6	30				
2,4,5-Trichlorophenol	93	79	34-143	16	30				
2,4,6-Trichlorophenol	95	79	19-162	18	30				
Batch number: 151080017A	Sample number(s): 7852522,7852525,7852528,7852531,7852534-7852536,7852540,7852542 UNSPK: 7852534								
4-Amino-2,6-Dinitrotoluene	237*	-15*	85-118	82*	50				
2-Amino-4,6-Dinitrotoluene	96	-32*	69-113	66*	50				
1,2-Dinitrobenzene	93	95	80-120	2	50				
1,3-Dinitrobenzene	91	80*	89-119	9	50				
1,4-Dinitrobenzene	96	94	82-117	2	50				
HMX	96	93	72-107	3	50				
Nitrobenzene	104	101	86-108	3	50				
Nitroglycerin	102	102	73-116	0	50				
1-Nitronaphthalene	69*	102	89-131	39	50				
2-Nitrotoluene	94	102	79-112	8	50				
3-Nitrotoluene	88	95	72-119	6	50				
4-Nitrotoluene	88*	95	90-118	8	50				
PETN	100	100	71-133	0	50				
RDX	102	101	75-108	1	50				
Tetryl	262*	101	58-125	89*	50				
1,3,5-Trinitrobenzene	39*	-72*	58-135	62*	50				
2,4,6-Trinitrotoluene	-131354 (2)	-291646 (2)	92-114	110*	50				
Batch number: 151101848005	Sample number(s): 7852541 UNSPK: P850899 BKG: P850899								
Lead	103	100	75-125	3	20	N.D.	N.D.	0 (1)	20
Batch number: 151125708001	Sample number(s): 7852522,7852525,7852528,7852531,7852534-7852537,7852540,7852542 UNSPK: 7852534 BKG: 7852534								
Lead	442 (2)	190 (2)	75-125	10	20	350	347	1	20
Batch number: 151135705001	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543 UNSPK: 7852523 BKG: 7852523								
Arsenic	98	97	75-125	0	20	N.D.	N.D.	0 (1)	20
Barium	89	86	75-125	3	20	0.627	0.621	1	20

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1554339
Reported: 04/29/2015 10:42

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Cadmium	88	88	75-125	0	20	0.00062 J	0.00062 J	0 (1)	20
Chromium	87	86	75-125	0	20	N.D.	0.0013 J	200* (1)	20
Lead	82	82	75-125	0	20	1.48	1.48	0	20
Selenium	101	99	75-125	2	20	N.D.	N.D.	0 (1)	20
Batch number: 151135713001	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543 UNSPK: 7852523 BKG: 7852523								
Mercury	85	84	80-120	1	20	N.D.	N.D.	0 (1)	20
Batch number: 151145705003	Sample number(s): 7852523,7852526,7852529,7852532,7852538,7852543 UNSPK: 7852523 BKG: 7852523								
Silver	52*	54*	75-125	4	20	N.D.	N.D.	0 (1)	20
Batch number: 15110104201A	Sample number(s): 7852522,7852525,7852528,7852531,7852534,7852542 UNSPK: 7852534								
Cyanide (Reactivity)	0	0	0-44	0	11				
Batch number: 15110112101A	Sample number(s): 7852522,7852525,7852528,7852531,7852534,7852542 UNSPK: 7852534								
Sulfide (Reactivity)	56*	64*	68-94	13	24				
Batch number: 15111039401A	Sample number(s): 7852522,7852525,7852528,7852531,7852534,7852542 BKG: 7852534								
Corrosivity						5.9	5.9	1	2
pH						5.90	5.87	1	3
Batch number: 15114820004A	Sample number(s): 7852525,7852542 BKG: P851401								
Moisture						20.6	20.0	3	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15108SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7852522	104	102	107
7852525	105	102	109
7852528	103	101	110
7852531	102	98	105
7852534	104	99	108
7852535	101	100	108
7852536	102	101	109
7852540	105	103	106
7852542	106	104	112
Blank	107	101	118
LCS	102	94	110
MS	101	100	108
MSD	102	101	109
Limits:	54-123	63-124	61-142

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1554339
Reported: 04/29/2015 10:42

Surrogate Quality Control

Analysis Name: TCL SW846 8270C Water
Batch number: 15108WAB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7852541	90	87	71
Blank	85	79	76
LCS	94	88	84
LCSD	95	88	83
Limits:	60-123	61-112	35-144

Analysis Name: TCLP Acid Base/Neutrals
Batch number: 15113WAE026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol
7852523	86	85	111	30	47	95
7852526	76	69	88	29	44	89
7852529	75	67	83	28	44	85
7852532	84	74	94	32	50	94
7852538	80	77	88	23	36	89
7852543	84	78	95	29	47	92
Blank	86	75	99	36	55	98
LCS	84	84	91	34	54	87
MS	95	96	111	37	58	98
MSD	83	77	93	36	54	92
Limits:	60-123	61-112	35-144	10-82	10-107	23-145

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 151080017A

	2-Nitro-m-xylene
7852522	97
7852525	96
7852528	68
7852531	111
7852534	65*
7852535	114
7852536	89
7852540	86
7852542	94
Blank	96
LCS	96
MS	114
MSD	89
Limits:	68-138

Analysis Name: Nitroaromatics/Amines in Water
Batch number: 151090005A

	2-Nitro-m-xylene
7852541	104
Blank	97
LCS	97
LCSD	99
Limits:	60-137

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

376229

eurofins | Lancaster Laboratories Environmental

Acct. #: 07116 For Eurofins Lancaster Laboratories Environmental use only Group # 1554359 Sample # 78502552-44
Instructions on reverse side correspond with circled numbers.

1 Client Information

Client: ARCADIS	Acct. #:
Project Name/#: Ashland Kenvil	PWSID #:
Project Manager: Jim McLaughlin	P.O. #:
Sampler: K. Lipkowski, D. Drew, J. Johnston	Quote #:

Name of state where samples were collected: New Jersey

4 Matrix

Sediment ☐ Soil ☒ Water | Ground ☐ Potable ☐ | Surface ☐ NPDES ☐ | Other: ____

5 Analysis Requested

Preservation Codes

For Lab Use Only

FSC: ____
SCR#: 170286

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	TCLP - SVOCs (Method 1311)	TCLP Metals (Method 1311)	TCLP Mercury (Method 1311)	Ignitability, Corrosivity, pH, Sulfide & Cyanide Reactivity	TNT (Method 8330)	DNT (Method 8210)	Amino - DNTs (Method 8330)	Lead (Method SW-846 6010B)
A3-1	4/17/15	1055		X		X	X	X	X	X	X	X	X
A3-2		1135		X		X	X	X	X	X	X	X	X
A3-3		1220		X		X	X	X	X	X	X	X	X
A2-1		1400		X		X	X	X	X	X	X	X	X
A1-1		1520		X		X	X	X	X	X	X	X	X
DUP(041715)		—		X						X	X	X	X
A1-1(MS)		1520		X						X	X	X	X
A1-1(MSD)		1520		X						X	X	X	X
FB(041715)		1600	X			X	X	X	X	X	X	X	X
B1-1		1605	~~X~~	X		X	X	X	X	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 5 working days

E-mail address: suzy.weber@arcadis-us.com

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Bottle storage			Dana Drew	4/16/15	1306
Dana Drew	4/17/15	1622	Washington	4/17/15	1622
Washington	4/17/15	1918			
			Pat	4/17/15	1918

9

EDD Required? (Yes) No
If yes, format: NJ-Reduced

Site-Specific QC (MS/MSD/Dup)? (Yes) No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____

Temperature upon receipt 1.2 °C

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

May 04, 2015

Project: Kenvil Treatability Study

Submittal Date: 04/21/2015
Group Number: 1555096
SDG: KVM38
PO Number: 4501686843
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
B1-2 Composite Soil Sample	7855936
B1-2 Composite Soil Sample	7855937
B2-1 Composite Soil Sample	7855939
B2-1 Composite Soil Sample	7855940
C1-1 Composite Soil Sample	7855942
C1-1 Composite Soil Sample	7855943
C3-1 Composite Soil Sample	7855945
C3-1 Composite Soil Sample	7855946
C2-1 Composite Soil Sample	7855948
C2-1 Composite Soil Sample	7855949
C2-1 Composite Soil Sample	7855950
C2-1 Composite Soil Sample	7855951
C2-1 Composite Soil Sample	7855952
DUP(042015) Composite Soil Sample	7855954
C2-2 Composite Soil Sample	7855955
C2-2 Composite Soil Sample	7855956
C2-3 Composite Soil Sample	7855958
C2-3 Composite Soil Sample	7855959

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC Ashland Attn: Ed Meeks

COPY TO		
ELECTRONIC	Arcadis US, Inc.	Attn: Kim Abbott
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ELECTRONIC	Arcadis US, Inc.	Attn: James McLaughlin
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ELECTRONIC	Arcadis U.S, Inc.	Attn: Suzy Weber
COPY TO		

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: B1-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855936
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 09:30 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB12A SDG#: KVM38-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	680	81	200	1
10727	2,6-Dinitrotoluene	606-20-2	47	20	40	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	830	160	430	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	380	110	320	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	110	320	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	110	320	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	110	320	1
06918	HMX	2691-41-0	N.D.	270	800	1
06918	Nitrobenzene	98-95-3	N.D.	110	320	1
06918	Nitroglycerin	55-63-0	N.D.	2,100	6,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.	110	320	1
06918	2-Nitrotoluene	88-72-2	N.D.	210	430	1
06918	3-Nitrotoluene	99-08-1	N.D.	270	530	1
06918	4-Nitrotoluene	99-99-0	N.D.	210	430	1
06918	PETN	78-11-5	N.D.	2,100	6,400	1
06918	RDX	121-82-4	N.D.	140	320	1
06918	Tetryl	479-45-8	N.D.	170	430	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	110	320	1
06918	2,4,6-Trinitrotoluene	118-96-7	350	110	320	1
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	781	0.615	1.85	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.6	58.9	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	7.20	0.0100	0.0100	1
	The pH was measured in water at 17.8 C.					

*=This limit was used in the evaluation of the final result

Sample Description: B1-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855936
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 09:30 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB12A SDG#: KVM38-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 7.20 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	18.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 05:22	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 00:54	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:19	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 11:59	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

Sample Description: B1-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855936
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 09:30 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB12A SDG#: KVM38-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	15120820006A	04/30/2015 22:35	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AB12A

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7855936
Sample wt/vol: 30.5 (g/mL) g Lab File ID: bd0794.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 18.7 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 10 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.746	960	JAB
2.	Unknown	9.254	220	J
3. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.251	370	J
4.	Unknown	10.473	220	J
5. 74685-33-9	3-Eicosene, (E)-	12.268	250	J
6. 1000351-88-8	Nonadecyl pentafluoropropion	12.938	510	J
7. 930-02-9	Octadecane, 1-(ethenyloxy)-	13.591	310	J
8.	Unknown	13.789	320	J
9.	Unknown	15.194	340	J
10. 559-74-0	Friedelan-3-one	16.453	320	J
11.				
12. SVOCTIC	Total SVOC TICs		3800	JAB
13.				
14.				
15.				
16.				
17.				
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25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: **B1-2 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855937
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 09:30 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB12N SDG#: KVM38-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.005	1
00949	2,4-Dinitrotoluene	121-14-2	N.D.	0.005	0.025	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.005	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
00949	2-Methylphenol	95-48-7	N.D.	0.003	0.005	1
00949	4-Methylphenol	106-44-5	N.D.	0.003	0.005	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.003	0.005	1
00949	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
00949	Pyridine	110-86-1	N.D.	0.010	0.025	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.005	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.005	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.786	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00072 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0013	0.0150	1
07055	Lead	7439-92-1	17.6	0.0235	0.0750	5
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15115WAG026	04/27/2015 17:07	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15115WAG026	04/26/2015 22:30	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	151145705004	04/27/2015 21:40	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	151145705004	04/27/2015 21:40	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: **B1-2 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855937
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 09:30 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB12N SDG#: KVM38-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151145705004	04/27/2015 21:40	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	151145705004	04/27/2015 21:40	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	151145705004	04/28/2015 02:19	Tara L Snyder	5
07036	Selenium	SW-846 6010B	1	151145705004	04/27/2015 21:40	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	151145705004	04/27/2015 21:40	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	151145713008	04/28/2015 11:57	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151145705004	04/27/2015 06:58	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151145713008	04/27/2015 23:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15114-2486-094 7A	04/24/2015 12:05	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: B2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855939
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 10:45 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB21A SDG#: KVM38-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	N.D.		81	200	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		20	40	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	400	J	180	490	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	150	J	120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	370	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	370	1
06918	HMX	2691-41-0	N.D.		310	920	1
06918	Nitrobenzene	98-95-3	N.D.		120	370	1
06918	Nitroglycerin	55-63-0	N.D.		2,400	7,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.		240	490	1
06918	3-Nitrotoluene	99-08-1	N.D.		310	610	1
06918	4-Nitrotoluene	99-99-0	N.D.		240	490	1
06918	PETN	78-11-5	N.D.		2,400	7,300	1
06918	RDX	121-82-4	N.D.		160	370	1
06918	Tetryl	479-45-8	N.D.		200	490	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		120	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	N.D.		120	370	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	52.1		0.606	1.82	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**		**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.		19.8	59.3	1
	40 CFR 261.21						
00542	Ignitability	n.a.	See Below				1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.						
	SW-846 9034		**mg/kg**		**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.		53.6	160	1
	SW-846 9045C modified		**Std. Units**		**Std. Units**	**Std. Units**	
00394	pH	n.a.	5.14		0.0100	0.0100	1
	The pH was measured in water at 17.1 C.						

*=This limit was used in the evaluation of the final result

Sample Description: B2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855939
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 10:45 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB21A SDG#: KVM38-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 5.14 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	18.3	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 05:44	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 01:36	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:22	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 12:00	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

Sample Description: B2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855939
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 10:45 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB21A SDG#: KVM38-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	15120820006A	04/30/2015 22:35	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AB21A

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7855939
Sample wt/vol: 30.4 (g/mL) g Lab File ID: bd0795.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 18.3 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 17 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.752	970	JAB
2. 1000351-87-0	Heptadecyl trifluoroacetate	12.268	640	J
3. 2004-39-9	1-Heptacosanol	12.600	180	J
4. 661-19-8	Behenic alcohol	12.932	2000	J
5. 6222-07-7	Pentafluoropropionic acid, h	13.264	180	J
6. 2004-39-9	1-Heptacosanol	13.591	780	J
7.	Unknown	13.643	170	J
8.	Unknown	13.806	170	J
9.	Unknown	14.028	370	J
10.	Unknown	14.214	250	J
11.	Unknown	14.244	230	J
12.	Unknown	14.296	190	J
13.	Unknown	14.827	160	J
14.	Unknown	14.914	170	J
15. 83-46-5	.beta.-Sitosterol	15.194	750	J
16.	Unknown	15.677	360	J
17.	Unknown	16.459	250	J
18.				
19. SVOCTIC	Total SVOC TICs		7800	JAB
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: **B2-1 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855940
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 10:45 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB21N SDG#: KVM38-05

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.005	1
00949	2,4-Dinitrotoluene	121-14-2	N.D.	0.005	0.025	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.005	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
00949	2-Methylphenol	95-48-7	N.D.	0.003	0.005	1
00949	4-Methylphenol	106-44-5	N.D.	0.003	0.005	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.003	0.005	1
00949	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
00949	Pyridine	110-86-1	N.D.	0.010	0.025	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.005	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.005	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.319	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00069 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0021 J	0.0013	0.0150	1
07055	Lead	7439-92-1	0.171	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15115WAG026	04/27/2015 17:30	Holly B Ziegler	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15115WAG026	04/26/2015 22:30	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	151145705004	04/27/2015 21:43	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	151145705004	04/27/2015 21:43	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: B2-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855940
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 10:45 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AB21N SDG#: KVM38-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151145705004	04/27/2015 21:43	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	151145705004	04/27/2015 21:43	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	151145705004	04/27/2015 21:43	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	151145705004	04/27/2015 21:43	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	151145705004	04/27/2015 21:43	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	151145713008	04/28/2015 11:59	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151145705004	04/27/2015 06:58	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151145713008	04/27/2015 23:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15114-2486-094 7A	04/24/2015 12:05	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: C1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855942
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 12:20 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC11A SDG#: KVM38-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	N.D.	78	190	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.	19	39	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,700	180	470	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,100	120	350	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	120	350	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	120	350	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	120	350	1
06918	HMX	2691-41-0	N.D.	290	880	1
06918	Nitrobenzene	98-95-3	N.D.	120	350	1
06918	Nitroglycerin	55-63-0	N.D.	2,400	7,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.	120	350	1
06918	2-Nitrotoluene	88-72-2	N.D.	240	470	1
06918	3-Nitrotoluene	99-08-1	N.D.	290	590	1
06918	4-Nitrotoluene	99-99-0	N.D.	240	470	1
06918	PETN	78-11-5	N.D.	2,400	7,100	1
06918	RDX	121-82-4	N.D.	150	350	1
06918	Tetryl	479-45-8	N.D.	190	470	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	120	350	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,200	120	350	1
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	47.3	0.590	1.77	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.7	59.2	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	5.39	0.0100	0.0100	1
	The pH was measured in water at 16.5 C.					

*=This limit was used in the evaluation of the final result

Sample Description: C1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855942
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 12:20 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC11A SDG#: KVM38-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 5.39 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	15.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 08:01	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 02:19	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:30	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 12:01	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855942
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 12:20 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC11A SDG#: KVM38-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	3	15121820001A	05/01/2015 18:33	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AC11A

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7855942
Sample wt/vol: 30.4 (g/mL) g Lab File ID: bd0796a.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 15.2 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.645	1100	J
2.123-42-2	2-Pentanone, 4-hydroxy-4-met	3.746	780	JAB
3.	Unknown	9.260	390	J
4.19406-51-0	p-Toluidine, 3,5-dinitro-	10.257	400	J
5.57-10-3	n-Hexadecanoic acid	10.344	170	J
6.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.478	180	J
7.206-44-0	Fluoranthene	10.921	310	J
8.74685-30-6	5-Eicosene, (E)-	12.268	340	J
9.217-59-4	Triphenylene	12.309	180	J
10.218-01-9	Chrysene	12.344	200	J
11.959085-66-6	Heptadecyl heptafluorobutyra	12.938	1100	J
12.205-99-2	Benz[e]acephenanthrylene	13.364	440	J
13.1000351-83-7	Tetracosyl heptafluorobutyra	13.591	620	J
14.	Unknown	13.620	320	J
15.192-97-2	Benzo[e]pyrene	13.672	250	J
16.	Unknown	13.789	1400	J
17.13187-99-0	2-Bromo dodecane	14.220	210	J
18.	Unknown	14.244	640	J
19.	Unknown	14.296	190	J
20.1000193-60-8	1,1,4a-Trimethyl-5,6-dimethy	14.908	300	J
21.53013-35-7	2,2,4a,6a,8a,9,12b,14a-Octam	14.996	210	J
22.83-46-5	.beta.-Sitosterol	15.194	600	J
23.	Unknown	15.643	270	J
24.	Unknown	16.039	200	J
25.				
26.SVOCTIC	Total SVOC TICs		11000	JAB
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: **C1-1 Composite Soil Sample**
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855943
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 12:20 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC11N SDG#: KVM38-08

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.005	1
00949	2,4-Dinitrotoluene	121-14-2	N.D.	0.005	0.025	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.005	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
00949	2-Methylphenol	95-48-7	N.D.	0.003	0.005	1
00949	4-Methylphenol	106-44-5	N.D.	0.003	0.005	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.003	0.005	1
00949	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
00949	Pyridine	110-86-1	N.D.	0.010	0.025	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.005	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.005	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.101	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00052 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0021 J	0.0013	0.0150	1
07055	Lead	7439-92-1	0.157	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15115WAG026	04/27/2015 23:01	William H Saadeh	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15115WAG026	04/26/2015 22:30	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	151145705004	04/27/2015 21:46	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	151145705004	04/27/2015 21:46	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: C1-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855943
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 12:20 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC11N SDG#: KVM38-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151145705004	04/27/2015 21:46	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	151145705004	04/27/2015 21:46	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	151145705004	04/27/2015 21:46	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	151145705004	04/27/2015 21:46	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	151145705004	04/27/2015 21:46	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	151145713008	04/28/2015 12:01	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151145705004	04/27/2015 06:58	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151145713008	04/27/2015 23:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15114-2486-094 7A	04/24/2015 12:05	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: C3-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855945
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 15:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC31A SDG#: KVM38-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	180	66	160	1
10727	2,6-Dinitrotoluene	606-20-2	54	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,500	150	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,600	100	300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	100	300	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	100	300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	100	300	1
06918	HMX	2691-41-0	N.D.	250	750	1
06918	Nitrobenzene	98-95-3	N.D.	100	300	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	6,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	100	300	1
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	1
06918	3-Nitrotoluene	99-08-1	N.D.	250	500	1
06918	4-Nitrotoluene	99-99-0	N.D.	200	400	1
06918	PETN	78-11-5	N.D.	2,000	6,000	1
06918	RDX	121-82-4	N.D.	130	300	1
06918	Tetryl	479-45-8	N.D.	160	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	100	300	1
06918	2,4,6-Trinitrotoluene	118-96-7	150,000	2,000	6,000	20
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	36.5	0.500	1.50	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.2	57.5	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	5.01	0.0100	0.0100	1
	The pH was measured in water at 16.7 C.					

*=This limit was used in the evaluation of the final result

Sample Description: C3-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855945
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 15:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC31A SDG#: KVM38-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 5.01 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 06:29	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 03:01	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 16:33	James H Place	20
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:32	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 12:02	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855945
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 15:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC31A SDG#: KVM38-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AC31A

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7855945
Sample wt/vol: 30.5 (g/mL) g Lab File ID: bd0797.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	3.746	720	JAB
2.	Unknown	9.365	55000	J
3.	Unknown	9.400	150	J
4.19406-51-0	p-Toluidine, 3,5-dinitro-	10.274	2000	J
5.57-10-3	n-Hexadecanoic acid	10.350	150	J
6.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.501	2300	J
7.297-03-0	Cyclotetracosane	12.268	820	J
8.1000351-75-1	Tricosyl trifluoroacetate	12.938	2000	J
9.629-92-5	Nonadecane	13.264	230	J
10.630-04-6	Hentriacontane	13.585	1800	J
11.	Unknown	13.643	220	J
12.	Unknown	13.789	230	J
13.	Unknown	14.028	290	J
14.593-49-7	Heptacosane	14.220	440	J
15.	Unknown	14.243	560	J
16.	Unknown	14.296	350	J
17.10191-41-0	dl-.alpha.-Tocopherol	14.366	200	J
18.	Unknown	14.412	200	J
19.1000351-75-1	Tricosyl trifluoroacetate	15.013	390	J
20.83-47-6	.gamma.-Sitosterol	15.193	870	J
21.	Unknown	15.532	240	J
22.	Unknown	15.683	290	J
23.	Unknown	15.835	180	J
24.				
25.SVOCTIC	Total SVOC TICs		69000	JAB
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: C3-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855946
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 15:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC31N SDG#: KVM38-11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.005	1
00949	2,4-Dinitrotoluene	121-14-2	0.037	0.005	0.025	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.005	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
00949	2-Methylphenol	95-48-7	N.D.	0.003	0.005	1
00949	4-Methylphenol	106-44-5	N.D.	0.003	0.005	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.003	0.005	1
00949	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
00949	Pyridine	110-86-1	N.D.	0.010	0.025	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.005	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.005	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.126	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00064 J	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0019 J	0.0013	0.0150	1
07055	Lead	7439-92-1	0.121	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15115WAG026	04/27/2015 23:23	William H Saadeh	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15115WAG026	04/26/2015 22:30	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	151145705004	04/27/2015 21:49	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	151145705004	04/27/2015 21:49	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: C3-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855946
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 15:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC31N SDG#: KVM38-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151145705004	04/27/2015 21:49	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	151145705004	04/27/2015 21:49	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	151145705004	04/27/2015 21:49	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	151145705004	04/27/2015 21:49	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	151145705004	04/27/2015 21:49	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	151145713008	04/28/2015 12:03	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151145705004	04/27/2015 06:58	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151145713008	04/27/2015 23:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15114-2486-094 7A	04/24/2015 12:05	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: C2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855948
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21A SDG#: KVM38-13BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	370	66	160	1
10727	2,6-Dinitrotoluene	606-20-2	180	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,800	140	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,600	95	290	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	95	290	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	95	290	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	95	290	1
06918	HMX	2691-41-0	N.D.	240	710	1
06918	Nitrobenzene	98-95-3	N.D.	95	290	1
06918	Nitroglycerin	55-63-0	N.D.	1,900	5,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.	330	330	1
06918	2-Nitrotoluene	88-72-2	N.D.	190	380	1
06918	3-Nitrotoluene	99-08-1	N.D.	240	480	1
06918	4-Nitrotoluene	99-99-0	N.D.	190	380	1
06918	PETN	78-11-5	N.D.	1,900	5,700	1
06918	RDX	121-82-4	N.D.	120	290	1
06918	Tetryl	479-45-8	N.D.	150	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	95	290	1
06918	2,4,6-Trinitrotoluene	118-96-7	280,000	4,800	14,000	50
	Reporting limits were raised due to interference from the sample matrix.					
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	82.8	0.481	1.44	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.3	57.8	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	4.56	0.0100	0.0100	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855948
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21A SDG#: KVM38-13BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 9045C modified**		**Std. Units**	**Std. Units**	**Std. Units**	
	The pH was measured in water at 16.6 C.					
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 4.56 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 04:14	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 03:44	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 04:26	James H Place	50
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:03	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 12:06	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855948
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21A SDG#: KVM38-13BKG

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AC21A

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7855948
Sample wt/vol: 30.4 (g/mL) g Lab File ID: bd0791.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 8 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.752	800	JAB
2.		Unknown	9.394	12000	J
3.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.280	280	J
4.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.501	1400	J
5.		Unknown	10.647	740	J
6.	31208-76-1	5,7-Dinitro-1H-indazole	11.539	400	J
7.	959261-23-5	Heptafluorobutyric acid, pen	12.268	320	J
8.	18435-45-5	1-Nonadecene	12.938	810	J
9.					
10.	SVOCTIC	Total SVOC TICs		17000	JAB
11.					
12.					
13.					
14.					
15.					
16.					
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29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: C2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855949
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21A SDG#: KVM38-13MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	1,700	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	1,500	17	33	1
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,000	140	380	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,900	95	290	1
06918	1,2-Dinitrobenzene	528-29-0	9,700	95	290	1
06918	1,3-Dinitrobenzene	99-65-0	5,100	95	290	1
06918	1,4-Dinitrobenzene	100-25-4	9,400	95	290	1
06918	HMX	2691-41-0	4,000	240	710	1
06918	Nitrobenzene	98-95-3	5,600	95	290	1
06918	Nitroglycerin	55-63-0	18,000	1,900	5,700	1
06918	1-Nitronaphthalene	86-57-7	11,000	95	290	1
06918	2-Nitrotoluene	88-72-2	6,600	190	380	1
06918	3-Nitrotoluene	99-08-1	4,800	240	480	1
06918	4-Nitrotoluene	99-99-0	4,400	190	380	1
06918	PETN	78-11-5	18,000	1,900	5,700	1
06918	RDX	121-82-4	4,700	120	290	1
06918	Tetryl	479-45-8	4,900	150	380	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,500	95	290	1
06918	2,4,6-Trinitrotoluene	118-96-7	94,000	4,800	14,000	50
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	128	0.500	1.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 04:37	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 05:09	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 05:51	James H Place	50
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:11	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855950
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21A SDG#: KVM38-13MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	1,800	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	1,600	17	33	1
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	9,500	130	350	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,500	87	260	1
06918	1,2-Dinitrobenzene	528-29-0	9,000	87	260	1
06918	1,3-Dinitrobenzene	99-65-0	4,600	87	260	1
06918	1,4-Dinitrobenzene	100-25-4	9,000	87	260	1
06918	HMX	2691-41-0	3,300	220	650	1
06918	Nitrobenzene	98-95-3	5,300	87	260	1
06918	Nitroglycerin	55-63-0	15,000	1,700	5,200	1
06918	1-Nitronaphthalene	86-57-7	9,800	87	260	1
06918	2-Nitrotoluene	88-72-2	6,200	170	350	1
06918	3-Nitrotoluene	99-08-1	4,800	220	430	1
06918	4-Nitrotoluene	99-99-0	4,100	170	350	1
06918	PETN	78-11-5	17,000	1,700	5,200	1
06918	RDX	121-82-4	4,500	110	260	1
06918	Tetryl	479-45-8	4,400	140	350	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,500	87	260	1
06918	2,4,6-Trinitrotoluene	118-96-7	200,000	4,300	13,000	50
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	132	0.500	1.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 05:00	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 07:16	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 07:58	James H Place	50
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:14	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-1 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855951
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21A SDG#: KVM38-13DUP

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	99.2	0.481	1.44	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:09	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855952
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21N SDG#: KVM38-14

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.005	1
00949	2,4-Dinitrotoluene	121-14-2	0.031	0.005	0.025	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.005	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
00949	2-Methylphenol	95-48-7	N.D.	0.003	0.005	1
00949	4-Methylphenol	106-44-5	N.D.	0.003	0.005	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.003	0.005	1
00949	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
00949	Pyridine	110-86-1	N.D.	0.010	0.025	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.005	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.005	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.0712	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0020 J	0.0013	0.0150	1
07055	Lead	7439-92-1	0.784	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15115WAG026	04/27/2015 23:46	William H Saadeh	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15115WAG026	04/26/2015 22:30	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	151145705004	04/27/2015 21:52	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	151145705004	04/27/2015 21:52	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-1 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855952
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:00 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC21N SDG#: KVM38-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151145705004	04/27/2015 21:52	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	151145705004	04/27/2015 21:52	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	151145705004	04/27/2015 21:52	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	151145705004	04/27/2015 21:52	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	151145705004	04/27/2015 21:52	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	151145713008	04/28/2015 12:05	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151145705004	04/27/2015 06:58	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151145713008	04/27/2015 23:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15114-2486-094 7A	04/24/2015 12:05	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: DUP(042015) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855954
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

ASKFD SDG#: KVM38-16FD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	500		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	210		16	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,000		140	360	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,900		91	270	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		91	270	1
06918	1,3-Dinitrobenzene	99-65-0	120	J	91	270	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		91	270	1
06918	HMX	2691-41-0	N.D.		230	680	1
06918	Nitrobenzene	98-95-3	N.D.		91	270	1
06918	Nitroglycerin	55-63-0	N.D.		1,800	5,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		91	270	1
06918	2-Nitrotoluene	88-72-2	N.D.		180	360	1
06918	3-Nitrotoluene	99-08-1	N.D.		230	450	1
06918	4-Nitrotoluene	99-99-0	N.D.		180	360	1
06918	PETN	78-11-5	N.D.		1,800	5,500	1
06918	RDX	121-82-4	N.D.		120	270	1
06918	Tetryl	479-45-8	N.D.		150	360	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		91	270	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,000,000		9,100	27,000	100
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	172		0.485	1.46	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**		**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.		19.5	58.6	1
	40 CFR 261.21						
00542	Ignitability	n.a.	See Below				1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.						
	SW-846 9034		**mg/kg**		**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.		53.6	160	1
	SW-846 9045C modified		**Std. Units**		**Std. Units**	**Std. Units**	
00394	pH	n.a.	4.54		0.0100	0.0100	1
	The pH was measured in water at 16.8 C.						

*=This limit was used in the evaluation of the final result

Sample Description: DUP(042015) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855954
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

ASKFD SDG#: KVM38-16FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 4.54 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 06:52	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 08:41	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 17:16	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:35	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 12:23	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP(042015) Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855954
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

ASKFD SDG#: KVM38-16FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASKFD

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7855954
Sample wt/vol: 30.5 (g/mL) g Lab File ID: bd0798.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 18 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	3.752	850	JAB
2.	Unknown	8.788	160	J
3.	Unknown	9.453	42000	J
4.	Unknown	9.709	160	J
5.19406-51-0	p-Toluidine, 3,5-dinitro-	10.298	560	J
6.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.513	1600	J
7.	Unknown	10.653	510	J
8.31208-76-1	5,7-Dinitro-1H-indazole	11.545	240	J
9.297-03-0	Cyclotetracosane	12.268	310	J
10.	Unknown	12.600	160	J
11.1000351-83-3	Hexacosyl heptafluorobutyrat	12.938	690	J
12.	Unknown	13.358	200	J
13.1000309-12-7	Sulfurous acid, octadecyl 2-	13.585	430	J
14.	Unknown	13.643	150	J
15.	Unknown	13.789	420	J
16.	Unknown	14.022	140	J
17.629-92-5	Nonadecane	14.214	140	J
18.	Unknown	14.244	170	J
19.				
20.SVOCTIC	Total SVOC TICs		49000	JAB
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: C2-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855955
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:55 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC22A SDG#: KVM38-17

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	130	J	66	160	1
10727	2,6-Dinitrotoluene	606-20-2	45		16	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	880		150	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	860		100	300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		100	300	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		100	300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		100	300	1
06918	HMX	2691-41-0	N.D.		250	750	1
06918	Nitrobenzene	98-95-3	N.D.		100	300	1
06918	Nitroglycerin	55-63-0	N.D.		2,000	6,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		100	300	1
06918	2-Nitrotoluene	88-72-2	N.D.		200	400	1
06918	3-Nitrotoluene	99-08-1	N.D.		250	500	1
06918	4-Nitrotoluene	99-99-0	N.D.		200	400	1
06918	PETN	78-11-5	N.D.		2,000	6,000	1
06918	RDX	121-82-4	N.D.		130	300	1
06918	Tetryl	479-45-8	N.D.		160	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		100	300	1
06918	2,4,6-Trinitrotoluene	118-96-7	87,000		2,000	6,000	20
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	71.2		0.490	1.47	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**		**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.		19.1	57.4	1
	40 CFR 261.21						
00542	Ignitability	n.a.	See Below				1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.						
	SW-846 9034		**mg/kg**		**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.		53.6	160	1
	SW-846 9045C modified		**Std. Units**		**Std. Units**	**Std. Units**	
00394	pH	n.a.	4.59		0.0100	0.0100	1
	The pH was measured in water at 16.8 C.						

*=This limit was used in the evaluation of the final result

Sample Description: C2-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855955
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:55 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC22A SDG#: KVM38-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 4.59 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 07:15	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 10:05	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 10:52	James H Place	20
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:37	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 12:09	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-2 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855955
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:55 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC22A SDG#: KVM38-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AC22A

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7855955
Sample wt/vol: 30.4 (g/mL) g Lab File ID: bd0799.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 17 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.752	720	JAB
2.	Unknown	9.301	8300	J
3. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.257	520	J
4.	Unknown	10.478	360	J
5. 129-00-0	Pyrene	10.927	140	J
6. 15594-90-8	1-Heneicosanol	12.268	390	J
7. 79392-43-1	Octadecyl trifluoroacetate	12.938	1500	J
8. 2004-39-9	1-Heptacosanol	13.264	140	J
9. 50-32-8	Benzo[a]pyrene	13.363	180	J
10. 1599-67-3	1-Docosene	13.591	660	J
11. 205-99-2	Benz[e]acephenanthrylene	13.666	140	J
12.	Unknown	14.028	210	J
13.	Unknown	14.243	230	J
14.	Unknown	14.908	300	J
15.	Unknown	14.990	140	J
16.	Unknown	15.019	150	J
17. 83-46-5	.beta.-Sitosterol	15.194	540	J
18.				
19. SVOCTIC	Total SVOC TICs		15000	JAB
20.				
21.				
22.				
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29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: C2-2 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855956
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:55 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC22N SDG#: KVM38-18

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.005	1
00949	2,4-Dinitrotoluene	121-14-2	0.008 J	0.005	0.025	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.005	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
00949	2-Methylphenol	95-48-7	N.D.	0.003	0.005	1
00949	4-Methylphenol	106-44-5	N.D.	0.003	0.005	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.003	0.005	1
00949	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
00949	Pyridine	110-86-1	N.D.	0.010	0.025	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.005	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.005	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.0971	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0014 J	0.0013	0.0150	1
07055	Lead	7439-92-1	0.528	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15115WAG026	04/28/2015 00:08	William H Saadeh	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15115WAG026	04/26/2015 22:30	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	151145705004	04/27/2015 21:55	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	151145705004	04/27/2015 21:55	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-2 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855956
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 16:55 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC22N SDG#: KVM38-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151145705004	04/27/2015 21:55	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	151145705004	04/27/2015 21:55	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	151145705004	04/27/2015 21:55	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	151145705004	04/27/2015 21:55	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	151145705004	04/27/2015 21:55	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	151145713008	04/28/2015 12:07	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151145705004	04/27/2015 06:58	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151145713008	04/27/2015 23:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15114-2486-094 7A	04/24/2015 12:05	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: C2-3 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855958
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 17:15 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC23A SDG#: KVM38-20

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2,4-Dinitrotoluene	121-14-2	360	66	160	1
10727	2,6-Dinitrotoluene	606-20-2	120	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	810	150	400	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	700	100	300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	100	300	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	100	300	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	100	300	1
06918	HMX	2691-41-0	N.D.	250	750	1
06918	Nitrobenzene	98-95-3	N.D.	100	300	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	6,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	100	300	1
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	1
06918	3-Nitrotoluene	99-08-1	N.D.	250	500	1
06918	4-Nitrotoluene	99-99-0	N.D.	200	400	1
06918	PETN	78-11-5	N.D.	2,000	6,000	1
06918	RDX	121-82-4	N.D.	130	300	1
06918	Tetryl	479-45-8	N.D.	160	400	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	100	300	1
06918	2,4,6-Trinitrotoluene	118-96-7	30,000	200	600	2
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06955	Lead	7439-92-1	157	0.485	1.46	1
Wet Chemistry	**SW-846 9012A modified**		**mg/kg**	**mg/kg**	**mg/kg**	
01123	Cyanide (Reactivity)	n.a.	N.D.	19.9	59.6	1
	40 CFR 261.21					
00542	Ignitability	n.a.	See Below			1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.					
	SW-846 9034		**mg/kg**	**mg/kg**	**mg/kg**	
01122	Sulfide (Reactivity)	n.a.	N.D.	53.6	160	1
	SW-846 9045C modified		**Std. Units**	**Std. Units**	**Std. Units**	
00394	pH	n.a.	4.81	0.0100	0.0100	1
	The pH was measured in water at 18 C.					

*=This limit was used in the evaluation of the final result

Sample Description: C2-3 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855958
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 17:15 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC23A SDG#: KVM38-20

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SW-846 Chapter 7**					
00496	Corrosivity	n.a.	See Below			1
	The pH of the sample is 4.81 indicating that the sample is not corrosive. A sample is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5.					
	SW-846 Chapter 7.3		**see below**	**see below**	**see below**	
01121	Reactivity	n.a.	See Below			1
	Reactivity: This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15113SLA026	04/28/2015 07:37	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15113SLA026	04/23/2015 07:25	Olivia Arosemena	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 11:35	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	151130003A	04/28/2015 17:58	James H Place	2
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	151130003A	04/23/2015 15:00	Wanda F Oswald	1
06955	Lead	SW-846 6010B	1	151145708002	04/27/2015 19:40	Suzanne M Will	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	151145708002	04/27/2015 08:22	Christopher M Klumpp	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	15117104201A	04/27/2015 12:10	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	15113054201A	04/23/2015 20:45	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1
00394	pH	SW-846 9045C modified	1	15114039402A	04/24/2015 18:35	Luz M Groff	1
00496	Corrosivity	SW-846 Chapter 7	1	15114039402A	04/24/2015 18:35	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-3 Composite Soil Sample
Ashland Kenvil

LL Sample # SW 7855958
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 17:15 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC23A SDG#: KVM38-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01121	Reactivity	SW-846 Chapter 7.3	1	15113112101A	04/23/2015 08:30	Susan E Hibner	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AC23A

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 7855958
Sample wt/vol: 30.4 (g/mL) g Lab File ID: bd0800.d
Level: (low/med) LOW Date Received: 04/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 04/23/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	3.752	790	JAB
2.	Unknown	9.441	120000	J
3.1000297-95-5	4-((1E)-3-Hydroxy-1-propenyl	9.540	170	J
4.	Unknown	9.697	180	J
5.	Unknown	9.913	290	J
6.	Unknown	10.059	140	J
7.	Unknown	10.140	140	J
8.19406-51-0	p-Toluidine, 3,5-dinitro-	10.298	2600	J
9.	Unknown	10.350	280	J
10.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.519	2500	J
11.	Unknown	10.647	370	J
12.15594-90-8	1-Heneicosanol	12.268	670	J
13.1000351-87-0	Heptadecyl trifluoroacetate	12.938	1500	J
14.5337-61-1	2-Octadecyl-propane-1,3-diol	13.264	190	J
15.18835-33-1	1-Hexacosene	13.591	900	J
16.	Unknown	13.643	180	J
17.	Unknown	13.789	200	J
18.	Unknown	13.818	200	J
19.	Unknown	14.028	250	J
20.1000104-10-8	3-Methyl-4-(methoxycarbonyl)	14.220	250	J
21.	Unknown	14.244	640	J
22.83-46-5	.beta.-Sitosterol	15.194	750	J
23.	Unknown	15.683	250	J
24.				
25.SVOCTIC	Total SVOC TICs		130000	JAB
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: C2-3 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855959
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 17:15 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC23N SDG#: KVM38-21

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**mg/l**	**mg/l**	**mg/l**	
00949	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.005	1
00949	2,4-Dinitrotoluene	121-14-2	0.011 J	0.005	0.025	1
00949	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
00949	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.005	1
00949	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
00949	2-Methylphenol	95-48-7	N.D.	0.003	0.005	1
00949	4-Methylphenol	106-44-5	N.D.	0.003	0.005	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
00949	Nitrobenzene	98-95-3	N.D.	0.003	0.005	1
00949	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
00949	Pyridine	110-86-1	N.D.	0.010	0.025	1
00949	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.005	1
00949	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.005	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0072	0.0200	1
07046	Barium	7440-39-3	0.210	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00033	0.0050	1
07051	Chromium	7440-47-3	0.0015 J	0.0013	0.0150	1
07055	Lead	7439-92-1	0.713	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0048	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00949	TCLP Acid Base/Neutrals	SW-846 8270C	1	15115WAG026	04/28/2015 00:31	William H Saadeh	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	15115WAG026	04/26/2015 22:30	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	151145705004	04/27/2015 22:04	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	151145705004	04/27/2015 22:04	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: C2-3 Composite Soil Sample
TCLP NON VOLATILE EXTRACTION
Ashland Kenvil

LL Sample # TL 7855959
LL Group # 1555096
Account # 06716

Project Name: Kenvil Treatability Study

Collected: 04/20/2015 17:15 by DD

Submitted: 04/21/2015 18:35
Reported: 05/04/2015 11:52

Ashland Chemical
Accounts Payable
PO Box 3746
Dublin OH 43016-0381

AC23N SDG#: KVM38-21

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07049	Cadmium	SW-846 6010B	1	151145705004	04/27/2015 22:04	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	151145705004	04/27/2015 22:04	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	151145705004	04/27/2015 22:04	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	151145705004	04/27/2015 22:04	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	151145705004	04/27/2015 22:04	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	151145713008	04/28/2015 12:13	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	151145705004	04/27/2015 06:58	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	151145713008	04/27/2015 23:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15114-2486-094 7A	04/24/2015 12:05	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1555096
Reported: 05/04/2015 11:52

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15113SLA026	Sample number(s): 7855936,7855939,7855942,7855945,7855948-7855950,7855954-7855955,7855958								
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	96		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	97		83-120		
Batch number: 15115WAG026	Sample number(s): 7855937,7855940,7855943,7855946,7855952,7855956,7855959								
1,4-Dichlorobenzene	N.D.	0.003	0.005	mg/l	71		56-106		
2,4-Dinitrotoluene	N.D.	0.005	0.025	mg/l	96		77-124		
Hexachlorobenzene	N.D.	0.0005	0.003	mg/l	93		73-118		
Hexachlorobutadiene	N.D.	0.003	0.005	mg/l	72		42-110		
Hexachloroethane	N.D.	0.005	0.025	mg/l	64		43-108		
2-Methylphenol	N.D.	0.003	0.005	mg/l	73		66-112		
4-Methylphenol	N.D.	0.003	0.005	mg/l	63		56-109		
Nitrobenzene	N.D.	0.003	0.005	mg/l	83		77-119		
Pentachlorophenol	N.D.	0.005	0.025	mg/l	93		50-121		
Pyridine	N.D.	0.010	0.025	mg/l	49		22-96		
2,4,5-Trichlorophenol	N.D.	0.003	0.005	mg/l	81		76-116		
2,4,6-Trichlorophenol	N.D.	0.003	0.005	mg/l	87		75-117		
Batch number: 151130003A	Sample number(s): 7855936,7855939,7855942,7855945,7855948-7855950,7855954-7855955,7855958								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	98		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	96		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	101		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	113		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	100		83-122		
HMX	N.D.	250.	750	ug/kg	77		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	107		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	94		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	104		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	99		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	107		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	100		80-122		
PETN	N.D.	2,000.	6,000	ug/kg	97		64-121		
RDX	N.D.	130.	300	ug/kg	105		84-122		
Tetryl	N.D.	160.	400	ug/kg	105		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	103		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	106		82-133		
Batch number: 151145705004	Sample number(s): 7855937,7855940,7855943,7855946,7855952,7855956,7855959								
Arsenic	N.D.	0.0072	0.0200	mg/l	116		80-120		
Barium	0.00058 J	0.00033	0.0050	mg/l	96		80-120		
Cadmium	N.D.	0.00033	0.0050	mg/l	99		80-120		
Chromium	0.0019 J	0.0013	0.0150	mg/l	100		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1555096
Reported: 05/04/2015 11:52

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Lead	N.D.	0.0047	0.0150	mg/l	92		80-120		
Selenium	N.D.	0.0048	0.0200	mg/l	109		80-120		
Silver	N.D.	0.0018	0.0050	mg/l	107		80-120		
Batch number: 151145708002	Sample number(s): 7855936,7855939,7855942,7855945,7855948-7855951,7855954-7855955,7855958								
Lead	N.D.	0.500	1.50	mg/kg	107		80-120		
Batch number: 151145713008	Sample number(s): 7855937,7855940,7855943,7855946,7855952,7855956,7855959								
Mercury	N.D.	0.00005 0	0.00020	mg/l	97		80-120		
Batch number: 15117104201A	Sample number(s): 7855936,7855939,7855942,7855945,7855948,7855954-7855955,7855958								
Cyanide (Reactivity)	N.D.	20.0	60.0	mg/kg	94		77-113		
Batch number: 15113112101A	Sample number(s): 7855936,7855939,7855942,7855945,7855948,7855954-7855955,7855958								
Sulfide (Reactivity)	N.D.	53.6	160	mg/kg	92		68-94		
Batch number: 15114039402A	Sample number(s): 7855936,7855939,7855942,7855945,7855948,7855954-7855955,7855958								
Corrosivity					101		89-110		
pH					101		95-105		
Batch number: 15120820006A	Sample number(s): 7855936,7855939								
Moisture					100		99-101		
Batch number: 15121820001A	Sample number(s): 7855942								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15113SLA026	Sample number(s): 7855936,7855939,7855942,7855945,7855948-7855950,7855954-7855955,7855958 UNSPK: 7855948								
2,4-Dinitrotoluene	83	86	37-149	2	30				
2,6-Dinitrotoluene	77	84	54-134	7	30				
Batch number: 15115WAG026	Sample number(s): 7855937,7855940,7855943,7855946,7855952,7855956,7855959 UNSPK: P849762								
1,4-Dichlorobenzene	79	65	51-108	20	30				
2,4-Dinitrotoluene	103	87	51-145	17	30				
Hexachlorobenzene	103	88	71-119	15	30				
Hexachlorobutadiene	84	71	44-113	17	30				
Hexachloroethane	74	61	32-120	19	30				
2-Methylphenol	64	52	27-132	20	30				
4-Methylphenol	54	46	13-128	17	30				
Nitrobenzene	94	79	50-143	18	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1555096
Reported: 05/04/2015 11:52

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Pentachlorophenol	98	88	23-140	10	30				
Pyridine	54	42	20-91	24	30				
2,4,5-Trichlorophenol	83	72	34-143	14	30				
2,4,6-Trichlorophenol	86	75	19-162	14	30				
Batch number: 151130003A	Sample number(s): 7855936,7855939,7855942,7855945,7855948-7855950,7855954-7855955,7855958 UNSPK: 7855948								
4-Amino-2,6-Dinitrotoluene	26*	85	85-118	30	50				
2-Amino-4,6-Dinitrotoluene	26*	66*	69-113	22	50				
1,2-Dinitrobenzene	102	103	80-120	8	50				
1,3-Dinitrobenzene	106	105	89-119	10	50				
1,4-Dinitrobenzene	99	103	82-117	5	50				
HMX	84	75	72-107	20	50				
Nitrobenzene	116*	121*	86-108	5	50				
Nitroglycerin	95	87	73-116	18	50				
1-Nitronaphthalene	112	112	89-131	9	50				
2-Nitrotoluene	139*	143*	79-112	6	50				
3-Nitrotoluene	101	109	72-119	1	50				
4-Nitrotoluene	92	95	90-118	6	50				
PETN	97	96	71-133	10	50				
RDX	97	102	75-108	4	50				
Tetryl	103	101	58-125	12	50				
1,3,5-Trinitrobenzene	115	103	58-135	20	50				
2,4,6-Trinitrotoluene	-3925 (2)	-1904 (2)	92-114	72*	50				
Batch number: 151145705004	Sample number(s): 7855937,7855940,7855943,7855946,7855952,7855956,7855959 UNSPK: P849762 BKG: P849762								
Arsenic	100	101	75-125	0	20	N.D.	N.D.	0 (1)	20
Barium	91	90	75-125	1	20	2.79	2.76	1	20
Cadmium	87	87	75-125	1	20	0.0022 J	0.0020 J	12 (1)	20
Chromium	84	85	75-125	1	20	0.0026 J	0.0031 J	16 (1)	20
Lead	77	76	75-125	1	20	3.27	3.21	2	20
Selenium	102	102	75-125	1	20	N.D.	N.D.	0 (1)	20
Silver	59*	62*	75-125	5	20	N.D.	N.D.	0 (1)	20
Batch number: 151145708002	Sample number(s): 7855936,7855939,7855942,7855945,7855948-7855951,7855954-7855955,7855958 UNSPK: 7855948 BKG: 7855948								
Lead	298 (2)	327 (2)	75-125	3	20	82.8	99.2	18	20
Batch number: 151145713008	Sample number(s): 7855937,7855940,7855943,7855946,7855952,7855956,7855959 UNSPK: P849762 BKG: P849762								
Mercury	81	89	80-120	9	20	N.D.	N.D.	0 (1)	20
Batch number: 15117104201A	Sample number(s): 7855936,7855939,7855942,7855945,7855948,7855954-7855955,7855958 UNSPK: 7855945								
Cyanide (Reactivity)	0	0	0-44	0	11				
Batch number: 15113112101A	Sample number(s): 7855936,7855939,7855942,7855945,7855948,7855954-7855955,7855958 UNSPK: 7855945								
Sulfide (Reactivity)	90	73	68-94	22	24				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1555096
Reported: 05/04/2015 11:52

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15114039402A	Sample number(s): 7855936,7855939,7855942,7855945,7855948,7855954-7855955,7855958 BKG: 7855948								
Corrosivity						4.6	4.5	0	2
pH						4.56	4.54	0	3
Batch number: 15120820006A	Sample number(s): 7855936,7855939 BKG: P855942								
Moisture						15.2	24.1	46*	5
Batch number: 15121820001A	Sample number(s): 7855942 BKG: 7855942								
Moisture						15.2	15.2	0	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15113SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7855936	79	76	74
7855939	82	81	76
7855942	64	63	61
7855945	75	73	70
7855948	75	76	72
7855949	78	76	73
7855950	83	82	78
7855954	69	70	69
7855955	71	69	67
7855958	72	73	70
Blank	93	92	85
LCS	86	82	77
MS	78	76	73
MSD	83	82	78
Limits:	54-123	63-124	61-142

Analysis Name: TCLP Acid Base/Neutrals
Batch number: 15115WAG026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol
7855937	89	83	82	27	43	70
7855940	90	85	100	30	51	99
7855943	83	77	91	27	44	90
7855946	77	74	90	21	30	47
7855952	86	82	100	30	49	94
7855956	83	76	91	29	48	90
7855959	82	79	94	29	47	90
Blank	86	83	95	29	49	92
LCS	84	85	93	33	53	92
MS	93	91	100	31	48	91

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Chemical Group Number: 1555096
Reported: 05/04/2015 11:52

Surrogate Quality Control

MSD	78	77	85	25	39	81
Limits:	60-123	61-112	35-144	10-82	10-107	23-145

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 151130003A

	2-Nitro-m-xylene
7855936	105
7855939	105
7855942	100
7855945	121
7855948	92
7855949	90
7855950	79
7855954	91
7855955	103
7855958	100
Blank	107
LCS	107
MS	90
MSD	79
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

376228

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only. Group # 1555096 Sample # 7855936-60

Instructions on reverse side correspond with circled numbers.

1 Client Information

Client: ARCADIS	Acct. #:
Project Name/#: Ashland Kenvil	PWSID #:
Project Manager: Jim McLaughlin	P.O. #:
Sampler: D. Drew / K. Lepkowski	Quote #:
Name of state where samples were collected: New Jersey	

4 Matrix: Sediment ☐ Soil ☒ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

5 Analysis Requested — Preservation Codes

For Lab Use Only
FSC: ____
SCR#: ____

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	Composite	Soil	Water	Other:	Total # of Containers	TCLP-SVOCs (Method 1311)	TCLP-Metals (Method 1311)	TCLP Mercury (Method 1311)	Ignitability, corrosivity, pH, sulfide & cyanide Reactivity	TNT (Method 8330)	DNT (Method 8270)	Amino-DNTs (Method 8330)	Lead (Method SW-846 6010B)			6 Remarks
B1-2	4/20/15	0930		X	X			5	X	X	X	X	X	X	X	X			
B2-1	↓	1045		↓	↓			5	X	X	X	X	X	X	X	X			
C1-1	↓	1220		↓	↓			5	X	X	X	X	X	X	X	X			
C3-1	↓	1500		↓	↓			5	X	X	X	X	X	X	X	X			
C2-1	↓	1600		↓	↓			5	X	X	X	X	X	X	X	X			
(14) ~~C2-1 (MS/MSD)~~ C2-1 (MS)	↓	1600		↓	↓			1					X	X	X	X			
(14) ~~C2-1 (MSD)~~ DUP (042015)	↓	—		↓	↓			1					X	X	X	X			
C2-2	↓	1655		↓	↓			5	X	X	X	X	X	X	X	X			
C2-3	↓	1715		↓	↓			5	X	X	X	X	X	X	X	X			
C2-1 (MSD)	↓	1600		↓	↓			1					X	X	X	X			

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 5 DAY

E-mail address: suzy.weber@arcadis-us.com

8 Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4/21/15	1100	[signature]	4/21/15	1100
[signature]	4/21/15	1835			
			[signature]	4/21/15	1835

EDD Required? Yes No
If yes, format: NJ-Reduced

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.9 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client. 7044 0315
Page 57 of 58

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Attachment 3

Analytical Data Packages

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

August 13, 2015

Project: Kenvil TNT Bioremediation Pilot

Submittal Date: 07/21/2015
Group Number: 1578511
SDG: KVM40, KVM41, KVM42
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-1-07202015 Composite Soil Sample	7973956
TNT-PS-A-2-07202015 Composite Soil Sample	7973957
TNT-PS-A-3-07202015 Composite Soil Sample	7973958
TNT-PS-A-4-07202015 Composite Soil Sample	7973959
TNT-PS-B-1-07202015 Composite Soil Sample	7973960
TNT-PS-B-2-07202015 Composite Soil Sample	7973961
TNT-PS-B-3-07202015 Composite Soil Sample	7973962
TNT-PS-B-4-07202015 Composite Soil Sample	7973963
TNT-PS-C-1-07202015 Composite Soil Sample	7973964
TNT-PS-C-2-07202015 Composite Soil Sample	7973965
TNT-PS-C-3-07202015 Composite Soil Sample	7973966
TNT-PS-C-4-07202015 Composite Soil Sample	7973967
TNT-PS-D-1-07202015 Composite Soil Sample	7973968
TNT-PS-D-2-07202015 Composite Soil Sample	7973969
TNT-PS-D-3-07202015 Composite Soil Sample	7973970
TNT-PS-D-4-07202015 Composite Soil Sample	7973971
TNT-PS-E-1-07202015 Composite Soil Sample	7973972
TNT-PS-E-2-07202015 Composite Soil Sample	7973973
TNT-PS-E-3-07202015 Composite Soil Sample	7973974
TNT-PS-E-4-07202015 Composite Soil Sample	7973975
TNT-PS-F-1-07202015 Composite Soil Sample	7973976
TNT-PS-F-2-07202015 Composite Soil Sample	7973977
TNT-PS-F-3-07202015 Composite Soil Sample	7973978
TNT-PS-F-4-07202015 Composite Soil Sample	7973979
TNT-PS-G-1-07202015 Composite Soil Sample	7973980
TNT-PS-G-2-07202015 Composite Soil Sample	7973981
TNT-PS-G-3-07202015 Composite Soil Sample	7973982
TNT-PS-G-4-07202015 Composite Soil Sample	7973983
TNT-PS-H-1-07202015 Composite Soil Sample	7973984
TNT-PS-H-2-07202015 Composite Soil Sample	7973985

TNT-PS-H-3-07202015 Composite Soil Sample	7973986
TNT-PS-H-4-07202015 Composite Soil Sample	7973987
TNT-PS-I-1-07202015 Composite Soil Sample	7973988
TNT-PS-I-2-07202015 Composite Soil Sample	7973989
TNT-PS-I-3-07202015 Composite Soil Sample	7973990
TNT-PS-I-4-07202015 Composite Soil Sample	7973991
TNT-PS-J-1-07202015 Composite Soil Sample	7973992
TNT-PS-J-2-07202015 Composite Soil Sample	7973993
TNT-PS-J-3-07202015 Composite Soil Sample	7973994
TNT-PS-J-4-07202015 Composite Soil Sample	7973995
TNT-PS-K-1-07202015 Composite Soil Sample	7973996
TNT-PS-K-2-07202015 Composite Soil Sample	7973997
TNT-PS-K-3-07202015 Composite Soil Sample	7973998
TNT-PS-K-4-07202015 Composite Soil Sample	7973999
Field_Blank-07202015 Grab Water Sample	7974000

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-A-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973956
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT01 SDG#: KVM40-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	9	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	7	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	10	J	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	8	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	6	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	9	J	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	3	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	320		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	120		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	15	J	3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	6	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973956
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT01 SDG#: KVM40-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	7	J	3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	12	J	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,400		140	380	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,100		96	290	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		19	58	1
06918	1,3-Dinitrobenzene	99-65-0	100		19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		19	58	1
06918	HMX	2691-41-0	N.D.		48	140	1
06918	Nitrobenzene	98-95-3	N.D.		280	280	1
06918	Nitroglycerin	55-63-0	N.D.		380	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		410	410	1
06918	2-Nitrotoluene	88-72-2	N.D.		38	77	1
06918	3-Nitrotoluene	99-08-1	210		48	96	1
06918	4-Nitrotoluene	99-99-0	230		38	77	1
06918	PETN	78-11-5	N.D.		380	1,200	1
06918	RDX	121-82-4	N.D.		460	460	1
06918	Tetryl	479-45-8	N.D.		31	77	1
06918	1,3,5-Trinitrobenzene	99-35-4	830		19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	580,000		9,600	29,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973956
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT01 SDG#: KVM40-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,560		7.37	19.2	1
06944	Antimony	7440-36-0	1.47	J	0.394	1.92	1
06935	Arsenic	7440-38-2	1.93		0.558	1.92	1
06946	Barium	7440-39-3	31.9		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.336	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.0798	J	0.0413	0.481	1
01650	Calcium	7440-70-2	575		3.20	19.2	1
06951	Chromium	7440-47-3	7.88		0.0942	1.44	1
06952	Cobalt	7440-48-4	2.56		0.0779	0.481	1
06953	Copper	7440-50-8	10.0		0.269	0.962	1
01654	Iron	7439-89-6	10,700		3.20	19.2	1
06955	Lead	7439-92-1	138		0.308	1.44	1
01657	Magnesium	7439-95-4	644		1.61	9.62	1
06958	Manganese	7439-96-5	84.1		0.0798	0.481	1
06961	Nickel	7440-02-0	4.53		0.221	0.962	1
01662	Potassium	7440-09-7	381		16.2	48.1	1
06936	Selenium	7782-49-2	1.63	J	0.798	1.92	1
06966	Silver	7440-22-4	0.153	J	0.115	0.481	1
01667	Sodium	7440-23-5	47.3	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	16.8		0.144	0.481	1
06972	Zinc	7440-66-6	22.4		0.740	1.92	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0246	J	0.0098	0.0981	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,940		100	300	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 00:21	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 06:07	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 00:59	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/11/2015 23:21	James H Place	500

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973956
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT01 SDG#: KVM40-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06966	Silver	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
06971	Vanadium	SW-846 6010B	1	152045708002	07/28/2015 11:49	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708002	07/24/2015 11:10	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:13	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708002	07/23/2015 21:47	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/28/2015 21:52	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT01

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973956
Sample wt/vol: 30.1 (g/mL) g Lab File ID: og1327.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 17301-23-4	Undecane, 2,6-dimethyl-	7.492	320	J
2.	Unknown	7.663	290	J
3.	Unknown Alkane	7.728	360	J
4. 6117-97-1	Dodecane, 4-methyl-	7.769	320	J
5.	Unknown Alkane	7.804	340	J
6. 61141-72-8	Dodecane, 4,6-dimethyl-	7.845	870	J
7.	Unknown Alkane	8.010	690	J
8.	Unknown	8.075	390	J
9.	Unknown Alkane	8.110	350	J
10.	Unknown	8.139	320	J
11.	Unknown Alkane	8.204	380	J
12. 5617-41-4	Heptylcyclohexane	8.304	600	J
13.	Unknown Alkane	8.339	250	J
14.	Unknown Alkane	8.375	400	J
15.	Unknown Alkane	8.410	230	J
16.	Unknown	8.522	360	J
17. 629-59-4	Tetradecane	8.575	450	J
18. 1000309-12-7	Sulfurous acid, octadecyl 2-	8.616	400	J
19.	Unknown Alkane	8.669	290	J
20.	Unknown Alkane	8.734	320	J
21.	Unknown	8.822	260	J
22.	Unknown Cycloalkane	8.869	230	J
23.	Unknown	10.157	41000	J
24. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.063	560	J
25. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.286	720	J
26.				
27. SVOCTIC	Total SVOC TICs		51000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973957
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT02 SDG#: KVM40-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		67	170	1
10727	Benzo(a)anthracene	56-55-3	17		3	17	1
10727	Benzo(a)pyrene	50-32-8	12	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	21		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	7	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	13	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		67	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	19		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,300		67	170	1
10727	2,6-Dinitrotoluene	606-20-2	390		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		67	170	1
10727	Fluoranthene	206-44-0	31		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	8	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973957
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT02 SDG#: KVM40-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	67	170	1
10727	4-Nitroaniline	100-01-6	N.D.	67	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	67	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	13 J	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	26	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	12,000	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,500	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	210	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	650	650	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	570	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	30	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	190	50	99	1
06918	4-Nitrotoluene	99-99-0	290	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	1,200	1,200	1
06918	Tetryl	479-45-8	N.D.	67	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,200	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	770,000	9,900	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973957
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT02 SDG#: KVM40-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,400		7.58	19.8	1
06944	Antimony	7440-36-0	1.73	J	0.406	1.98	1
06935	Arsenic	7440-38-2	2.46		0.574	1.98	1
06946	Barium	7440-39-3	42.0		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.436	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.0960	J	0.0426	0.495	1
01650	Calcium	7440-70-2	696		3.30	19.8	1
06951	Chromium	7440-47-3	10.1		0.0970	1.49	1
06952	Cobalt	7440-48-4	3.26		0.0802	0.495	1
06953	Copper	7440-50-8	12.9		0.277	0.990	1
01654	Iron	7439-89-6	13,700		3.30	19.8	1
06955	Lead	7439-92-1	175		0.317	1.49	1
01657	Magnesium	7439-95-4	828		1.65	9.90	1
06958	Manganese	7439-96-5	108		0.0822	0.495	1
06961	Nickel	7440-02-0	5.67		0.228	0.990	1
01662	Potassium	7440-09-7	507		16.6	49.5	1
06936	Selenium	7782-49-2	1.94	J	0.822	1.98	1
06966	Silver	7440-22-4	0.278	J	0.119	0.495	1
01667	Sodium	7440-23-5	50.5	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	21.2		0.149	0.495	1
06972	Zinc	7440-66-6	26.2		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0388	J	0.0095	0.0947	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,600		654	1,960	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15213SLA026	08/04/2015 10:13	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	2	15213SLA026	08/03/2015 08:15	Jessica M Velez	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 08:15	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 01:41	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/12/2015 00:03	James H Place	500

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973957
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT02 SDG#: KVM40-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06966	Silver	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
06971	Vanadium	SW-846 6010B	1	152045708002	07/28/2015 11:52	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708002	07/24/2015 11:20	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:15	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708002	07/23/2015 21:47	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/29/2015 03:05	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT02

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973957
Sample wt/vol: 30.0 (g/mL) g Lab File ID: oh0096.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.17301-23-4	Undecane, 2,6-dimethyl-	7.134	690	J
2.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.287	580	J
3.	Unknown Alkane	7.381	660	J
4.	Unknown Alkane	7.445	780	J
5.26730-14-3	Tridecane, 7-methyl-	7.492	1200	J
6.	Unknown	7.622	750	J
7.629-50-5	Tridecane	7.657	1200	J
8.	Unknown	7.716	600	J
9.13287-21-3	Tridecane, 6-methyl-	7.751	1000	J
10.	Unknown	7.875	520	J
11.	Unknown Cycloalkane	7.934	1000	J
12.	Unknown Alkane	7.981	570	J
13.1560-96-9	Tridecane, 2-methyl-	8.016	870	J
14.	Unknown	8.051	650	J
15.3178-23-2	Cyclohexane, 1,1'-methyleneb	8.151	990	J
16.629-59-4	Tetradecane	8.216	1100	J
17.	Unknown Alkane	8.257	630	J
18.	Unknown Alkane	8.286	530	J
19.	Unknown	8.428	550	J
20.1795-15-9	Cyclohexane, octyl-	8.498	650	J
21.629-62-9	Pentadecane	8.728	670	J
22.	Unknown	9.845	44000	J
23.	Unknown	9.880	15000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.716	1200	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.933	2800	J
26.				
27.SVOCTIC	Total SVOC TICs		79000	J
28.				
29.				
30.				

Sample Description: TNT-PS-A-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973958
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT03 SDG#: KVM40-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	5	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	21		3	17	1
10727	Benzo(a)pyrene	50-32-8	17		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	31		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	12	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	13	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	23		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,300		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	570		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	39		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	11	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973958
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT03 SDG#: KVM40-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	18	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	31	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,000	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	170	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	780	780	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	760	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	150	50	99	1
06918	4-Nitrotoluene	99-99-0	260	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	360	360	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,100	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	700,000	9,900	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973958
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT03 SDG#: KVM40-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,600		7.44	19.4	1
06944	Antimony	7440-36-0	1.87	J	0.398	1.94	1
06935	Arsenic	7440-38-2	2.60		0.563	1.94	1
06946	Barium	7440-39-3	41.6		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.451	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0748	J	0.0417	0.485	1
01650	Calcium	7440-70-2	678		3.23	19.4	1
06951	Chromium	7440-47-3	10.2		0.0951	1.46	1
06952	Cobalt	7440-48-4	3.34		0.0786	0.485	1
06953	Copper	7440-50-8	13.3		0.272	0.971	1
01654	Iron	7439-89-6	14,400		3.23	19.4	1
06955	Lead	7439-92-1	186		0.311	1.46	1
01657	Magnesium	7439-95-4	840		1.62	9.71	1
06958	Manganese	7439-96-5	111		0.0806	0.485	1
06961	Nickel	7440-02-0	5.85		0.223	0.971	1
01662	Potassium	7440-09-7	452		16.3	48.5	1
06936	Selenium	7782-49-2	1.63	J	0.806	1.94	1
06966	Silver	7440-22-4	0.296	J	0.117	0.485	1
01667	Sodium	7440-23-5	46.1	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	21.8		0.146	0.485	1
06972	Zinc	7440-66-6	26.2		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0419	J	0.0096	0.0957	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	12,700		731	2,190	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 00:46	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 08:57	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 02:24	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/12/2015 00:46	James H Place	500

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973958
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT03 SDG#: KVM40-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06966	Silver	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
06971	Vanadium	SW-846 6010B	1	152045708002	07/28/2015 11:55	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708002	07/24/2015 11:24	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:21	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708002	07/23/2015 21:47	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/28/2015 22:21	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT03

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973958
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1328.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.17301-23-4	Undecane, 2,6-dimethyl-	7.492	620	J
2.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.669	470	J
3.	Unknown Cycloalkane	7.698	460	J
4.6044-71-9	Dodecane, 6-methyl-	7.728	500	J
5.	Unknown Alkane	7.769	500	J
6.62238-13-5	Decane, 2,3,7-trimethyl-	7.804	580	J
7.2051-30-1	Octane, 2,6-dimethyl-	7.851	1300	J
8.	Unknown Alkane	7.887	520	J
9.	Unknown Alkane	8.016	710	J
10.	Unknown	8.057	910	J
11.	Unknown Alkane	8.116	550	J
12.92-51-3	1,1'-Bicyclohexyl	8.145	560	J
13.	Unknown Alkane	8.210	560	J
14.	Unknown	8.257	290	J
15.	Unknown Cycloalkane	8.310	880	J
16.	Unknown Alkane	8.345	370	J
17.	Unknown Alkane	8.375	580	J
18.	Unknown Cycloalkane	8.534	460	J
19.629-59-4	Tetradecane	8.575	770	J
20.	Unknown Alkane	8.622	670	J
21.	Unknown	8.822	650	J
22.	Unknown Cycloalkane	8.875	370	J
23.	Unknown	10.245	45000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	11.104	1300	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.322	3300	J
26.				
27.SVOCTIC	Total SVOC TICs		63000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973959
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT04 SDG#: KVM40-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	11	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	11	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	15	J	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	11	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	8	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	13	J	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	710		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	230		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	19		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	8	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	17		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973959
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT04 SDG#: KVM40-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	13 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	8 J	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	16 J	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,700	100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	230	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	2,100	2,100	1
06918	Nitrobenzene	98-95-3	N.D.	290	290	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	260	50	100	1
06918	4-Nitrotoluene	99-99-0	250	40	80	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	430	430	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,300	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	790,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973959
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT04 SDG#: KVM40-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	11,700		7.58	19.8	1
06944	Antimony	7440-36-0	1.85	J	0.406	1.98	1
06935	Arsenic	7440-38-2	2.53		0.574	1.98	1
06946	Barium	7440-39-3	38.0		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.403	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.114	J	0.0426	0.495	1
01650	Calcium	7440-70-2	663		3.30	19.8	1
06951	Chromium	7440-47-3	9.31		0.0970	1.49	1
06952	Cobalt	7440-48-4	3.03		0.0802	0.495	1
06953	Copper	7440-50-8	11.9		0.277	0.990	1
01654	Iron	7439-89-6	12,500		3.30	19.8	1
06955	Lead	7439-92-1	161		0.317	1.49	1
01657	Magnesium	7439-95-4	777		1.65	9.90	1
06958	Manganese	7439-96-5	99.1		0.0822	0.495	1
06961	Nickel	7440-02-0	5.34		0.228	0.990	1
01662	Potassium	7440-09-7	479		16.6	49.5	1
06936	Selenium	7782-49-2	1.47	J	0.822	1.98	1
06966	Silver	7440-22-4	0.175	J	0.119	0.495	1
01667	Sodium	7440-23-5	54.1	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	19.7		0.149	0.495	1
06972	Zinc	7440-66-6	23.4		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0393	J	0.0098	0.0979	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,700		716	2,150	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15213SLA026	08/04/2015 10:37	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	2	15213SLA026	08/03/2015 08:15	Jessica M Velez	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 09:39	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 03:06	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 18:40	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973959
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT04 SDG#: KVM40-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06966	Silver	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
06971	Vanadium	SW-846 6010B	1	152045708002	07/28/2015 11:59	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708002	07/24/2015 11:27	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:23	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708002	07/23/2015 21:47	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/28/2015 22:47	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT04

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973959
Sample wt/vol: 30.3 (g/mL) g Lab File ID: oh0097.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Alkane	7.134	490	J
2.	58462-32-1	trans,trans-3-Ethylbicyclo[4	7.286	410	J
3.		Unknown Alkane	7.381	470	J
4.	1560-97-0	Dodecane, 2-methyl-	7.445	550	J
5.	61141-72-8	Dodecane, 4,6-dimethyl-	7.486	860	J
6.		Unknown	7.622	570	J
7.	66563-30-2	Bacchotricuneatin c	7.657	550	J
8.		Unknown	7.716	420	J
9.		Unknown Alkane	7.751	700	J
10.		Unknown	7.875	410	J
11.		Unknown Cycloalkane	7.933	810	J
12.	62338-14-1	Decane, 3,3,6-trimethyl-	7.981	450	J
13.	1560-96-9	Tridecane, 2-methyl-	8.016	680	J
14.		Unknown	8.051	530	J
15.		Unknown Cycloalkane	8.151	780	J
16.		Unknown Alkane	8.216	800	J
17.	7098-21-7	Tritetracontane	8.257	500	J
18.		Unknown	8.286	410	J
19.		Unknown	8.428	430	J
20.		Unknown Cycloalkane	8.492	500	J
21.		Unknown	8.628	470	J
22.	629-62-9	Pentadecane	8.728	520	J
23.		Unknown	9.833	50000	J
24.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.692	1000	J
25.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.916	1800	J
26.					
27.	SVOCTIC	Total SVOC TICs		65000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973960
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:32 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT05 SDG#: KVM40-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	19		3	17	1
10727	Benzo(a)pyrene	50-32-8	16	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	24		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	12	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	15	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	3,100		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	22		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,400		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	350		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	33		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	12	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973960
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:32 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT05 SDG#: KVM40-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	20	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	28	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,800	150	390	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,500	98	290	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	440	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	1,400	1,400	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	220	49	98	1
06918	4-Nitrotoluene	99-99-0	200	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	360	360	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,500	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	830,000	9,800	29,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973960
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:32 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT05 SDG#: KVM40-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	6,990		7.44	19.4	1
06944	Antimony	7440-36-0	1.51	J	0.398	1.94	1
06935	Arsenic	7440-38-2	1.68	J	0.563	1.94	1
06946	Barium	7440-39-3	26.9		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.290	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0806	J	0.0417	0.485	1
01650	Calcium	7440-70-2	454		3.23	19.4	1
06951	Chromium	7440-47-3	7.29		0.0951	1.46	1
06952	Cobalt	7440-48-4	2.59		0.0786	0.485	1
06953	Copper	7440-50-8	7.56		0.272	0.971	1
01654	Iron	7439-89-6	12,300		3.23	19.4	1
06955	Lead	7439-92-1	99.2		0.311	1.46	1
01657	Magnesium	7439-95-4	577		1.62	9.71	1
06958	Manganese	7439-96-5	90.7		0.0806	0.485	1
06961	Nickel	7440-02-0	3.33		0.223	0.971	1
01662	Potassium	7440-09-7	375		16.3	48.5	1
06936	Selenium	7782-49-2	2.22		0.806	1.94	1
06966	Silver	7440-22-4	0.166	J	0.117	0.485	1
01667	Sodium	7440-23-5	46.6	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	18.0		0.146	0.485	1
06972	Zinc	7440-66-6	15.0		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0280	J	0.0097	0.0971	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	11,600		676	2,030	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 01:36	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 10:28	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 03:49	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/12/2015 01:28	James H Place	500

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973960
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:32 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT05 SDG#: KVM40-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06966	Silver	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
06971	Vanadium	SW-846 6010B	1	152045708002	07/28/2015 12:02	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708002	07/24/2015 11:31	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:25	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708002	07/23/2015 21:47	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/28/2015 22:55	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT05

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973960
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1330.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.904	250	J
2. 112-40-3	Dodecane	7.410	350	J
3. 17301-23-4	Undecane, 2,6-dimethyl-	7.492	280	J
4. 58462-32-1	trans,trans-3-Ethylbicyclo[4	7.663	300	J
5.	Unknown Cycloalkane	7.698	240	J
6.	Unknown Alkane	7.769	260	J
7.	Unknown Alkane	7.804	290	J
8.	Unknown Alkane	7.845	670	J
9. 629-50-5	Tridecane	8.016	1200	J
10.	Unknown	8.139	250	J
11.	Unknown Alkane	8.204	250	J
12.	Unknown Cycloalkane	8.304	340	J
13.	Unknown Alkane	8.375	210	J
14.	Unknown Cycloalkane	8.528	180	J
15. 629-59-4	Tetradecane	8.575	680	J
16.	Unknown Alkane	8.616	210	J
17.	Unknown Cycloalkane	8.669	160	J
18.	Unknown	8.751	180	J
19.	Unknown	9.580	200	J
20. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.263	69000	J
21.	Unknown	10.504	180	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.098	830	J
23.	Unknown	11.157	180	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.316	1900	J
25.	Unknown	11.457	640	J
26.				
27. SVOCTIC	Total SVOC TICs		80000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973961
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT06 SDG#: KVM40-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	18		3	17	1
10727	Benzo(a)pyrene	50-32-8	15	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	25		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	11	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	12	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	23		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,600		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	550		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	32		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	11	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973961
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT06 SDG#: KVM40-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	18	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	26	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,700	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,100	100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	470	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	540	540	1
06918	Nitrobenzene	98-95-3	N.D.	20	60	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	180	180	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	120	50	100	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	80	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	26	60	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	2,100	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,300,000	10,000	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973961
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT06 SDG#: KVM40-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	8,730		7.58	19.8	1
06944	Antimony	7440-36-0	1.85	J	0.406	1.98	1
06935	Arsenic	7440-38-2	4.58		0.574	1.98	1
06946	Barium	7440-39-3	27.9		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.287	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.176	J	0.0426	0.495	1
01650	Calcium	7440-70-2	522		3.30	19.8	1
06951	Chromium	7440-47-3	8.48		0.0970	1.49	1
06952	Cobalt	7440-48-4	2.76		0.0802	0.495	1
06953	Copper	7440-50-8	9.07		0.277	0.990	1
01654	Iron	7439-89-6	14,100		3.30	19.8	1
06955	Lead	7439-92-1	104		0.317	1.49	1
01657	Magnesium	7439-95-4	727		1.65	9.90	1
06958	Manganese	7439-96-5	101		0.0822	0.495	1
06961	Nickel	7440-02-0	5.30		0.228	0.990	1
01662	Potassium	7440-09-7	504		16.6	49.5	1
06936	Selenium	7782-49-2	1.96	J	0.822	1.98	1
06966	Silver	7440-22-4	0.285	J	0.119	0.495	1
01667	Sodium	7440-23-5	44.8	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	19.8		0.149	0.495	1
06972	Zinc	7440-66-6	24.0		0.762	1.98	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0197	J	0.0094	0.0936	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,000		711	2,130	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 02:01	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 11:11	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 04:31	James H Place	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973961
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT06 SDG#: KVM40-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/12/2015 02:11	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:08	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:08	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:04	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:27	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/28/2015 23:05	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT06

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973961
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1331.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	6.904	310	J
2.112-40-3	Dodecane	7.410	610	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.492	380	J
4.	Unknown	7.545	310	J
5.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.669	400	J
6.	Unknown Cycloalkane	7.698	320	J
7.	Unknown Alkane	7.728	340	J
8.	Unknown Alkane	7.769	340	J
9.1560-97-0	Dodecane, 2-methyl-	7.804	340	J
10.61141-72-8	Dodecane, 4,6-dimethyl-	7.845	920	J
11.629-50-5	Tridecane	8.016	1500	J
12.	Unknown	8.087	320	J
13.	Unknown	8.140	320	J
14.	Unknown Alkane	8.210	350	J
15.	Unknown Cycloalkane	8.304	380	J
16.1560-96-9	Tridecane, 2-methyl-	8.375	260	J
17.629-59-4	Tetradecane	8.575	710	J
18.	Unknown Alkane	8.616	280	J
19.	Unknown Cycloalkane	8.669	180	J
20.	Unknown	8.739	180	J
21.	Unknown	8.822	170	J
22.544-76-3	Hexadecane	9.586	200	J
23.	Unknown	10.292	53000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	11.110	870	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.333	3200	J
26.				
27.SVOCTIC	Total SVOC TICs		66000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973962
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:39 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT07 SDG#: KVM40-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	5	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	24		3	17	1
10727	Benzo(a)pyrene	50-32-8	24		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	37		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	16	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	18		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	30		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,300		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	700		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	40		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	15	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973962
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:39 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT07 SDG#: KVM40-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	20	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	33	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,800	140	380	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,500	96	290	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	110	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	48	140	1
06918	Nitrobenzene	98-95-3	N.D.	19	58	1
06918	Nitroglycerin	55-63-0	N.D.	380	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	38	77	1
06918	3-Nitrotoluene	99-08-1	N.D.	48	96	1
06918	4-Nitrotoluene	99-99-0	N.D.	38	77	1
06918	PETN	78-11-5	N.D.	380	1,200	1
06918	RDX	121-82-4	N.D.	25	58	1
06918	Tetryl	479-45-8	N.D.	31	77	1
06918	1,3,5-Trinitrobenzene	99-35-4	910	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	310,000	3,800	12,000	200
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973962
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:39 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT07 SDG#: KVM40-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,210		7.51	19.6	1
06944	Antimony	7440-36-0	2.08		0.402	1.96	1
06935	Arsenic	7440-38-2	4.22		0.569	1.96	1
06946	Barium	7440-39-3	22.9		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.261	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.141	J	0.0422	0.490	1
01650	Calcium	7440-70-2	431		3.26	19.6	1
06951	Chromium	7440-47-3	9.16		0.0961	1.47	1
06952	Cobalt	7440-48-4	2.58		0.0794	0.490	1
06953	Copper	7440-50-8	7.55		0.275	0.980	1
01654	Iron	7439-89-6	14,300		3.26	19.6	1
06955	Lead	7439-92-1	93.0		0.314	1.47	1
01657	Magnesium	7439-95-4	608		1.64	9.80	1
06958	Manganese	7439-96-5	93.9		0.0814	0.490	1
06961	Nickel	7440-02-0	4.56		0.225	0.980	1
01662	Potassium	7440-09-7	430		16.5	49.0	1
06936	Selenium	7782-49-2	1.74	J	0.814	1.96	1
06966	Silver	7440-22-4	0.258	J	0.118	0.490	1
01667	Sodium	7440-23-5	38.5	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	20.4		0.147	0.490	1
06972	Zinc	7440-66-6	15.1		0.755	1.96	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0307	J	0.0098	0.0976	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	6,010		379	1,140	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 02:26	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 11:53	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 05:13	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 20:47	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973962
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:39 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT07 SDG#: KVM40-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:12	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:12	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:07	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:03	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/29/2015 00:30	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT07

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973962
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1332.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.410	590	J
2.17301-23-4	Undecane, 2,6-dimethyl-	7.492	340	J
3.58462-32-1	trans,trans-3-Ethylbicyclo[4	7.669	420	J
4.	Unknown Alkane	7.728	330	J
5.6117-97-1	Dodecane, 4-methyl-	7.769	340	J
6.	Unknown Alkane	7.804	340	J
7.	Unknown Alkane	7.845	900	J
8.629-50-5	Tridecane	8.016	1500	J
9.	Unknown	8.051	300	J
10.	Unknown	8.087	310	J
11.13287-21-3	Tridecane, 6-methyl-	8.110	300	J
12.	Unknown	8.139	320	J
13.	Unknown Alkane	8.210	310	J
14.	Unknown Cycloalkane	8.304	390	J
15.1560-96-9	Tridecane, 2-methyl-	8.375	260	J
16.629-59-4	Tetradecane	8.575	740	J
17.	Unknown Alkane	8.616	280	J
18.	Unknown	8.669	180	J
19.	Unknown	8.757	200	J
20.99-65-0	Benzene, 1,3-dinitro-	8.869	210	J
21.544-76-3	Hexadecane	9.586	200	J
22.	Unknown	10.304	49000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.122	700	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.339	3500	J
25.	Unknown	11.475	1100	J
26.				
27.SVOCTIC	Total SVOC TICs		63000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973963
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT08 SDG#: KVM40-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	13	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	9	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	76		3	17	1
10727	Benzo(a)pyrene	50-32-8	63		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	89		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	35		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	42		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	71		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	10	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,000		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	490		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	130		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	35		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973963
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT08 SDG#: KVM40-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	21	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	110	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,200	30	79	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,800	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	130	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	530	530	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	50 J	50	99	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	26	59	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	930	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	340,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973963
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT08 SDG#: KVM40-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	8,030		7.37	19.2	1
06944	Antimony	7440-36-0	2.37		0.394	1.92	1
06935	Arsenic	7440-38-2	4.36		0.558	1.92	1
06946	Barium	7440-39-3	24.4		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.305	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.172	J	0.0413	0.481	1
01650	Calcium	7440-70-2	466		3.20	19.2	1
06951	Chromium	7440-47-3	12.5		0.0942	1.44	1
06952	Cobalt	7440-48-4	2.77		0.0779	0.481	1
06953	Copper	7440-50-8	8.18		0.269	0.962	1
01654	Iron	7439-89-6	14,400		3.20	19.2	1
06955	Lead	7439-92-1	102		0.308	1.44	1
01657	Magnesium	7439-95-4	654		1.61	9.62	1
06958	Manganese	7439-96-5	104		0.0798	0.481	1
06961	Nickel	7440-02-0	4.50		0.221	0.962	1
01662	Potassium	7440-09-7	414		16.2	48.1	1
06936	Selenium	7782-49-2	2.25		0.798	1.92	1
06966	Silver	7440-22-4	0.259	J	0.115	0.481	1
01667	Sodium	7440-23-5	38.0	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	22.8		0.144	0.481	1
06972	Zinc	7440-66-6	16.6		0.740	1.92	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0345	J	0.010	0.0997	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,790		842	2,530	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 02:51	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 13:18	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 22:12	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973963
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT08 SDG#: KVM40-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:22	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:22	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:14	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:29	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/29/2015 00:38	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT08

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973963
Sample wt/vol: 30.1 (g/mL) g Lab File ID: og1333.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.904	310	J
2.112-40-3	Dodecane	7.410	440	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.492	430	J
4.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.663	390	J
5.	Unknown Cycloalkane	7.698	320	J
6.	Unknown Alkane	7.769	350	J
7.	Unknown Alkane	7.804	390	J
8.	Unknown Alkane	7.845	910	J
9.629-50-5	Tridecane	8.016	1500	J
10.	Unknown	8.051	300	J
11.	Unknown	8.087	310	J
12.	Unknown	8.139	320	J
13.13187-99-0	2-Bromo dodecane	8.210	310	J
14.	Unknown Cycloalkane	8.304	400	J
15.1560-96-9	Tridecane, 2-methyl-	8.375	260	J
16.629-59-4	Tetradecane	8.575	750	J
17.	Unknown	8.616	290	J
18.	Unknown	8.669	180	J
19.	Unknown	8.751	180	J
20.544-76-3	Hexadecane	9.586	180	J
21.	Unknown	10.275	61000	J
22.	Unknown	10.510	220	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.104	860	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.327	2400	J
25.	Unknown	11.463	780	J
26.				
27.SVOCTIC	Total SVOC TICs		74000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973964
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT09 SDG#: KVM40-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	11	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	9	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	16	J	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	6	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	8	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	32	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	14	J	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		98	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	980	1
10727	2,4-Dinitrotoluene	121-14-2	1,900		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	490		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	22		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	7	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973964
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT09 SDG#: KVM40-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		16	33	1
10727	4-Methylphenol	106-44-5	N.D.		16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		16	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	160	1
10727	4-Nitroaniline	100-01-6	N.D.		66	160	1
10727	Nitrobenzene	98-95-3	N.D.		16	33	1
10727	2-Nitrophenol	88-75-5	N.D.		16	33	1
10727	4-Nitrophenol	100-02-7	N.D.		160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	160	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	14	J	3	17	1
10727	Phenol	108-95-2	N.D.		16	33	1
10727	Pyrene	129-00-0	18		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		16	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,900		30	79	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,400		20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	59	1
06918	1,3-Dinitrobenzene	99-65-0	160		20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	59	1
06918	HMX	2691-41-0	N.D.		710	710	1
06918	Nitrobenzene	98-95-3	N.D.		20	59	1
06918	Nitroglycerin	55-63-0	N.D.		400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	79	1
06918	3-Nitrotoluene	99-08-1	51	J	50	99	1
06918	4-Nitrotoluene	99-99-0	N.D.		40	79	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		26	59	1
06918	Tetryl	479-45-8	N.D.		32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,400		20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	420,000		4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973964
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT09 SDG#: KVM40-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,390		7.51	19.6	1
06944	Antimony	7440-36-0	2.03		0.402	1.96	1
06935	Arsenic	7440-38-2	4.46		0.569	1.96	1
06946	Barium	7440-39-3	33.1		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.305	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.151	J	0.0422	0.490	1
01650	Calcium	7440-70-2	668		3.26	19.6	1
06951	Chromium	7440-47-3	8.01		0.0961	1.47	1
06952	Cobalt	7440-48-4	2.97		0.0794	0.490	1
06953	Copper	7440-50-8	9.86		0.275	0.980	1
01654	Iron	7439-89-6	13,500		3.26	19.6	1
06955	Lead	7439-92-1	137		0.314	1.47	1
01657	Magnesium	7439-95-4	673		1.64	9.80	1
06958	Manganese	7439-96-5	120		0.0814	0.490	1
06961	Nickel	7440-02-0	4.93		0.225	0.980	1
01662	Potassium	7440-09-7	402		16.5	49.0	1
06936	Selenium	7782-49-2	1.62	J	0.814	1.96	1
06966	Silver	7440-22-4	0.255	J	0.118	0.490	1
01667	Sodium	7440-23-5	43.7	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	17.7		0.147	0.490	1
06972	Zinc	7440-66-6	19.1		0.755	1.96	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0331	J	0.0094	0.0943	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,400		1,120	3,360	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 03:16	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 14:00	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 22:55	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973964
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT09 SDG#: KVM40-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:26	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:26	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:17	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:31	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/29/2015 00:47	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT09

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973964
Sample wt/vol: 30.5 (g/mL) g Lab File ID: og1334.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 24 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.263	840	JAB
2.1000152-47-3	trans-Decalin, 2-methyl-	6.904	300	J
3.2958-76-1	Naphthalene, decahydro-2-met	7.016	190	J
4.112-40-3	Dodecane	7.410	350	J
5.17301-23-4	Undecane, 2,6-dimethyl-	7.493	220	J
6.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.663	220	J
7.	Unknown Cycloalkane	7.698	180	J
8.	Unknown Alkane	7.728	190	J
9.	Unknown Alkane	7.769	210	J
10.	Unknown Alkane	7.804	240	J
11.2051-30-1	Octane, 2,6-dimethyl-	7.845	580	J
12.	Unknown	7.975	190	J
13.629-50-5	Tridecane	8.016	1200	J
14.	Unknown	8.087	180	J
15.5617-41-4	Heptylcyclohexane	8.304	260	J
16.	Unknown Alkane	8.375	160	J
17.629-59-4	Tetradecane	8.575	660	J
18.	Unknown	9.581	310	J
19.	Unknown	10.286	75000	J
20.	Unknown	10.539	170	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	11.116	730	J
22.	Unknown	11.181	140	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.333	2600	J
24.	Unknown	11.475	810	J
25.				
26.SVOCTIC	Total SVOC TICs		86000	JAB
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973965
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:12 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT10 SDG#: KVM40-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	13	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	12	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	20		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	8	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	10	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	16	J	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,200		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	310		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	24		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	9	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973965
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:12 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT10 SDG#: KVM40-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	12	J	3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	20		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,200		150	390	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,900		20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	59	1
06918	1,3-Dinitrobenzene	99-65-0	190		20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	59	1
06918	HMX	2691-41-0	N.D.		490	490	1
06918	Nitrobenzene	98-95-3	N.D.		20	59	1
06918	Nitroglycerin	55-63-0	N.D.		390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.		39	78	1
06918	3-Nitrotoluene	99-08-1	54	J	49	98	1
06918	4-Nitrotoluene	99-99-0	N.D.		39	78	1
06918	PETN	78-11-5	N.D.		390	1,200	1
06918	RDX	121-82-4	N.D.		43	59	1
06918	Tetryl	479-45-8	N.D.		31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,300		20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	680,000		3,900	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973965
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:12 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT10 SDG#: KVM40-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,490		7.37	19.2	1
06944	Antimony	7440-36-0	1.59	J	0.394	1.92	1
06935	Arsenic	7440-38-2	4.41		0.558	1.92	1
06946	Barium	7440-39-3	30.7		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.306	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.127	J	0.0413	0.481	1
01650	Calcium	7440-70-2	793		3.20	19.2	1
06951	Chromium	7440-47-3	11.4		0.0942	1.44	1
06952	Cobalt	7440-48-4	2.71		0.0779	0.481	1
06953	Copper	7440-50-8	9.44		0.269	0.962	1
01654	Iron	7439-89-6	13,000		3.20	19.2	1
06955	Lead	7439-92-1	130		0.308	1.44	1
01657	Magnesium	7439-95-4	681		1.61	9.62	1
06958	Manganese	7439-96-5	93.2		0.0798	0.481	1
06961	Nickel	7440-02-0	5.20		0.221	0.962	1
01662	Potassium	7440-09-7	495		16.2	48.1	1
06936	Selenium	7782-49-2	1.66	J	0.798	1.92	1
06966	Silver	7440-22-4	0.228	J	0.115	0.481	1
01667	Sodium	7440-23-5	43.8	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	21.2		0.144	0.481	1
06972	Zinc	7440-66-6	17.7		0.740	1.92	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0244	J	0.0098	0.0985	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,120		658	1,970	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 03:41	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 14:43	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 08:03	James H Place	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973965
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:12 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT10 SDG#: KVM40-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 23:37	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 04:47	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 04:47	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 06:48	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:33	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531A	07/29/2015 00:54	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT10

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973965
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1335.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.263	860	JAB
2.2958-76-1	Naphthalene, decahydro-2-met	6.904	340	J
3.	Unknown	7.016	220	J
4.1618-22-0	Naphthalene, decahydro-2,6-d	7.286	210	J
5.112-40-3	Dodecane	7.410	410	J
6.17301-28-9	Undecane, 3,6-dimethyl-	7.492	240	J
7.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.669	250	J
8.	Unknown Cycloalkane	7.698	200	J
9.	Unknown Alkane	7.728	230	J
10.	Unknown Alkane	7.769	270	J
11.	Unknown Alkane	7.804	270	J
12.	Unknown Alkane	7.845	680	J
13.629-50-5	Tridecane	8.016	1500	J
14.	Unknown	8.086	210	J
15.	Unknown Cycloalkane	8.304	290	J
16.1560-96-9	Tridecane, 2-methyl-	8.375	180	J
17.629-59-4	Tetradecane	8.575	740	J
18.544-76-3	Hexadecane	9.586	260	J
19.	Unknown	10.239	64000	J
20.	Unknown	10.492	140	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	11.092	1000	J
22.618-87-1	Benzenamine, 3,5-dinitro-	11.157	200	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.316	1800	J
24.	Unknown	11.457	580	J
25.	Unknown Carboxylic Acid	11.839	340	J
26.				
27.SVOCTIC	Total SVOC TICs		76000	JAB
28.				
29.				
30.				

Sample Description: TNT-PS-C-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973966
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:15 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT11 SDG#: KVM40-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	20		3	17	1
10727	Benzo(a)pyrene	50-32-8	17	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	29		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	13	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	15	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	22		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,400		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	760		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	37		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	12	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973966
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:15 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT11 SDG#: KVM40-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	20	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	30	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,100	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,000	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	120	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	50	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	170	50	99	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	490	490	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	730	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	510,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973966
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:15 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT11 SDG#: KVM40-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	8,660		7.44	19.4	1
06944	Antimony	7440-36-0	2.02		0.398	1.94	1
06935	Arsenic	7440-38-2	3.80		0.563	1.94	1
06946	Barium	7440-39-3	29.3		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.298	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.139	J	0.0417	0.485	1
01650	Calcium	7440-70-2	654		3.23	19.4	1
06951	Chromium	7440-47-3	8.34		0.0951	1.46	1
06952	Cobalt	7440-48-4	2.60		0.0786	0.485	1
06953	Copper	7440-50-8	14.3		0.272	0.971	1
01654	Iron	7439-89-6	12,700		3.23	19.4	1
06955	Lead	7439-92-1	120		0.311	1.46	1
01657	Magnesium	7439-95-4	659		1.62	9.71	1
06958	Manganese	7439-96-5	110		0.0806	0.485	1
06961	Nickel	7440-02-0	4.68		0.223	0.971	1
01662	Potassium	7440-09-7	397		16.3	48.5	1
06936	Selenium	7782-49-2	1.80	J	0.806	1.94	1
06966	Silver	7440-22-4	0.245	J	0.117	0.485	1
01667	Sodium	7440-23-5	35.4	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	18.3		0.146	0.485	1
06972	Zinc	7440-66-6	17.2		0.748	1.94	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0249	J	0.0099	0.0990	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,650		494	1,480	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 04:06	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 15:25	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 08:46	James H Place	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973966
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:15 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT11 SDG#: KVM40-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 00:20	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:29	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:29	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:20	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:35	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531B	07/29/2015 01:37	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT11

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973966
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1336.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.410	730	J
2.17301-23-4	Undecane, 2,6-dimethyl-	7.493	410	J
3.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.669	420	J
4.	Unknown Cycloalkane	7.698	350	J
5.	Unknown Alkane	7.728	370	J
6.	Unknown Alkane	7.769	370	J
7.	Unknown Alkane	7.804	370	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	7.845	1000	J
9.629-50-5	Tridecane	8.016	1500	J
10.	Unknown	8.051	330	J
11.	Unknown	8.087	340	J
12.	Unknown Alkane	8.110	330	J
13.	Unknown	8.140	360	J
14.	Unknown Alkane	8.210	380	J
15.	Unknown Cycloalkane	8.304	440	J
16.1560-96-9	Tridecane, 2-methyl-	8.375	290	J
17.629-59-4	Tetradecane	8.575	770	J
18.66563-30-2	Bacchotricuneatin c	8.616	320	J
19.	Unknown	8.669	200	J
20.	Unknown	8.751	200	J
21.544-76-3	Hexadecane	9.587	250	J
22.	Unknown	10.281	68000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.122	1100	J
24.	Unknown	11.339	3400	J
25.	Unknown	11.475	1000	J
26.				
27.SVOCTIC	Total SVOC TICs		84000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973967
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT12 SDG#: KVM40-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	5	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	3	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	24		3	17	1
10727	Benzo(a)pyrene	50-32-8	22		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	36		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	15	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	19		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	27		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,900		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	770		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	42		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	15	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973967
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT12 SDG#: KVM40-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	22	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	35	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,400	30	80	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,000	20	60	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	130	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	270	270	1
06918	Nitrobenzene	98-95-3	N.D.	20	60	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	100	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	80	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	26	60	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	830	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	330,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973967
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT12 SDG#: KVM40-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	6,880		7.44	19.4	1
06944	Antimony	7440-36-0	1.73	J	0.398	1.94	1
06935	Arsenic	7440-38-2	3.72		0.563	1.94	1
06946	Barium	7440-39-3	23.8		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.239	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.151	J	0.0417	0.485	1
01650	Calcium	7440-70-2	558		3.23	19.4	1
06951	Chromium	7440-47-3	7.74		0.0951	1.46	1
06952	Cobalt	7440-48-4	2.23		0.0786	0.485	1
06953	Copper	7440-50-8	8.01		0.272	0.971	1
01654	Iron	7439-89-6	12,500		3.23	19.4	1
06955	Lead	7439-92-1	105		0.311	1.46	1
01657	Magnesium	7439-95-4	524		1.62	9.71	1
06958	Manganese	7439-96-5	83.7		0.0806	0.485	1
06961	Nickel	7440-02-0	3.98		0.223	0.971	1
01662	Potassium	7440-09-7	369		16.3	48.5	1
06936	Selenium	7782-49-2	1.88	J	0.806	1.94	1
06966	Silver	7440-22-4	0.117	J	0.117	0.485	1
01667	Sodium	7440-23-5	36.0	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	15.8		0.146	0.485	1
06972	Zinc	7440-66-6	15.2		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0250	J	0.0093	0.0931	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	6,710		417	1,250	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 04:31	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 16:08	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 01:02	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973967
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT12 SDG#: KVM40-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:33	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:33	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:22	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:37	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531B	07/29/2015 02:04	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT12

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973967
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1337.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.904	310	J
2. 112-40-3	Dodecane	7.410	450	J
3. 17301-23-4	Undecane, 2,6-dimethyl-	7.492	430	J
4. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.669	390	J
5.	Unknown Cycloalkane	7.698	330	J
6.	Unknown Alkane	7.728	350	J
7. 6117-97-1	Dodecane, 4-methyl-	7.769	350	J
8.	Unknown Alkane	7.804	350	J
9.	Unknown Alkane	7.845	940	J
10. 629-50-5	Tridecane	8.016	1600	J
11.	Unknown	8.051	310	J
12.	Unknown	8.086	320	J
13.	Unknown	8.139	330	J
14.	Unknown Alkane	8.210	330	J
15.	Unknown Cycloalkane	8.304	420	J
16. 1560-96-9	Tridecane, 2-methyl-	8.375	280	J
17. 629-59-4	Tetradecane	8.575	800	J
18.	Unknown	8.616	290	J
19.	Unknown	8.751	190	J
20. 544-76-3	Hexadecane	9.586	260	J
21.	Unknown	10.274	84000	J
22.	Unknown	10.551	310	J
23. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.127	1200	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.345	4100	J
25.	Unknown	11.480	1300	J
26.				
27. SVOCTIC	Total SVOC TICs		100000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973968
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT13 SDG#: KVM40-13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	4	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	26		3	17	1
10727	Benzo(a)pyrene	50-32-8	22		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	33		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	15	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	17	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	27		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,500		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	640		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	43		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	14	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973968
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT13 SDG#: KVM40-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	22	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	34	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,600	140	380	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,200	96	290	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	180	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	48	140	1
06918	Nitrobenzene	98-95-3	N.D.	19	58	1
06918	Nitroglycerin	55-63-0	N.D.	380	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	38	77	1
06918	3-Nitrotoluene	99-08-1	260	48	96	1
06918	4-Nitrotoluene	99-99-0	N.D.	38	77	1
06918	PETN	78-11-5	N.D.	380	1,200	1
06918	RDX	121-82-4	N.D.	310	310	1
06918	Tetryl	479-45-8	N.D.	31	77	1
06918	1,3,5-Trinitrobenzene	99-35-4	790	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	720,000	9,600	29,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973968
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT13 SDG#: KVM40-13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,200		7.44	19.4	1
06944	Antimony	7440-36-0	2.03		0.398	1.94	1
06935	Arsenic	7440-38-2	4.56		0.563	1.94	1
06946	Barium	7440-39-3	38.7		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.388	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.188	J	0.0417	0.485	1
01650	Calcium	7440-70-2	610		3.23	19.4	1
06951	Chromium	7440-47-3	11.1		0.0951	1.46	1
06952	Cobalt	7440-48-4	3.39		0.0786	0.485	1
06953	Copper	7440-50-8	11.5		0.272	0.971	1
01654	Iron	7439-89-6	15,100		3.23	19.4	1
06955	Lead	7439-92-1	137		0.311	1.46	1
01657	Magnesium	7439-95-4	1,050		1.62	9.71	1
06958	Manganese	7439-96-5	127		0.0806	0.485	1
06961	Nickel	7440-02-0	6.43		0.223	0.971	1
01662	Potassium	7440-09-7	553		16.3	48.5	1
06936	Selenium	7782-49-2	1.60	J	0.806	1.94	1
06966	Silver	7440-22-4	0.307	J	0.117	0.485	1
01667	Sodium	7440-23-5	66.7	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	23.4		0.146	0.485	1
06972	Zinc	7440-66-6	23.1		0.748	1.94	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0371	J	0.0093	0.0926	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,330		839	2,520	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 04:56	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 16:50	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 10:10	James H Place	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973968
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT13 SDG#: KVM40-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/12/2015 02:53	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:36	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:36	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:25	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:39	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531B	07/29/2015 02:14	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT13

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973968
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1338.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.263	910	JAB
2.2958-76-1	Naphthalene, decahydro-2-met	6.904	350	J
3.	Unknown	7.016	220	J
4.1618-22-0	Naphthalene, decahydro-2,6-d	7.286	210	J
5.112-40-3	Dodecane	7.410	400	J
6.17301-23-4	Undecane, 2,6-dimethyl-	7.492	240	J
7.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.663	250	J
8.	Unknown Alkane	7.728	220	J
9.49622-18-6	Decane, 3,3,4-trimethyl-	7.769	260	J
10.62238-13-5	Decane, 2,3,7-trimethyl-	7.804	260	J
11.	Unknown Alkane	7.845	660	J
12.629-50-5	Tridecane	8.016	1500	J
13.	Unknown	8.086	200	J
14.5617-41-4	Heptylcyclohexane	8.304	280	J
15.1560-96-9	Tridecane, 2-methyl-	8.375	170	J
16.629-59-4	Tetradecane	8.575	730	J
17.544-76-3	Hexadecane	9.586	210	J
18.	Unknown	10.286	68000	J
19.	Unknown	10.533	160	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	11.116	930	J
21.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.339	3400	J
22.	Unknown	11.474	1200	J
23.31208-76-1	5,7-Dinitro-1H-indazole	12.369	370	J
24.				
25.SVOCTIC	Total SVOC TICs		81000	JAB
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973969
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:04 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT14 SDG#: KVM40-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	14	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	11	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	19		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	8	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	7	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	14	J	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,200		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	570		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	23		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	9	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973969
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:04 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT14 SDG#: KVM40-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		16	33	1
10727	4-Methylphenol	106-44-5	N.D.		16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		16	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	160	1
10727	4-Nitroaniline	100-01-6	N.D.		66	160	1
10727	Nitrobenzene	98-95-3	N.D.		16	33	1
10727	2-Nitrophenol	88-75-5	N.D.		16	33	1
10727	4-Nitrophenol	100-02-7	N.D.		160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	160	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	13	J	3	17	1
10727	Phenol	108-95-2	N.D.		16	33	1
10727	Pyrene	129-00-0	18		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		16	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,400		29	77	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,900		19	58	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		19	58	1
06918	1,3-Dinitrobenzene	99-65-0	110		19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		19	58	1
06918	HMX	2691-41-0	110	J	48	140	1
06918	Nitrobenzene	98-95-3	N.D.		19	58	1
06918	Nitroglycerin	55-63-0	N.D.		380	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.		38	77	1
06918	3-Nitrotoluene	99-08-1	N.D.		48	96	1
06918	4-Nitrotoluene	99-99-0	N.D.		38	77	1
06918	PETN	78-11-5	N.D.		380	1,200	1
06918	RDX	121-82-4	N.D.		130	130	1
06918	Tetryl	479-45-8	N.D.		31	77	1
06918	1,3,5-Trinitrobenzene	99-35-4	570		19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	450,000		3,800	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973969
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:04 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT14 SDG#: KVM40-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	11,500		7.37	19.2	1
06944	Antimony	7440-36-0	1.98		0.394	1.92	1
06935	Arsenic	7440-38-2	4.29		0.558	1.92	1
06946	Barium	7440-39-3	36.3		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.378	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.178	J	0.0413	0.481	1
01650	Calcium	7440-70-2	468		3.20	19.2	1
06951	Chromium	7440-47-3	9.91		0.0942	1.44	1
06952	Cobalt	7440-48-4	3.51		0.0779	0.481	1
06953	Copper	7440-50-8	11.4		0.269	0.962	1
01654	Iron	7439-89-6	14,300		3.20	19.2	1
06955	Lead	7439-92-1	130		0.308	1.44	1
01657	Magnesium	7439-95-4	806		1.61	9.62	1
06958	Manganese	7439-96-5	130		0.0798	0.481	1
06961	Nickel	7440-02-0	5.98		0.221	0.962	1
01662	Potassium	7440-09-7	499		16.2	48.1	1
06936	Selenium	7782-49-2	1.58	J	0.798	1.92	1
06966	Silver	7440-22-4	0.306	J	0.115	0.481	1
01667	Sodium	7440-23-5	40.1	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	21.5		0.144	0.481	1
06972	Zinc	7440-66-6	21.6		0.740	1.92	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0255	J	0.0099	0.0993	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,540		664	1,990	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 05:21	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 17:33	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 02:27	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973969
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:04 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT14 SDG#: KVM40-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:40	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:40	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:27	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:45	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531B	07/29/2015 02:23	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT14

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973969
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1339.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	6.904	250	J
2.112-40-3	Dodecane	7.410	330	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.492	260	J
4.	Unknown	7.545	240	J
5.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.663	300	J
6.	Unknown Alkane	7.728	250	J
7.	Unknown Alkane	7.769	260	J
8.	Unknown Alkane	7.804	290	J
9.61141-72-8	Dodecane, 4,6-dimethyl-	7.845	680	J
10.629-50-5	Tridecane	8.016	1200	J
11.5911-04-6	Nonane, 3-methyl-	8.075	430	J
12.	Unknown	8.139	290	J
13.	Unknown Alkane	8.204	260	J
14.	Unknown Alkane	8.304	340	J
15.1560-96-9	Tridecane, 2-methyl-	8.375	210	J
16.629-59-4	Tetradecane	8.575	660	J
17.66563-30-2	Bacchotricuneatin c	8.616	220	J
18.	Unknown	8.669	160	J
19.	Unknown	8.751	150	J
20.	Unknown	9.581	240	J
21.	Unknown	10.269	51000	J
22.	Unknown	10.539	140	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.116	530	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.333	2600	J
25.	Unknown	11.475	900	J
26.				
27.SVOCTIC	Total SVOC TICs		62000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973970
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:06 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT15 SDG#: KVM40-15

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	5	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	6	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	22		3	17	1
10727	Benzo(a)pyrene	50-32-8	22		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	33		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	14	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	17		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	28		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,300		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	690		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	42		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	12	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973970
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:06 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT15 SDG#: KVM40-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	21	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	35	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,700	150	390	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,700	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	160	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	490	490	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	N.D.	49	98	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	70	70	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	810	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	560,000	3,900	12,000	200
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973970
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:06 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT15 SDG#: KVM40-15

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,600		7.37	19.2	1
06944	Antimony	7440-36-0	1.93		0.394	1.92	1
06935	Arsenic	7440-38-2	4.54		0.558	1.92	1
06946	Barium	7440-39-3	34.8		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.343	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.197	J	0.0413	0.481	1
01650	Calcium	7440-70-2	388		3.20	19.2	1
06951	Chromium	7440-47-3	9.02		0.0942	1.44	1
06952	Cobalt	7440-48-4	2.98		0.0779	0.481	1
06953	Copper	7440-50-8	10.7		0.269	0.962	1
01654	Iron	7439-89-6	14,700		3.20	19.2	1
06955	Lead	7439-92-1	125		0.308	1.44	1
01657	Magnesium	7439-95-4	764		1.61	9.62	1
06958	Manganese	7439-96-5	110		0.0798	0.481	1
06961	Nickel	7440-02-0	5.53		0.221	0.962	1
01662	Potassium	7440-09-7	425		16.2	48.1	1
06936	Selenium	7782-49-2	1.96		0.798	1.92	1
06966	Silver	7440-22-4	0.267	J	0.115	0.481	1
01667	Sodium	7440-23-5	38.2	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	20.0		0.144	0.481	1
06972	Zinc	7440-66-6	20.3		0.740	1.92	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0244	J	0.0099	0.0995	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,900		584	1,750	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 05:46	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 18:15	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 11:35	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 03:09	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973970
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:06 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT15 SDG#: KVM40-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:43	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:43	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:30	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:47	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15209049531B	07/29/2015 02:51	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT15

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973970
Sample wt/vol: 30.1 (g/mL) g Lab File ID: og1340.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 112-40-3	Dodecane	7.410	440	J
2. 17301-23-4	Undecane, 2,6-dimethyl-	7.492	350	J
3.	Unknown	7.545	310	J
4. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.663	400	J
5.	Unknown Cycloalkane	7.698	320	J
6.	Unknown Alkane	7.769	350	J
7.	Unknown Alkane	7.804	390	J
8. 66563-30-2	Bacchotricuneatin c	7.845	920	J
9. 629-50-5	Tridecane	8.016	1500	J
10.	Unknown	8.086	320	J
11.	Unknown	8.139	330	J
12.	Unknown Alkane	8.204	350	J
13. 5617-41-4	Heptylcyclohexane	8.304	390	J
14. 1560-96-9	Tridecane, 2-methyl-	8.375	260	J
15. 629-59-4	Tetradecane	8.575	730	J
16.	Unknown	8.616	270	J
17.	Unknown	8.669	200	J
18.	Unknown Alkane	8.751	260	J
19.	Unknown	8.822	170	J
20. 544-76-3	Hexadecane	9.586	200	J
21.	Unknown	10.298	64000	J
22.	Unknown	10.533	360	J
23. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.116	910	J
24.	Unknown	11.333	2900	J
25.	Unknown	11.474	930	J
26.				
27. SVOCTIC	Total SVOC TICs		78000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973971
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:08 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT16 SDG#: KVM40-16

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	4	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	22		3	17	1
10727	Benzo(a)pyrene	50-32-8	18		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	31		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	14	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	16	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	25		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,900		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	670		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	38		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	12	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973971
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:08 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT16 SDG#: KVM40-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	19	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	32	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,100	29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,600	19	58	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	94	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	270	270	1
06918	Nitrobenzene	98-95-3	N.D.	19	58	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	54 J	49	97	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	25	58	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	520	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	270,000	3,900	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973971
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:08 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT16 SDG#: KVM40-16

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,800		7.58	19.8	1
06944	Antimony	7440-36-0	2.14		0.406	1.98	1
06935	Arsenic	7440-38-2	5.06		0.574	1.98	1
06946	Barium	7440-39-3	41.9		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.409	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.197	J	0.0426	0.495	1
01650	Calcium	7440-70-2	539		3.30	19.8	1
06951	Chromium	7440-47-3	10.5		0.0970	1.49	1
06952	Cobalt	7440-48-4	3.78		0.0802	0.495	1
06953	Copper	7440-50-8	12.8		0.277	0.990	1
01654	Iron	7439-89-6	15,500		3.30	19.8	1
06955	Lead	7439-92-1	154		0.317	1.49	1
01657	Magnesium	7439-95-4	886		1.65	9.90	1
06958	Manganese	7439-96-5	146		0.0822	0.495	1
06961	Nickel	7440-02-0	6.54		0.228	0.990	1
01662	Potassium	7440-09-7	511		16.6	49.5	1
06936	Selenium	7782-49-2	2.02		0.822	1.98	1
06966	Silver	7440-22-4	0.297	J	0.119	0.495	1
01667	Sodium	7440-23-5	41.3	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	22.9		0.149	0.495	1
06972	Zinc	7440-66-6	24.9		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0333	J	0.0098	0.0975	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,100		1,030	3,100	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 06:11	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 18:57	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 03:52	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973971
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:08 by SL

Submitted: 07/21/2015 20:26
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Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT16 SDG#: KVM40-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:46	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:46	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:32	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:49	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/29/2015 22:11	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT16

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973971
Sample wt/vol: 30.1 (g/mL) g Lab File ID: og1341.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.904	290	J
2.112-40-3	Dodecane	7.410	410	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.492	350	J
4.	Unknown	7.545	290	J
5.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.663	370	J
6.	Unknown Alkane	7.728	310	J
7.	Unknown Alkane	7.769	370	J
8.	Unknown Alkane	7.804	320	J
9.	Unknown	7.845	850	J
10.629-50-5	Tridecane	8.016	1400	J
11.	Unknown	8.087	290	J
12.	Unknown	8.139	310	J
13.	Unknown	8.204	320	J
14.	Unknown Cycloalkane	8.304	400	J
15.	Unknown Alkane	8.375	250	J
16.	Unknown Cycloalkane	8.528	210	J
17.629-59-4	Tetradecane	8.575	790	J
18.	Unknown Alkane	8.616	180	J
19.	Unknown	8.669	190	J
20.	Unknown	8.751	210	J
21.544-76-3	Hexadecane	9.586	220	J
22.	Unknown	10.292	55000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.110	850	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.333	3200	J
25.	Unknown	11.469	1100	J
26.				
27.SVOCTIC	Total SVOC TICs		68000	J
28.				
29.				
30.				

Sample Description: TNT-PS-E-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973972
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT17 SDG#: KVM40-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	6 J	3	17	1
10727	Acetophenone	98-86-2	N.D.	17	33	1
10727	Anthracene	120-12-7	N.D.	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	170	1
10727	Benzaldehyde	100-52-7	N.D.	66	170	1
10727	Benzo(a)anthracene	56-55-3	35	3	17	1
10727	Benzo(a)pyrene	50-32-8	27	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	44	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	17	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	25	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	170	1
10727	Caprolactam	105-60-2	N.D.	33	170	1
10727	Carbazole	86-74-8	N.D.	17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	17	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	36	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	17	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	17	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,400	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	700	17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	55	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	170	500	1
10727	Hexachloroethane	67-72-1	N.D.	33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	18	3	17	1
10727	Isophorone	78-59-1	N.D.	17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973972
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT17 SDG#: KVM40-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	20	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	47	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,800	30	80	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,500	20	60	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	64	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	110	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	60	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	100	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	80	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	26	60	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	340	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	180,000	2,000	6,000	100

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973972
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

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PO Box 2219
Columbus OH 43016-0381

TNT17 SDG#: KVM40-17

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,200		7.58	19.8	1
06944	Antimony	7440-36-0	2.06		0.406	1.98	1
06935	Arsenic	7440-38-2	4.35		0.574	1.98	1
06946	Barium	7440-39-3	33.1		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.328	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.164	J	0.0426	0.495	1
01650	Calcium	7440-70-2	637		3.30	19.8	1
06951	Chromium	7440-47-3	9.67		0.0970	1.49	1
06952	Cobalt	7440-48-4	3.40		0.0802	0.495	1
06953	Copper	7440-50-8	10.2		0.277	0.990	1
01654	Iron	7439-89-6	13,900		3.30	19.8	1
06955	Lead	7439-92-1	126		0.317	1.49	1
01657	Magnesium	7439-95-4	752		1.65	9.90	1
06958	Manganese	7439-96-5	115		0.0822	0.495	1
06961	Nickel	7440-02-0	5.52		0.228	0.990	1
01662	Potassium	7440-09-7	448		16.6	49.5	1
06936	Selenium	7782-49-2	1.88	J	0.822	1.98	1
06966	Silver	7440-22-4	0.281	J	0.119	0.495	1
01667	Sodium	7440-23-5	41.1	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	21.3		0.149	0.495	1
06972	Zinc	7440-66-6	20.8		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0286	J	0.0097	0.0967	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,450		635	1,910	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 06:37	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	07/31/2015 19:40	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 04:34	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973972
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT17 SDG#: KVM40-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:50	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:50	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:35	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:51	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/29/2015 23:03	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT17

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973972
Sample wt/vol: 30.1 (g/mL) g Lab File ID: og1342.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.904	360	J
2.	Unknown	7.016	230	J
3. 1618-22-0	Naphthalene, decahydro-2,6-d	7.286	220	J
4. 112-40-3	Dodecane	7.410	440	J
5. 17301-23-4	Undecane, 2,6-dimethyl-	7.492	260	J
6. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.663	280	J
7.	Unknown Cycloalkane	7.698	240	J
8.	Unknown Alkane	7.728	230	J
9.	Unknown Alkane	7.769	270	J
10.	Unknown Alkane	7.804	310	J
11.	Unknown Alkane	7.845	740	J
12. 629-50-5	Tridecane	8.016	1600	J
13.	Unknown	8.051	220	J
14.	Unknown	8.086	230	J
15.	Unknown	8.139	220	J
16.	Unknown Cycloalkane	8.304	320	J
17. 1560-96-9	Tridecane, 2-methyl-	8.375	200	J
18. 629-59-4	Tetradecane	8.575	840	J
19.	Unknown Alkane	8.616	140	J
20. 544-76-3	Hexadecane	9.586	210	J
21. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.292	53000	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.116	630	J
23. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.339	3200	J
24.	Unknown	11.474	1100	J
25.				
26. SVOCTIC	Total SVOC TICs		65000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973973
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT18 SDG#: KVM40-18

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	4	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	3	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	21		3	17	1
10727	Benzo(a)pyrene	50-32-8	18		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	31		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	13	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	11	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	22		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,300		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	660		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	43		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	12	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973973
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT18 SDG#: KVM40-18

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	25	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	36	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,800	30	79	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,400	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	100	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	50	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	99	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	26	59	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	920	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	290,000	4,000	12,000	200
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973973
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT18 SDG#: KVM40-18

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,450		7.58	19.8	1
06944	Antimony	7440-36-0	1.81	J	0.406	1.98	1
06935	Arsenic	7440-38-2	3.92		0.574	1.98	1
06946	Barium	7440-39-3	42.8		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.313	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.173	J	0.0426	0.495	1
01650	Calcium	7440-70-2	482		3.30	19.8	1
06951	Chromium	7440-47-3	9.21		0.0970	1.49	1
06952	Cobalt	7440-48-4	2.78		0.0802	0.495	1
06953	Copper	7440-50-8	9.54		0.277	0.990	1
01654	Iron	7439-89-6	12,700		3.30	19.8	1
06955	Lead	7439-92-1	115		0.317	1.49	1
01657	Magnesium	7439-95-4	724		1.65	9.90	1
06958	Manganese	7439-96-5	101		0.0822	0.495	1
06961	Nickel	7440-02-0	5.01		0.228	0.990	1
01662	Potassium	7440-09-7	441		16.6	49.5	1
06936	Selenium	7782-49-2	1.92	J	0.822	1.98	1
06966	Silver	7440-22-4	0.139	J	0.119	0.495	1
01667	Sodium	7440-23-5	44.5	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	18.7		0.149	0.495	1
06972	Zinc	7440-66-6	19.1		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0231	J	0.0096	0.0965	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	2,830		673	2,020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 07:02	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/05/2015 22:52	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 05:59	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973973
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT18 SDG#: KVM40-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 05:53	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 05:53	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:38	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:53	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/29/2015 23:11	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT18

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973973
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1343.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.904	290	J
2.112-40-3	Dodecane	7.410	400	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.492	390	J
4.	Unknown	7.545	280	J
5.66660-37-5	Trans, trans-2-ethylbicyclo[	7.663	360	J
6.	Unknown Cycloalkane	7.698	290	J
7.	Unknown	7.769	320	J
8.	Unknown Alkane	7.804	350	J
9.	Unknown	7.845	830	J
10.629-50-5	Tridecane	8.016	1400	J
11.	Unknown	8.086	280	J
12.	Unknown	8.139	300	J
13.	Unknown	8.204	310	J
14.	Unknown Cycloalkane	8.304	390	J
15.1560-96-9	Tridecane, 2-methyl-	8.375	240	J
16.629-59-4	Tetradecane	8.575	770	J
17.	Unknown Alkane	8.616	250	J
18.	Unknown	8.669	180	J
19.	Unknown	8.751	170	J
20.544-76-3	Hexadecane	9.586	200	J
21.	Unknown	10.292	59000	J
22.	Unknown	10.533	160	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.116	630	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.333	2500	J
25.	Unknown	11.474	870	J
26.				
27.SVOCTIC	Total SVOC TICs		72000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973974
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT19 SDG#: KVM40-19

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	6	J	3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	38		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	82		3	17	1
10727	Benzo(a)pyrene	50-32-8	71		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	90		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	43		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	52		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	76		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	11	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,100		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	170		3	17	1
10727	Fluorene	86-73-7	6	J	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973974
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT19 SDG#: KVM40-19

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	120	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	140	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,200	150	390	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,400	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	140	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	49	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	160	49	98	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	25	59	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,200	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	590,000	3,900	12,000	200
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973974
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT19 SDG#: KVM40-19

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,000		7.58	19.8	1
06944	Antimony	7440-36-0	1.73	J	0.406	1.98	1
06935	Arsenic	7440-38-2	3.83		0.574	1.98	1
06946	Barium	7440-39-3	39.6		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.314	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.155	J	0.0426	0.495	1
01650	Calcium	7440-70-2	447		3.30	19.8	1
06951	Chromium	7440-47-3	8.05		0.0970	1.49	1
06952	Cobalt	7440-48-4	3.20		0.0802	0.495	1
06953	Copper	7440-50-8	9.65		0.277	0.990	1
01654	Iron	7439-89-6	12,500		3.30	19.8	1
06955	Lead	7439-92-1	119		0.317	1.49	1
01657	Magnesium	7439-95-4	697		1.65	9.90	1
06958	Manganese	7439-96-5	149		0.0822	0.495	1
06961	Nickel	7440-02-0	5.28		0.228	0.990	1
01662	Potassium	7440-09-7	465		16.6	49.5	1
06936	Selenium	7782-49-2	1.47	J	0.822	1.98	1
06966	Silver	7440-22-4	0.126	J	0.119	0.495	1
01667	Sodium	7440-23-5	41.2	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	21.0		0.149	0.495	1
06972	Zinc	7440-66-6	18.4		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0291	J	0.0095	0.0955	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,030		615	1,850	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 07:27	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/05/2015 23:34	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 15:07	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 06:41	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973974
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT19 SDG#: KVM40-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 06:04	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 06:04	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:45	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:55	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/29/2015 23:59	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT19

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973974
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1344.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	6.904	360	J
2.112-40-3	Dodecane	7.410	460	J
3.	Unknown Alkane	7.492	300	J
4.66660-43-3	trans, cis-3-Ethylbicyclo[4.!	7.663	310	J
5.	Unknown Cycloalkane	7.698	260	J
6.	Unknown	7.728	250	J
7.	Unknown Alkane	7.769	330	J
8.	Unknown Alkane	7.804	320	J
9.	Unknown Alkane	7.845	830	J
10.629-50-5	Tridecane	8.016	1800	J
11.	Unknown	8.051	260	J
12.	Unknown	8.086	270	J
13.	Unknown	8.139	250	J
14.	Unknown Cycloalkane	8.304	360	J
15.1560-96-9	Tridecane, 2-methyl-	8.375	220	J
16.	Unknown Alkane	8.410	150	J
17.629-59-4	Tetradecane	8.575	860	J
18.	Unknown	8.616	190	J
19.	Unknown Cycloalkane	8.869	470	J
20.544-76-3	Hexadecane	9.586	170	J
21.	Unknown	10.298	63000	J
22.	Unknown	10.539	230	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.122	750	J
24.	Unknown	11.339	2400	J
25.	Unknown	11.475	830	J
26.				
27.SVOCTIC	Total SVOC TICs		76000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973975
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT20 SDG#: KVM40-20

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	3	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	26		3	17	1
10727	Benzo(a)pyrene	50-32-8	21		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	36		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	14	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	14	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	28		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,400		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	720		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	42		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	14	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973975
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT20 SDG#: KVM40-20

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	18	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	35	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,200	29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,900	19	58	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	85	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	260	260	1
06918	Nitrobenzene	98-95-3	N.D.	19	58	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	N.D.	49	97	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	25	58	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	710	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	270,000	3,900	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973975
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT20 SDG#: KVM40-20

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,270		7.58	19.8	1
06944	Antimony	7440-36-0	2.09		0.406	1.98	1
06935	Arsenic	7440-38-2	3.96		0.574	1.98	1
06946	Barium	7440-39-3	24.7		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.259	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.155	J	0.0426	0.495	1
01650	Calcium	7440-70-2	406		3.30	19.8	1
06951	Chromium	7440-47-3	10.8		0.0970	1.49	1
06952	Cobalt	7440-48-4	2.57		0.0802	0.495	1
06953	Copper	7440-50-8	8.37		0.277	0.990	1
01654	Iron	7439-89-6	13,500		3.30	19.8	1
06955	Lead	7439-92-1	94.1		0.317	1.49	1
01657	Magnesium	7439-95-4	847		1.65	9.90	1
06958	Manganese	7439-96-5	108		0.0822	0.495	1
06961	Nickel	7440-02-0	4.42		0.228	0.990	1
01662	Potassium	7440-09-7	342		16.6	49.5	1
06936	Selenium	7782-49-2	2.07		0.822	1.98	1
06966	Silver	7440-22-4	0.317	J	0.119	0.495	1
01667	Sodium	7440-23-5	31.0	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	16.8		0.149	0.495	1
06972	Zinc	7440-66-6	22.9		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0265	J	0.0093	0.0933	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,380		324	972	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLA026	07/31/2015 07:52	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLA026	07/27/2015 08:45	Katheryne V Dinan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/06/2015 00:17	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060005A	08/07/2015 07:24	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060005A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973975
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 15:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT20 SDG#: KVM40-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 06:07	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 06:07	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:48	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711003	07/28/2015 09:57	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711003	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/30/2015 00:07	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT20

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973975
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1345.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 24 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	4.269	890	JAB
2. 2958-76-1	Naphthalene, decahydro-2-met	6.904	380	J
3.	Unknown	7.016	240	J
4. 1618-22-0	Naphthalene, decahydro-2,6-d	7.287	230	J
5. 112-40-3	Dodecane	7.410	430	J
6. 17301-23-4	Undecane, 2,6-dimethyl-	7.492	280	J
7. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.669	270	J
8.	Unknown Cycloalkane	7.698	230	J
9.	Unknown Alkane	7.728	220	J
10.	Unknown Alkane	7.769	280	J
11. 1560-97-0	Dodecane, 2-methyl-	7.804	280	J
12.	Unknown Alkane	7.845	710	J
13. 629-50-5	Tridecane	8.016	1600	J
14.	Unknown	8.051	210	J
15.	Unknown	8.087	220	J
16.	Unknown Cycloalkane	8.304	300	J
17. 1560-96-9	Tridecane, 2-methyl-	8.375	180	J
18. 629-59-4	Tetradecane	8.575	790	J
19. 544-76-3	Hexadecane	9.586	210	J
20.	Unknown	10.316	52000	J
21.	Unknown	10.551	190	J
22.	Unknown	11.345	3400	J
23. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.480	1100	J
24. 112-79-8	9-Octadecenoic acid, (E)-	11.845	420	J
25.				
26. SVOCTIC	Total SVOC TICs		65000	JAB
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973976
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT21 SDG#: KVM41-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	21		3	17	1
10727	Benzo(a)pyrene	50-32-8	22		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	35		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	16	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	15	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	26		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,900		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	450		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	40		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	16	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973976
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT21 SDG#: KVM41-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	19	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	35	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,700	30	80	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,600	20	60	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	89	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	50	150	1
06918	Nitrobenzene	98-95-3	N.D.	50	60	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	6,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	100	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	80	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	80	26	60	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	420	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	390,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973976
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT21 SDG#: KVM41-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,070		7.51	19.6	1
06944	Antimony	7440-36-0	2.24		0.402	1.96	1
06935	Arsenic	7440-38-2	4.72		0.569	1.96	1
06946	Barium	7440-39-3	28.7		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.301	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.158	J	0.0422	0.490	1
01650	Calcium	7440-70-2	453		3.26	19.6	1
06951	Chromium	7440-47-3	8.25		0.0961	1.47	1
06952	Cobalt	7440-48-4	2.84		0.0794	0.490	1
06953	Copper	7440-50-8	9.69		0.275	0.980	1
01654	Iron	7439-89-6	15,100		3.26	19.6	1
06955	Lead	7439-92-1	115		0.314	1.47	1
01657	Magnesium	7439-95-4	677		1.64	9.80	1
06958	Manganese	7439-96-5	105		0.0814	0.490	1
06961	Nickel	7440-02-0	5.05		0.225	0.980	1
01662	Potassium	7440-09-7	382		16.5	49.0	1
06936	Selenium	7782-49-2	2.26		0.814	1.96	1
06966	Silver	7440-22-4	0.365	J	0.118	0.490	1
01667	Sodium	7440-23-5	36.4	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	18.8		0.147	0.490	1
06972	Zinc	7440-66-6	19.3		0.755	1.96	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0186	J	0.0099	0.0988	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,740		532	1,600	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 17:43	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 11:02	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/03/2015 12:25	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 03:58	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973976
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT21 SDG#: KVM41-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 06:11	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 06:11	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:50	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 07:58	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/30/2015 00:46	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT21

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973976
Sample wt/vol: 30.1 (g/mL) g Lab File ID: og1268.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.957	310	J
2.	Unknown Cycloalkane	7.075	230	J
3.7045-71-8	Undecane, 2-methyl-	7.234	230	J
4.1618-22-0	Naphthalene, decahydro-2,6-d	7.340	270	J
5.112-40-3	Dodecane	7.463	390	J
6.	Unknown Alkane	7.545	270	J
7.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	290	J
8.	Unknown Alkane	7.781	250	J
9.6117-97-1	Dodecane, 4-methyl-	7.822	230	J
10.1560-97-0	Dodecane, 2-methyl-	7.857	300	J
11.66563-30-2	Bacchotricuneatin c	7.898	600	J
12.629-50-5	Tridecane	8.069	1200	J
13.	Unknown Cycloalkane	8.145	210	J
14.	Unknown Cycloalkane	8.363	280	J
15.	Unknown Alkane	8.428	170	J
16.629-59-4	Tetradecane	8.628	720	J
17.	Unknown Cycloalkane	8.928	190	J
18.	Unknown Aromatic	8.957	160	J
19.544-76-3	Hexadecane	9.639	210	J
20.	Unknown Aromatic	10.339	51000	J
21.	Unknown	10.575	260	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.157	740	J
23.	Unknown Aromatic	11.216	150	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.380	2400	J
25.	Unknown Aromatic	11.516	830	J
26.				
27.SVOCTIC	Total SVOC TICs		62000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973977
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT22 SDG#: KVM41-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		67	170	1
10727	Benzo(a)anthracene	56-55-3	17		3	17	1
10727	Benzo(a)pyrene	50-32-8	17		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	27		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	12	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	10	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	23	J	17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		67	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	21		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,500		67	170	1
10727	2,6-Dinitrotoluene	606-20-2	390		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		67	170	1
10727	Fluoranthene	206-44-0	29		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	9	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973977
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT22 SDG#: KVM41-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		67	170	1
10727	4-Nitroaniline	100-01-6	N.D.		67	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		67	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	14	J	3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	25		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,900		150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,300		100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	60	1
06918	1,3-Dinitrobenzene	99-65-0	89		20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	60	1
06918	HMX	2691-41-0	N.D.		50	150	1
06918	Nitrobenzene	98-95-3	N.D.		120	120	1
06918	Nitroglycerin	55-63-0	N.D.		400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		55	60	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	80	1
06918	3-Nitrotoluene	99-08-1	92	J	50	100	1
06918	4-Nitrotoluene	99-99-0	110		40	80	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		26	60	1
06918	Tetryl	479-45-8	N.D.		32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	850		20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	460,000		4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973977
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT22 SDG#: KVM41-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,600		7.66	20.0	1
06944	Antimony	7440-36-0	1.84	J	0.410	2.00	1
06935	Arsenic	7440-38-2	4.63		0.580	2.00	1
06946	Barium	7440-39-3	33.8		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.345	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.156	J	0.0430	0.500	1
01650	Calcium	7440-70-2	542		3.33	20.0	1
06951	Chromium	7440-47-3	9.88		0.0980	1.50	1
06952	Cobalt	7440-48-4	3.02		0.0810	0.500	1
06953	Copper	7440-50-8	11.1		0.280	1.00	1
01654	Iron	7439-89-6	13,700		3.33	20.0	1
06955	Lead	7439-92-1	137		0.320	1.50	1
01657	Magnesium	7439-95-4	803		1.67	10.0	1
06958	Manganese	7439-96-5	111		0.0830	0.500	1
06961	Nickel	7440-02-0	5.56		0.230	1.00	1
01662	Potassium	7440-09-7	423		16.8	50.0	1
06936	Selenium	7782-49-2	1.68	J	0.830	2.00	1
06966	Silver	7440-22-4	0.266	J	0.120	0.500	1
01667	Sodium	7440-23-5	46.1	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	19.5		0.150	0.500	1
06972	Zinc	7440-66-6	20.7		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0262	J	0.0096	0.0961	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,810		516	1,550	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 16:26	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 13:51	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/03/2015 13:07	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 04:40	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973977
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT22 SDG#: KVM41-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 06:14	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 06:14	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:53	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:12	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/30/2015 00:55	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT22

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973977
Sample wt/vol: 30.0 (g/mL) g Lab File ID: og1265.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 24 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	4.322	1000	JBA
2. 1000152-47-3	trans-Decalin, 2-methyl-	6.957	320	J
3.	Unknown Cycloalkane	7.075	240	J
4.	Unknown Alkane	7.234	240	J
5.	Unknown PAH	7.339	210	J
6. 112-40-3	Dodecane	7.463	420	J
7. 17301-23-4	Undecane, 2,6-dimethyl-	7.545	250	J
8. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	180	J
9.	Unknown Alkane	7.781	160	J
10.	Unknown Alkane	7.857	200	J
11.	Unknown Alkane	7.898	400	J
12. 629-50-5	Tridecane	8.069	1100	J
13. 544-76-3	Hexadecane	8.163	160	J
14.	Unknown Cycloalkane	8.363	270	J
15. 1560-96-9	Tridecane, 2-methyl-	8.428	160	J
16.	Unknown Alkane	8.469	140	J
17. 629-59-4	Tetradecane	8.628	810	J
18.	Unknown Alkane	9.639	220	J
19. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.322	63000	J
20.	Unknown Aromatic	10.569	240	J
21. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.157	850	J
22.	Unknown Amine	11.216	140	J
23. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.374	2700	J
24.	Unknown Aromatic	11.516	930	J
25.				
26. SVOCTIC	Total SVOC TICs		75000	JBA
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973978
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT23 SDG#: KVM41-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	N.D.	3	17	1
10727	Acetophenone	98-86-2	N.D.	17	33	1
10727	Anthracene	120-12-7	9 J	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	170	1
10727	Benzaldehyde	100-52-7	N.D.	66	170	1
10727	Benzo(a)anthracene	56-55-3	37	3	17	1
10727	Benzo(a)pyrene	50-32-8	34	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	53	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	23	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	24	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	170	1
10727	Caprolactam	105-60-2	N.D.	33	170	1
10727	Carbazole	86-74-8	N.D.	17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	17	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	40	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	9 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	17	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	17	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,500	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	800	17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	62	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	170	500	1
10727	Hexachloroethane	67-72-1	N.D.	33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	23	3	17	1
10727	Isophorone	78-59-1	N.D.	17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973978
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT23 SDG#: KVM41-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	27 J	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	32	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	51	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,000	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,200	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	86	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	410	410	1
06918	Nitrobenzene	98-95-3	290	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	99	1
06918	4-Nitrotoluene	99-99-0	71 J	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	95	95	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	530	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	600,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973978
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT23 SDG#: KVM41-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,600	7.51	19.6	1
06944	Antimony	7440-36-0	2.16	0.402	1.96	1
06935	Arsenic	7440-38-2	4.10	0.569	1.96	1
06946	Barium	7440-39-3	35.1	0.0657	0.490	1
06947	Beryllium	7440-41-7	0.358 J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.215 J	0.0422	0.490	1
01650	Calcium	7440-70-2	530	3.26	19.6	1
06951	Chromium	7440-47-3	9.38	0.0961	1.47	1
06952	Cobalt	7440-48-4	2.94	0.0794	0.490	1
06953	Copper	7440-50-8	11.2	0.275	0.980	1
01654	Iron	7439-89-6	14,500	3.26	19.6	1
06955	Lead	7439-92-1	140	0.314	1.47	1
01657	Magnesium	7439-95-4	791	1.64	9.80	1
06958	Manganese	7439-96-5	110	0.0814	0.490	1
06961	Nickel	7440-02-0	5.66	0.225	0.980	1
01662	Potassium	7440-09-7	449	16.5	49.0	1
06936	Selenium	7782-49-2	2.52	0.814	1.96	1
06966	Silver	7440-22-4	0.270 J	0.118	0.490	1
01667	Sodium	7440-23-5	38.6 J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.	0.735	2.94	1
06971	Vanadium	7440-62-2	20.7	0.147	0.490	1
06972	Zinc	7440-66-6	29.1	0.755	1.96	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0322 J	0.0095	0.0948	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,920	451	1,350	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 18:09	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 14:34	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/03/2015 13:50	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 05:23	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973978
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:47 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT23 SDG#: KVM41-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 06:17	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 06:17	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:55	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:14	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 01:12	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT23

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973978
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1269.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.328	1100	JAB
2.1000152-47-3	trans-Decalin, 2-methyl-	6.963	400	J
3.2958-76-1	Naphthalene, decahydro-2-met	7.075	320	J
4.1618-22-0	Naphthalene, decahydro-2,6-d	7.345	270	J
5.112-40-3	Dodecane	7.469	550	J
6.17301-23-4	Undecane, 2,6-dimethyl-	7.545	330	J
7.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	310	J
8.	Unknown Alkane	7.781	290	J
9.	Unknown Alkane	7.822	300	J
10.1560-97-0	Dodecane, 2-methyl-	7.857	330	J
11.66563-30-2	Bacchotricuneatin c	7.904	720	J
12.629-50-5	Tridecane	8.075	1600	J
13.	Unknown Alkane	8.198	260	J
14.	Unknown Cycloalkane	8.363	310	J
15.	Unknown Alkane	8.434	190	J
16.	Unknown Alkane	8.469	140	J
17.629-59-4	Tetradecane	8.633	880	J
18.	Unknown Cycloalkane	8.928	160	J
19.544-76-3	Hexadecane	9.639	200	J
20.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.339	46000	J
21.	Unknown	10.610	270	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.186	1100	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.404	4400	J
24.	Unknown Aromatic	11.533	1400	J
25.1599-67-3	1-Docosene	13.839	550	J
26.				
27.SVOCTIC	Total SVOC TICs		62000	JAB
28.				
29.				
30.				

Sample Description: TNT-PS-F-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973979
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:50 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT24 SDG#: KVM41-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	7 J	3	17	1
10727	Acetophenone	98-86-2	N.D.	17	33	1
10727	Anthracene	120-12-7	5 J	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	170	1
10727	Benzaldehyde	100-52-7	N.D.	66	170	1
10727	Benzo(a)anthracene	56-55-3	28	3	17	1
10727	Benzo(a)pyrene	50-32-8	27	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	42	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	19	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	19	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	170	1
10727	Caprolactam	105-60-2	N.D.	33	170	1
10727	Carbazole	86-74-8	N.D.	17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	17	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	27	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	7 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	17	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	17	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,100	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	520	17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	44	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	170	500	1
10727	Hexachloroethane	67-72-1	N.D.	33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	18	3	17	1
10727	Isophorone	78-59-1	N.D.	17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973979
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:50 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT24 SDG#: KVM41-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	22	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	39	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,700	30	79	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,600	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	110	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	190	190	1
06918	Nitrobenzene	98-95-3	N.D.	170	170	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	99	1
06918	4-Nitrotoluene	99-99-0	N.D.	41	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	53	59	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	570	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	490,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973979
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:50 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT24 SDG#: KVM41-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,340		7.66	20.0	1
06944	Antimony	7440-36-0	1.76	J	0.410	2.00	1
06935	Arsenic	7440-38-2	4.03		0.580	2.00	1
06946	Barium	7440-39-3	29.0		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.302	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.175	J	0.0430	0.500	1
01650	Calcium	7440-70-2	429		3.33	20.0	1
06951	Chromium	7440-47-3	8.19		0.0980	1.50	1
06952	Cobalt	7440-48-4	2.89		0.0810	0.500	1
06953	Copper	7440-50-8	9.29		0.280	1.00	1
01654	Iron	7439-89-6	12,800		3.33	20.0	1
06955	Lead	7439-92-1	111		0.320	1.50	1
01657	Magnesium	7439-95-4	664		1.67	10.0	1
06958	Manganese	7439-96-5	98.2		0.0830	0.500	1
06961	Nickel	7440-02-0	5.50		0.230	1.00	1
01662	Potassium	7440-09-7	442		16.8	50.0	1
06936	Selenium	7782-49-2	1.64	J	0.830	2.00	1
06966	Silver	7440-22-4	0.167	J	0.120	0.500	1
01667	Sodium	7440-23-5	39.6	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	18.4		0.150	0.500	1
06972	Zinc	7440-66-6	18.1		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0207	J	0.0099	0.0993	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,710		457	1,370	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 18:35	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 15:16	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 06:05	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973979
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:50 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT24 SDG#: KVM41-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152045708003	07/28/2015 06:21	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152045708003	07/28/2015 06:21	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152045708003	07/24/2015 07:58	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:16	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152045708003	07/23/2015 22:09	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 01:38	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT24

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973979
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1270.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.957	360	J
2.	Unknown	7.075	280	J
3. 112-40-3	Dodecane	7.463	440	J
4.	Unknown Alkane	7.545	250	J
5. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.722	260	J
6.	Unknown Alkane	7.781	240	J
7.	Unknown Alkane	7.822	230	J
8. 1560-97-0	Dodecane, 2-methyl-	7.857	310	J
9.	Unknown Alkane	7.898	630	J
10. 629-50-5	Tridecane	8.069	1500	J
11.	Unknown Cycloalkane	8.145	220	J
12.	Unknown Alkane	8.163	230	J
13.	Unknown Alkane	8.198	220	J
14.	Unknown Cycloalkane	8.363	310	J
15. 1560-96-9	Tridecane, 2-methyl-	8.428	200	J
16.	Unknown Alkane	8.469	160	J
17. 629-59-4	Tetradecane	8.628	880	J
18.	Unknown Cycloalkane	8.928	190	J
19. 544-76-3	Hexadecane	9.639	260	J
20. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.363	64000	J
21.	Unknown Aromatic	10.592	210	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.169	870	J
23.	Unknown Amine	11.228	160	J
24.	Unknown Amine	11.386	2800	J
25.	Unknown Aromatic	11.522	900	J
26.				
27. SVOCTIC	Total SVOC TICs		76000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973980
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT25 SDG#: KVM41-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	5	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	7	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	26		3	17	1
10727	Benzo(a)pyrene	50-32-8	23		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	37		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	17		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	17		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	30		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	7	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,700		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	710		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	43		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	16	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973980
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT25 SDG#: KVM41-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	24	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	37	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,000	30	80	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,900	20	60	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	110	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	360	360	1
06918	Nitrobenzene	98-95-3	N.D.	390	390	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	69 J	50	100	1
06918	4-Nitrotoluene	99-99-0	81	40	80	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	80	80	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	590	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	490,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973980
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT25 SDG#: KVM41-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,500		7.66	20.0	1
06944	Antimony	7440-36-0	1.97	J	0.410	2.00	1
06935	Arsenic	7440-38-2	2.02		0.580	2.00	1
06946	Barium	7440-39-3	34.4		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.388	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.0520	J	0.0430	0.500	1
01650	Calcium	7440-70-2	591		3.33	20.0	1
06951	Chromium	7440-47-3	9.12		0.0980	1.50	1
06952	Cobalt	7440-48-4	2.96		0.0810	0.500	1
06953	Copper	7440-50-8	11.6		0.280	1.00	1
01654	Iron	7439-89-6	13,600		3.33	20.0	1
06955	Lead	7439-92-1	133		0.320	1.50	1
01657	Magnesium	7439-95-4	776		1.67	10.0	1
06958	Manganese	7439-96-5	102		0.0830	0.500	1
06961	Nickel	7440-02-0	4.97		0.230	1.00	1
01662	Potassium	7440-09-7	476		16.8	50.0	1
06936	Selenium	7782-49-2	1.99	J	0.830	2.00	1
06966	Silver	7440-22-4	0.386	J	0.120	0.500	1
01667	Sodium	7440-23-5	39.6	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	19.1		0.150	0.500	1
06972	Zinc	7440-66-6	21.0		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0229	J	0.0095	0.0950	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,700		559	1,680	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 19:00	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 15:59	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 06:48	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973980
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:30 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT25 SDG#: KVM41-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 07:36	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:18	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 01:46	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT25

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973980
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1271.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.328	1300	JBA
2.2958-76-1	Naphthalene, decahydro-2-met	6.963	420	J
3.	Unknown PAH	7.075	290	J
4.1618-22-0	Naphthalene, decahydro-2,6-d	7.340	250	J
5.112-40-3	Dodecane	7.469	500	J
6.17301-23-4	Undecane, 2,6-dimethyl-	7.545	260	J
7.1560-97-0	Dodecane, 2-methyl-	7.857	220	J
8.	Unknown	7.904	570	J
9.629-50-5	Tridecane	8.075	1600	J
10.629-62-9	Pentadecane	8.163	230	J
11.	Unknown Alkane	8.198	220	J
12.	Unknown Cycloalkane	8.363	270	J
13.	Unknown Alkane	8.434	170	J
14.629-59-4	Tetradecane	8.634	940	J
15.	Unknown Cycloalkane	8.928	140	J
16.544-76-3	Hexadecane	9.639	260	J
17.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.339	54000	J
18.	Unknown	10.404	140	J
19.	Unknown Alkane	10.592	190	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	11.175	1000	J
21.	Unknown Amine	11.233	150	J
22.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.398	4200	J
23.	Unknown Aromatic	11.528	1400	J
24.13126-39-1	cis-13-Octadecenoic acid	11.898	730	J
25.297-03-0	Cyclotetracosane	13.833	770	J
26.				
27.SVOCTIC	Total SVOC TICs		70000	JBA
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973981
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT26 SDG#: KVM41-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	N.D.	3	17	1
10727	Acetophenone	98-86-2	N.D.	17	33	1
10727	Anthracene	120-12-7	8 J	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	170	1
10727	Benzaldehyde	100-52-7	N.D.	66	170	1
10727	Benzo(a)anthracene	56-55-3	29	3	17	1
10727	Benzo(a)pyrene	50-32-8	25	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	42	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	17	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	20	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	170	1
10727	Caprolactam	105-60-2	N.D.	33	170	1
10727	Carbazole	86-74-8	N.D.	17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	17	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	34	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	7 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	17	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	17	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	990	1
10727	2,4-Dinitrotoluene	121-14-2	3,300	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	950	17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	47	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	170	500	1
10727	Hexachloroethane	67-72-1	N.D.	33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	19	3	17	1
10727	Isophorone	78-59-1	N.D.	17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973981
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT26 SDG#: KVM41-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	26	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	38	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,200	30	79	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,000	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	80	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	250	250	1
06918	Nitrobenzene	98-95-3	N.D.	230	230	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	64 J	50	99	1
06918	4-Nitrotoluene	99-99-0	90	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	57	59	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	560	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	470,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973981
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT26 SDG#: KVM41-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	8,950		7.37	19.2	1
06944	Antimony	7440-36-0	1.75	J	0.394	1.92	1
06935	Arsenic	7440-38-2	1.88	J	0.558	1.92	1
06946	Barium	7440-39-3	28.6		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.341	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.0519	J	0.0413	0.481	1
01650	Calcium	7440-70-2	545		3.20	19.2	1
06951	Chromium	7440-47-3	7.92		0.0942	1.44	1
06952	Cobalt	7440-48-4	3.04		0.0779	0.481	1
06953	Copper	7440-50-8	10.2		0.269	0.962	1
01654	Iron	7439-89-6	12,500		3.20	19.2	1
06955	Lead	7439-92-1	116		0.308	1.44	1
01657	Magnesium	7439-95-4	713		1.61	9.62	1
06958	Manganese	7439-96-5	104		0.0798	0.481	1
06961	Nickel	7440-02-0	4.40		0.221	0.962	1
01662	Potassium	7440-09-7	400		16.2	48.1	1
06936	Selenium	7782-49-2	1.72	J	0.798	1.92	1
06966	Silver	7440-22-4	0.229	J	0.115	0.481	1
01667	Sodium	7440-23-5	33.6	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	17.4		0.144	0.481	1
06972	Zinc	7440-66-6	19.4		0.740	1.92	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0197	J	0.0099	0.0990	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,540		436	1,310	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 19:26	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 16:41	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 07:30	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973981
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT26 SDG#: KVM41-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 07:57	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:20	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 01:54	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT26

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973981
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1272.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	4.322	1400	JBA
2. 2958-76-1	Naphthalene, decahydro-2-met	6.963	320	J
3. 1618-22-0	Naphthalene, decahydro-2,6-d	7.340	250	J
4. 112-40-3	Dodecane	7.469	470	J
5. 17301-23-4	Undecane, 2,6-dimethyl-	7.545	280	J
6. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.722	210	J
7.	Unknown Alkane	7.857	230	J
8. 61141-72-8	Dodecane, 4,6-dimethyl-	7.904	580	J
9. 629-50-5	Tridecane	8.075	1300	J
10.	Unknown Cycloalkane	8.363	290	J
11. 1560-96-9	Tridecane, 2-methyl-	8.428	190	J
12.	Unknown Alkane	8.469	160	J
13. 629-59-4	Tetradecane	8.634	860	J
14.	Unknown Cycloalkane	8.928	200	J
15.	Unknown Aromatic	8.957	200	J
16. 544-76-3	Hexadecane	9.639	210	J
17.	Unknown Aromatic	10.310	54000	J
18.	Unknown	10.339	10000	J
19.	Unknown	10.357	17000	J
20.	Unknown Aromatic	10.398	5400	J
21.	Unknown Aromatic	10.616	320	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.186	1500	J
23. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.404	4900	J
24.	Unknown Aromatic	11.539	1600	J
25. 13126-39-1	cis-13-Octadecenoic acid	11.898	710	J
26.				
27. SVOCTIC	Total SVOC TICs		100000	JBA
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973982
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT27 SDG#: KVM41-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	9	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		67	170	1
10727	Benzo(a)anthracene	56-55-3	23		3	17	1
10727	Benzo(a)pyrene	50-32-8	21		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	33		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	16	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	16	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		67	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	27		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,700		67	170	1
10727	2,6-Dinitrotoluene	606-20-2	740		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		67	170	1
10727	Fluoranthene	206-44-0	45		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	15	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973982
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT27 SDG#: KVM41-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		67	170	1
10727	4-Nitroaniline	100-01-6	N.D.		67	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		67	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	22		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	34		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,700		29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,400		20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	59	1
06918	1,3-Dinitrobenzene	99-65-0	99		20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	59	1
06918	HMX	2691-41-0	N.D.		49	150	1
06918	Nitrobenzene	98-95-3	N.D.		20	59	1
06918	Nitroglycerin	55-63-0	N.D.		390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.		39	78	1
06918	3-Nitrotoluene	99-08-1	57	J	49	98	1
06918	4-Nitrotoluene	99-99-0	59	J	39	78	1
06918	PETN	78-11-5	N.D.		390	1,200	1
06918	RDX	121-82-4	N.D.		25	59	1
06918	Tetryl	479-45-8	N.D.		31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	680		20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	410,000		3,900	12,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973982
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT27 SDG#: KVM41-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,640		7.51	19.6	1
06944	Antimony	7440-36-0	2.14		0.402	1.96	1
06935	Arsenic	7440-38-2	1.91	J	0.569	1.96	1
06946	Barium	7440-39-3	30.6		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.368	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.0588	J	0.0422	0.490	1
01650	Calcium	7440-70-2	601		3.26	19.6	1
06951	Chromium	7440-47-3	8.82		0.0961	1.47	1
06952	Cobalt	7440-48-4	3.70		0.0794	0.490	1
06953	Copper	7440-50-8	10.8		0.275	0.980	1
01654	Iron	7439-89-6	13,700		3.26	19.6	1
06955	Lead	7439-92-1	122		0.314	1.47	1
01657	Magnesium	7439-95-4	739		1.64	9.80	1
06958	Manganese	7439-96-5	102		0.0814	0.490	1
06961	Nickel	7440-02-0	4.75		0.225	0.980	1
01662	Potassium	7440-09-7	425		16.5	49.0	1
06936	Selenium	7782-49-2	1.79	J	0.814	1.96	1
06966	Silver	7440-22-4	0.269	J	0.118	0.490	1
01667	Sodium	7440-23-5	38.6	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	18.7		0.147	0.490	1
06972	Zinc	7440-66-6	20.0		0.755	1.96	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0285	J	0.0097	0.0973	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,910		492	1,480	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 19:52	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 17:24	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 08:55	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973982
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT27 SDG#: KVM41-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:01	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:22	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 03:02	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT27

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973982
Sample wt/vol: 30.0 (g/mL) g Lab File ID: og1273.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	4.328	1300	JBA
2. 2958-76-1	Naphthalene, decahydro-2-met	6.963	490	J
3.	Unknown Cycloalkane	7.075	300	J
4. 1618-22-0	Naphthalene, decahydro-2,6-d	7.339	290	J
5. 112-40-3	Dodecane	7.469	500	J
6. 17301-23-4	Undecane, 2,6-dimethyl-	7.545	280	J
7. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.722	220	J
8. 1560-97-0	Dodecane, 2-methyl-	7.857	260	J
9.	Unknown Alkane	7.904	670	J
10. 629-50-5	Tridecane	8.075	1900	J
11.	Unknown Cycloalkane	8.363	260	J
12. 1560-96-9	Tridecane, 2-methyl-	8.428	150	J
13. 629-59-4	Tetradecane	8.633	880	J
14. 544-76-3	Hexadecane	9.639	240	J
15. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.357	100000	J
16.	Unknown Aromatic	10.622	330	J
17.	Unknown	10.669	160	J
18.	Unknown Aromatic	10.957	220	J
19. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.192	1800	J
20.	Unknown Amine	11.245	220	J
21. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.410	4900	J
22.	Unknown Aromatic	11.539	1600	J
23. 112-80-1	Oleic Acid	11.904	720	J
24. 297-03-0	Cyclotetracosane	13.827	760	J
25.				
26. SVOCTIC	Total SVOC TICs		120000	JBA
27.				
28.				
29.				
30.				

Sample Description: TNT-PS-G-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973983
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT28 SDG#: KVM41-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	7	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		67	170	1
10727	Benzo(a)anthracene	56-55-3	22		3	17	1
10727	Benzo(a)pyrene	50-32-8	20		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	35		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	14	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	18		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		67	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	28		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,700		67	170	1
10727	2,6-Dinitrotoluene	606-20-2	790		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		67	170	1
10727	Fluoranthene	206-44-0	42		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	15	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973983
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT28 SDG#: KVM41-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		67	170	1
10727	4-Nitroaniline	100-01-6	N.D.		67	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		67	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	22		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	34		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,500		29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,400		20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	59	1
06918	1,3-Dinitrobenzene	99-65-0	100		20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	59	1
06918	HMX	2691-41-0	N.D.		49	150	1
06918	Nitrobenzene	98-95-3	N.D.		20	59	1
06918	Nitroglycerin	55-63-0	N.D.		390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.		39	78	1
06918	3-Nitrotoluene	99-08-1	55	J	49	98	1
06918	4-Nitrotoluene	99-99-0	44	J	39	78	1
06918	PETN	78-11-5	N.D.		390	1,200	1
06918	RDX	121-82-4	N.D.		41	59	1
06918	Tetryl	479-45-8	N.D.		31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	510		20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	290,000		3,900	12,000	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973983
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT28 SDG#: KVM41-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,500		7.66	20.0	1
06944	Antimony	7440-36-0	1.93	J	0.410	2.00	1
06935	Arsenic	7440-38-2	2.04		0.580	2.00	1
06946	Barium	7440-39-3	32.9		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.402	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	N.D.		0.0430	0.500	1
01650	Calcium	7440-70-2	585		3.33	20.0	1
06951	Chromium	7440-47-3	9.12		0.0980	1.50	1
06952	Cobalt	7440-48-4	2.77		0.0810	0.500	1
06953	Copper	7440-50-8	10.6		0.280	1.00	1
01654	Iron	7439-89-6	14,100		3.33	20.0	1
06955	Lead	7439-92-1	127		0.320	1.50	1
01657	Magnesium	7439-95-4	778		1.67	10.0	1
06958	Manganese	7439-96-5	104		0.0830	0.500	1
06961	Nickel	7440-02-0	4.93		0.230	1.00	1
01662	Potassium	7440-09-7	481		16.8	50.0	1
06936	Selenium	7782-49-2	1.65	J	0.830	2.00	1
06966	Silver	7440-22-4	0.374	J	0.120	0.500	1
01667	Sodium	7440-23-5	36.2	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	22.3		0.150	0.500	1
06972	Zinc	7440-66-6	20.5		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0274	J	0.0098	0.0978	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,300		498	1,490	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 20:18	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 18:06	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 09:37	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973983
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT28 SDG#: KVM41-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:11	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:24	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 03:19	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT28

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973983
Sample wt/vol: 30.0 (g/mL) g Lab File ID: og1274.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 112-40-3	Dodecane	7.469	440	J
2.	Unknown Alkane	7.545	320	J
3. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.722	420	J
4.	Unknown Alkane	7.780	340	J
5.	Unknown	7.822	340	J
6.	Unknown Alkane	7.857	380	J
7.	Unknown	7.904	870	J
8. 629-50-5	Tridecane	8.075	1500	J
9.	Unknown	8.133	580	J
10.	Unknown	8.198	370	J
11.	Unknown Alkane	8.263	320	J
12.	Unknown Cycloalkane	8.363	450	J
13. 1560-96-9	Tridecane, 2-methyl-	8.428	300	J
14.	Unknown Alkane	8.469	220	J
15. 629-59-4	Tetradecane	8.633	920	J
16.	Unknown Alkane	8.675	300	J
17.	Unknown	8.727	270	J
18.	Unknown	8.810	230	J
19.	Unknown Alkane	8.880	310	J
20.	Unknown Cycloalkane	8.927	200	J
21. 544-76-3	Hexadecane	9.639	230	J
22. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.363	61000	J
23. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.192	1200	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.410	4200	J
25.	Unknown	11.539	1300	J
26.				
27. SVOCTIC	Total SVOC TICs		77000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973984
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT29 SDG#: KVM41-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	4	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	22		3	17	1
10727	Benzo(a)pyrene	50-32-8	19		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	29		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	12	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	15	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	24		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,000		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	580		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	36		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	12	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973984
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT29 SDG#: KVM41-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	17	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	28	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,600	29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,600	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	82	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	49	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	N.D.	49	98	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	54	59	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	510	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	240,000	3,900	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973984
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT29 SDG#: KVM41-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	8,240		7.58	19.8	1
06944	Antimony	7440-36-0	1.98	J	0.406	1.98	1
06935	Arsenic	7440-38-2	1.61	J	0.574	1.98	1
06946	Barium	7440-39-3	25.8		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.315	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.0545	J	0.0426	0.495	1
01650	Calcium	7440-70-2	649		3.30	19.8	1
06951	Chromium	7440-47-3	8.07		0.0970	1.49	1
06952	Cobalt	7440-48-4	2.38		0.0802	0.495	1
06953	Copper	7440-50-8	8.84		0.277	0.990	1
01654	Iron	7439-89-6	12,300		3.30	19.8	1
06955	Lead	7439-92-1	113		0.317	1.49	1
01657	Magnesium	7439-95-4	731		1.65	9.90	1
06958	Manganese	7439-96-5	93.4		0.0822	0.495	1
06961	Nickel	7440-02-0	4.06		0.228	0.990	1
01662	Potassium	7440-09-7	429		16.6	49.5	1
06936	Selenium	7782-49-2	1.63	J	0.822	1.98	1
06966	Silver	7440-22-4	0.252	J	0.119	0.495	1
01667	Sodium	7440-23-5	33.2	J	16.5	99.0	1
06925	Thallium	7440-28-0	N.D.		0.743	2.97	1
06971	Vanadium	7440-62-2	16.8		0.149	0.495	1
06972	Zinc	7440-66-6	17.6		0.762	1.98	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0136	J	0.0097	0.0966	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	6,830		604	1,810	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 20:43	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 18:48	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 10:20	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973984
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT29 SDG#: KVM41-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:15	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:26	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 03:28	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT29

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973984
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1275.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.469	440	J
2.17301-28-9	Undecane, 3,6-dimethyl-	7.545	320	J
3.66660-43-3	trans, cis-3-Ethylbicyclo[4.	7.722	420	J
4.	Unknown Alkane	7.781	340	J
5.	Unknown Alkane	7.822	340	J
6.1560-97-0	Dodecane, 2-methyl-	7.857	380	J
7.	Unknown Alkane	7.898	860	J
8.629-50-5	Tridecane	8.075	1500	J
9.	Unknown Alkane	8.134	570	J
10.	Unknown	8.198	360	J
11.	Unknown	8.310	200	J
12.	Unknown Cycloalkane	8.363	360	J
13.1560-96-9	Tridecane, 2-methyl-	8.428	270	J
14.	Unknown Alkane	8.469	200	J
15.629-59-4	Tetradecane	8.628	830	J
16.	Unknown Alkane	8.675	290	J
17.	Unknown	8.733	240	J
18.	Unknown	8.810	180	J
19.	Unknown Alkane	8.881	250	J
20.544-76-3	Hexadecane	9.639	230	J
21.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.363	64000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.174	1000	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.398	3800	J
24.	Unknown	11.533	1300	J
25.	Unknown	15.645	1200	J
26.				
27.SVOCTIC	Total SVOC TICs		80000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973985
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:02 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT30 SDG#: KVM41-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	8 J	3	17	1
10727	Acetophenone	98-86-2	N.D.	17	33	1
10727	Anthracene	120-12-7	4 J	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	170	1
10727	Benzaldehyde	100-52-7	N.D.	66	170	1
10727	Benzo(a)anthracene	56-55-3	34	3	17	1
10727	Benzo(a)pyrene	50-32-8	28	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	50	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	18	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	20	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	170	1
10727	Caprolactam	105-60-2	N.D.	33	170	1
10727	Carbazole	86-74-8	N.D.	17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	17	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	37	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	17	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	17	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,400	66	170	1
10727	2,6-Dinitrotoluene	606-20-2	650	17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	54	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	170	500	1
10727	Hexachloroethane	67-72-1	N.D.	33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	18	3	17	1
10727	Isophorone	78-59-1	N.D.	17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973985
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:02 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT30 SDG#: KVM41-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	20		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	49		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,700		30	80	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,700		20	60	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	60	1
06918	1,3-Dinitrobenzene	99-65-0	100		20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	60	1
06918	HMX	2691-41-0	N.D.		170	170	1
06918	Nitrobenzene	98-95-3	N.D.		20	60	1
06918	Nitroglycerin	55-63-0	N.D.		400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	80	1
06918	3-Nitrotoluene	99-08-1	57	J	50	100	1
06918	4-Nitrotoluene	99-99-0	41	J	40	80	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		26	60	1
06918	Tetryl	479-45-8	N.D.		32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	500		20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	380,000		4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973985
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:02 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT30 SDG#: KVM41-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,140		7.66	20.0	1
06944	Antimony	7440-36-0	2.03		0.410	2.00	1
06935	Arsenic	7440-38-2	1.48	J	0.580	2.00	1
06946	Barium	7440-39-3	24.5		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.293	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.0540	J	0.0430	0.500	1
01650	Calcium	7440-70-2	802		3.33	20.0	1
06951	Chromium	7440-47-3	8.28		0.0980	1.50	1
06952	Cobalt	7440-48-4	2.42		0.0810	0.500	1
06953	Copper	7440-50-8	9.48		0.280	1.00	1
01654	Iron	7439-89-6	11,900		3.33	20.0	1
06955	Lead	7439-92-1	114		0.320	1.50	1
01657	Magnesium	7439-95-4	643		1.67	10.0	1
06958	Manganese	7439-96-5	92.1		0.0830	0.500	1
06961	Nickel	7440-02-0	3.66		0.230	1.00	1
01662	Potassium	7440-09-7	413		16.8	50.0	1
06936	Selenium	7782-49-2	1.77	J	0.830	2.00	1
06966	Silver	7440-22-4	0.255	J	0.120	0.500	1
01667	Sodium	7440-23-5	35.9	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	15.7		0.150	0.500	1
06972	Zinc	7440-66-6	17.5		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0186	J	0.0096	0.0958	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,160		688	2,060	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 21:09	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 19:31	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 11:02	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973985
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:02 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT30 SDG#: KVM41-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:18	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:32	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 03:36	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT30

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973985
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1276.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.469	420	J
2.17301-23-4	Undecane, 2,6-dimethyl-	7.545	300	J
3.58462-32-1	trans,trans-3-Ethylbicyclo[4	7.722	400	J
4.	Unknown Alkane	7.781	320	J
5.	Unknown Alkane	7.822	330	J
6.	Unknown Alkane	7.857	360	J
7.	Unknown	7.904	830	J
8.	Unknown	8.028	300	J
9.629-50-5	Tridecane	8.075	1400	J
10.	Unknown Alkane	8.134	550	J
11.	Unknown	8.198	350	J
12.	Unknown	8.310	270	J
13.	Unknown Cycloalkane	8.363	480	J
14.	Unknown Alkane	8.428	390	J
15.	Unknown Cycloalkane	8.592	300	J
16.629-59-4	Tetradecane	8.628	1100	J
17.	Unknown Alkane	8.675	390	J
18.	Unknown Cycloalkane	8.728	270	J
19.	Unknown	8.810	250	J
20.	Unknown Alkane	8.881	500	J
21.544-76-3	Hexadecane	9.639	290	J
22.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.357	70000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.192	1000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.410	3800	J
25.	Unknown	11.539	1200	J
26.				
27.SVOCTIC	Total SVOC TICs		86000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973986
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT31 SDG#: KVM41-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	5	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	27		3	17	1
10727	Benzo(a)pyrene	50-32-8	26		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	44		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	18		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	16	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	30		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,300		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	590		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	50		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	18		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973986
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT31 SDG#: KVM41-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	23	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	42	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,900	29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,900	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	110	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	290	290	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	N.D.	49	98	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	62	62	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	430	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	340,000	3,900	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973986
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT31 SDG#: KVM41-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,730		7.44	19.4	1
06944	Antimony	7440-36-0	2.13		0.398	1.94	1
06935	Arsenic	7440-38-2	1.51	J	0.563	1.94	1
06946	Barium	7440-39-3	25.2		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.314	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0495	J	0.0417	0.485	1
01650	Calcium	7440-70-2	580		3.23	19.4	1
06951	Chromium	7440-47-3	11.4		0.0951	1.46	1
06952	Cobalt	7440-48-4	2.43		0.0786	0.485	1
06953	Copper	7440-50-8	8.77		0.272	0.971	1
01654	Iron	7439-89-6	13,000		3.23	19.4	1
06955	Lead	7439-92-1	121		0.311	1.46	1
01657	Magnesium	7439-95-4	613		1.62	9.71	1
06958	Manganese	7439-96-5	94.3		0.0806	0.485	1
06961	Nickel	7440-02-0	3.95		0.223	0.971	1
01662	Potassium	7440-09-7	388		16.3	48.5	1
06936	Selenium	7782-49-2	1.86	J	0.806	1.94	1
06966	Silver	7440-22-4	0.367	J	0.117	0.485	1
01667	Sodium	7440-23-5	29.7	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	20.0		0.146	0.485	1
06972	Zinc	7440-66-6	17.0		0.748	1.94	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0223	J	0.0096	0.0962	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,820		640	1,920	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 21:34	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 20:13	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 11:45	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973986
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT31 SDG#: KVM41-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:21	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:34	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 03:43	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT31

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973986
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1277.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.963	340	J
2.112-40-3	Dodecane	7.469	450	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.545	330	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.722	450	J
5.	Unknown Alkane	7.781	350	J
6.1560-97-0	Dodecane, 2-methyl-	7.857	440	J
7.	Unknown Alkane	7.898	900	J
8.629-50-5	Tridecane	8.075	1500	J
9.	Unknown Alkane	8.133	600	J
10.	Unknown	8.198	380	J
11.	Unknown Alkane	8.263	320	J
12.	Unknown Cycloalkane	8.363	430	J
13.1560-96-9	Tridecane, 2-methyl-	8.428	280	J
14.6418-41-3	Tridecane, 3-methyl-	8.469	210	J
15.3178-23-2	Cyclohexane, 1,1'-methyleneb	8.586	190	J
16.629-59-4	Tetradecane	8.628	870	J
17.	Unknown	8.675	290	J
18.	Unknown Cycloalkane	8.728	270	J
19.	Unknown	8.810	200	J
20.	Unknown Alkane	8.881	410	J
21.544-76-3	Hexadecane	9.639	240	J
22.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.357	55000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.180	950	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.398	3500	J
25.	Unknown	11.533	1200	J
26.				
27.SVOCTIC	Total SVOC TICs		70000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973987
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:28 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT32 SDG#: KVM41-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	5	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	9	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		67	170	1
10727	Benzo(a)anthracene	56-55-3	33		3	17	1
10727	Benzo(a)pyrene	50-32-8	28		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	40		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	16	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	20		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		67	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	33		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,900		67	170	1
10727	2,6-Dinitrotoluene	606-20-2	550		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		67	170	1
10727	Fluoranthene	206-44-0	64		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	16	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973987
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:28 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT32 SDG#: KVM41-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		67	170	1
10727	4-Nitroaniline	100-01-6	N.D.		67	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		67	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	29		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	55		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,500		30	80	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,400		20	60	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	60	1
06918	1,3-Dinitrobenzene	99-65-0	50	J	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	60	1
06918	HMX	2691-41-0	N.D.		50	150	1
06918	Nitrobenzene	98-95-3	N.D.		20	60	1
06918	Nitroglycerin	55-63-0	N.D.		400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	80	1
06918	3-Nitrotoluene	99-08-1	N.D.		50	100	1
06918	4-Nitrotoluene	99-99-0	N.D.		63	80	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		26	60	1
06918	Tetryl	479-45-8	N.D.		32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	440		20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	250,000		4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973987
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:28 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT32 SDG#: KVM41-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,160		7.44	19.4	1
06944	Antimony	7440-36-0	1.81	J	0.398	1.94	1
06935	Arsenic	7440-38-2	1.99		0.563	1.94	1
06946	Barium	7440-39-3	22.4		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.301	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0612	J	0.0417	0.485	1
01650	Calcium	7440-70-2	703		3.23	19.4	1
06951	Chromium	7440-47-3	7.35		0.0951	1.46	1
06952	Cobalt	7440-48-4	2.18		0.0786	0.485	1
06953	Copper	7440-50-8	8.20		0.272	0.971	1
01654	Iron	7439-89-6	11,100		3.23	19.4	1
06955	Lead	7439-92-1	102		0.311	1.46	1
01657	Magnesium	7439-95-4	616		1.62	9.71	1
06958	Manganese	7439-96-5	78.4		0.0806	0.485	1
06961	Nickel	7440-02-0	3.61		0.223	0.971	1
01662	Potassium	7440-09-7	386		16.3	48.5	1
06936	Selenium	7782-49-2	1.50	J	0.806	1.94	1
06966	Silver	7440-22-4	0.240	J	0.117	0.485	1
01667	Sodium	7440-23-5	32.7	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	14.6		0.146	0.485	1
06972	Zinc	7440-66-6	15.4		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0277	J	0.0099	0.0993	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,460		408	1,220	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 22:00	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 21:38	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 12:27	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973987
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:28 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT32 SDG#: KVM41-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:25	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:36	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531B	07/30/2015 03:50	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT32

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973987
Sample wt/vol: 30.0 (g/mL) g Lab File ID: og1278.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 112-40-3	Dodecane	7.469	450	J
2.	Unknown Alkane	7.545	320	J
3. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	430	J
4.	Unknown Alkane	7.781	340	J
5. 17301-27-8	Undecane, 2,10-dimethyl-	7.857	430	J
6.	Unknown Alkane	7.898	880	J
7.	Unknown	8.028	320	J
8. 629-50-5	Tridecane	8.069	1500	J
9.	Unknown	8.198	330	J
10.	Unknown Alkane	8.263	310	J
11.	Unknown	8.310	250	J
12.	Unknown Cycloalkane	8.363	430	J
13. 1560-96-9	Tridecane, 2-methyl-	8.428	320	J
14.	Unknown Alkane	8.469	240	J
15. 629-59-4	Tetradecane	8.628	980	J
16.	Unknown Alkane	8.675	350	J
17.	Unknown	8.733	250	J
18.	Unknown	8.810	240	J
19.	Unknown Alkane	8.880	440	J
20.	Unknown Cycloalkane	8.927	220	J
21. 544-76-3	Hexadecane	9.639	280	J
22.	Unknown	10.345	50000	J
23. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.169	850	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.386	3500	J
25.	Unknown	11.521	1100	J
26.				
27. SVOCTIC	Total SVOC TICs		65000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973988
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT33 SDG#: KVM41-13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	18		3	17	1
10727	Benzo(a)pyrene	50-32-8	16	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	25		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	13	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	14	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	19		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,900		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	440		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	28		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	10	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973988
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT33 SDG#: KVM41-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	14 J	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	22	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	580	29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	470	19	58	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	49	150	1
06918	Nitrobenzene	98-95-3	N.D.	19	58	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	N.D.	49	97	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	25	58	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	140	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	230,000	3,900	12,000	200
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973988
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT33 SDG#: KVM41-13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	6,190		7.66	20.0	1
06944	Antimony	7440-36-0	1.97	J	0.410	2.00	1
06935	Arsenic	7440-38-2	1.32	J	0.580	2.00	1
06946	Barium	7440-39-3	20.1		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.266	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.0540	J	0.0430	0.500	1
01650	Calcium	7440-70-2	663		3.33	20.0	1
06951	Chromium	7440-47-3	7.19		0.0980	1.50	1
06952	Cobalt	7440-48-4	2.27		0.0810	0.500	1
06953	Copper	7440-50-8	7.29		0.280	1.00	1
01654	Iron	7439-89-6	12,800		3.33	20.0	1
06955	Lead	7439-92-1	86.3		0.320	1.50	1
01657	Magnesium	7439-95-4	532		1.67	10.0	1
06958	Manganese	7439-96-5	83.1		0.0830	0.500	1
06961	Nickel	7440-02-0	3.17		0.230	1.00	1
01662	Potassium	7440-09-7	349		16.8	50.0	1
06936	Selenium	7782-49-2	1.92	J	0.830	2.00	1
06966	Silver	7440-22-4	0.277	J	0.120	0.500	1
01667	Sodium	7440-23-5	25.0	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	16.6		0.150	0.500	1
06972	Zinc	7440-66-6	13.2		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0236	J	0.0097	0.0972	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,550		433	1,300	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 22:25	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 22:21	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 13:10	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973988
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT33 SDG#: KVM41-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:28	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:38	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 21:41	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT33

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973988
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1279.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	6.957	300	J
2.	112-40-3	Dodecane	7.469	440	J
3.		Unknown Alkane	7.545	310	J
4.	66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.722	420	J
5.		Unknown	7.781	330	J
6.		Unknown Alkane	7.857	420	J
7.	61141-72-8	Dodecane, 4,6-dimethyl-	7.904	860	J
8.	629-50-5	Tridecane	8.075	1500	J
9.		Unknown Cycloalkane	8.145	310	J
10.		Unknown Alkane	8.163	300	J
11.		Unknown	8.198	320	J
12.		Unknown	8.263	300	J
13.		Unknown	8.310	240	J
14.		Unknown Cycloalkane	8.363	420	J
15.	1560-96-9	Tridecane, 2-methyl-	8.428	320	J
16.	6418-41-3	Tridecane, 3-methyl-	8.469	230	J
17.	629-59-4	Tetradecane	8.628	990	J
18.		Unknown	8.675	310	J
19.		Unknown	8.734	280	J
20.		Unknown	8.810	220	J
21.		Unknown Alkane	8.881	320	J
22.	544-76-3	Hexadecane	9.639	250	J
23.		Unknown	10.351	76000	J
24.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.169	1100	J
25.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.386	2900	J
26.					
27.	SVOCTIC	Total SVOC TICs		89000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973989
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT34 SDG#: KVM41-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	11	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	14	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	49		3	17	1
10727	Benzo(a)pyrene	50-32-8	45		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	56		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	25		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	33		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	49		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	8	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,200		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	560		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	83		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	23		3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973989
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT34 SDG#: KVM41-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		16	33	1
10727	4-Methylphenol	106-44-5	N.D.		16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		16	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	160	1
10727	4-Nitroaniline	100-01-6	N.D.		66	160	1
10727	Nitrobenzene	98-95-3	N.D.		16	33	1
10727	2-Nitrophenol	88-75-5	N.D.		16	33	1
10727	4-Nitrophenol	100-02-7	N.D.		160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	160	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	52		3	17	1
10727	Phenol	108-95-2	N.D.		16	33	1
10727	Pyrene	129-00-0	74		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		16	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,100		30	79	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,600		20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	59	1
06918	1,3-Dinitrobenzene	99-65-0	110		20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	59	1
06918	HMX	2691-41-0	N.D.		250	250	1
06918	Nitrobenzene	98-95-3	N.D.		66	66	1
06918	Nitroglycerin	55-63-0	N.D.		1,000	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	79	1
06918	3-Nitrotoluene	99-08-1	86	J	50	99	1
06918	4-Nitrotoluene	99-99-0	70	J	40	79	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		65	65	1
06918	Tetryl	479-45-8	N.D.		32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	570		20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	290,000		4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973989
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT34 SDG#: KVM41-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		mg/kg		mg/kg	mg/kg	
01643	Aluminum	7429-90-5	6,370		7.51	19.6	1
06944	Antimony	7440-36-0	1.86	J	0.402	1.96	1
06935	Arsenic	7440-38-2	1.32	J	0.569	1.96	1
06946	Barium	7440-39-3	21.2		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.261	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.0667	J	0.0422	0.490	1
01650	Calcium	7440-70-2	816		3.26	19.6	1
06951	Chromium	7440-47-3	7.71		0.0961	1.47	1
06952	Cobalt	7440-48-4	2.30		0.0794	0.490	1
06953	Copper	7440-50-8	7.52		0.275	0.980	1
01654	Iron	7439-89-6	11,300		3.26	19.6	1
06955	Lead	7439-92-1	91.7		0.314	1.47	1
01657	Magnesium	7439-95-4	570		1.64	9.80	1
06958	Manganese	7439-96-5	99.8		0.0814	0.490	1
06961	Nickel	7440-02-0	3.44		0.225	0.980	1
01662	Potassium	7440-09-7	351		16.5	49.0	1
06936	Selenium	7782-49-2	1.85	J	0.814	1.96	1
06966	Silver	7440-22-4	0.290	J	0.118	0.490	1
01667	Sodium	7440-23-5	29.7	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	14.8		0.147	0.490	1
06972	Zinc	7440-66-6	15.3		0.755	1.96	1
	SW-846 7471A		mg/kg		mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.0233	J	0.0098	0.0982	1
Wet Chemistry	**Lloyd Kahn modified**		mg/kg		mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	5,900		673	2,020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 22:50	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 23:03	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 13:52	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973989
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:20 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT34 SDG#: KVM41-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:32	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:40	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 22:08	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT34

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973989
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1280.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	6.957	290	J
2.112-40-3	Dodecane	7.469	420	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.545	300	J
4.66660-43-3	trans, cis-3-Ethylbicyclo[4.	7.722	390	J
5.	Unknown Alkane	7.781	320	J
6.	Unknown Alkane	7.822	280	J
7.17301-27-8	Undecane, 2,10-dimethyl-	7.857	400	J
8.	Unknown	7.904	810	J
9.629-50-5	Tridecane	8.075	1400	J
10.	Unknown	8.133	530	J
11.	Unknown	8.198	330	J
12.	Unknown	8.263	310	J
13.	Unknown	8.310	220	J
14.	Unknown Cycloalkane	8.363	440	J
15.	Unknown Alkane	8.428	360	J
16.	Unknown Cycloalkane	8.586	210	J
17.629-59-4	Tetradecane	8.633	1000	J
18.	Unknown Alkane	8.675	350	J
19.	Unknown	8.728	240	J
20.	Unknown Alkane	8.880	440	J
21.544-76-3	Hexadecane	9.639	240	J
22.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.339	79000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.180	1000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.398	3200	J
25.	Unknown	11.533	970	J
26.				
27.SVOCTIC	Total SVOC TICs		93000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973990
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT35 SDG#: KVM41-15

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	4	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	5	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	26		3	17	1
10727	Benzo(a)pyrene	50-32-8	21		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	32		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	14	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	16	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	27		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,800		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	520		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	41		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	13	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973990
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT35 SDG#: KVM41-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	20	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	35	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,200	140	380	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,600	96	290	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	180	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	190	190	1
06918	Nitrobenzene	98-95-3	N.D.	260	260	1
06918	Nitroglycerin	55-63-0	N.D.	380	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	38	77	1
06918	3-Nitrotoluene	99-08-1	50 J	48	96	1
06918	4-Nitrotoluene	99-99-0	88	38	77	1
06918	PETN	78-11-5	N.D.	380	1,200	1
06918	RDX	121-82-4	N.D.	380	380	1
06918	Tetryl	479-45-8	N.D.	31	77	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,100	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	440,000	3,800	12,000	200
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973990
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT35 SDG#: KVM41-15

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,480		7.51	19.6	1
06944	Antimony	7440-36-0	2.23		0.402	1.96	1
06935	Arsenic	7440-38-2	1.63	J	0.569	1.96	1
06946	Barium	7440-39-3	24.2		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.314	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	N.D.		0.0422	0.490	1
01650	Calcium	7440-70-2	700		3.26	19.6	1
06951	Chromium	7440-47-3	7.55		0.0961	1.47	1
06952	Cobalt	7440-48-4	2.68		0.0794	0.490	1
06953	Copper	7440-50-8	9.00		0.275	0.980	1
01654	Iron	7439-89-6	14,000		3.26	19.6	1
06955	Lead	7439-92-1	113		0.314	1.47	1
01657	Magnesium	7439-95-4	613		1.64	9.80	1
06958	Manganese	7439-96-5	102		0.0814	0.490	1
06961	Nickel	7440-02-0	3.74		0.225	0.980	1
01662	Potassium	7440-09-7	340		16.5	49.0	1
06936	Selenium	7782-49-2	1.83	J	0.814	1.96	1
06966	Silver	7440-22-4	0.355	J	0.118	0.490	1
01667	Sodium	7440-23-5	27.2	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	17.5		0.147	0.490	1
06972	Zinc	7440-66-6	15.7		0.755	1.96	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0250	J	0.0094	0.0941	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,040		735	2,210	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 23:16	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/30/2015 23:46	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/03/2015 23:01	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 14:35	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973990
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:05 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT35 SDG#: KVM41-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:35	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:42	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 22:23	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT35

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973990
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1281.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000155-85-6	cis-Decalin, 2-syn-methyl-	6.963	320	J
2.112-40-3	Dodecane	7.469	450	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.545	330	J
4.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	440	J
5.	Unknown Alkane	7.781	350	J
6.1560-97-0	Dodecane, 2-methyl-	7.857	430	J
7.	Unknown Alkane	7.898	890	J
8.629-50-5	Tridecane	8.075	1500	J
9.	Unknown	8.134	590	J
10.	Unknown	8.198	370	J
11.	Unknown Alkane	8.263	320	J
12.	Unknown	8.310	200	J
13.	Unknown Cycloalkane	8.363	360	J
14.	Unknown Alkane	8.428	270	J
15.	Unknown Alkane	8.469	200	J
16.629-59-4	Tetradecane	8.628	800	J
17.	Unknown Alkane	8.669	300	J
18.	Unknown	8.733	210	J
19.	Unknown	8.810	200	J
20.	Unknown Alkane	8.881	360	J
21.544-76-3	Hexadecane	9.639	250	J
22.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.339	64000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.163	1100	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.386	2900	J
25.	Unknown	11.522	910	J
26.				
27.SVOCTIC	Total SVOC TICs		78000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973991
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 14:10 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT36 SDG#: KVM41-16

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	3	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	14	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	13	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	23		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	10	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	8	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	17		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,800		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	450		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	26		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	11	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

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LL Sample # SW 7973991
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

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TNT36 SDG#: KVM41-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	14 J	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	23	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,900	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,200	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	130	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	50	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	190	50	99	1
06918	4-Nitrotoluene	99-99-0	270	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	140	140	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	920	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	700,000	4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

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Kenvil Treatability Study

LL Sample # SW 7973991
LL Group # 1578511
Account # 06716

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Collected: 07/20/2015 14:10 by SL

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Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT36 SDG#: KVM41-16

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,720		7.66	20.0	1
06944	Antimony	7440-36-0	1.47	J	0.410	2.00	1
06935	Arsenic	7440-38-2	1.89	J	0.580	2.00	1
06946	Barium	7440-39-3	31.9		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.294	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.0620	J	0.0430	0.500	1
01650	Calcium	7440-70-2	797		3.33	20.0	1
06951	Chromium	7440-47-3	7.59		0.0980	1.50	1
06952	Cobalt	7440-48-4	2.53		0.0810	0.500	1
06953	Copper	7440-50-8	9.09		0.280	1.00	1
01654	Iron	7439-89-6	11,000		3.33	20.0	1
06955	Lead	7439-92-1	121		0.320	1.50	1
01657	Magnesium	7439-95-4	612		1.67	10.0	1
06958	Manganese	7439-96-5	92.8		0.0830	0.500	1
06961	Nickel	7440-02-0	3.68		0.230	1.00	1
01662	Potassium	7440-09-7	336		16.8	50.0	1
06936	Selenium	7782-49-2	1.31	J	0.830	2.00	1
06966	Silver	7440-22-4	0.227	J	0.120	0.500	1
01667	Sodium	7440-23-5	28.7	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	15.4		0.150	0.500	1
06972	Zinc	7440-66-6	25.0		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0200	J	0.0097	0.0969	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,970		545	1,640	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/29/2015 23:42	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/31/2015 00:28	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/03/2015 23:43	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 15:17	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-4-07202015 Composite Soil Sample
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LL Sample # SW 7973991
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TNT36 SDG#: KVM41-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:38	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:44	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 22:32	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT36

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973991
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1282.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.963	310	J
2. 112-40-3	Dodecane	7.469	430	J
3. 17301-23-4	Undecane, 2,6-dimethyl-	7.545	310	J
4. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	410	J
5.	Unknown Alkane	7.780	330	J
6.	Unknown Alkane	7.857	410	J
7. 66563-30-2	Bacchotricuneatin c	7.898	840	J
8. 629-50-5	Tridecane	8.069	1400	J
9.	Unknown	8.145	300	J
10.	Unknown	8.198	310	J
11.	Unknown Alkane	8.263	300	J
12.	Unknown	8.310	200	J
13.	Unknown Cycloalkane	8.363	340	J
14. 1560-96-9	Tridecane, 2-methyl-	8.427	260	J
15.	Unknown Alkane	8.469	190	J
16. 629-59-4	Tetradecane	8.627	770	J
17.	Unknown Alkane	8.669	280	J
18.	Unknown Alkane	8.727	240	J
19.	Unknown	8.810	180	J
20.	Unknown Alkane	8.880	360	J
21.	Unknown Alkane	9.639	230	J
22.	Unknown	10.339	80000	J
23.	Unknown	10.592	270	J
24. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.168	900	J
25. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.386	2300	J
26.				
27. SVOCTIC	Total SVOC TICs		91000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

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TNT37 SDG#: KVM41-17

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	15	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		67	170	1
10727	Benzo(a)anthracene	56-55-3	27		3	17	1
10727	Benzo(a)pyrene	50-32-8	24		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	33		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	15	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	17	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		67	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	27		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,000		67	170	1
10727	2,6-Dinitrotoluene	606-20-2	510		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		67	170	1
10727	Fluoranthene	206-44-0	58		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	15	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973992
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT37 SDG#: KVM41-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	67	170	1
10727	4-Nitroaniline	100-01-6	N.D.	67	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	67	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	51	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	52	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,900	29	77	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,700	19	58	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	73	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	48	140	1
06918	Nitrobenzene	98-95-3	N.D.	19	58	1
06918	Nitroglycerin	55-63-0	N.D.	380	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	38	77	1
06918	3-Nitrotoluene	99-08-1	N.D.	48	96	1
06918	4-Nitrotoluene	99-99-0	N.D.	38	77	1
06918	PETN	78-11-5	N.D.	380	1,200	1
06918	RDX	121-82-4	N.D.	50	58	1
06918	Tetryl	479-45-8	N.D.	31	77	1
06918	1,3,5-Trinitrobenzene	99-35-4	370	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	210,000	3,800	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973992
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT37 SDG#: KVM41-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,300	7.44	19.4	1
06944	Antimony	7440-36-0	2.08	0.398	1.94	1
06935	Arsenic	7440-38-2	2.01	0.563	1.94	1
06946	Barium	7440-39-3	32.5	0.0650	0.485	1
06947	Beryllium	7440-41-7	0.377 J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0553 J	0.0417	0.485	1
01650	Calcium	7440-70-2	483	3.23	19.4	1
06951	Chromium	7440-47-3	8.87	0.0951	1.46	1
06952	Cobalt	7440-48-4	2.83	0.0786	0.485	1
06953	Copper	7440-50-8	10.7	0.272	0.971	1
01654	Iron	7439-89-6	13,500	3.23	19.4	1
06955	Lead	7439-92-1	127	0.311	1.46	1
01657	Magnesium	7439-95-4	741	1.62	9.71	1
06958	Manganese	7439-96-5	107	0.0806	0.485	1
06961	Nickel	7440-02-0	4.72	0.223	0.971	1
01662	Potassium	7440-09-7	450	16.3	48.5	1
06936	Selenium	7782-49-2	2.02	0.806	1.94	1
06966	Silver	7440-22-4	0.328 J	0.117	0.485	1
01667	Sodium	7440-23-5	31.4 J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.	0.728	2.91	1
06971	Vanadium	7440-62-2	18.4	0.146	0.485	1
06972	Zinc	7440-66-6	21.4	0.748	1.94	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0264 J	0.0096	0.0955	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,360	441	1,320	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/30/2015 00:07	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/31/2015 01:10	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 16:42	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973992
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT37 SDG#: KVM41-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:42	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:46	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 22:42	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT37

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973992
Sample wt/vol: 30.0 (g/mL) g Lab File ID: og1283.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/30/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.957	270	J
2. 112-40-3	Dodecane	7.463	360	J
3.	Unknown Alkane	7.545	260	J
4. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	350	J
5.	Unknown Alkane	7.781	280	J
6. 1560-97-0	Dodecane, 2-methyl-	7.857	340	J
7.	Unknown Alkane	7.898	710	J
8. 652-67-5	Isosorbide	8.028	250	J
9. 629-59-4	Tetradecane	8.069	1200	J
10.	Unknown	8.145	250	J
11.	Unknown	8.198	260	J
12.	Unknown Alkane	8.263	250	J
13.	Unknown	8.310	220	J
14.	Unknown Cycloalkane	8.363	380	J
15. 1560-96-9	Tridecane, 2-methyl-	8.428	280	J
16. 629-92-5	Nonadecane	8.628	850	J
17. 62016-18-6	Octane, 5-ethyl-2-methyl-	8.669	300	J
18.	Unknown	8.728	210	J
19.	Unknown Cycloalkane	8.927	200	J
20. 544-76-3	Hexadecane	9.639	200	J
21.	Unknown	10.363	88000	J
22.	Unknown	10.592	280	J
23. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.169	950	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.386	2400	J
25.	Unknown	11.527	780	J
26.				
27. SVOCTIC	Total SVOC TICs		100000	J
28.				
29.				
30.				

Sample Description: TNT-PS-J-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973993
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:48 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT38 SDG#: KVM41-18

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	6 J	3	17	1
10727	Acetophenone	98-86-2	N.D.	16	33	1
10727	Anthracene	120-12-7	9 J	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	160	1
10727	Benzaldehyde	100-52-7	N.D.	66	160	1
10727	Benzo(a)anthracene	56-55-3	29	3	17	1
10727	Benzo(a)pyrene	50-32-8	25	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	38	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	17	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	21	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	160	1
10727	Caprolactam	105-60-2	N.D.	33	160	1
10727	Carbazole	86-74-8	N.D.	16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	16	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	32	1
10727	2-Chlorophenol	95-57-8	N.D.	16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	32	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	98	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	16	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	16	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	980	1
10727	2,4-Dinitrotoluene	121-14-2	2,300	66	160	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.	16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	65	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	160	490	1
10727	Hexachloroethane	67-72-1	N.D.	33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	18	3	17	1
10727	Isophorone	78-59-1	N.D.	16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973993
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:48 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT38 SDG#: KVM41-18

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	39	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	54	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,800	150	390	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,400	98	290	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	130	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	49	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	750	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	N.D.	57	98	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	210	210	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	390	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	550,000	3,900	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973993
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:48 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT38 SDG#: KVM41-18

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,740		7.44	19.4	1
06944	Antimony	7440-36-0	1.97		0.398	1.94	1
06935	Arsenic	7440-38-2	1.68	J	0.563	1.94	1
06946	Barium	7440-39-3	32.9		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.383	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0563	J	0.0417	0.485	1
01650	Calcium	7440-70-2	502		3.23	19.4	1
06951	Chromium	7440-47-3	9.65		0.0951	1.46	1
06952	Cobalt	7440-48-4	3.31		0.0786	0.485	1
06953	Copper	7440-50-8	10.3		0.272	0.971	1
01654	Iron	7439-89-6	14,300		3.23	19.4	1
06955	Lead	7439-92-1	121		0.311	1.46	1
01657	Magnesium	7439-95-4	710		1.62	9.71	1
06958	Manganese	7439-96-5	163		0.0806	0.485	1
06961	Nickel	7440-02-0	5.39		0.223	0.971	1
01662	Potassium	7440-09-7	418		16.3	48.5	1
06936	Selenium	7782-49-2	2.00		0.806	1.94	1
06966	Silver	7440-22-4	0.439	J	0.117	0.485	1
01667	Sodium	7440-23-5	31.6	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	20.0		0.146	0.485	1
06972	Zinc	7440-66-6	19.3		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0248	J	0.0096	0.0956	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	6,710		598	1,790	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/30/2015 00:33	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/31/2015 01:53	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 01:51	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 17:24	James H Place	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973993
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:48 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT38 SDG#: KVM41-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:52	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:48	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 23:07	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT38

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973993
Sample wt/vol: 30.5 (g/mL) g Lab File ID: og1284.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/30/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	4.328	790	JAB
2. 112-40-3	Dodecane	7.469	390	J
3.	Unknown Alkane	7.545	280	J
4. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.722	380	J
5.	Unknown Alkane	7.781	300	J
6.	Unknown Alkane	7.857	380	J
7.	Unknown Alkane	7.898	800	J
8. 629-50-5	Tridecane	8.069	1300	J
9.	Unknown	8.198	290	J
10.	Unknown	8.310	190	J
11.	Unknown Cycloalkane	8.363	340	J
12. 1560-96-9	Tridecane, 2-methyl-	8.428	250	J
13.	Unknown Alkane	8.469	190	J
14. 629-59-4	Tetradecane	8.628	770	J
15.	Unknown Alkane	8.675	280	J
16.	Unknown Cycloalkane	8.728	230	J
17.	Unknown	8.810	190	J
18.	Unknown Alkane	8.881	270	J
19.	Unknown Alkane	8.945	360	J
20. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.345	61000	J
21.	Unknown	10.598	280	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.175	810	J
23. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.392	3000	J
24.	Unknown	11.527	990	J
25. 112-79-8	9-Octadecenoic acid, (E)-	11.898	450	J
26.				
27. SVOCTIC	Total SVOC TICs		74000	JAB
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973994
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:51 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT39 SDG#: KVM41-19

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		67	170	1
10727	Benzo(a)anthracene	56-55-3	18		3	17	1
10727	Benzo(a)pyrene	50-32-8	17	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	25		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	12	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	14	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		67	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	20		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,000		67	170	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		67	170	1
10727	Fluoranthene	206-44-0	32		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	12	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973994
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:51 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT39 SDG#: KVM41-19

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	4 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	67	170	1
10727	4-Nitroaniline	100-01-6	N.D.	67	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	67	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	16 J	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	26	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,000	29	78	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,700	19	58	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	19	58	1
06918	1,3-Dinitrobenzene	99-65-0	130	19	58	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	19	58	1
06918	HMX	2691-41-0	N.D.	49	150	1
06918	Nitrobenzene	98-95-3	N.D.	19	58	1
06918	Nitroglycerin	55-63-0	N.D.	390	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	19	58	1
06918	2-Nitrotoluene	88-72-2	N.D.	39	78	1
06918	3-Nitrotoluene	99-08-1	N.D.	80	97	1
06918	4-Nitrotoluene	99-99-0	N.D.	39	78	1
06918	PETN	78-11-5	N.D.	390	1,200	1
06918	RDX	121-82-4	N.D.	25	58	1
06918	Tetryl	479-45-8	N.D.	31	78	1
06918	1,3,5-Trinitrobenzene	99-35-4	880	19	58	1
06918	2,4,6-Trinitrotoluene	118-96-7	400,000	3,900	12,000	200
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973994
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:51 by SL

Submitted: 07/21/2015 20:26
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Accounts Payable Dept.
PO Box 2219
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TNT39 SDG#: KVM41-19

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	7,970		7.44	19.4	1
06944	Antimony	7440-36-0	2.61		0.398	1.94	1
06935	Arsenic	7440-38-2	1.93	J	0.563	1.94	1
06946	Barium	7440-39-3	24.9		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.317	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	N.D.		0.0417	0.485	1
01650	Calcium	7440-70-2	467		3.23	19.4	1
06951	Chromium	7440-47-3	9.09		0.0951	1.46	1
06952	Cobalt	7440-48-4	2.66		0.0786	0.485	1
06953	Copper	7440-50-8	9.40		0.272	0.971	1
01654	Iron	7439-89-6	17,100		3.23	19.4	1
06955	Lead	7439-92-1	106		0.311	1.46	1
01657	Magnesium	7439-95-4	642		1.62	9.71	1
06958	Manganese	7439-96-5	109		0.0806	0.485	1
06961	Nickel	7440-02-0	4.23		0.223	0.971	1
01662	Potassium	7440-09-7	334		16.3	48.5	1
06936	Selenium	7782-49-2	2.53		0.806	1.94	1
06966	Silver	7440-22-4	0.585		0.117	0.485	1
01667	Sodium	7440-23-5	26.0	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	17.8		0.146	0.485	1
06972	Zinc	7440-66-6	22.3		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0191	J	0.0094	0.0942	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,300		603	1,810	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/30/2015 00:58	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/31/2015 02:35	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 18:07	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973994
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:51 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT39 SDG#: KVM41-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:56	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:50	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 23:38	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT39

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973994
Sample wt/vol: 30.0 (g/mL) g Lab File ID: og1285.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/30/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.334	770	JAB
2.1000152-47-3	trans-Decalin, 2-methyl-	6.957	260	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.545	270	J
4.66660-43-3	trans, cis-3-Ethylbicyclo[4.	7.722	360	J
5.	Unknown Alkane	7.781	290	J
6.	Unknown Alkane	7.857	360	J
7.	Unknown Alkane	7.898	740	J
8.629-50-5	Tridecane	8.069	1300	J
9.	Unknown	8.145	260	J
10.	Unknown	8.198	280	J
11.	Unknown Alkane	8.263	260	J
12.	Unknown	8.310	190	J
13.	Unknown Cycloalkane	8.363	330	J
14.1560-96-9	Tridecane, 2-methyl-	8.428	240	J
15.629-59-4	Tetradecane	8.628	760	J
16.	Unknown Alkane	8.669	270	J
17.	Unknown	8.728	180	J
18.	Unknown	8.810	180	J
19.	Unknown	8.881	220	J
20.	Unknown Cycloalkane	8.928	170	J
21.	Unknown Alkane	8.945	350	J
22.	Unknown	10.339	28000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.175	290	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.392	2500	J
25.	Unknown	11.527	820	J
26.				
27.SVOCTIC	Total SVOC TICs		39000	JAB
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973995
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT40 SDG#: KVM41-20

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	4	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	17	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	17	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	24		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	11	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	13	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	20		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,600		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	33		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	11	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973995
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT40 SDG#: KVM41-20

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	19	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	26	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,100	30	79	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,600	20	59	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	92	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	50	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	N.D.	75	99	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	60	60	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	650	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	380,000	4,000	12,000	200
	Reporting limits were raised due to interference from the sample matrix.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973995
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT40 SDG#: KVM41-20

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,540		7.37	19.2	1
06944	Antimony	7440-36-0	1.73	J	0.394	1.92	1
06935	Arsenic	7440-38-2	1.82	J	0.558	1.92	1
06946	Barium	7440-39-3	31.2		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.370	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.0481	J	0.0413	0.481	1
01650	Calcium	7440-70-2	464		3.20	19.2	1
06951	Chromium	7440-47-3	8.92		0.0942	1.44	1
06952	Cobalt	7440-48-4	2.86		0.0779	0.481	1
06953	Copper	7440-50-8	10.4		0.269	0.962	1
01654	Iron	7439-89-6	12,800		3.20	19.2	1
06955	Lead	7439-92-1	125		0.308	1.44	1
01657	Magnesium	7439-95-4	686		1.61	9.62	1
06958	Manganese	7439-96-5	105		0.0798	0.481	1
06961	Nickel	7440-02-0	4.59		0.221	0.962	1
01662	Potassium	7440-09-7	361		16.2	48.1	1
06936	Selenium	7782-49-2	1.81	J	0.798	1.92	1
06966	Silver	7440-22-4	0.238	J	0.115	0.481	1
01667	Sodium	7440-23-5	29.6	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	18.6		0.144	0.481	1
06972	Zinc	7440-66-6	20.9		0.740	1.92	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0306	J	0.0098	0.0975	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,530		629	1,890	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLB026	07/30/2015 01:23	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLB026	07/27/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	07/31/2015 03:18	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060006A	08/04/2015 18:49	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060006A	07/27/2015 19:30	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973995
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:55 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT40 SDG#: KVM41-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 08:59	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711002	07/28/2015 08:56	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711002	07/27/2015 02:10	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 23:46	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT40

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973995
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1286.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/30/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.328	910	JAB
2.2958-76-1	Naphthalene, decahydro-2-met	6.963	360	J
3.2958-75-0	1-Methyldecahydronaphthalene	7.075	220	J
4.1618-22-0	Naphthalene, decahydro-2,6-d	7.340	210	J
5.112-40-3	Dodecane	7.463	410	J
6.	Unknown Alkane	7.545	220	J
7.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.722	240	J
8.	Unknown Cycloalkane	7.751	190	J
9.	Unknown Alkane	7.781	220	J
10.	Unknown Alkane	7.822	200	J
11.	Unknown Alkane	7.857	280	J
12.	Unknown Alkane	7.898	620	J
13.629-50-5	Tridecane	8.069	1500	J
14.	Unknown Cycloalkane	8.363	280	J
15.1560-96-9	Tridecane, 2-methyl-	8.428	170	J
16.629-59-4	Tetradecane	8.628	870	J
17.638-36-8	Hexadecane, 2,6,10,14-tetram	8.945	300	J
18.544-76-3	Hexadecane	9.639	220	J
19.	Unknown	10.328	62000	J
20.	Unknown	10.604	190	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	11.181	750	J
22.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.398	3300	J
23.	Unknown	11.533	1100	J
24.112-80-1	Oleic Acid	11.898	380	J
25.1599-67-3	1-Docosene	13.827	350	J
26.				
27.SVOCTIC	Total SVOC TICs		76000	JAB
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973996
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT41 SDG#: KVM42-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	8	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	5	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	25		3	17	1
10727	Benzo(a)pyrene	50-32-8	27		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	40		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	20		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	19		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	29		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	11	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,700		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	480		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	44		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	17		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973996
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT41 SDG#: KVM42-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	26	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	42	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,900	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,300	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	59	1
06918	1,3-Dinitrobenzene	99-65-0	86	20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	59	1
06918	HMX	2691-41-0	N.D.	50	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	59	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.	20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	79	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	99	1
06918	4-Nitrotoluene	99-99-0	580	40	79	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	350	350	1
06918	Tetryl	479-45-8	N.D.	32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	700	20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	770,000	9,900	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973996
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT41 SDG#: KVM42-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,200		7.51	19.6	1
06944	Antimony	7440-36-0	1.81	J	0.402	1.96	1
06935	Arsenic	7440-38-2	2.03		0.569	1.96	1
06946	Barium	7440-39-3	32.9		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.376	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.0529	J	0.0422	0.490	1
01650	Calcium	7440-70-2	725		3.26	19.6	1
06951	Chromium	7440-47-3	10.2		0.0961	1.47	1
06952	Cobalt	7440-48-4	2.78		0.0794	0.490	1
06953	Copper	7440-50-8	11.0		0.275	0.980	1
01654	Iron	7439-89-6	12,800		3.26	19.6	1
06955	Lead	7439-92-1	137		0.314	1.47	1
01657	Magnesium	7439-95-4	757		1.64	9.80	1
06958	Manganese	7439-96-5	104		0.0814	0.490	1
06961	Nickel	7440-02-0	4.67		0.225	0.980	1
01662	Potassium	7440-09-7	396		16.5	49.0	1
06936	Selenium	7782-49-2	1.65	J	0.814	1.96	1
06966	Silver	7440-22-4	0.297	J	0.118	0.490	1
01667	Sodium	7440-23-5	40.7	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	18.0		0.147	0.490	1
06972	Zinc	7440-66-6	21.7		0.755	1.96	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0305	J	0.0094	0.0941	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,890		461	1,380	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLE026	07/28/2015 15:34	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLE026	07/27/2015 19:15	David V Hershey Jr	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	07/30/2015 02:32	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 01:48	James H Place	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973996
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT41 SDG#: KVM42-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/07/2015 08:06	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060049A	07/28/2015 12:50	Katheryne V Dinan	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 09:03	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711004	07/28/2015 10:04	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711004	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/30/2015 23:54	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT41

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973996
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1219.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.504	440	J
2.17301-23-4	Undecane, 2,6-dimethyl-	7.581	310	J
3.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.763	370	J
4.	Unknown Alkane	7.822	320	J
5.	Unknown	7.857	330	J
6.	Unknown Alkane	7.892	370	J
7.	Unknown Alkane	7.939	710	J
8.629-50-5	Tridecane	8.110	1500	J
9.	Unknown	8.151	290	J
10.	Unknown	8.186	300	J
11.13287-21-3	Tridecane, 6-methyl-	8.204	290	J
12.	Unknown	8.233	310	J
13.	Unknown	8.298	320	J
14.	Unknown PAH	8.351	180	J
15.	Unknown Cycloalkane	8.398	400	J
16.1560-96-9	Tridecane, 2-methyl-	8.469	280	J
17.629-59-4	Tetradecane	8.669	800	J
18.	Unknown	8.728	190	J
19.	Unknown	8.916	270	J
20.	Unknown Alkane	8.980	210	J
21.544-76-3	Hexadecane	9.675	190	J
22.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.375	75000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.204	1200	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.421	3800	J
25.33499-32-0	Benzaldehyde, 4-nitro-, O-me	11.557	1100	J
26.				
27.SVOCTIC	Total SVOC TICs		89000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973997
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT42 SDG#: KVM42-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	9	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	10	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	15	J	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	9	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	9	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	12	J	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	4	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	950		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	280		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	13	J	3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	9	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973997
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT42 SDG#: KVM42-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	7	J	3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	13	J	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,500		150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,000		99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	59	1
06918	1,3-Dinitrobenzene	99-65-0	220		20	59	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	59	1
06918	HMX	2691-41-0	N.D.		50	150	1
06918	Nitrobenzene	98-95-3	N.D.		20	59	1
06918	Nitroglycerin	55-63-0	N.D.		2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.		20	59	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	79	1
06918	3-Nitrotoluene	99-08-1	190		50	99	1
06918	4-Nitrotoluene	99-99-0	N.D.		630	630	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		270	270	1
06918	Tetryl	479-45-8	N.D.		32	79	1
06918	1,3,5-Trinitrobenzene	99-35-4	950		20	59	1
06918	2,4,6-Trinitrotoluene	118-96-7	900,000		9,900	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973997
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT42 SDG#: KVM42-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.					
Metals		**SW-846 6010B**	**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	11,300	7.44	19.4	1
06944	Antimony	7440-36-0	1.96	0.398	1.94	1
06935	Arsenic	7440-38-2	2.40	0.563	1.94	1
06946	Barium	7440-39-3	37.0	0.0650	0.485	1
06947	Beryllium	7440-41-7	0.423 J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0544 J	0.0417	0.485	1
01650	Calcium	7440-70-2	713	3.23	19.4	1
06951	Chromium	7440-47-3	9.51	0.0951	1.46	1
06952	Cobalt	7440-48-4	3.02	0.0786	0.485	1
06953	Copper	7440-50-8	12.2	0.272	0.971	1
01654	Iron	7439-89-6	14,300	3.23	19.4	1
06955	Lead	7439-92-1	159	0.311	1.46	1
01657	Magnesium	7439-95-4	793	1.62	9.71	1
06958	Manganese	7439-96-5	111	0.0806	0.485	1
06961	Nickel	7440-02-0	5.67	0.223	0.971	1
01662	Potassium	7440-09-7	442	16.3	48.5	1
06936	Selenium	7782-49-2	1.75 J	0.806	1.94	1
06966	Silver	7440-22-4	0.360 J	0.117	0.485	1
01667	Sodium	7440-23-5	34.6 J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.	0.728	2.91	1
06971	Vanadium	7440-62-2	19.7	0.146	0.485	1
06972	Zinc	7440-66-6	22.5	0.748	1.94	1
		SW-846 7471A	**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0289 J	0.0099	0.0991	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	6,950	516	1,550	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLE026	07/28/2015 16:00	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLE026	07/27/2015 19:15	David V Hershey Jr	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	07/30/2015 04:40	James H Place	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973997
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT42 SDG#: KVM42-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 02:31	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/07/2015 08:49	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060049A	07/28/2015 12:50	Katheryne V Dinan	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 09:06	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711004	07/28/2015 10:18	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711004	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531A	07/31/2015 00:02	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT42

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973997
Sample wt/vol: 30.2 (g/mL) g Lab File ID: og1220.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.504	360	J
2.17301-23-4	Undecane, 2,6-dimethyl-	7.581	250	J
3.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.763	300	J
4.	Unknown Alkane	7.816	260	J
5.	Unknown	7.857	270	J
6.1560-97-0	Dodecane, 2-methyl-	7.892	300	J
7.	Unknown Alkane	7.939	490	J
8.652-67-5	Isosorbide	8.051	380	J
9.629-50-5	Tridecane	8.110	1200	J
10.	Unknown	8.181	250	J
11.	Unknown	8.233	260	J
12.	Unknown Alkane	8.298	270	J
13.	Unknown Cycloalkane	8.398	330	J
14.1560-96-9	Tridecane, 2-methyl-	8.469	240	J
15.629-59-4	Tetradecane	8.663	710	J
16.1000309-12-6	Sulfurous acid, pentadecyl 2	8.710	240	J
17.	Unknown	8.775	210	J
18.	Unknown Alkane	8.916	220	J
19.	Unknown Aromatic	8.986	190	J
20.544-76-3	Hexadecane	9.675	170	J
21.	Unknown Aromatic	10.292	24000	J
22.	Unknown	10.310	3600	J
23.	Unknown	10.574	190	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	11.169	360	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.392	1700	J
26.				
27.SVOCTIC	Total SVOC TICs		36000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973998
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT43 SDG#: KVM42-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	14	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	8	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	74		3	17	1
10727	Benzo(a)pyrene	50-32-8	63		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	96		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	39		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	43		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	73		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	15	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,800		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	540		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	85		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	41		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973998
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT43 SDG#: KVM42-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	23		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	80		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		ug/kg		ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,600		150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,100		100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	60	1
06918	1,3-Dinitrobenzene	99-65-0	190		20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	60	1
06918	HMX	2691-41-0	N.D.		710	710	1
06918	Nitrobenzene	98-95-3	N.D.		20	60	1
06918	Nitroglycerin	55-63-0	N.D.		2,000	6,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	80	1
06918	3-Nitrotoluene	99-08-1	100	J	50	540	1
06918	4-Nitrotoluene	99-99-0	N.D.		540	540	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		26	60	1
06918	Tetryl	479-45-8	N.D.		32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,000		20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	800,000		10,000	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973998
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT43 SDG#: KVM42-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,480		7.44	19.4	1
06944	Antimony	7440-36-0	1.82	J	0.398	1.94	1
06935	Arsenic	7440-38-2	2.38		0.563	1.94	1
06946	Barium	7440-39-3	30.2		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.336	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0748	J	0.0417	0.485	1
01650	Calcium	7440-70-2	821		3.23	19.4	1
06951	Chromium	7440-47-3	7.84		0.0951	1.46	1
06952	Cobalt	7440-48-4	2.68		0.0786	0.485	1
06953	Copper	7440-50-8	10.2		0.272	0.971	1
01654	Iron	7439-89-6	11,700		3.23	19.4	1
06955	Lead	7439-92-1	132		0.311	1.46	1
01657	Magnesium	7439-95-4	694		1.62	9.71	1
06958	Manganese	7439-96-5	86.8		0.0806	0.485	1
06961	Nickel	7440-02-0	5.13		0.223	0.971	1
01662	Potassium	7440-09-7	396		16.3	48.5	1
06936	Selenium	7782-49-2	1.26	J	0.806	1.94	1
06966	Silver	7440-22-4	0.235	J	0.117	0.485	1
01667	Sodium	7440-23-5	35.0	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	16.1		0.146	0.485	1
06972	Zinc	7440-66-6	25.7		0.748	1.94	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0194	J	0.0099	0.0985	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,890		525	1,580	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLE026	07/28/2015 16:26	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLE026	07/27/2015 19:15	David V Hershey Jr	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	07/30/2015 06:05	James H Place	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973998
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT43 SDG#: KVM42-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 03:13	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/07/2015 09:31	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060049A	07/28/2015 12:50	Katheryne V Dinan	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 09:10	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711004	07/28/2015 10:20	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711004	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531B	07/31/2015 00:10	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT43

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973998
Sample wt/vol: 30.1 (g/mL) g Lab File ID: og1221.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.998	590	J
2. 1606-08-2	Cyclopentylcyclohexane	7.110	370	J
3. 1618-22-0	Naphthalene, decahydro-2,6-d	7.381	360	J
4. 112-40-3	Dodecane	7.504	550	J
5. 17301-23-4	Undecane, 2,6-dimethyl-	7.581	400	J
6. 66660-43-3	trans, cis-3-Ethylbicyclo[4.	7.763	360	J
7. 1560-97-0	Dodecane, 2-methyl-	7.892	310	J
8.	Unknown Alkane	7.939	880	J
9. 629-50-5	Tridecane	8.110	2200	J
10.	Unknown	8.187	290	J
11. 13287-21-3	Tridecane, 6-methyl-	8.204	290	J
12. 92-51-3	1,1'-Bicyclohexyl	8.239	350	J
13.	Unknown Cycloalkane	8.404	310	J
14. 1560-96-9	Tridecane, 2-methyl-	8.469	160	J
15. 629-59-4	Tetradecane	8.669	840	J
16. 544-76-3	Hexadecane	9.675	260	J
17. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.339	63000	J
18.	Unknown Cycloalkane	10.363	12000	J
19.	Unknown	10.604	200	J
20. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.198	1600	J
21.	Unknown Cycloalkane	11.251	210	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.422	3500	J
23.	Unknown Cycloalkane	11.551	1000	J
24. 112-80-1	Oleic Acid	11.933	650	J
25.				
26. SVOCTIC	Total SVOC TICs		90000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973999
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:50 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT44 SDG#: KVM42-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	16	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	16	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	26		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	16	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	12	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	19		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	8	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,900		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	520		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	25		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	13	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	25		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973999
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:50 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT44 SDG#: KVM42-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	N.D.	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	23	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,700	100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	200	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	800	800	1
06918	Nitrobenzene	98-95-3	N.D.	20	60	1
06918	Nitroglycerin	55-63-0	N.D.	400	1,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	N.D.	650	650	1
06918	4-Nitrotoluene	99-99-0	79 J	50	650	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	550	550	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	860	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	930,000	10,000	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973999
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:50 by SL

Submitted: 07/21/2015 20:26
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Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT44 SDG#: KVM42-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,300		7.66	20.0	1
06944	Antimony	7440-36-0	1.87	J	0.410	2.00	1
06935	Arsenic	7440-38-2	2.38		0.580	2.00	1
06946	Barium	7440-39-3	33.6		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.379	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.0710	J	0.0430	0.500	1
01650	Calcium	7440-70-2	959		3.33	20.0	1
06951	Chromium	7440-47-3	8.66		0.0980	1.50	1
06952	Cobalt	7440-48-4	2.83		0.0810	0.500	1
06953	Copper	7440-50-8	11.3		0.280	1.00	1
01654	Iron	7439-89-6	12,400		3.33	20.0	1
06955	Lead	7439-92-1	148		0.320	1.50	1
01657	Magnesium	7439-95-4	789		1.67	10.0	1
06958	Manganese	7439-96-5	99.0		0.0830	0.500	1
06961	Nickel	7440-02-0	5.00		0.230	1.00	1
01662	Potassium	7440-09-7	440		16.8	50.0	1
06936	Selenium	7782-49-2	1.68	J	0.830	2.00	1
06966	Silver	7440-22-4	0.224	J	0.120	0.500	1
01667	Sodium	7440-23-5	39.8	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	17.9		0.150	0.500	1
06972	Zinc	7440-66-6	21.1		0.770	2.00	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0234	J	0.0097	0.0968	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,400		625	1,880	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLE026	07/28/2015 16:52	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLE026	07/27/2015 19:15	David V Hershey Jr	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	07/30/2015 06:47	James H Place	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-07202015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 7973999
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 13:50 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT44 SDG#: KVM42-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 03:56	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/07/2015 10:14	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060049A	07/28/2015 12:50	Katheryne V Dinan	1
01643	Aluminum	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
01657	Magnesium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152055708003	07/28/2015 09:13	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152055711004	07/28/2015 10:22	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708003	07/26/2015 22:49	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711004	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15211049531B	07/31/2015 00:41	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT44

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7973999
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1222.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	6.998	280	J
2.629-92-5	Nonadecane	7.504	390	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.581	280	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.763	350	J
5.	Unknown Cycloalkane	7.792	280	J
6.	Unknown	7.857	300	J
7.	Unknown Alkane	7.892	330	J
8.	Unknown Alkane	7.939	800	J
9.652-67-5	Isosorbide	8.051	420	J
10.629-50-5	Tridecane	8.110	1300	J
11.	Unknown	8.234	440	J
12.	Unknown Alkane	8.298	310	J
13.	Unknown Alkane	8.351	180	J
14.	Unknown Cycloalkane	8.398	380	J
15.1560-96-9	Tridecane, 2-methyl-	8.469	260	J
16.629-59-4	Tetradecane	8.669	730	J
17.	Unknown Alkane	8.710	210	J
18.	Unknown	8.845	200	J
19.	Unknown Alkane	8.916	250	J
20.638-36-8	Hexadecane, 2,6,10,14-tetram	8.981	350	J
21.609-93-8	Phenol, 4-methyl-2,6-dinitro	9.675	300	J
22.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.398	56000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.204	820	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.422	3400	J
25.	Unknown Aromatic	11.557	980	J
26.				
27.SVOCTIC	Total SVOC TICs		69000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: Field_Blank-07202015 Grab Water Sample
Kenvil Treatability Study

LL Sample # WW 7974000
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 16:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT45 SDG#: KVM42-05

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Acetophenone	98-86-2	N.D.	0.5	1	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Atrazine	1912-24-9	N.D.	2	5	1
04678	Benzaldehyde	100-52-7	N.D.	1	5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	1,1'-Biphenyl	92-52-4	N.D.	0.5	1	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Caprolactam	105-60-2	N.D.	5	15	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	31	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: Field_Blank-07202015 Grab Water Sample
Kenvil Treatability Study

LL Sample # WW 7974000
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 16:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT45 SDG#: KVM42-05

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	31	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/l**	**ug/l**	**ug/l**	
06916	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	0.30	0.60	1
06916	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	0.20	0.60	1
06916	1,2-Dinitrobenzene	528-29-0	N.D.	0.20	0.60	1
06916	1,3-Dinitrobenzene	99-65-0	N.D.	0.20	0.60	1
06916	1,4-Dinitrobenzene	100-25-4	N.D.	0.20	0.60	1
06916	HMX	2691-41-0	N.D.	0.65	2.0	1
06916	Nitrobenzene	98-95-3	N.D.	0.20	0.60	1
06916	Nitroglycerin	55-63-0	N.D.	5.2	15	1
06916	1-Nitronaphthalene	86-57-7	N.D.	0.20	0.60	1
06916	2-Nitrotoluene	88-72-2	N.D.	0.25	0.75	1
06916	3-Nitrotoluene	99-08-1	N.D.	0.40	1.2	1
06916	4-Nitrotoluene	99-99-0	N.D.	0.60	1.2	1
06916	PETN	78-11-5	N.D.	6.0	18	1
06916	RDX	121-82-4	N.D.	0.20	0.50	1
06916	Tetryl	479-45-8	N.D.	0.40	0.80	1
06916	1,3,5-Trinitrobenzene	99-35-4	N.D.	0.20	0.60	1
06916	2,4,6-Trinitrotoluene	118-96-7	N.D.	0.20	0.60	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	

*=This limit was used in the evaluation of the final result

Sample Description: Field_Blank-07202015 Grab Water Sample
Kenvil Treatability Study

LL Sample # WW 7974000
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 16:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT45 SDG#: KVM42-05

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0841	0.200	1
07046	Barium	7440-39-3	0.00032 J	0.00030	0.0050	1
07047	Beryllium	7440-41-7	N.D.	0.00070	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00030	0.0050	1
01750	Calcium	7440-70-2	0.0862 J	0.0333	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0015	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00090	0.0050	1
07053	Copper	7440-50-8	N.D.	0.0025	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0333	0.200	1
01757	Magnesium	7439-95-4	N.D.	0.0167	0.100	1
07058	Manganese	7439-96-5	0.0032 J	0.00080	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.0013	0.0100	1
01762	Potassium	7440-09-7	N.D.	0.192	0.500	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0014	0.0050	1
01767	Sodium	7440-23-5	0.175 J	0.167	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.0014	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	N.D.	0.00033	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00054	0.0020	1
06035	Lead	7439-92-1	N.D.	0.00013	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
04678	TCL SW846 8270C Water	SW-846 8270C	1	15203WAC026	07/27/2015 17:14	Holly B Ziegler	1
00813	BNA Water Extraction	SW-846 3510C	1	15203WAC026	07/22/2015 16:00	Ryan A Schafran	1
06916	Nitroaromatics/Amines in Water	SW-846 8330	1	152040023A	07/24/2015 17:47	Jessica L Miller	1
06915	Nitroaromatics/Amines Wat Ext	SW-846 8330	1	152040023A	07/23/2015 14:30	Edwin Ortiz	1
01743	Aluminum	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07046	Barium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1

*=This limit was used in the evaluation of the final result

Sample Description: Field_Blank-07202015 Grab Water Sample
Kenvil Treatability Study

LL Sample # WW 7974000
LL Group # 1578511
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/20/2015 16:00 by SL

Submitted: 07/21/2015 20:26
Reported: 08/13/2015 12:47

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT45 SDG#: KVM42-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07047	Beryllium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
01750	Calcium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
01754	Iron	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
01757	Magnesium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07058	Manganese	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
01762	Potassium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
01767	Sodium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	152081848004	07/28/2015 22:24	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020	1	152086050002A	07/28/2015 19:58	Mallory L Clark	1
06025	Arsenic	SW-846 6020	1	152086050002A	07/28/2015 19:58	Mallory L Clark	1
06035	Lead	SW-846 6020	1	152086050002A	07/28/2015 19:58	Mallory L Clark	1
06045	Thallium	SW-846 6020	1	152086050002A	07/28/2015 19:58	Mallory L Clark	1
00259	Mercury	SW-846 7470A	1	152085713004	07/29/2015 10:59	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	152081848004	07/28/2015 06:17	James L Mertz	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	152086050002	07/28/2015 07:02	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	152085713004	07/29/2015 00:05	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT45

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 7974000
Sample wt/vol: 245 (g/mL) mL Lab File ID: mg0778.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: Decanted: (Y/N) Date Extracted: 07/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/27/15
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. SVOCTIC	Total SVOC TICs		0	U
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page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15203WAC026	Sample number(s): 7974000									
Acenaphthene	N.D.		0.1	0.5	ug/l	93	101	80-112	9	30
Acenaphthylene	N.D.		0.1	0.5	ug/l	95	103	78-125	8	30
Acetophenone	N.D.		0.5	1	ug/l	92	99	78-112	8	30
Anthracene	N.D.		0.1	0.5	ug/l	95	103	82-116	8	30
Atrazine	N.D.		2.	5	ug/l	95	104	79-129	8	30
Benzaldehyde	N.D.		1.	5	ug/l	46	48	10-123	4	30
Benzo(a)anthracene	N.D.		0.1	0.5	ug/l	99	104	76-122	5	30
Benzo(a)pyrene	N.D.		0.1	0.5	ug/l	94	99	73-120	5	30
Benzo(b)fluoranthene	N.D.		0.1	0.5	ug/l	98	102	75-123	4	30
Benzo(g,h,i)perylene	N.D.		0.1	0.5	ug/l	99	104	70-126	4	30
Benzo(k)fluoranthene	N.D.		0.1	0.5	ug/l	99	104	74-119	5	30
1,1'-Biphenyl	N.D.		0.5	1	ug/l	94	103	76-112	9	30
4-Bromophenyl-phenylether	N.D.		0.5	1	ug/l	99	105	76-116	6	30
Butylbenzylphthalate	N.D.		2.	5	ug/l	86	93	68-119	8	30
Di-n-butylphthalate	N.D.		2.	5	ug/l	85	95	74-114	10	30
Caprolactam	N.D.		5.	15	ug/l	29	31	10-58	5	30
Carbazole	N.D.		0.5	1	ug/l	99	108	79-115	8	30
4-Chloro-3-methylphenol	N.D.		0.5	1	ug/l	89	96	73-115	7	30
4-Chloroaniline	N.D.		2.	4	ug/l	85	93	44-114	9	30
bis(2-Chloroethoxy)methane	N.D.		0.5	1	ug/l	91	97	77-115	7	30
bis(2-Chloroethyl)ether	N.D.		0.5	1	ug/l	88	93	78-112	6	30
2-Chloronaphthalene	N.D.		0.4	1	ug/l	93	100	69-112	8	30
2-Chlorophenol	N.D.		0.5	1	ug/l	88	93	70-111	5	30
4-Chlorophenyl-phenylether	N.D.		0.5	1	ug/l	92	100	76-113	8	30
2,2'-oxybis(1-Chloropropane)	N.D.		0.5	1	ug/l	87	93	56-128	7	30
Chrysene	N.D.		0.1	0.5	ug/l	100	106	81-120	5	30
Dibenz(a,h)anthracene	N.D.		0.1	0.5	ug/l	98	102	72-127	4	30
Dibenzofuran	N.D.		0.5	1	ug/l	92	99	81-110	8	30
3,3'-Dichlorobenzidine	N.D.		2.	5	ug/l	84	92	39-111	9	30
2,4-Dichlorophenol	N.D.		0.5	1	ug/l	92	97	74-114	5	30
Diethylphthalate	N.D.		2.	5	ug/l	81	90	70-118	10	30
2,4-Dimethylphenol	N.D.		0.5	1	ug/l	88	93	75-110	5	30
Dimethylphthalate	N.D.		2.	5	ug/l	79	88	43-128	10	30
4,6-Dinitro-2-methylphenol	N.D.		5.	15	ug/l	81	90	53-134	10	30
2,4-Dinitrophenol	N.D.		10.	30	ug/l	70	86	31-129	20	30
2,4-Dinitrotoluene	N.D.		1.	5	ug/l	86	95	77-124	11	30
2,6-Dinitrotoluene	N.D.		0.5	1	ug/l	87	94	80-119	7	30
bis(2-Ethylhexyl)phthalate	2	J	2.	5	ug/l	87	91	72-122	5	30
Fluoranthene	N.D.		0.1	0.5	ug/l	93	101	76-117	8	30
Fluorene	N.D.		0.1	0.5	ug/l	93	101	80-117	8	30
Hexachlorobenzene	N.D.		0.1	0.5	ug/l	98	104	73-118	5	30
Hexachlorobutadiene	N.D.		0.5	1	ug/l	81	88	42-110	9	30
Hexachlorocyclopentadiene	N.D.		5.	15	ug/l	65	73	10-119	11	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachloroethane	N.D.		1.	5	ug/l	77	86	43-108	11	30
Indeno(1,2,3-cd)pyrene	N.D.		0.1	0.5	ug/l	95	99	70-121	3	30
Isophorone	N.D.		0.5	1	ug/l	91	97	81-124	7	30
2-Methylnaphthalene	N.D.		0.1	0.5	ug/l	86	92	69-103	7	30
2-Methylphenol	N.D.		0.5	1	ug/l	86	91	66-112	5	30
4-Methylphenol	N.D.		0.5	1	ug/l	82	87	56-109	6	30
Naphthalene	0.1	J	0.1	0.5	ug/l	90	96	75-108	7	30
2-Nitroaniline	N.D.		0.5	1	ug/l	84	92	71-121	10	30
3-Nitroaniline	N.D.		0.5	1	ug/l	84	92	58-111	9	30
4-Nitroaniline	N.D.		0.5	1	ug/l	85	89	66-110	5	30
Nitrobenzene	N.D.		0.5	1	ug/l	90	96	77-119	7	30
2-Nitrophenol	N.D.		0.5	1	ug/l	91	98	71-118	8	30
4-Nitrophenol	N.D.		10.	30	ug/l	45	46	20-89	3	30
N-Nitroso-di-n-propylamine	N.D.		0.5	1	ug/l	86	92	71-117	7	30
N-Nitrosodiphenylamine	N.D.		0.5	1	ug/l	96	101	80-115	5	30
Di-n-octylphthalate	N.D.		2.	5	ug/l	87	96	72-127	10	30
Pentachlorophenol	N.D.		1.	5	ug/l	96	106	50-121	10	30
Phenanthrene	N.D.		0.1	0.5	ug/l	94	100	81-114	6	30
Phenol	N.D.		0.5	1	ug/l	52	54	25-80	4	30
Pyrene	N.D.		0.1	0.5	ug/l	91	96	76-111	5	30
2,4,5-Trichlorophenol	N.D.		0.5	1	ug/l	95	102	76-116	7	30
2,4,6-Trichlorophenol	N.D.		0.5	1	ug/l	99	107	75-117	8	30

Batch number: 15206SLA026 Sample number(s): 7973956,7973958,7973960-7973975

Acenaphthene	N.D.	3.	17	ug/kg	106	83-116
Acenaphthylene	N.D.	3.	17	ug/kg	106	83-127
Acetophenone	N.D.	17.	33	ug/kg	90	74-116
Anthracene	N.D.	3.	17	ug/kg	99	82-118
Atrazine	N.D.	33.	170	ug/kg	120	63-148
Benzaldehyde	N.D.	67.	170	ug/kg	29	10-69
Benzo(a)anthracene	N.D.	3.	17	ug/kg	102	76-119
Benzo(a)pyrene	N.D.	3.	17	ug/kg	106	85-117
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	108	78-129
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	108	82-119
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	116	79-120
1,1'-Biphenyl	N.D.	17.	33	ug/kg	92	78-111
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	95	84-120
Butylbenzylphthalate	N.D.	67.	170	ug/kg	108	80-118
Di-n-butylphthalate	N.D.	67.	170	ug/kg	103	84-120
Caprolactam	N.D.	33.	170	ug/kg	104	76-123
Carbazole	N.D.	17.	33	ug/kg	97	78-117
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	113	79-127
4-Chloroaniline	N.D.	33.	67	ug/kg	98	10-101
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	96	77-116
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	96	77-115
2-Chloronaphthalene	N.D.	7.	33	ug/kg	95	63-146
2-Chlorophenol	N.D.	17.	33	ug/kg	109	85-123
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	106	81-120
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	102	70-119
Chrysene	N.D.	3.	17	ug/kg	106	80-121
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	110	81-123
Dibenzofuran	N.D.	17.	33	ug/kg	104	85-115
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	89	16-117
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	112	81-123
Diethylphthalate	N.D.	67.	170	ug/kg	109	81-118
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	103	83-120

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Dimethylphthalate	N.D.	67.	170	ug/kg	107		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	91		76-124		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	77		47-130		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	116		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	117		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	107		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	98		81-117		
Fluorene	N.D.	3.	17	ug/kg	111		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	91		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	101		78-121		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	84		75-176		
Hexachloroethane	N.D.	33.	170	ug/kg	99		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	105		81-118		
Isophorone	N.D.	17.	33	ug/kg	99		87-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	102		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	113		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	108		75-119		
Naphthalene	N.D.	3.	17	ug/kg	103		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	118		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	114		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	96		48-112		
Nitrobenzene	N.D.	17.	33	ug/kg	97		80-115		
2-Nitrophenol	N.D.	17.	33	ug/kg	113		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	89		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	98		75-116		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	95		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	126		82-134		
Pentachlorophenol	N.D.	33.	170	ug/kg	95		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	94		80-114		
Phenol	N.D.	17.	33	ug/kg	96		75-117		
Pyrene	N.D.	3.	17	ug/kg	101		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	106		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	110		81-123		
Batch number: 15206SLB026	Sample number(s): 7973976-7973995								
Acenaphthene	N.D.	3.	17	ug/kg	106		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	107		83-127		
Acetophenone	N.D.	17.	33	ug/kg	92		74-116		
Anthracene	N.D.	3.	17	ug/kg	109		82-118		
Atrazine	N.D.	33.	170	ug/kg	135		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	22		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	102		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	104		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	104		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	99		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	118		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	93		78-111		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	106		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	107		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	112		84-120		
Caprolactam	N.D.	33.	170	ug/kg	101		76-123		
Carbazole	N.D.	17.	33	ug/kg	105		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	113		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	48		10-101		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	100		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	98		77-115		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2-Chloronaphthalene	N.D.	7.	33	ug/kg	113		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	110		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	105		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	106		70-119		
Chrysene	N.D.	3.	17	ug/kg	103		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	102		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	103		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	57		16-117		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	114		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	107		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	106		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	106		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	95		76-124		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	85		47-130		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	109		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	113		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	106		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	105		81-117		
Fluorene	N.D.	3.	17	ug/kg	111		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	102		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	101		78-121		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	101		75-176		
Hexachloroethane	N.D.	33.	170	ug/kg	99		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	97		81-118		
Isophorone	N.D.	17.	33	ug/kg	103		87-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	105		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	115		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	109		75-119		
Naphthalene	N.D.	3.	17	ug/kg	105		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	111		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	103		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	77		48-112		
Nitrobenzene	N.D.	17.	33	ug/kg	100		80-115		
2-Nitrophenol	N.D.	17.	33	ug/kg	112		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	91		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	101		75-116		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	107		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	126		82-134		
Pentachlorophenol	N.D.	33.	170	ug/kg	115		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	105		80-114		
Phenol	N.D.	17.	33	ug/kg	104		75-117		
Pyrene	N.D.	3.	17	ug/kg	102		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	108		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	111		81-123		
Batch number: 15206SLE026	Sample number(s): 7973996-7973999								
Acenaphthene	N.D.	3.	17	ug/kg	109		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	110		83-127		
Acetophenone	N.D.	17.	33	ug/kg	100		74-116		
Anthracene	N.D.	3.	17	ug/kg	105		82-118		
Atrazine	N.D.	33.	170	ug/kg	129		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	31		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	107		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	113		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	126		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	103		82-119		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	114		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	95		78-111		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	100		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	109		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	108		84-120		
Caprolactam	N.D.	33.	170	ug/kg	108		76-123		
Carbazole	N.D.	17.	33	ug/kg	102		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	120		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	106*		10-101		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	104		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	104		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	91		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	119		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	111		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	112		70-119		
Chrysene	N.D.	3.	17	ug/kg	106		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	109		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	106		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	94		16-117		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	118		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	113		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	110		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	111		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	92		76-124		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	88		47-130		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	116		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	120		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	108		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	105		81-117		
Fluorene	N.D.	3.	17	ug/kg	114		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	97		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	102		78-121		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	100		75-176		
Hexachloroethane	N.D.	33.	170	ug/kg	101		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	103		81-118		
Isophorone	N.D.	17.	33	ug/kg	108		87-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	106		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	123		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	120*		75-119		
Naphthalene	N.D.	3.	17	ug/kg	106		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	118		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	118		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	105		48-112		
Nitrobenzene	N.D.	17.	33	ug/kg	105		80-115		
2-Nitrophenol	N.D.	17.	33	ug/kg	111		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	96		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	109		75-116		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	102		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	132		82-134		
Pentachlorophenol	N.D.	33.	170	ug/kg	118		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	101		80-114		
Phenol	N.D.	17.	33	ug/kg	116		75-117		
Pyrene	N.D.	3.	17	ug/kg	105		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	112		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	117		81-123		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15213SLA026	Sample number(s): 7973957,7973959								
Acenaphthene	N.D.	3.	17	ug/kg	99		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	95		83-127		
Acetophenone	N.D.	17.	33	ug/kg	86		74-116		
Anthracene	N.D.	3.	17	ug/kg	102		82-118		
Atrazine	N.D.	33.	170	ug/kg	126		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	21		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	97		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	95		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	98		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	94		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	103		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	87		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	100		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	98		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	104		84-120		
Caprolactam	N.D.	33.	170	ug/kg	91		71-129		
Carbazole	N.D.	17.	33	ug/kg	98		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	103		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	64		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	92		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	93		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	89		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	100		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	102		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	93		63-126		
Chrysene	N.D.	3.	17	ug/kg	104		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	96		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	97		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	59		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	102		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	101		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	94		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	99		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	97		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	65		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	106		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	107		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	96		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	103		81-117		
Fluorene	N.D.	3.	17	ug/kg	103		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	98		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	99		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	76		68-145		
Hexachloroethane	N.D.	33.	170	ug/kg	91		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	92		81-118		
Isophorone	N.D.	17.	33	ug/kg	95		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	96		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	104		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	96		75-119		
Naphthalene	N.D.	3.	17	ug/kg	96		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	107		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	101		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	79		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	95		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	105		83-120		

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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
4-Nitrophenol	N.D.	170.	500	ug/kg	78		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	93		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	99		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	105		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	95		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	97		80-114		
Phenol	N.D.	17.	33	ug/kg	89		73-122		
Pyrene	N.D.	3.	17	ug/kg	95		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	99		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	102		81-123		
Batch number: 152040023A	Sample number(s): 7974000								
4-Amino-2,6-Dinitrotoluene	N.D.	0.30	0.60	ug/l	100	103	83-129	2	30
2-Amino-4,6-Dinitrotoluene	N.D.	0.20	0.60	ug/l	91	93	74-115	2	30
1,2-Dinitrobenzene	N.D.	0.20	0.60	ug/l	111	110	76-145	1	30
1,3-Dinitrobenzene	N.D.	0.20	0.60	ug/l	101	101	85-115	1	30
1,4-Dinitrobenzene	N.D.	0.20	0.60	ug/l	94	94	85-115	0	30
HMX	N.D.	0.65	2.0	ug/l	87	94	67-123	7	30
Nitrobenzene	N.D.	0.20	0.60	ug/l	103	103	80-115	0	30
Nitroglycerin	N.D.	5.2	15	ug/l	101	101	78-115	0	30
1-Nitronaphthalene	N.D.	0.20	0.60	ug/l	102	101	85-121	2	30
2-Nitrotoluene	N.D.	0.25	0.75	ug/l	86	94	77-115	9	30
3-Nitrotoluene	N.D.	0.40	1.2	ug/l	97	101	83-118	4	30
4-Nitrotoluene	N.D.	0.60	1.2	ug/l	91	97	84-115	6	30
PETN	N.D.	6.0	18	ug/l	104	104	86-115	0	30
RDX	N.D.	0.20	0.50	ug/l	92	91	77-115	1	30
Tetryl	N.D.	0.40	0.80	ug/l	93	92	53-116	2	30
1,3,5-Trinitrobenzene	N.D.	0.20	0.60	ug/l	95	95	83-115	0	30
2,4,6-Trinitrotoluene	N.D.	0.20	0.60	ug/l	89	90	83-115	1	30
Batch number: 152060005A	Sample number(s): 7973956-7973975								
4-Amino-2,6-Dinitrotoluene	N.D.	30.	80	ug/kg	108		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	20.	60	ug/kg	96		79-120		
1,2-Dinitrobenzene	N.D.	20.	60	ug/kg	119		94-129		
1,3-Dinitrobenzene	N.D.	20.	60	ug/kg	106		94-124		
1,4-Dinitrobenzene	N.D.	20.	60	ug/kg	100		83-122		
HMX	N.D.	50.	150	ug/kg	89		65-121		
Nitrobenzene	N.D.	20.	60	ug/kg	112		81-116		
Nitroglycerin	N.D.	400.	1,200	ug/kg	94		70-118		
1-Nitronaphthalene	N.D.	20.	60	ug/kg	111		83-122		
2-Nitrotoluene	N.D.	40.	80	ug/kg	98		86-113		
3-Nitrotoluene	N.D.	50.	100	ug/kg	106		85-135		
4-Nitrotoluene	N.D.	40.	80	ug/kg	112		80-122		
PETN	N.D.	400.	1,200	ug/kg	108		64-121		
RDX	N.D.	26.	60	ug/kg	103		84-122		
Tetryl	N.D.	32.	80	ug/kg	103		67-152		
1,3,5-Trinitrobenzene	N.D.	20.	60	ug/kg	101		83-119		
2,4,6-Trinitrotoluene	N.D.	20.	60	ug/kg	98		82-133		
Batch number: 152060006A	Sample number(s): 7973976-7973995								
4-Amino-2,6-Dinitrotoluene	N.D.	30.	80	ug/kg	109		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	20.	60	ug/kg	106		79-120		
1,2-Dinitrobenzene	N.D.	20.	60	ug/kg	126		94-129		
1,3-Dinitrobenzene	N.D.	20.	60	ug/kg	119		94-124		
1,4-Dinitrobenzene	N.D.	20.	60	ug/kg	109		83-122		
HMX	N.D.	50.	150	ug/kg	99		65-121		

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Nitrobenzene	N.D.	20.	60	ug/kg	123*		81-116		
Nitroglycerin	N.D.	400.	1,200	ug/kg	108		70-118		
1-Nitronaphthalene	N.D.	20.	60	ug/kg	120		83-122		
2-Nitrotoluene	N.D.	40.	80	ug/kg	105		86-113		
3-Nitrotoluene	N.D.	50.	100	ug/kg	130		85-135		
4-Nitrotoluene	N.D.	40.	80	ug/kg	109		80-122		
PETN	N.D.	400.	1,200	ug/kg	130*		64-121		
RDX	N.D.	26.	60	ug/kg	111		84-122		
Tetryl	N.D.	32.	80	ug/kg	114		67-152		
1,3,5-Trinitrobenzene	N.D.	20.	60	ug/kg	110		83-119		
2,4,6-Trinitrotoluene	N.D.	20.	60	ug/kg	112		82-133		
Batch number: 152060049A	Sample number(s): 7973996-7973999								
4-Amino-2,6-Dinitrotoluene	N.D.	30.	80	ug/kg	97		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	20.	60	ug/kg	92		79-120		
1,2-Dinitrobenzene	N.D.	20.	60	ug/kg	104		94-129		
1,3-Dinitrobenzene	N.D.	20.	60	ug/kg	99		94-124		
1,4-Dinitrobenzene	N.D.	20.	60	ug/kg	90		83-122		
HMX	N.D.	50.	150	ug/kg	82		65-121		
Nitrobenzene	N.D.	20.	60	ug/kg	100		81-116		
Nitroglycerin	N.D.	400.	1,200	ug/kg	100		70-118		
1-Nitronaphthalene	N.D.	20.	60	ug/kg	101		83-122		
2-Nitrotoluene	N.D.	40.	80	ug/kg	95		86-113		
3-Nitrotoluene	N.D.	50.	100	ug/kg	110		85-135		
4-Nitrotoluene	N.D.	40.	80	ug/kg	98		80-122		
PETN	N.D.	400.	1,200	ug/kg	110		64-121		
RDX	N.D.	26.	60	ug/kg	92		84-122		
Tetryl	N.D.	32.	80	ug/kg	93		67-152		
1,3,5-Trinitrobenzene	N.D.	20.	60	ug/kg	90		83-119		
2,4,6-Trinitrotoluene	N.D.	20.	60	ug/kg	91		82-133		
Batch number: 152045708002	Sample number(s): 7973956-7973960								
Aluminum	8.74 J	7.66	20.0	mg/kg	106		80-120		
Antimony	N.D.	0.410	2.00	mg/kg	110		80-120		
Arsenic	N.D.	0.580	2.00	mg/kg	109		80-120		
Barium	N.D.	0.0670	0.500	mg/kg	104		80-120		
Beryllium	N.D.	0.0670	0.500	mg/kg	110		80-120		
Cadmium	0.0500 J	0.0430	0.500	mg/kg	106		80-120		
Calcium	8.65 J	3.33	20.0	mg/kg	104		80-120		
Chromium	0.0980 J	0.0980	1.50	mg/kg	104		80-120		
Cobalt	N.D.	0.0810	0.500	mg/kg	107		80-120		
Copper	N.D.	0.280	1.00	mg/kg	107		80-120		
Iron	N.D.	3.33	20.0	mg/kg	103		80-120		
Lead	N.D.	0.320	1.50	mg/kg	110		80-120		
Magnesium	2.68 J	1.67	10.0	mg/kg	103		80-120		
Manganese	0.124 J	0.0830	0.500	mg/kg	105		80-120		
Nickel	N.D.	0.230	1.00	mg/kg	108		80-120		
Potassium	N.D.	16.8	50.0	mg/kg	101		80-120		
Selenium	N.D.	0.830	2.00	mg/kg	107		80-120		
Silver	N.D.	0.120	0.500	mg/kg	101		80-120		
Sodium	28.8 J	16.7	100	mg/kg	104		80-120		
Thallium	N.D.	0.750	3.00	mg/kg	110		80-120		
Vanadium	N.D.	0.150	0.500	mg/kg	107		80-120		
Zinc	N.D.	0.770	2.00	mg/kg	105		80-120		
Batch number: 152045708003	Sample number(s): 7973961-7973979								

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Aluminum	N.D.		7.66	20.0	mg/kg	102		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	109		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	104		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	101		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	101		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	101		80-120		
Calcium	N.D.		3.33	20.0	mg/kg	102		80-120		
Chromium	N.D.		0.0980	1.50	mg/kg	102		80-120		
Cobalt	N.D.		0.0810	0.500	mg/kg	102		80-120		
Copper	N.D.		0.280	1.00	mg/kg	102		80-120		
Iron	N.D.		3.33	20.0	mg/kg	100		80-120		
Lead	N.D.		0.320	1.50	mg/kg	102		80-120		
Magnesium	N.D.		1.67	10.0	mg/kg	101		80-120		
Manganese	N.D.		0.0830	0.500	mg/kg	102		80-120		
Nickel	N.D.		0.230	1.00	mg/kg	104		80-120		
Potassium	N.D.		16.8	50.0	mg/kg	100		80-120		
Selenium	N.D.		0.830	2.00	mg/kg	107		80-120		
Silver	N.D.		0.120	0.500	mg/kg	107		80-120		
Sodium	N.D.		16.7	100	mg/kg	101		80-120		
Thallium	N.D.		0.750	3.00	mg/kg	101		80-120		
Vanadium	N.D.		0.150	0.500	mg/kg	104		80-120		
Zinc	N.D.		0.770	2.00	mg/kg	99		80-120		
Batch number: 152055708003	Sample number(s): 7973980-7973999									
Aluminum	N.D.		7.66	20.0	mg/kg	102		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	107		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	105		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	101		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	106		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	104		80-120		
Calcium	4.08	J	3.33	20.0	mg/kg	103		80-120		
Chromium	N.D.		0.0980	1.50	mg/kg	100		80-120		
Cobalt	N.D.		0.0810	0.500	mg/kg	104		80-120		
Copper	N.D.		0.280	1.00	mg/kg	104		80-120		
Iron	N.D.		3.33	20.0	mg/kg	103		80-120		
Lead	N.D.		0.320	1.50	mg/kg	106		80-120		
Magnesium	N.D.		1.67	10.0	mg/kg	101		80-120		
Manganese	N.D.		0.0830	0.500	mg/kg	101		80-120		
Nickel	N.D.		0.230	1.00	mg/kg	105		80-120		
Potassium	N.D.		16.8	50.0	mg/kg	101		80-120		
Selenium	N.D.		0.830	2.00	mg/kg	106		80-120		
Silver	N.D.		0.120	0.500	mg/kg	97		80-120		
Sodium	N.D.		16.7	100	mg/kg	100		80-120		
Thallium	N.D.		0.750	3.00	mg/kg	107		80-120		
Vanadium	N.D.		0.150	0.500	mg/kg	102		80-120		
Zinc	N.D.		0.770	2.00	mg/kg	102		80-120		
Batch number: 152055711002	Sample number(s): 7973976-7973995									
Mercury	N.D.		0.0100	0.100	mg/kg	106		80-120		
Batch number: 152055711003	Sample number(s): 7973956-7973975									
Mercury	N.D.		0.0100	0.100	mg/kg	116		80-120		
Batch number: 152055711004	Sample number(s): 7973996-7973999									
Mercury	N.D.		0.0100	0.100	mg/kg	115		80-120		

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 152081848004	Sample number(s): 7974000								
Aluminum	N.D.	0.0841	0.200	mg/l	102		80-120		
Barium	N.D.	0.00030	0.0050	mg/l	100		80-120		
Beryllium	N.D.	0.00070	0.0050	mg/l	102		80-120		
Cadmium	0.00039 J	0.00030	0.0050	mg/l	102		80-120		
Calcium	0.0594 J	0.0333	0.200	mg/l	104		80-120		
Chromium	N.D.	0.0015	0.0150	mg/l	100		80-120		
Cobalt	N.D.	0.00090	0.0050	mg/l	103		80-120		
Copper	N.D.	0.0025	0.0100	mg/l	103		80-120		
Iron	N.D.	0.0333	0.200	mg/l	102		80-120		
Magnesium	N.D.	0.0167	0.100	mg/l	101		80-120		
Manganese	N.D.	0.00080	0.0050	mg/l	100		80-120		
Nickel	N.D.	0.0013	0.0100	mg/l	104		80-120		
Potassium	N.D.	0.192	0.500	mg/l	101		80-120		
Selenium	N.D.	0.0082	0.0200	mg/l	99		80-120		
Silver	N.D.	0.0014	0.0050	mg/l	95		80-120		
Sodium	N.D.	0.167	1.00	mg/l	100		80-120		
Vanadium	N.D.	0.0014	0.0050	mg/l	104		80-120		
Zinc	N.D.	0.0039	0.0200	mg/l	99		80-120		
Batch number: 152085713004	Sample number(s): 7974000								
Mercury	N.D.	0.00005 0	0.00020	mg/l	93		80-120		
Batch number: 152086050002A	Sample number(s): 7974000								
Antimony	N.D.	0.00033	0.0010	mg/l	90		80-120		
Arsenic	N.D.	0.00054	0.0020	mg/l	96		80-120		
Lead	N.D.	0.00013	0.0010	mg/l	101		80-120		
Thallium	N.D.	0.00015	0.00050	mg/l	97		80-120		
Batch number: 15209049531A	Sample number(s): 7973956-7973965								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	120		47-143		
Batch number: 15209049531B	Sample number(s): 7973966-7973970								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	120		47-143		
Batch number: 15210049531A	Sample number(s): 7973971-7973977								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	105		47-143		
Batch number: 15210049531B	Sample number(s): 7973978-7973987								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	105		47-143		
Batch number: 15211049531A	Sample number(s): 7973988-7973997								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	123		47-143		
Batch number: 15211049531B	Sample number(s): 7973998-7973999								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	123		47-143		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

	MS	MSD	MS/MSD	RPD	BKG	DUP	DUP	Dup RPD

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Analysis Name	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD	Max
Batch number: 15206SLA026	Sample number(s): 7973956,7973958,7973960-7973975 UNSPK: P973957								
Acenaphthene	99	97	45-141	2	30				
Acenaphthylene	100	97	53-143	3	30				
Acetophenone	89	92	35-147	2	30				
Anthracene	102	100	42-147	3	30				
Atrazine	92	90	33-141	2	30				
Benzaldehyde	34	35	10-85	4	30				
Benzo(a)anthracene	98	93	32-150	5	30				
Benzo(a)pyrene	98	95	36-151	3	30				
Benzo(b)fluoranthene	110	105	29-150	5	30				
Benzo(g,h,i)perylene	101	98	41-147	4	30				
Benzo(k)fluoranthene	98	97	35-146	1	30				
1,1'-Biphenyl	87	84	34-145	4	30				
4-Bromophenyl-phenylether	97	96	48-146	2	30				
Butylbenzylphthalate	105	100	50-137	5	30				
Di-n-butylphthalate	106	103	65-126	3	30				
Caprolactam	183*	183*	34-145	0	30				
Carbazole	98	95	36-143	4	30				
4-Chloro-3-methylphenol	105	106	48-141	1	30				
4-Chloroaniline	58	61	10-100	5	30				
bis(2-Chloroethoxy)methane	91	89	64-119	2	30				
bis(2-Chloroethyl)ether	95	94	63-122	1	30				
2-Chloronaphthalene	109	103	40-156	6	30				
2-Chlorophenol	106	108	50-142	2	30				
4-Chlorophenyl-phenylether	97	95	49-135	3	30				
2,2'-oxybis(1-Chloropropane)	99	97	60-120	3	30				
Chrysene	101	97	28-146	4	30				
Dibenz(a,h)anthracene	105	102	38-156	3	30				
Dibenzofuran	95	93	34-146	3	30				
3,3'-Dichlorobenzidine	33	39	10-143	18	30				
2,4-Dichlorophenol	102	102	46-145	0	30				
Diethylphthalate	97	95	61-124	2	30				
2,4-Dimethylphenol	97	96	38-140	1	30				
Dimethylphthalate	97	97	59-124	0	30				
4,6-Dinitro-2-methylphenol	116	118	10-148	2	30				
2,4-Dinitrophenol	99	102	20-143	2	30				
2,4-Dinitrotoluene	121	115	37-149	3	30				
2,6-Dinitrotoluene	108	105	54-134	3	30				
bis(2-Ethylhexyl)phthalate	109	107	60-133	3	30				
Fluoranthene	98	94	41-135	4	30				
Fluorene	101	98	43-146	3	30				
Hexachlorobenzene	99	94	36-150	5	30				
Hexachlorobutadiene	97	94	65-125	4	30				
Hexachlorocyclopentadiene	77	75	10-153	3	30				
Hexachloroethane	98	94	37-143	4	30				
Indeno(1,2,3-cd)pyrene	100	97	35-151	4	30				
Isophorone	95	94	68-119	1	30				
2-Methylnaphthalene	99	96	39-140	3	30				
2-Methylphenol	110	111	36-149	1	30				
4-Methylphenol	102	105	46-135	3	30				
Naphthalene	115	112	39-147	3	30				
2-Nitroaniline	105	106	46-152	0	30				
3-Nitroaniline	95	96	31-145	1	30				
4-Nitroaniline	75	77	30-131	2	30				
Nitrobenzene	95	93	54-131	2	30				
2-Nitrophenol	113	114	38-150	0	30				

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
4-Nitrophenol	111	97	25-142	13	30				
N-Nitroso-di-n-propylamine	96	98	58-126	2	30				
N-Nitrosodiphenylamine	106	103	41-147	4	30				
Di-n-octylphthalate	121	120	53-156	2	30				
Pentachlorophenol	110	104	23-145	5	30				
Phenanthrene	100	96	42-141	4	30				
Phenol	96	97	53-129	1	30				
Pyrene	98	94	37-140	4	30				
2,4,5-Trichlorophenol	100	97	42-144	3	30				
2,4,6-Trichlorophenol	103	101	43-145	2	30				
Batch number: 15206SLB026	Sample number(s): 7973976-7973995 UNSPK: 7973977								
Acenaphthene	95	95	45-141	1	30				
Acenaphthylene	97	95	53-143	2	30				
Acetophenone	89	94	35-147	5	30				
Anthracene	97	96	42-147	1	30				
Atrazine	96	94	33-141	2	30				
Benzaldehyde	19	21	10-85	9	30				
Benzo(a)anthracene	89	91	32-150	3	30				
Benzo(a)pyrene	92	89	36-151	3	30				
Benzo(b)fluoranthene	93	100	29-150	7	30				
Benzo(g,h,i)perylene	93	90	41-147	4	30				
Benzo(k)fluoranthene	103	87	35-146	17	30				
1,1'-Biphenyl	85	82	34-145	4	30				
4-Bromophenyl-phenylether	96	94	48-146	2	30				
Butylbenzylphthalate	95	98	50-137	2	30				
Di-n-butylphthalate	101	100	65-126	1	30				
Caprolactam	105	110	34-145	5	30				
Carbazole	91	89	36-143	2	30				
4-Chloro-3-methylphenol	99	104	48-141	5	30				
4-Chloroaniline	18	26	10-100	37*	30				
bis(2-Chloroethoxy)methane	91	91	64-119	0	30				
bis(2-Chloroethyl)ether	94	96	63-122	2	30				
2-Chloronaphthalene	90	89	40-156	1	30				
2-Chlorophenol	106	108	50-142	2	30				
4-Chlorophenyl-phenylether	92	91	49-135	2	30				
2,2'-oxybis(1-Chloropropane)	97	97	60-120	0	30				
Chrysene	89	90	28-146	2	30				
Dibenz(a,h)anthracene	97	92	38-156	5	30				
Dibenzofuran	90	88	34-146	2	30				
3,3'-Dichlorobenzidine	41	47	10-143	15	30				
2,4-Dichlorophenol	98	99	46-145	1	30				
Diethylphthalate	92	90	61-124	2	30				
2,4-Dimethylphenol	95	95	38-140	0	30				
Dimethylphthalate	96	96	59-124	0	30				
4,6-Dinitro-2-methylphenol	116	118	10-148	2	30				
2,4-Dinitrophenol	99	104	20-143	5	30				
2,4-Dinitrotoluene	113	112	37-149	0	30				
2,6-Dinitrotoluene	104	102	54-134	1	30				
bis(2-Ethylhexyl)phthalate	102	102	60-133	1	30				
Fluoranthene	89	88	41-135	1	30				
Fluorene	94	93	43-146	1	30				

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Hexachlorobenzene	98	96	36-150	2	30				
Hexachlorobutadiene	90	86	65-125	4	30				
Hexachlorocyclopentadiene	90	84	10-153	6	30				
Hexachloroethane	89	89	37-143	1	30				
Indeno(1,2,3-cd)pyrene	92	88	35-151	4	30				
Isophorone	102	98	68-119	4	30				
2-Methylnaphthalene	91	92	39-140	2	30				
2-Methylphenol	109	114	36-149	5	30				
4-Methylphenol	99	106	46-135	6	30				
Naphthalene	98	99	39-147	1	30				
2-Nitroaniline	103	105	46-152	2	30				
3-Nitroaniline	93	97	31-145	3	30				
4-Nitroaniline	72	71	30-131	1	30				
Nitrobenzene	96	97	54-131	1	30				
2-Nitrophenol	110	113	38-150	3	30				
4-Nitrophenol	87	87	25-142	0	30				
N-Nitroso-di-n-propylamine	95	100	58-126	5	30				
N-Nitrosodiphenylamine	103	100	41-147	3	30				
Di-n-octylphthalate	119	112	53-156	5	30				
Pentachlorophenol	115	112	23-145	3	30				
Phenanthrene	94	92	42-141	2	30				
Phenol	98	103	53-129	5	30				
Pyrene	91	90	37-140	1	30				
2,4,5-Trichlorophenol	99	96	42-144	3	30				
2,4,6-Trichlorophenol	103	102	43-145	1	30				
Batch number: 15206SLE026	Sample number(s): 7973996-7973999 UNSPK: P979524								
Acenaphthene	108	109	45-141	1	30				
Acenaphthylene	107	100	53-143	7	30				
Acetophenone	96	91	35-147	5	30				
Anthracene	101	109	42-147	7	30				
Atrazine	115	112	33-141	3	30				
Benzaldehyde	27	84	10-85	103*	30				
Benzo(a)anthracene	92	122	32-150	26	30				
Benzo(a)pyrene	103	128	36-151	20	30				
Benzo(b)fluoranthene	111	136	29-150	19	30				
Benzo(g,h,i)perylene	105	118	41-147	11	30				
Benzo(k)fluoranthene	105	118	35-146	11	30				
1,1'-Biphenyl	92	90	34-145	3	30				
4-Bromophenyl-phenylether	102	99	48-146	3	30				
Butylbenzylphthalate	108	106	50-137	3	30				
Di-n-butylphthalate	107	102	65-126	5	30				
Caprolactam	101	94	34-145	8	30				
Carbazole	97	99	36-143	2	30				
4-Chloro-3-methylphenol	116	109	48-141	6	30				
4-Chloroaniline	54	48	10-100	13	30				
bis(2-Chloroethoxy)methane	99	96	64-119	4	30				
bis(2-Chloroethyl)ether	104	99	63-122	6	30				
2-Chloronaphthalene	113	114	40-156	0	30				
2-Chlorophenol	110	107	50-142	3	30				
4-Chlorophenyl-phenylether	106	102	49-135	5	30				
2,2'-oxybis(1-Chloropropane)	108	104	60-120	3	30				

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Chrysene	92	120	28-146	25	30				
Dibenz(a,h)anthracene	111	112	38-156	0	30				
Dibenzofuran	104	101	34-146	2	30				
3,3'-Dichlorobenzidine	64	63	10-143	3	30				
2,4-Dichlorophenol	113	108	46-145	5	30				
Diethylphthalate	106	100	61-124	6	30				
2,4-Dimethylphenol	88	82	38-140	8	30				
Dimethylphthalate	104	100	59-124	5	30				
4,6-Dinitro-2-methylphenol	93	86	10-148	8	30				
2,4-Dinitrophenol	90	81	20-143	11	30				
2,4-Dinitrotoluene	109	104	37-149	5	30				
2,6-Dinitrotoluene	115	108	54-134	7	30				
bis(2-Ethylhexyl)phthalate	107	104	60-133	3	30				
Fluoranthene	86	154*	41-135	51*	30				
Fluorene	109	112	43-146	3	30				
Hexachlorobenzene	96	93	36-150	3	30				
Hexachlorobutadiene	104	102	65-125	2	30				
Hexachlorocyclopentadiene	69	53	10-153	27	30				
Hexachloroethane	97	95	37-143	3	30				
Indeno(1,2,3-cd)pyrene	104	114	35-151	8	30				
Isophorone	105	98	68-119	7	30				
2-Methylnaphthalene	105	102	39-140	4	30				
2-Methylphenol	112	106	36-149	5	30				
4-Methylphenol	108	104	46-135	5	30				
Naphthalene	106	103	39-147	3	30				
2-Nitroaniline	115	110	46-152	5	30				
3-Nitroaniline	108	101	31-145	7	30				
4-Nitroaniline	87	86	30-131	1	30				
Nitrobenzene	103	100	54-131	3	30				
2-Nitrophenol	114	111	38-150	3	30				
4-Nitrophenol	95	89	25-142	7	30				
N-Nitroso-di-n-propylamine	105	100	58-126	5	30				
N-Nitrosodiphenylamine	96	92	41-147	5	30				
Di-n-octylphthalate	136	126	53-156	9	30				
Pentachlorophenol	96	92	23-145	5	30				
Phenanthrene	90	146*	42-141	44*	30				
Phenol	108	103	53-129	5	30				
Pyrene	92	155*	37-140	46*	30				
2,4,5-Trichlorophenol	108	104	42-144	4	30				
2,4,6-Trichlorophenol	110	104	43-145	6	30				
Batch number: 15213SLA026	Sample number(s): 7973957,7973959 UNSPK: P983942								
Acenaphthene	98	94	83-116	4	30				
Acenaphthylene	94	90	83-127	4	30				
Acetophenone	84	79	74-116	6	30				
Anthracene	99	95	82-118	4	30				
Atrazine	118	112	63-148	6	30				
Benzaldehyde	36	34	10-69	5	30				
Benzo(a)anthracene	92	89	76-119	3	30				
Benzo(a)pyrene	92	87	85-117	5	30				
Benzo(b)fluoranthene	95	89	78-129	7	30				
Benzo(g,h,i)perylene	87	82	82-119	7	30				

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Benzo(k)fluoranthene	104	100	79-120	4	30				
1,1'-Biphenyl	86	81	80-116	5	30				
4-Bromophenyl-phenylether	98	93	84-120	5	30				
Butylbenzylphthalate	96	93	80-118	3	30				
Di-n-butylphthalate	101	97	84-120	5	30				
Caprolactam	83	81	71-129	3	30				
Carbazole	94	91	78-117	4	30				
4-Chloro-3-methylphenol	94	92	79-127	2	30				
4-Chloroaniline	57	49	10-103	14	30				
bis(2-Chloroethoxy)methane	90	85	77-116	6	30				
bis(2-Chloroethyl)ether	92	87	77-115	6	30				
2-Chloronaphthalene	85	84	63-146	2	30				
2-Chlorophenol	95	90	85-123	5	30				
4-Chlorophenyl-phenylether	97	94	81-120	3	30				
2,2'-oxybis(1-Chloropropane)	92	87	63-126	6	30				
Chrysene	100	98	80-121	2	30				
Dibenz(a,h)anthracene	91	86	81-123	6	30				
Dibenzofuran	94	91	85-115	3	30				
3,3'-Dichlorobenzidine	37	35	10-104	7	30				
2,4-Dichlorophenol	97	95	81-123	2	30				
Diethylphthalate	95	91	81-118	4	30				
2,4-Dimethylphenol	67*	64*	83-120	5	30				
Dimethylphthalate	95	92	82-113	3	30				
4,6-Dinitro-2-methylphenol	98	95	59-131	3	30				
2,4-Dinitrophenol	86	85	27-140	1	30				
2,4-Dinitrotoluene	102	99	81-122	3	30				
2,6-Dinitrotoluene	103	100	83-120	2	30				
bis(2-Ethylhexyl)phthalate	96	93	81-121	3	30				
Fluoranthene	99	95	81-117	4	30				
Fluorene	99	97	86-118	3	30				
Hexachlorobenzene	95	91	75-123	4	30				
Hexachlorobutadiene	98	92	72-120	7	30				
Hexachlorocyclopentadiene	79	75	68-145	5	30				
Hexachloroethane	92	88	78-114	4	30				
Indeno(1,2,3-cd)pyrene	86	82	81-118	6	30				
Isophorone	92	87	78-125	5	30				
2-Methylnaphthalene	95	90	83-109	6	30				
2-Methylphenol	86	84	82-125	2	30				
4-Methylphenol	81	78	75-119	4	30				
Naphthalene	97	91	83-112	6	30				
2-Nitroaniline	101	98	84-126	3	30				
3-Nitroaniline	90	85	66-119	6	30				
4-Nitroaniline	77	77	50-100	0	30				
Nitrobenzene	92	88	70-122	4	30				
2-Nitrophenol	105	100	83-120	5	30				
4-Nitrophenol	72	72	60-129	1	30				
N-Nitroso-di-n-propylamine	90	85	67-121	6	30				
N-Nitrosodiphenylamine	83	81*	83-118	2	30				
Di-n-octylphthalate	108	104	74-146	4	30				
Pentachlorophenol	97	93	57-126	4	30				
Phenanthrene	96	91	80-114	5	30				
Phenol	82	80	73-122	3	30				

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Pyrene	94	91	81-114	4	30				
2,4,5-Trichlorophenol	94	93	86-123	1	30				
2,4,6-Trichlorophenol	95	93	81-123	2	30				
Batch number: 152060005A	Sample number(s): 7973956-7973975 UNSPK: 7973956								
4-Amino-2,6-Dinitrotoluene	129 (2)	-370 (2)	85-118	68*	50				
2-Amino-4,6-Dinitrotoluene	97 (2)	-313 (2)	69-113	68*	50				
1,2-Dinitrobenzene	89	101	80-120	13	50				
1,3-Dinitrobenzene	66*	79*	89-119	16	50				
1,4-Dinitrobenzene	86	85	82-117	1	50				
HMX	104	82	72-107	23	50				
Nitrobenzene	113*	98	86-108	14	50				
Nitroglycerin	101	87	73-116	15	50				
1-Nitronaphthalene	32*	83*	89-131	88*	50				
2-Nitrotoluene	68*	120*	79-112	55*	50				
3-Nitrotoluene	77	84	72-119	7	50				
4-Nitrotoluene	54*	70*	90-118	20	50				
PETN	99	103	71-133	4	50				
RDX	98	79	75-108	22	50				
Tetryl	0*	0*	58-125	0	50				
1,3,5-Trinitrobenzene	83	48*	58-135	23	50				
2,4,6-Trinitrotoluene	0 (2)	-39396 (2)	92-114	200*	50				
Batch number: 152060006A	Sample number(s): 7973976-7973995 UNSPK: 7973976								
4-Amino-2,6-Dinitrotoluene	100	137*	85-118	9	50				
2-Amino-4,6-Dinitrotoluene	89	127*	69-113	10	50				
1,2-Dinitrobenzene	79*	97	80-120	19	50				
1,3-Dinitrobenzene	80*	87*	89-119	6	50				
1,4-Dinitrobenzene	71*	84	82-117	15	50				
HMX	58*	77	72-107	27	50				
Nitrobenzene	85*	94	86-108	9	50				
Nitroglycerin	83	90	73-116	7	50				
1-Nitronaphthalene	98	110	89-131	10	50				
2-Nitrotoluene	107	107	79-112	1	50				
3-Nitrotoluene	97	105	72-119	7	50				
4-Nitrotoluene	73*	77*	90-118	4	50				
PETN	83	98	71-133	16	50				
RDX	64*	67*	75-108	3	50				
Tetryl	68	80	58-125	15	50				
1,3,5-Trinitrobenzene	122	117	58-135	4	50				
2,4,6-Trinitrotoluene	-1920 (2)	-13142 (2)	92-114	35	50				
Batch number: 152060049A	Sample number(s): 7973996-7973999 UNSPK: 7973996								
4-Amino-2,6-Dinitrotoluene	-216 (2)	-230 (2)	85-118	2	50				
2-Amino-4,6-Dinitrotoluene	-125 (2)	-141 (2)	69-113	3	50				
1,2-Dinitrobenzene	83	89	80-120	5	50				

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,3-Dinitrobenzene	87*	93	89-119	6	50				
1,4-Dinitrobenzene	83	92	82-117	9	50				
HMX	61*	62*	72-107	1	50				
Nitrobenzene	87	94	86-108	6	50				
Nitroglycerin	45*	9926*	73-116	198*	50				
1-Nitronaphthalene	126	123	89-131	3	50				
2-Nitrotoluene	151*	147*	79-112	3	50				
3-Nitrotoluene	130*	132*	72-119	1	50				
4-Nitrotoluene	44*	51*	90-118	6	50				
PETN	112	112	71-133	1	50				
RDX	76	97	75-108	23	50				
Tetryl	81	83	58-125	1	50				
1,3,5-Trinitrobenzene	94	85	58-135	6	50				
2,4,6-Trinitrotoluene	0 (2)	0 (2)	92-114	0	50				
Batch number: 152045708002	Sample number(s): 7973956-7973960 UNSPK: P973938 BKG: P973938								
Aluminum	763 (2)	1129 (2)	75-125	15	20	3,010	2,250	29*	20
Antimony	106	95	75-125	8	20	20.3	14.5	33*	20
Arsenic	75	71*	75-125	5	20	1.38 J	1.66 J	18 (1)	20
Barium	48*	127*	75-125	26*	20	411	561	31*	20
Beryllium	112	111	75-125	1	20	0.0680 J	N.D.	200* (1)	20
Cadmium	156*	122	75-125	11	20	8.52	5.83	37*	20
Calcium	-378 (2)	-27 (2)	75-125	2	20	66,800	82,400	21*	20
Chromium	1340 (2)	1217 (2)	75-125	2	20	722	488	39*	20
Cobalt	112	129*	75-125	5	20	96.9	59.3	48*	20
Copper	143*	123	75-125	9	20	25.4	44.4	54*	20
Iron	-272 (2)	-907 (2)	75-125	15	20	4,680	6,350	30*	20
Lead	4697 (2)	4899 (2)	75-125	1	20	1,730	1,330	26*	20
Magnesium	-5653 (2)	-5454 (2)	75-125	4	20	20,400	28,700	34*	20
Manganese	63*	64*	75-125	0	20	82.2	57.7	35*	20
Nickel	100	129*	75-125	23*	20	7.04	5.47	25*	20
Potassium	108	109	75-125	0	20	925	1,630	55*	20
Selenium	82	77	75-125	6	20	1.16 J	1.27 J	8 (1)	20
Silver	98	97	75-125	1	20	N.D.	N.D.	0 (1)	20
Sodium	109	112	75-125	1	20	1,030	1,380	29*	20
Thallium	99	98	75-125	2	20	N.D.	N.D.	0 (1)	20
Vanadium	111	109	75-125	2	20	3.99	3.25	20	20
Zinc	19605 (2)	13336 (2)	75-125	8	20	32,200	20,900	43*	20
Batch number: 152045708003	Sample number(s): 7973961-7973979 UNSPK: 7973965 BKG: 7973965								
Aluminum	1911 (2)	1663 (2)	75-125	4	20	9,490	9,500	0	20
Antimony	88	87	75-125	1	20	1.59 J	1.72 J	8 (1)	20
Arsenic	96	96	75-125	0	20	4.41	4.05	9 (1)	20
Barium	101	100	75-125	1	20	30.7	30.6	0	20

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Beryllium	99	99	75-125	0	20	0.306 J	0.292 J	5 (1)	20
Cadmium	94	95	75-125	1	20	0.127 J	0.143 J	12 (1)	20
Calcium	122	109	75-125	4	20	793	756	5	20
Chromium	97	91	75-125	4	20	11.4	8.36	31*	20
Cobalt	97	96	75-125	1	20	2.71	2.68	1	20
Copper	104	103	75-125	1	20	9.44	9.52	1	20
Iron	520 (2)	266 (2)	75-125	2	20	13,000	12,100	7	20
Lead	110 (2)	120 (2)	75-125	1	20	130	125	4	20
Magnesium	211*	171*	75-125	7	20	681	684	0	20
Manganese	121	110	75-125	4	20	93.2	94.9	2	20
Nickel	99	99	75-125	0	20	5.20	4.96	5	20
Potassium	135*	129*	75-125	3	20	495	461	7	20
Selenium	99	100	75-125	1	20	1.66 J	1.55 J	6 (1)	20
Silver	102	103	75-125	1	20	0.228 J	0.163 J	33* (1)	20
Sodium	98	97	75-125	1	20	43.8 J	43.2 J	1 (1)	20
Thallium	94	90	75-125	5	20	N.D.	N.D.	0 (1)	20
Vanadium	101	100	75-125	1	20	21.2	17.7	18	20
Zinc	105	100	75-125	4	20	17.7	18.7	6	20
Batch number: 152055708003	Sample number(s): 7973980-7973999 UNSPK: 7973980 BKG: 7973980								
Aluminum	1542 (2)	469 (2)	75-125	17	20	10,500	10,100	4	20
Antimony	87	88	75-125	1	20	1.97 J	2.10	6 (1)	20
Arsenic	98	100	75-125	1	20	2.02	1.90 J	6 (1)	20
Barium	101	98	75-125	3	20	34.4	80.8	80*	20
Beryllium	107	106	75-125	1	20	0.388 J	0.413 J	6 (1)	20
Cadmium	96	98	75-125	2	20	0.0520 J	0.0500 J	4 (1)	20
Calcium	144*	91	75-125	20	20	591	572	3	20
Chromium	107	99	75-125	5	20	9.12	9.34	2	20
Cobalt	97	99	75-125	2	20	2.96	3.05	3	20
Copper	101	97	75-125	3	20	11.6	10.9	6	20
Iron	524 (2)	-1429 (2)	75-125	15	20	13,600	14,500	7	20
Lead	76 (2)	-43 (2)	75-125	13	20	133	132	1	20
Magnesium	162*	87	75-125	15	20	776	797	3	20
Manganese	125	81	75-125	14	20	102	121	17	20
Nickel	99	99	75-125	0	20	4.97	5.04	1 (1)	20
Potassium	149*	120	75-125	16	20	476	464	3	20
Selenium	97	95	75-125	1	20	1.99 J	1.78 J	11 (1)	20
Silver	95	95	75-125	0	20	0.386 J	0.283 J	31* (1)	20
Sodium	99	98	75-125	1	20	39.6 J	37.2 J	6 (1)	20
Thallium	102	103	75-125	1	20	N.D.	N.D.	0 (1)	20
Vanadium	106	99	75-125	5	20	19.1	20.1	5	20
Zinc	99	95	75-125	3	20	21.0	32.3	42*	20
Batch number: 152055711002	Sample number(s): 7973976-7973995 UNSPK: 7973976 BKG: 7973976								
Mercury	117	117	80-120	2	20	0.0186 J	0.0233 J	23* (1)	20
Batch number: 152055711003	Sample number(s): 7973956-7973975 UNSPK: 7973962 BKG: 7973962								
Mercury	119	113	80-120	7	20	0.0307 J	0.0291 J	5 (1)	20
Batch number: 152055711004	Sample number(s): 7973996-7973999 UNSPK: 7973996 BKG: 7973996								

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Mercury	118	119	80-120	2	20	0.0305 J	0.0302 J	1 (1)	20
Batch number: 152081848004	Sample number(s): 7974000 UNSPK: P974764 BKG: P974764								
Aluminum	114	113	75-125	1	20	0.310	0.311	0 (1)	20
Barium	103	102	75-125	1	20	0.503	0.518	3	20
Beryllium	109	107	75-125	1	20	N.D.	N.D.	0 (1)	20
Cadmium	102	100	75-125	2	20	0.00047 J	0.00060 J	24* (1)	20
Calcium	407 (2)	276 (2)	75-125	2	20	200	205	2	20
Chromium	103	101	75-125	1	20	0.0022 J	0.0020 J	10 (1)	20
Cobalt	103	101	75-125	2	20	0.0059	0.0063	8 (1)	20
Copper	110	108	75-125	1	20	0.0092 J	0.0108	16 (1)	20
Iron	243 (2)	193 (2)	75-125	2	20	19.5	20.1	3	20
Magnesium	201 (2)	172 (2)	75-125	2	20	28.5	29.5	3	20
Manganese	146 (2)	132 (2)	75-125	1	20	4.07	4.22	4	20
Nickel	104	102	75-125	2	20	0.0108	0.0117	8 (1)	20
Potassium	110	107	75-125	2	20	1.51	1.57	4 (1)	20
Selenium	106	106	75-125	1	20	N.D.	N.D.	0 (1)	20
Silver	103	100	75-125	3	20	N.D.	N.D.	0 (1)	20
Sodium	154 (2)	138 (2)	75-125	2	20	62.7	65.2	4	20
Vanadium	111	110	75-125	1	20	0.0030 J	0.0028 J	7 (1)	20
Zinc	103	101	75-125	2	20	0.0063 J	0.0062 J	1 (1)	20
Batch number: 152085713004	Sample number(s): 7974000 UNSPK: P975992 BKG: P975992								
Mercury	95	93	80-120	2	20	N.D.	N.D.	0 (1)	20
Batch number: 152086050002A	Sample number(s): 7974000 UNSPK: P970269 BKG: P970269								
Antimony	102	94	75-125	7	20	N.D.	N.D.	0 (1)	20
Arsenic	127*	98	75-125	15	20	0.0073	0.0084	15 (1)	20
Lead	109	107	75-125	2	20	0.0017	0.0017	0 (1)	20
Thallium	118	108	75-125	8	20	N.D.	N.D.	0 (1)	20
Batch number: 15209049531A	Sample number(s): 7973956-7973965 UNSPK: 7973958 BKG: 7973958								
TOC by Lloyd Kahn	105		47-143			12,700	13,400	5	7
Batch number: 15209049531B	Sample number(s): 7973966-7973970 UNSPK: 7973966 BKG: 7973966								
TOC by Lloyd Kahn	103		47-143			5,650	5,170	9* (1)	7
Batch number: 15210049531A	Sample number(s): 7973971-7973977 UNSPK: 7973971 BKG: 7973971								
TOC by Lloyd Kahn	105		47-143			5,100	4,460	13* (1)	7
Batch number: 15210049531B	Sample number(s): 7973978-7973987 UNSPK: 7973978 BKG: 7973978								
TOC by Lloyd Kahn	101		47-143			8,920	7,890	12*	7
Batch number: 15211049531A	Sample number(s): 7973988-7973997 UNSPK: 7973988 BKG: 7973988								
TOC by Lloyd Kahn	109		47-143			8,550	8,570	0	7
Batch number: 15211049531B	Sample number(s): 7973998-7973999 UNSPK: 7973999 BKG: 7973999								
TOC by Lloyd Kahn	113		47-143			7,400	6,820	8* (1)	7

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Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL SW846 8270C Water
Batch number: 15203WAC026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7974000	42	41	45	81	87	87
Blank	52	36	76	70	74	75
LCS	65	45	90	85	87	82
LCSD	68	47	97	90	92	86
Limits:	10-107	10-82	23-145	60-123	61-112	35-144

Analysis Name: TCL 8270 (microwave)
Batch number: 15206SLA026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7973956	96	98	91	87	84	93
7973958	97	99	81	86	71	86
7973960	98	101	84	88	80	87
7973961	95	98	87	89	82	92
7973962	98	101	92	88	95	99
7973963	97	100	90	88	89	94
7973964	99	100	77	87	74	81
7973965	99	100	82	86	75	85
7973966	97	99	90	90	93	98
7973967	98	101	88	89	90	94
7973968	97	99	81	87	80	85
7973969	98	101	77	86	77	84
7973970	98	101	89	90	90	96
7973971	96	100	83	87	83	88
7973972	97	100	86	88	89	94
7973973	98	101	80	87	81	89
7973974	96	99	87	88	93	99
7973975	97	100	84	89	85	90
Blank	92	98	97	91	96	100
LCS	99	103	103	94	97	99
MS	96	99	86	90	79	90
MSD	97	99	77	86	69	81
Limits:	58-122	57-128	36-142	54-123	63-124	61-142

Analysis Name: TCL 8270 (microwave)
Batch number: 15206SLB026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7973976	100	102	87	89	89	97
7973977	98	100	87	91	88	92
7973978	97	101	93	97	102	103
7973979	96	98	88	90	96	99
7973980	95	97	88	90	95	99
7973981	93	95	91	90	97	97
7973982	91	94	86	88	95	95
7973983	89	93	87	89	96	96
7973984	96	99	86	91	92	96
7973985	95	99	88	91	94	99
7973986	95	98	83	90	91	96
7973987	96	99	86	91	92	98
7973988	97	101	89	90	94	99
7973989	96	100	91	93	98	103

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Quality Control Summary

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Reported: 08/13/2015 12:47

Surrogate Quality Control

7973990	98	101	89	93	91	100
7973991	95	98	88	90	91	96
7973992	95	99	82	89	86	92
7973993	95	100	89	91	95	101
7973994	97	100	88	91	95	100
7973995	98	102	92	94	97	101
Blank	93	99	100	92	98	102
LCS	100	102	99	95	98	99
MS	96	99	83	91	88	85
MSD	99	100	85	91	86	88
Limits:	58-122	57-128	36-142	54-123	63-124	61-142

Analysis Name: TCL 8270 (microwave)
Batch number: 15206SLE026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7973996	97	99	87	90	86	91
7973997	100	103	87	90	88	95
7973998	93	96	90	88	91	96
7973999	99	100	82	89	78	85
Blank	99	104	106	95	103	110
LCS	108	110	107	96	97	100
MS	102	102	97	95	96	100
MSD	102	104	95	96	98	102
Limits:	58-122	57-128	36-142	54-123	63-124	61-142

Analysis Name: TCL 8270 (microwave)
Batch number: 15213SLA026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7973957	101	99	83	88	75	86
7973959	98	98	87	89	85	97
Blank	99	101	104	95	99	108
LCS	99	98	100	92	96	97
MS	92	90	90	91	95	98
MSD	88	88	89	87	90	94
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Water
Batch number: 152040023A

	2-Nitro-m-xylene
7974000	89
Blank	92
LCS	90
LCSD	90
Limits:	60-137

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152060005A

	2-Nitro-m-xylene
7973956	90
7973957	69
7973958	69
7973959	88
7973960	82
7973961	37*
7973962	67*

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Surrogate Quality Control

7973963	78
7973964	62*
7973965	52*
7973966	46*
7973967	74
7973968	46*
7973969	63*
7973970	81
7973971	71
7973972	83
7973973	77
7973974	69
7973975	93
Blank	115
LCS	106
MS	74
MSD	98
Limits:	68-138

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152060006A

	2-Nitro-m-xylene
7973976	64*
7973977	92
7973978	96
7973979	106
7973980	98
7973981	97
7973982	91
7973983	106
7973984	108
7973985	97
7973986	66*
7973987	103
7973988	55*
7973989	122
7973990	112
7973991	105
7973992	103
7973993	64*
7973994	75
7973995	73
Blank	76
LCS	86
MS	69
MSD	84
Limits:	68-138

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152060049A

	2-Nitro-m-xylene
7973996	36*
7973997	44*
7973998	37*
7973999	39*
Blank	80

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578511
Reported: 08/13/2015 12:47

Surrogate Quality Control

LCS	69
MS	44*
MSD	34*
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1578511 Sample # 797345-4000

Instructions on reverse side correspond with circled numbers.

382793

1 Client Information

Client: Arcadis-US | Acct. #: 06716

Project Name/#: Ashland/Hercules | PWSID #:

Project Manager: Jim McLaughlin | P.O. #: NJ007000, NJ78

Sampler: S. Lemoine & S. Manning | Quote #:

Name of state where samples were collected: NJ

4 Matrix

Sediment ☐ | Soil ☒ | Water: Potable ☐ Ground ☐ Surface ☐ NPDES ☐ | Other: ☐

5 Analysis Requested

Preservation Codes

For Lab Use Only

FSC:

SCR#: 174773

Preservation Codes

H=HCl T=Thiosulfate

N=HNO_3 B=NaOH

S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	SVOCs (SW846, 8270, TICs)	EtOH (SW846, 8330, TICs)	Metals (SW846, 6010)	TOC	% Moisture
TNT-PS-A-1-07202015	7/20/15	1530		X	1	X	X	X	X	X
TNT-PS-A-2-07202015		1535		X		X	X	X	X	X
TNT-PS-A-3-07202015		1540		X		X	X	X	X	X
TNT-PS-A-4-07202015		1545		X		X	X	X	X	X
TNT-PS-B-1-07202015		1432		X		X	X	X	X	X
TNT-PS-B-2-07202015		1435		X		X	X	X	X	X
TNT-PS-B-3-07202015		1439		X		X	X	X	X	X
TNT-PS-B-4-07202015		1440		X		X	X	X	X	X
TNT-PS-C-1-07202015		1510		X		X	X	X	X	X
TNT-PS-C-2-07202015		1512		X		X	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: _____

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Bottle Storage					
	7/21/15	1629		7/21/15	1629
	7/21/15	2026			
				7/21/15	2026

9

EDD Required? Yes No

If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.3-5.7 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 | For Eurofins Lancaster Laboratories Environmental use only Group # 1573511 Sample # 7973956-4000
Instructions on reverse side correspond with circled numbers.

382797

1 Client Information

Client: Arcadis-US	Acct. #: 06716
Project Name/#: Ashland / Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ00700, NJ78
Sampler: S. Lemaine & S. Manning	Quote #:

Name of state where samples were collected:

4 Matrix

Sediment ☐ | Soil ☒ | Water: Ground ☐ Potable ☐ Surface ☐ NPDES ☐ | Other: ___

5 Analysis Requested

Preservation Codes

For Lab Use Only

FSC:

SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	SVOC (SW846 8270, TIC)	EDE (SW846 8330, TIC)	Metals (SW846 6010)	TOC	% Moisture
TNT-PS-C-3-07202015	7/20/15	1515		X	1	X	X	X	X	X
TNT-PS-C-4-07202015		1520		X		X	X	X	X	X
TNT-PS-D-1-07202015		1500		X		X	X	X	X	X
TNT-PS-D-2-07202015		1504		X		X	X	X	X	X
TNT-PS-D-3-07202015		1506		X		X	X	X	X	X
TNT-PS-D-4-07202015		1508		X		X	X	X	X	X
TNT-PS-E-1-07202015		1455		X		X	X	X	X	X
TNT-PS-E-2-07202015		1500		X		X	X	X	X	X
TNT-PS-E-3-07202015		1505		X		X	X	X	X	X
TNT-PS-E-4-07202015		1510		X		X	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: _____

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Steve Lemaine	7/21/15	1629	[signature]	7/21/15	1629
[signature]	7/21/15	2026			
			[signature]	7/21/15	2026

9

EDD Required? Yes No
If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.3-5.7 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1578511 Sample # 7913956-4000
Instructions on reverse side correspond with circled numbers.

382796

1 Client Information

Client: Arcadis-US	Acct. #: 06716
Project Name/#: Ashland Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NS007000.NJ78
Sampler: S. Lemoine + S. Manning	Quote #:

Name of state where samples were collected: NJ

4 Matrix: Sediment ☐ Soil ☑ | Water: Ground ☐ Potable ☐ Surface ☐ NPDES ☐ | Other: ____

5 Analysis Requested — Preservation Codes

For Lab Use Only
FSC: ____
SCR#: ____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	SVOC (SW846 8270 TIC)	Ed E (SW 846, 8330, TIC)	Metals (SW846, 6010)	TOC	% Moisture
TNT-PS-F-1-07202015	7/20/15	1445		X	1	X	X	X	X	X
TNT-PS-F-2-07202015		1447		X		X	X	X	X	X
TNT-PS-F-3-07202015		1447		X		X	X	X	X	X
TNT-PS-F-4-07202015		1450		X		X	X	X	X	X
TNT-PS-G-1-07202015		1430		X		X	X	X	X	X
TNT-PS-G-2-07202015		1435		X		X	X	X	X	X
TNT-PS-G-3-07202015		1440		X		X	X	X	X	X
TNT-PS-G-4-07202015		1445		X		X	X	X	X	X
TNT-PS-H-1-07202015		1400		X		X	X	X	X	X
TNT-PS-H-2-07202015		1402		X		X	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ____

E-mail address: ____

8 Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	7/21/15	1629		7/21/15	1629
	7/21/15	2026			
				7/21/15	2026

9

EDD Required? Yes No
If yes, format: ____
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____
Temperature upon receipt 0.3-5.7 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1573511 Sample # 79739564000
Instructions on reverse side correspond with circled numbers.

382795

1 Client Information

Client: Arcadis-US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJC07000.N578
Sampler: S. Lemoine, S. Manning	Quote #:
Name of state where samples were collected: NJ	

4 Matrix: Sediment ☐ Soil ☒ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: ___

5 Analysis Requested — Preservation Codes

For Lab Use Only
FSC: ___
SCR#: ___

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	SVOC (SW846 8270 TICs)	EtE (SW846 8330 TICs)	Metals (SW846 6000)	TOC	% Moisture
TNT-PS-H-3-07202015	7/20/15	1405		X	1	X	X	X	X	X
TNT-PS-H-4-07202015		1428		X		X	X	X	X	X
TNT-PS-I-1-07202015		355		X		X	X	X	X	X
TNT-PS-I-2-07202015		1420		X		X	X	X	X	X
TNT-PS-I-3-07202015		1405		X		X	X	X	X	X
TNT-PS-I-4-07202015		1410		X		X	X	X	X	X
TNT-PS-J-1-07202015		1345		X		X	X	X	X	X
TNT-PS-J-2-07202015		1348		X		X	X	X	X	X
TNT-PS-J-3-07202015		1351		X		X	X	X	X	X
TNT-PS-J-4-07202015		1353		X		X	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ___

E-mail address: ___

8 Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	7/21/15	1629	[signature]	7/21/15	1629
[signature]	7/21/15	2026			
			[signature]	7/21/15	2026

9

EDD Required? (Yes) No
If yes, format: ___

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ___ FedEx ___ Other ___

Temperature upon receipt 0.3-5.7 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1578511 Sample # 79739756-4000
Instructions on reverse side correspond with circled numbers.

382799

1 Client Information

Client: Arcadis-US	Acct. #: 06716
Project Name/#: Ashland / Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: N500700, N578
Sampler: S. Lemoine & S. Manning	Quote #:

Name of state where samples were collected: NJ

4 Matrix: Sediment ☐ Soil ☒ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

5 Analysis Requested — Preservation Codes

For Lab Use Only
FSC:
SCR#: 174791

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	SVOC (SW 846 8270 TICs)	EDB (SW 846 8330 TICs)	Metals (SW 846 6010)	TOC	% Moisture
TNT-PS-K-1-07202015	7/20/15	1340		X	1	X	X	X	X	X
TNT-PS-K-2-07202015	"	1340		X	1	X	X	X	X	X
TNT-PS-K-3-07202015	"	1345		X	1	X	X	X	X	X
TNT-PS-K-4-07202015	"	1350		X	1	X	X	X	X	X
Field Blank 07202015	7/20/15	1600	X			X	X	X		

7 Turnaround Time (TAT) Requested (please circle)
(Standard) Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: _____

8 Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Bottle Storage					
	7/21/15	1629		7/21/15	1629
	7/21/15	2026			
				7/21/15	2026

9

EDD Required? Yes No
If yes, format: _____
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____
Temperature upon receipt 0.3-5.7 °C

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

August 12, 2015

Project: Kenvil TNT Bioremediation Pilot

Submittal Date: 07/21/2015
Group Number: 1578519
SDG: KVM43
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
Process_Sand_Fraction Grab Soil Sample	7974078
Process_Flock_Fraction Grab Soil Sample	7974079
Process_Combination_Fraction Grab Soil Sample	7974080

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: Process_Sand_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974078
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-1 SDG#: KVM43-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	6 J	3	17	1
10727	Acetophenone	98-86-2	N.D.	17	33	1
10727	Anthracene	120-12-7	N.D.	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	170	1
10727	Benzaldehyde	100-52-7	N.D.	67	170	1
10727	Benzo(a)anthracene	56-55-3	33	3	17	1
10727	Benzo(a)pyrene	50-32-8	32	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	43	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	23	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	22	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	67	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.	67	170	1
10727	Caprolactam	105-60-2	N.D.	33	170	1
10727	Carbazole	86-74-8	N.D.	17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	17	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	67	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	35	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	7 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	17	33	1
10727	Diethylphthalate	84-66-2	N.D.	67	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	17	33	1
10727	Dimethylphthalate	131-11-3	N.D.	67	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	3,400	67	170	1
10727	2,6-Dinitrotoluene	606-20-2	470	17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	67	170	1
10727	Fluoranthene	206-44-0	46	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	170	500	1
10727	Hexachloroethane	67-72-1	N.D.	33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	21	3	17	1
10727	Isophorone	78-59-1	N.D.	17	33	1
10727	2-Methylnaphthalene	91-57-6	52	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: Process_Sand_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974078
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-1 SDG#: KVM43-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg	ug/kg	ug/kg	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	45	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	67	170	1
10727	4-Nitroaniline	100-01-6	N.D.	67	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	67	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	N.D.	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	42	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,200	30	80	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,200	20	60	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	65	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	50	150	1
06918	Nitrobenzene	98-95-3	N.D.	20	60	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	6,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	N.D.	50	100	1
06918	4-Nitrotoluene	99-99-0	N.D.	40	80	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	26	60	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	360	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	300,000	4,000	12,000	200
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.					

*=This limit was used in the evaluation of the final result

Sample Description: Process_Sand_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974078
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-1 SDG#: KVM43-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	3,200		7.44	19.4	1
06944	Antimony	7440-36-0	1.21	J	0.398	1.94	1
06935	Arsenic	7440-38-2	1.19	J	0.563	1.94	1
06946	Barium	7440-39-3	11.6		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.172	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0883	J	0.0417	0.485	1
01650	Calcium	7440-70-2	464		3.23	19.4	1
06951	Chromium	7440-47-3	5.56		0.0951	1.46	1
06952	Cobalt	7440-48-4	1.31		0.0786	0.485	1
06953	Copper	7440-50-8	5.47		0.272	0.971	1
01654	Iron	7439-89-6	7,970		3.23	19.4	1
06955	Lead	7439-92-1	48.7		0.311	1.46	1
01657	Magnesium	7439-95-4	364		1.62	9.71	1
06958	Manganese	7439-96-5	58.1		0.0806	0.485	1
06961	Nickel	7440-02-0	2.04		0.223	0.971	1
01662	Potassium	7440-09-7	263		16.3	48.5	1
06936	Selenium	7782-49-2	1.32	J	0.806	1.94	1
06966	Silver	7440-22-4	N.D.		0.117	0.485	1
01667	Sodium	7440-23-5	22.1	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	11.0		0.146	0.485	1
06972	Zinc	7440-66-6	11.4		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.		0.0098	0.0984	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	487		100	300	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLE026	07/28/2015 17:18	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLE026	07/27/2015 19:15	David V Hershey Jr	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	07/30/2015 07:30	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 04:38	James H Place	5

*=This limit was used in the evaluation of the final result

Sample Description: Process_Sand_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974078
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:45 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-1 SDG#: KVM43-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 10:17	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060049A	07/28/2015 12:50	Katheryne V Dinan	1
01643	Aluminum	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06944	Antimony	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06947	Beryllium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06949	Cadmium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06952	Cobalt	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06953	Copper	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
01654	Iron	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152055708004	07/29/2015 14:30	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06958	Manganese	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06961	Nickel	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
01662	Potassium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06925	Thallium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
06972	Zinc	SW-846 6010B	1	152055708004	07/28/2015 02:06	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152055711004	07/28/2015 10:24	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708004	07/26/2015 23:20	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711004	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/30/2015 03:10	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT-1

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7974078
Sample wt/vol: 30.0 (g/mL) g Lab File ID: og1223.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 12 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	4.369	1200	JBA
2. 526-73-8	Benzene, 1,2,3-trimethyl-	6.016	160	J
3. 99-65-0	Benzene, 1,3-dinitro-	8.957	180	J
4.	Unknown	9.669	190	J
5. 118-96-7	Benzene, 2-methyl-1,3,5-trin	10.433	88000	J
6.	Unknown	10.716	610	J
7.	Unknown Carboxylic Acid	10.810	280	J
8. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.239	360	J
9. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.445	1600	J
10.	Unknown Aromatic	11.580	390	J
11. 593-49-7	Heptacosane	15.210	730	J
12. 593-45-3	Octadecane	16.251	1100	J
13.				
14. SVOCTIC	Total SVOC TICs		95000	JBA
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: Process_Flock_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974079
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-2 SDG#: KVM43-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	18		3	17	1
10727	Benzo(a)pyrene	50-32-8	15	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	28		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	12	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	12	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	22		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	6	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	26		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	11	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: Process_Flock_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974079
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-2 SDG#: KVM43-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	15	J	3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	31		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,400		150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,200		100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		20	60	1
06918	1,3-Dinitrobenzene	99-65-0	120		20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		20	60	1
06918	HMX	2691-41-0	N.D.		270	270	1
06918	Nitrobenzene	98-95-3	N.D.		20	60	1
06918	Nitroglycerin	55-63-0	N.D.		2,000	6,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.		40	80	1
06918	3-Nitrotoluene	99-08-1	77	J	50	100	1
06918	4-Nitrotoluene	99-99-0	N.D.		450	450	1
06918	PETN	78-11-5	N.D.		400	1,200	1
06918	RDX	121-82-4	N.D.		380	380	1
06918	Tetryl	479-45-8	N.D.		32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,100		20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	610,000		4,000	12,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: Process_Flock_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974079
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-2 SDG#: KVM43-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	8,560		7.44	19.4	1
06944	Antimony	7440-36-0	1.53	J	0.398	1.94	1
06935	Arsenic	7440-38-2	1.88	J	0.563	1.94	1
06946	Barium	7440-39-3	27.9		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.290	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.0718	J	0.0417	0.485	1
01650	Calcium	7440-70-2	752		3.23	19.4	1
06951	Chromium	7440-47-3	6.80		0.0951	1.46	1
06952	Cobalt	7440-48-4	1.98		0.0786	0.485	1
06953	Copper	7440-50-8	8.65		0.272	0.971	1
01654	Iron	7439-89-6	8,860		3.23	19.4	1
06955	Lead	7439-92-1	110		0.311	1.46	1
01657	Magnesium	7439-95-4	588		1.62	9.71	1
06958	Manganese	7439-96-5	74.9		0.0806	0.485	1
06961	Nickel	7440-02-0	3.80		0.223	0.971	1
01662	Potassium	7440-09-7	435		16.3	48.5	1
06936	Selenium	7782-49-2	1.42	J	0.806	1.94	1
06966	Silver	7440-22-4	N.D.		0.117	0.485	1
01667	Sodium	7440-23-5	33.7	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	14.4		0.146	0.485	1
06972	Zinc	7440-66-6	15.8		0.748	1.94	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0203	J	0.0093	0.0934	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,390		580	1,740	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLE026	07/28/2015 17:43	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLE026	07/27/2015 19:15	David V Hershey Jr	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	07/30/2015 08:12	James H Place	1

*=This limit was used in the evaluation of the final result

Sample Description: Process_Flock_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974079
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:40 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-2 SDG#: KVM43-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 05:20	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 11:00	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060049A	07/28/2015 12:50	Katheryne V Dinan	1
01643	Aluminum	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06944	Antimony	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06947	Beryllium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06949	Cadmium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06952	Cobalt	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06953	Copper	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
01654	Iron	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152055708004	07/29/2015 14:33	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06958	Manganese	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06961	Nickel	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
01662	Potassium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06925	Thallium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
06972	Zinc	SW-846 6010B	1	152055708004	07/28/2015 02:09	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152055711004	07/28/2015 10:26	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708004	07/26/2015 23:20	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711004	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/29/2015 22:46	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNT-2

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7974079
Sample wt/vol: 30.3 (g/mL) g Lab File ID: og1224.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.504	410	J
2.17301-23-4	Undecane, 2,6-dimethyl-	7.581	290	J
3.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.763	350	J
4.	Unknown	7.857	310	J
5.1560-97-0	Dodecane, 2-methyl-	7.892	350	J
6.	Unknown	7.939	830	J
7.629-50-5	Tridecane	8.110	1400	J
8.	Unknown	8.180	290	J
9.	Unknown	8.233	440	J
10.	Unknown	8.298	310	J
11.	Unknown	8.398	420	J
12.1560-96-9	Tridecane, 2-methyl-	8.469	290	J
13.629-59-4	Tetradecane	8.669	870	J
14.	Unknown	8.710	320	J
15.	Unknown	8.916	270	J
16.	Unknown	8.963	570	J
17.	Unknown Aromatic	9.386	240	J
18.544-76-3	Hexadecane	9.680	260	J
19.	Unknown Aromatic	10.345	110000	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	11.186	1900	J
21.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.410	2600	J
22.	Unknown	11.545	730	J
23.630-02-4	Octacosane	15.215	1600	J
24.112-95-8	Eicosane	15.656	1100	J
25.638-36-8	Hexadecane, 2,6,10,14-tetram	16.256	2200	J
26.				
27.SVOCTIC	Total SVOC TICs		130000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: Process_Combination_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974080
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-3 SDG#: KVM43-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	6 J	3	17	1
10727	Acetophenone	98-86-2	N.D.	16	33	1
10727	Anthracene	120-12-7	4 J	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	160	1
10727	Benzaldehyde	100-52-7	N.D.	66	160	1
10727	Benzo(a)anthracene	56-55-3	28	3	17	1
10727	Benzo(a)pyrene	50-32-8	24	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	44	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	19	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	20	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	160	1
10727	Caprolactam	105-60-2	N.D.	33	160	1
10727	Carbazole	86-74-8	N.D.	16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	16	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	33	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	8 J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	16	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	16	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,800	66	160	1
10727	2,6-Dinitrotoluene	606-20-2	530	16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	43	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	160	490	1
10727	Hexachloroethane	67-72-1	N.D.	33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	19	3	17	1
10727	Isophorone	78-59-1	N.D.	16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: Process_Combination_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974080
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-3 SDG#: KVM43-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	22	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	40	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,600	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,100	100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	20	60	1
06918	1,3-Dinitrobenzene	99-65-0	190	20	60	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	20	60	1
06918	HMX	2691-41-0	N.D.	1,100	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	20	60	1
06918	Nitroglycerin	55-63-0	N.D.	2,000	6,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	20	60	1
06918	2-Nitrotoluene	88-72-2	N.D.	40	80	1
06918	3-Nitrotoluene	99-08-1	71 J	50	570	1
06918	4-Nitrotoluene	99-99-0	N.D.	570	570	1
06918	PETN	78-11-5	N.D.	400	1,200	1
06918	RDX	121-82-4	N.D.	290	290	1
06918	Tetryl	479-45-8	N.D.	32	80	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,800	20	60	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,100,000	10,000	30,000	500

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: Process_Combination_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974080
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-3 SDG#: KVM43-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.						
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,260		7.37	19.2	1
06944	Antimony	7440-36-0	1.99		0.394	1.92	1
06935	Arsenic	7440-38-2	2.31		0.558	1.92	1
06946	Barium	7440-39-3	29.3		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.355	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.0692	J	0.0413	0.481	1
01650	Calcium	7440-70-2	787		3.20	19.2	1
06951	Chromium	7440-47-3	10.1		0.0942	1.44	1
06952	Cobalt	7440-48-4	2.85		0.0779	0.481	1
06953	Copper	7440-50-8	9.88		0.269	0.962	1
01654	Iron	7439-89-6	12,300		3.20	19.2	1
06955	Lead	7439-92-1	111		0.308	1.44	1
01657	Magnesium	7439-95-4	731		1.61	9.62	1
06958	Manganese	7439-96-5	114		0.0798	0.481	1
06961	Nickel	7440-02-0	4.51		0.221	0.962	1
01662	Potassium	7440-09-7	466		16.2	48.1	1
06936	Selenium	7782-49-2	1.75	J	0.798	1.92	1
06966	Silver	7440-22-4	N.D.		0.115	0.481	1
01667	Sodium	7440-23-5	32.7	J	16.1	96.2	1
06925	Thallium	7440-28-0	N.D.		0.721	2.88	1
06971	Vanadium	7440-62-2	19.2		0.144	0.481	1
06972	Zinc	7440-66-6	24.4		0.740	1.92	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0254	J	0.0093	0.0929	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	5,410		500	1,500	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15206SLE026	07/28/2015 18:09	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15206SLE026	07/27/2015 19:15	David V Hershey Jr	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	07/30/2015 08:54	James H Place	1

*=This limit was used in the evaluation of the final result

Sample Description: Process_Combination_Fraction Grab Soil Sample
Kenvil Treatability Study

LL Sample # SW 7974080
LL Group # 1578519
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 07/18/2015 11:35 by SL

Submitted: 07/21/2015 20:26
Reported: 08/12/2015 16:53

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNT-3 SDG#: KVM43-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/03/2015 06:03	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152060049A	08/07/2015 10:56	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152060049A	07/28/2015 12:50	Katheryne V Dinan	1
01643	Aluminum	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06944	Antimony	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06935	Arsenic	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06947	Beryllium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06949	Cadmium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06952	Cobalt	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06953	Copper	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
01654	Iron	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152055708004	07/29/2015 14:36	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06958	Manganese	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06961	Nickel	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
01662	Potassium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06925	Thallium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
06972	Zinc	SW-846 6010B	1	152055708004	07/28/2015 02:13	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152055711004	07/28/2015 10:28	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152055708004	07/26/2015 23:20	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152055711004	07/27/2015 12:05	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15210049531A	07/29/2015 22:56	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNT-3

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7974080
Sample wt/vol: 30.4 (g/mL) g Lab File ID: og1225.d
Level: (low/med) LOW Date Received: 07/21/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 07/27/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.629-59-4	Tetradecane	7.504	450	J
2.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.763	390	J
3.	Unknown	7.822	340	J
4.	Unknown	7.857	360	J
5.1560-97-0	Dodecane, 2-methyl-	7.892	390	J
6.	Unknown	7.940	940	J
7.	Unknown	8.051	340	J
8.629-50-5	Tridecane	8.110	1500	J
9.	Unknown	8.151	320	J
10.	Unknown	8.187	330	J
11.	Unknown	8.240	330	J
12.	Unknown	8.298	360	J
13.	Unknown	8.351	250	J
14.	Unknown	8.404	520	J
15.1560-96-9	Tridecane, 2-methyl-	8.469	360	J
16.629-78-7	Heptadecane	8.669	1000	J
17.	Unknown	8.710	400	J
18.	Unknown	8.916	380	J
19.544-76-3	Hexadecane	9.675	290	J
20.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.345	50000	J
21.	Unknown	10.610	310	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.198	1000	J
23.	Unknown	11.416	4100	J
24.7225-64-1	Heptadecane, 9-octyl-	13.963	2000	J
25.630-07-9	Pentatriacontane	15.663	2700	J
26.				
27.SVOCTIC	Total SVOC TICs		70000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578519
Reported: 08/12/2015 16:53

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15206SLE026	Sample number(s): 7974078-7974080								
Acenaphthene	N.D.	3.	17	ug/kg	109		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	110		83-127		
Acetophenone	N.D.	17.	33	ug/kg	100		74-116		
Anthracene	N.D.	3.	17	ug/kg	105		82-118		
Atrazine	N.D.	33.	170	ug/kg	129		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	31		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	107		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	113		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	126		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	103		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	114		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	95		78-111		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	100		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	109		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	108		84-120		
Caprolactam	N.D.	33.	170	ug/kg	108		76-123		
Carbazole	N.D.	17.	33	ug/kg	102		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	120		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	106*		10-101		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	104		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	104		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	91		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	119		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	111		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	112		70-119		
Chrysene	N.D.	3.	17	ug/kg	106		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	109		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	106		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	94		16-117		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	118		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	113		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	110		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	111		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	92		76-124		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	88		47-130		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	116		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	120		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	108		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	105		81-117		
Fluorene	N.D.	3.	17	ug/kg	114		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	97		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	102		78-121		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	100		75-176		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578519
Reported: 08/12/2015 16:53

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachloroethane	N.D.		33.	170	ug/kg	101		78-114		
Indeno(1,2,3-cd)pyrene	N.D.		3.	17	ug/kg	103		81-118		
Isophorone	N.D.		17.	33	ug/kg	108		87-125		
2-Methylnaphthalene	N.D.		3.	17	ug/kg	106		83-109		
2-Methylphenol	N.D.		17.	33	ug/kg	123		82-125		
4-Methylphenol	N.D.		17.	33	ug/kg	120*		75-119		
Naphthalene	N.D.		3.	17	ug/kg	106		83-112		
2-Nitroaniline	N.D.		17.	33	ug/kg	118		84-126		
3-Nitroaniline	N.D.		67.	170	ug/kg	118		66-119		
4-Nitroaniline	N.D.		67.	170	ug/kg	105		48-112		
Nitrobenzene	N.D.		17.	33	ug/kg	105		80-115		
2-Nitrophenol	N.D.		17.	33	ug/kg	111		83-120		
4-Nitrophenol	N.D.		170.	500	ug/kg	96		60-129		
N-Nitroso-di-n-propylamine	N.D.		17.	33	ug/kg	109		75-116		
N-Nitrosodiphenylamine	N.D.		17.	33	ug/kg	102		83-118		
Di-n-octylphthalate	N.D.		67.	170	ug/kg	132		82-134		
Pentachlorophenol	N.D.		33.	170	ug/kg	118		57-126		
Phenanthrene	N.D.		3.	17	ug/kg	101		80-114		
Phenol	N.D.		17.	33	ug/kg	116		75-117		
Pyrene	N.D.		3.	17	ug/kg	105		81-114		
2,4,5-Trichlorophenol	N.D.		17.	33	ug/kg	112		86-123		
2,4,6-Trichlorophenol	N.D.		17.	33	ug/kg	117		81-123		
Batch number: 152060049A	Sample number(s): 7974078-7974080									
4-Amino-2,6-Dinitrotoluene	N.D.		30.	80	ug/kg	97		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.		20.	60	ug/kg	92		79-120		
1,2-Dinitrobenzene	N.D.		20.	60	ug/kg	104		94-129		
1,3-Dinitrobenzene	N.D.		20.	60	ug/kg	99		94-124		
1,4-Dinitrobenzene	N.D.		20.	60	ug/kg	90		83-122		
HMX	N.D.		50.	150	ug/kg	82		65-121		
Nitrobenzene	N.D.		20.	60	ug/kg	100		81-116		
Nitroglycerin	N.D.		400.	1,200	ug/kg	100		70-118		
1-Nitronaphthalene	N.D.		20.	60	ug/kg	101		83-122		
2-Nitrotoluene	N.D.		40.	80	ug/kg	95		86-113		
3-Nitrotoluene	N.D.		50.	100	ug/kg	110		85-135		
4-Nitrotoluene	N.D.		40.	80	ug/kg	98		80-122		
PETN	N.D.		400.	1,200	ug/kg	110		64-121		
RDX	N.D.		26.	60	ug/kg	92		84-122		
Tetryl	N.D.		32.	80	ug/kg	93		67-152		
1,3,5-Trinitrobenzene	N.D.		20.	60	ug/kg	90		83-119		
2,4,6-Trinitrotoluene	N.D.		20.	60	ug/kg	91		82-133		
Batch number: 152055708004	Sample number(s): 7974078-7974080									
Aluminum	N.D.		7.66	20.0	mg/kg	104		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	108		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	106		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	103		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	106		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	103		80-120		
Calcium	5.36	J	3.33	20.0	mg/kg	102		80-120		
Chromium	N.D.		0.0980	1.50	mg/kg	101		80-120		
Cobalt	N.D.		0.0810	0.500	mg/kg	103		80-120		
Copper	N.D.		0.280	1.00	mg/kg	104		80-120		
Iron	N.D.		3.33	20.0	mg/kg	101		80-120		
Lead	N.D.		0.320	1.50	mg/kg	104		80-120		
Magnesium	1.82	J	1.67	10.0	mg/kg	100		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578519
Reported: 08/12/2015 16:53

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Manganese	N.D.	0.0830	0.500	mg/kg	102		80-120		
Nickel	N.D.	0.230	1.00	mg/kg	105		80-120		
Potassium	N.D.	16.8	50.0	mg/kg	99		80-120		
Selenium	N.D.	0.830	2.00	mg/kg	106		80-120		
Silver	N.D.	0.120	0.500	mg/kg	97		80-120		
Sodium	N.D.	16.7	100	mg/kg	100		80-120		
Thallium	N.D.	0.750	3.00	mg/kg	106		80-120		
Vanadium	N.D.	0.150	0.500	mg/kg	105		80-120		
Zinc	N.D.	0.770	2.00	mg/kg	101		80-120		
Batch number: 152055711004	Sample number(s): 7974078-7974080								
Mercury	N.D.	0.0100	0.100	mg/kg	115		80-120		
Batch number: 15210049531A	Sample number(s): 7974078-7974080								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	105		47-143		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15206SLE026	Sample number(s): 7974078-7974080 UNSPK: P979524								
Acenaphthene	108	109	45-141	1	30				
Acenaphthylene	107	100	53-143	7	30				
Acetophenone	96	91	35-147	5	30				
Anthracene	101	109	42-147	7	30				
Atrazine	115	112	33-141	3	30				
Benzaldehyde	27	84	10-85	103*	30				
Benzo(a)anthracene	92	122	32-150	26	30				
Benzo(a)pyrene	103	128	36-151	20	30				
Benzo(b)fluoranthene	111	136	29-150	19	30				
Benzo(g,h,i)perylene	105	118	41-147	11	30				
Benzo(k)fluoranthene	105	118	35-146	11	30				
1,1'-Biphenyl	92	90	34-145	3	30				
4-Bromophenyl-phenylether	102	99	48-146	3	30				
Butylbenzylphthalate	108	106	50-137	3	30				
Di-n-butylphthalate	107	102	65-126	5	30				
Caprolactam	101	94	34-145	8	30				
Carbazole	97	99	36-143	2	30				
4-Chloro-3-methylphenol	116	109	48-141	6	30				
4-Chloroaniline	54	48	10-100	13	30				
bis(2-Chloroethoxy)methane	99	96	64-119	4	30				
bis(2-Chloroethyl)ether	104	99	63-122	6	30				
2-Chloronaphthalene	113	114	40-156	0	30				
2-Chlorophenol	110	107	50-142	3	30				
4-Chlorophenyl-phenylether	106	102	49-135	5	30				
2,2'-oxybis(1-Chloropropane)	108	104	60-120	3	30				
Chrysene	92	120	28-146	25	30				
Dibenz(a,h)anthracene	111	112	38-156	0	30				
Dibenzofuran	104	101	34-146	2	30				
3,3'-Dichlorobenzidine	64	63	10-143	3	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578519
Reported: 08/12/2015 16:53

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2,4-Dichlorophenol	113	108	46-145	5	30				
Diethylphthalate	106	100	61-124	6	30				
2,4-Dimethylphenol	88	82	38-140	8	30				
Dimethylphthalate	104	100	59-124	5	30				
4,6-Dinitro-2-methylphenol	93	86	10-148	8	30				
2,4-Dinitrophenol	90	81	20-143	11	30				
2,4-Dinitrotoluene	109	104	37-149	5	30				
2,6-Dinitrotoluene	115	108	54-134	7	30				
bis(2-Ethylhexyl)phthalate	107	104	60-133	3	30				
Fluoranthene	86	154*	41-135	51*	30				
Fluorene	109	112	43-146	3	30				
Hexachlorobenzene	96	93	36-150	3	30				
Hexachlorobutadiene	104	102	65-125	2	30				
Hexachlorocyclopentadiene	69	53	10-153	27	30				
Hexachloroethane	97	95	37-143	3	30				
Indeno(1,2,3-cd)pyrene	104	114	35-151	8	30				
Isophorone	105	98	68-119	7	30				
2-Methylnaphthalene	105	102	39-140	4	30				
2-Methylphenol	112	106	36-149	5	30				
4-Methylphenol	108	104	46-135	5	30				
Naphthalene	106	103	39-147	3	30				
2-Nitroaniline	115	110	46-152	5	30				
3-Nitroaniline	108	101	31-145	7	30				
4-Nitroaniline	87	86	30-131	1	30				
Nitrobenzene	103	100	54-131	3	30				
2-Nitrophenol	114	111	38-150	3	30				
4-Nitrophenol	95	89	25-142	7	30				
N-Nitroso-di-n-propylamine	105	100	58-126	5	30				
N-Nitrosodiphenylamine	96	92	41-147	5	30				
Di-n-octylphthalate	136	126	53-156	9	30				
Pentachlorophenol	96	92	23-145	5	30				
Phenanthrene	90	146*	42-141	44*	30				
Phenol	108	103	53-129	5	30				
Pyrene	92	155*	37-140	46*	30				
2,4,5-Trichlorophenol	108	104	42-144	4	30				
2,4,6-Trichlorophenol	110	104	43-145	6	30				
Batch number: 152060049A	Sample number(s): 7974078-7974080 UNSPK: P973996								
4-Amino-2,6-Dinitrotoluene	-216 (2)	-230 (2)	85-118	2	50				
2-Amino-4,6-Dinitrotoluene	-125 (2)	-141 (2)	69-113	3	50				
1,2-Dinitrobenzene	83	89	80-120	5	50				
1,3-Dinitrobenzene	87*	93	89-119	6	50				
1,4-Dinitrobenzene	83	92	82-117	9	50				
HMX	61*	62*	72-107	1	50				
Nitrobenzene	87	94	86-108	6	50				
Nitroglycerin	45*	9926*	73-116	198*	50				
1-Nitronaphthalene	126	123	89-131	3	50				
2-Nitrotoluene	151*	147*	79-112	3	50				
3-Nitrotoluene	130*	132*	72-119	1	50				
4-Nitrotoluene	44*	51*	90-118	6	50				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578519
Reported: 08/12/2015 16:53

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
PETN	112	112	71-133	1	50				
RDX	76	97	75-108	23	50				
Tetryl	81	83	58-125	1	50				
1,3,5-Trinitrobenzene	94	85	58-135	6	50				
2,4,6-Trinitrotoluene	0 (2)	0 (2)	92-114	0	50				
Batch number: 152055708004	Sample number(s): 7974078-7974080 UNSPK: P975710 BKG: P975710								
Aluminum	4232 (2)	4636 (2)	75-125	2	20	26,700	26,900	1	20
Antimony	81	78	75-125	4	20	N.D.	0.654 J	200* (1)	20
Arsenic	98	101	75-125	2	20	1.54 J	1.59 J	3 (1)	20
Barium	105	105	75-125	0	20	19.2	19.8	3	20
Beryllium	115	115	75-125	1	20	0.228 J	0.229 J	0 (1)	20
Cadmium	100	99	75-125	2	20	0.0901 J	0.0842 J	7 (1)	20
Calcium	99	97	75-125	1	20	561	555	1	20
Chromium	112	107	75-125	3	20	13.5	13.5	0	20
Cobalt	99	98	75-125	1	20	1.03	1.05	2 (1)	20
Copper	111	109	75-125	2	20	3.54	3.64	3 (1)	20
Iron	683 (2)	671 (2)	75-125	0	20	5,180	5,110	1	20
Lead	96	89	75-125	5	20	5.62	5.97	6 (1)	20
Magnesium	122	143*	75-125	5	20	557	569	2	20
Manganese	97	98	75-125	1	20	31.0	30.7	1	20
Nickel	103	102	75-125	1	20	4.97	4.97	0	20
Potassium	105	111	75-125	4	20	548	560	2	20
Selenium	94	93	75-125	1	20	N.D.	N.D.	0 (1)	20
Silver	96	96	75-125	1	20	N.D.	N.D.	0 (1)	20
Sodium	100	100	75-125	1	20	56.3 J	55.2 J	2 (1)	20
Thallium	99	98	75-125	1	20	0.818 J	0.851 J	4 (1)	20
Vanadium	112	108	75-125	2	20	21.0	20.6	2	20
Zinc	106	106	75-125	0	20	9.41	9.37	0 (1)	20
Batch number: 152055711004	Sample number(s): 7974078-7974080 UNSPK: P973996 BKG: P973996								
Mercury	118	119	80-120	2	20	0.0305 J	0.0302 J	1 (1)	20
Batch number: 15210049531A	Sample number(s): 7974078-7974080 UNSPK: P973971 BKG: P973971								
TOC by Lloyd Kahn	105		47-143			5,100	4,460	13* (1)	7

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15206SLE026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7974078	101	103	89	92	101	102
7974079	103	105	89	90	84	93
7974080	96	99	91	90	94	102
Blank	99	104	106	95	103	110

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1578519
Reported: 08/12/2015 16:53

Surrogate Quality Control

LCS	108	110	107	96	97	100
MS	102	102	97	95	96	100
MSD	102	104	95	96	98	102
Limits:	58-122	57-128	36-142	54-123	63-124	61-142

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152060049A

	2-Nitro-m-xylene
7974078	64*
7974079	42*
7974080	41*
Blank	80
LCS	69
MS	44*
MSD	34*
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 — For Eurofins Lancaster Laboratories Environmental use only — Group # 1578519 Sample # 7974078-80
Instructions on reverse side correspond with circled numbers.

373025

1 Client Information

Client: Arcadis - US	Acct. #: 06716
Project Name/#: Ashland / Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ067 000, NJ78
Sampler: S. Lemoine & S. Manning	Quote #:

Name of state where samples were collected: NJ

4 Matrix: Sediment ☐ Soil ☒ | Ground ☐ Potable ☐ Water | Surface ☐ NPDES ☐ | Other: ☐

5 Analysis Requested — Preservation Codes

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	Sitec (SW846 8270 TIC)	E+E (SW846 8330 TA)	Metals (SW846 6000	TOC	% Moisture	Grain Size
Process Sand Fraction	7/18/15	1145	X		1	X	X	X	X	X	X
Process Fluff Fraction		1140	X		1	X	X	X	X	X	X
Process Combination Fraction		1135	X		1	X	X	X	X	X	X

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks
2 separate containers not submitted for grain size analysis
WAK 7/28/15

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: _____

8 Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	7/21/15	1629	[signature]	7/21/15	1629
[signature]	7/21/15	2026	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by [signature]	Date 7/21/15	Time 2026

9

EDD Required? Yes No
If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.3-5.7 °C

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

August 27, 2015

Project: Kenvil TNT Bioremediation Pilot

Submittal Date: 08/03/2015
Group Number: 1581571
SDG: KVM44
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
Process Combined Grab Soil Sample	7990404
Process Sediment Grab Soil Sample	7990405
Process Flock Grab Soil Sample	7990406

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: Process Combined Grab Soil Sample
Ashland/Hercules

LL Sample # SW 7990404
LL Group # 1581571
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:35 by SM

Submitted: 08/03/2015 18:45
Reported: 08/27/2015 10:09

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

SDG#: KVM44-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	99.7	0.50	0.50	1
07103	3.35 mm	n.a.	99.6	0.50	0.50	1
07103	2.36 mm	n.a.	99.5	0.50	0.50	1
07103	1.18 mm	n.a.	89.5	0.50	0.50	1
07103	0.6 mm	n.a.	75.5	0.50	0.50	1
07103	0.3 mm	n.a.	62.2	0.50	0.50	1
07103	0.15 mm	n.a.	50.4	0.50	0.50	1
07103	0.075 mm	n.a.	42.8	0.50	0.50	1
07103	0.064 mm	n.a.	40.0	0.50	0.50	1
07103	0.05 mm	n.a.	35.0	0.50	0.50	1
07103	0.02 mm	n.a.	15.0	0.50	0.50	1
07103	0.005 mm	n.a.	5.0	0.50	0.50	1
07103	0.002 mm	n.a.	1.0	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	15216710301A	08/04/2015 21:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: Process Sediment Grab Soil Sample
Ashland/Hercules

LL Sample # SW 7990405
LL Group # 1581571
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/27/2015 10:09

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

SDG#: KVM44-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	99.6	0.50	0.50	1
07103	3.35 mm	n.a.	99.3	0.50	0.50	1
07103	2.36 mm	n.a.	98.8	0.50	0.50	1
07103	1.18 mm	n.a.	84.4	0.50	0.50	1
07103	0.6 mm	n.a.	61.1	0.50	0.50	1
07103	0.3 mm	n.a.	35.2	0.50	0.50	1
07103	0.15 mm	n.a.	16.1	0.50	0.50	1
07103	0.075 mm	n.a.	6.7	0.50	0.50	1
07103	0.064 mm	n.a.	4.0	0.50	0.50	1
07103	0.05 mm	n.a.	N.D.	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	15216710301A	08/04/2015 21:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: Process Flock Grab Soil Sample
Ashland/Hercules

LL Sample # SW 7990406
LL Group # 1581571
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:45 by SM

Submitted: 08/03/2015 18:45
Reported: 08/27/2015 10:09

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

SDG#: KVM44-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	100	0.50	0.50	1
07103	3.35 mm	n.a.	100	0.50	0.50	1
07103	2.36 mm	n.a.	99.8	0.50	0.50	1
07103	1.18 mm	n.a.	99.6	0.50	0.50	1
07103	0.6 mm	n.a.	98.7	0.50	0.50	1
07103	0.3 mm	n.a.	96.3	0.50	0.50	1
07103	0.15 mm	n.a.	90.2	0.50	0.50	1
07103	0.075 mm	n.a.	77.5	0.50	0.50	1
07103	0.064 mm	n.a.	69.0	0.50	0.50	1
07103	0.05 mm	n.a.	53.0	0.50	0.50	1
07103	0.02 mm	n.a.	29.0	0.50	0.50	1
07103	0.005 mm	n.a.	6.0	0.50	0.50	1
07103	0.002 mm	n.a.	1.0	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	15216710301A	08/04/2015 21:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1581571
Reported: 08/27/2015 10:09

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1581571 Sample # 7990404-06
Instructions on reverse side correspond with circled numbers.

Barcode

Client Information

Client: ARCadis-US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ007,000,NJ
Sampler: S. Manning	Quote #:
Name of state where samples were collected: NJ	

Matrix

Sediment ☐ Soil ☒ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other:

Analysis Requested

Preservation Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	SVOC (SW8270 TTC)	EtE (SW846, 8330 TTC)	Metals (SW846, 6000)	TOC	% Moisture	Grain Size						Remarks
TNT-PS-F-08032015	8/3/15	0730		X				1	X	X	X	X	X							
TNT-PS-E-08032015	8/3/15	0735		X				1	X	X	X	X	X							
TNT-PS-D-08032015	8/3/15	0740		X				1	X	X	X	X	X							
TNT-PS-C-08032015	8/3/15	0930		X				1	X	X	X	X	X							
TNT-PS-J-08032015	8/3/15	0940		X				1	X	X	X	X	X							
TNT-PS-B-08032015	8/3/15	0945		X				1	X	X	X	X	X							
TNT-PS-G-08032015	8/3/15	0950		X				1	X	X	X	X	X							
TNT-PS-H-08032015	8/3/15	1000		X				1	X	X	X	X	X							
TNT-PS-I-08032015	8/3/15	1010		X				1	X	X	X	X	X							
TNT-PS-K-08032015	8/3/15	1020		X				1	X	X	X	X	X							

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 5 day TAT

E-mail address: James.mclaughlin@arcadis-us.com

Data Package Options (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/3/15	1435	[signature]	8/3/15	1435
[signature]	8/3/15	1845			
			[signature]	8/3/15	1845

EDD Required? Yes No
If yes, format:

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____

Temperature upon receipt 8.1 °C °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0614

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1581571 Sample # 7990404-06
Instructions on reverse side correspond with circled numbers.

Barcode

Client Information

Client: ARCadis-US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ007,000,NJ
Sampler: S. Manning	Quote #:
Name of state where samples were collected: NJ	

Matrix: Sediment ☐ Soil ☒ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

Analysis Requested — Preservation Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Sediment	Water	Other	Total # of Containers	SVOC (SW8270 TIC)	EtE (SW846,830 TIC)	Metals (SW846,1600)	TOC	% Moisture	Grain Size
TNT-PS-A-08032015	8/3/15	1030		X				1	X	X	X	X	X	
Process combined	8/3/15	1035	X					1						X
process sediment	8/3/15	1040	X					1						X
process Flock	8/3/15	1045	X					1						X

For Lab Use Only
FSC: ____
SCR#: ____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 5 day TAT

E-mail address: James.mclaughlin@arcadis-us.com

Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/3/15	1435	[signature]	8/3/15	1435
[signature]	8/3/15	1845			
			[signature]	8/3/15	1845

EDD Required? Yes No
If yes, format: ____
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____
Temperature upon receipt 8.1°C °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0614

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

August 13, 2015

Project: Kenvil TNT Bioremediation Pilot

Submittal Date: 08/03/2015
Group Number: 1581570
SDG: KVM45
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

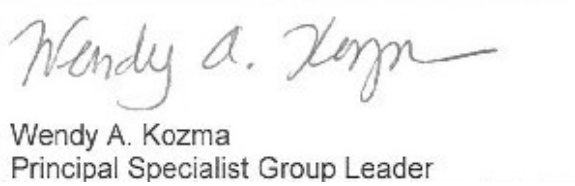
Client Sample Description	Lancaster Labs (LL) #
TNT-PS-F-08032015 Composite Soil Sample	7990393
TNT-PS-E-08032015 Composite Soil Sample	7990394
TNT-PS-D-08032015 Composite Soil Sample	7990395
TNT-PS-C-08032015 Composite Soil Sample	7990396
TNT-PS-J-08032015 Composite Soil Sample	7990397
TNT-PS-B-08032015 Composite Soil Sample	7990398
TNT-PS-G-08032015 Composite Soil Sample	7990399
TNT-PS-H-08032015 Composite Soil Sample	7990400
TNT-PS-I-08032015 Composite Soil Sample	7990401
TNT-PS-K-08032015 Composite Soil Sample	7990402
TNT-PS-A-08032015 Composite Soil Sample	7990403

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,



Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-F-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990393
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR1 SDG#: KVM45-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	12	J	3	17	1
10727	Acenaphthylene	208-96-8	9	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	10	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	150	J	66	170	1
10727	Benzo(a)anthracene	56-55-3	53		3	17	1
10727	Benzo(a)pyrene	50-32-8	39		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	67		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	28		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	32		3	17	1
10727	1,1'-Biphenyl	92-52-4	36		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	63		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	11	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	3,000		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	1,100		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	100	J	66	170	1
10727	Fluoranthene	206-44-0	85		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	29		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990393
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR1 SDG#: KVM45-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	13	J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	51		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	44		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	64		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	110,000		7,400	20,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	87,000		4,900	15,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.		98	290	5
06918	1,3-Dinitrobenzene	99-65-0	170	J	98	290	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		98	290	5
06918	HMX	2691-41-0	N.D.		6,600	6,600	5
06918	Nitrobenzene	98-95-3	N.D.		98	290	5
06918	Nitroglycerin	55-63-0	N.D.		2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.		98	290	5
06918	2-Nitrotoluene	88-72-2	N.D.		200	390	5
06918	3-Nitrotoluene	99-08-1	N.D.		250	490	5
06918	4-Nitrotoluene	99-99-0	N.D.		200	390	5
06918	PETN	78-11-5	N.D.		2,000	5,900	5
06918	RDX	121-82-4	N.D.		130	290	5
06918	Tetryl	479-45-8	N.D.		160	390	5
06918	1,3,5-Trinitrobenzene	99-35-4	440		98	290	5
06918	2,4,6-Trinitrotoluene	118-96-7	440,000		4,900	15,000	250

Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990393
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR1 SDG#: KVM45-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Reporting limits were raised due to interference from the sample matrix.							
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,400		7.58	19.8	1
06944	Antimony	7440-36-0	0.779	J	0.406	1.98	1
06935	Arsenic	7440-38-2	1.06	J	0.574	1.98	1
06946	Barium	7440-39-3	39.8		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.415	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.188	J	0.0426	0.495	1
01650	Calcium	7440-70-2	606		3.30	19.8	1
06951	Chromium	7440-47-3	12.7		0.0970	1.49	1
06952	Cobalt	7440-48-4	5.28		0.0802	0.495	1
06953	Copper	7440-50-8	16.3		0.277	0.990	1
01654	Iron	7439-89-6	20,400		3.30	19.8	1
06955	Lead	7439-92-1	150		0.317	1.49	1
01657	Magnesium	7439-95-4	894		1.65	9.90	1
06958	Manganese	7439-96-5	141		0.0822	0.495	1
06961	Nickel	7440-02-0	9.17		0.228	0.990	1
01662	Potassium	7440-09-7	612		16.6	49.5	1
06936	Selenium	7782-49-2	2.33		0.822	1.98	1
06966	Silver	7440-22-4	0.141	J	0.119	0.495	1
01667	Sodium	7440-23-5	41.2	J	16.5	99.0	1
06925	Thallium	7440-28-0	0.843	J	0.743	2.97	1
06971	Vanadium	7440-62-2	25.5		0.149	0.495	1
06972	Zinc	7440-66-6	29.2		0.762	1.98	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0280	J	0.0098	0.0984	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,920		316	948	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 18:19	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 13:46	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 14:28	James H Place	250

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990393
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR1 SDG#: KVM45-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 11:40	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 08:45	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/05/2015 21:56	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR1

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990393
Sample wt/vol: 30.3 (g/mL) g Lab File ID: oh0386.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.378	630	J
2. 1618-22-0	Naphthalene, decahydro-2,6-d	6.766	620	J
3. 112-40-3	Dodecane	6.919	1100	J
4.	Unknown Alkane	7.190	620	J
5.	Unknown	7.248	730	J
6.	Unknown Alkane	7.313	820	J
7. 2051-30-1	Octane, 2,6-dimethyl-	7.360	1100	J
8.	Unknown	7.490	680	J
9. 629-50-5	Tridecane	7.531	2900	J
10.	Unknown	7.619	700	J
11.	Unknown Alkane	7.801	1200	J
12. 1560-96-9	Tridecane, 2-methyl-	7.884	890	J
13.	Unknown Alkane	7.925	1300	J
14.	Unknown Alkane	7.948	1100	J
15. 629-59-4	Tetradecane	8.089	4000	J
16. 66563-30-2	Bacchotricuneatin c	8.601	2200	J
17.	Unknown	9.536	2700	J
18.	Unknown	9.760	130000	J
19.	Unknown	10.219	3900	J
20. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.683	44000	J
21. 57-10-3	n-Hexadecanoic acid	10.713	11000	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.919	45000	J
23. 60-33-3	9,12-Octadecadienoic acid (Z	11.389	32000	J
24. 1000336-66-8	6-Octadecenoic acid	11.407	9900	J
25. 57-11-4	Octadecanoic acid	11.460	5400	J
26.				
27. SVOCTIC	Total SVOC TICs		310000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990394
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:35 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR2 SDG#: KVM45-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	9	J	3	17	1
10727	Acenaphthylene	208-96-8	13	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	18		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	110	J	66	170	1
10727	Benzo(a)anthracene	56-55-3	150		3	17	1
10727	Benzo(a)pyrene	50-32-8	100		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	150		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	67		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	84		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	150		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	21		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,400		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	930		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	120	J	66	170	1
10727	Fluoranthene	206-44-0	170		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	67		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	8	J	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990394
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:35 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR2 SDG#: KVM45-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	17		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	150	J	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	26	J	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	45		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	130		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	260,000		7,400	20,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	190,000		5,000	15,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.		99	300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		240	300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		99	300	5
06918	HMX	2691-41-0	N.D.		19,000	19,000	5
06918	Nitrobenzene	98-95-3	N.D.		99	300	5
06918	Nitroglycerin	55-63-0	N.D.		2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.		99	300	5
06918	2-Nitrotoluene	88-72-2	N.D.		200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.		250	500	5
06918	4-Nitrotoluene	99-99-0	N.D.		200	400	5
06918	PETN	78-11-5	N.D.		2,000	5,900	5
06918	RDX	121-82-4	N.D.		130	300	5
06918	Tetryl	479-45-8	N.D.		160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	300	5
06918	2,4,6-Trinitrotoluene	118-96-7	360,000		5,000	15,000	250

Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990394
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:35 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR2 SDG#: KVM45-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Reporting limits were raised due to interference from the sample matrix.							
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	11,100		7.66	20.0	1
06944	Antimony	7440-36-0	0.464	J	0.410	2.00	1
06935	Arsenic	7440-38-2	1.66	J	0.580	2.00	1
06946	Barium	7440-39-3	35.1		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.367	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.188	J	0.0430	0.500	1
01650	Calcium	7440-70-2	651		3.33	20.0	1
06951	Chromium	7440-47-3	12.6		0.0980	1.50	1
06952	Cobalt	7440-48-4	4.75		0.0810	0.500	1
06953	Copper	7440-50-8	15.2		0.280	1.00	1
01654	Iron	7439-89-6	18,800		3.33	20.0	1
06955	Lead	7439-92-1	160		0.320	1.50	1
01657	Magnesium	7439-95-4	893		1.67	10.0	1
06958	Manganese	7439-96-5	122		0.0830	0.500	1
06961	Nickel	7440-02-0	8.63		0.230	1.00	1
01662	Potassium	7440-09-7	700		16.8	50.0	1
06936	Selenium	7782-49-2	2.26		0.830	2.00	1
06966	Silver	7440-22-4	N.D.		0.120	0.500	1
01667	Sodium	7440-23-5	50.4	J	16.7	100	1
06925	Thallium	7440-28-0	N.D.		0.750	3.00	1
06971	Vanadium	7440-62-2	25.1		0.150	0.500	1
06972	Zinc	7440-66-6	29.7		0.770	2.00	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0274	J	0.0097	0.0972	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	13,700		579	1,740	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 19:31	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 16:35	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 17:18	James H Place	250

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990394
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:35 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR2 SDG#: KVM45-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 11:43	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 08:47	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/05/2015 22:48	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR2

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990394
Sample wt/vol: 30.15(g/mL) g Lab File ID: oh0389.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.513-85-9	2,3-Butanediol	2.666	8100	J
2.24347-58-8	2,3-Butanediol, [R-(R*,R*)]-	2.878	6700	J
3.1000152-47-3	trans-Decalin, 2-methyl-	6.378	490	J
4.112-40-3	Dodecane	6.919	830	J
5.	Unknown Alkane	7.248	560	J
6.1560-97-0	Dodecane, 2-methyl-	7.313	600	J
7.61141-72-8	Dodecane, 4,6-dimethyl-	7.354	820	J
8.629-50-5	Tridecane	7.531	2000	J
9.	Unknown	7.619	620	J
10.	Unknown Alkane	7.801	770	J
11.629-59-4	Tetradecane	8.084	3000	J
12.629-62-9	Pentadecane	8.601	1700	J
13.	Unknown	9.542	1900	J
14.	Unknown	9.689	50000	J
15.	Unknown	10.213	7400	J
16.19406-51-0	p-Toluidine, 3,5-dinitro-	10.725	64000	J
17.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.983	69000	J
18.59229-75-3	1,3-Benzenediamine, 2-methyl	10.995	3700	J
19.60-33-3	9,12-Octadecadienoic acid (Z	11.454	70000	J
20.112-79-8	9-Octadecenoic acid, (E)-	11.466	17000	J
21.57-11-4	Octadecanoic acid	11.513	9800	J
22.295-17-0	Cyclotetradecane	13.189	1900	J
23.593-49-7	Heptacosane	13.824	1800	J
24.59-02-9	Vitamin E	14.689	1000	J
25.83-47-6	.gamma.-Sitosterol	15.212	2000	J
26.				
27.SVOCTIC	Total SVOC TICs		320000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990395
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR3 SDG#: KVM45-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	8	J	3	17	1
10727	Acenaphthylene	208-96-8	8	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	10	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	88	J	66	170	1
10727	Benzo(a)anthracene	56-55-3	62		3	17	1
10727	Benzo(a)pyrene	50-32-8	45		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	61		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	34		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	37		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	71		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	2,400		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	820		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	91		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	30		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	9	J	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990395
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR3 SDG#: KVM45-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	10	J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	100	J	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	45		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	46		3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	69		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	200,000		7,500	20,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	160,000		5,000	15,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.		100	300	5
06918	1,3-Dinitrobenzene	99-65-0	150	J	100	300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		100	300	5
06918	HMX	2691-41-0	N.D.		250	750	5
06918	Nitrobenzene	98-95-3	N.D.		100	300	5
06918	Nitroglycerin	55-63-0	N.D.		2,000	6,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		100	300	5
06918	2-Nitrotoluene	88-72-2	N.D.		200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.		340	500	5
06918	4-Nitrotoluene	99-99-0	N.D.		340	400	5
06918	PETN	78-11-5	N.D.		2,000	6,000	5
06918	RDX	121-82-4	N.D.		130	300	5
06918	Tetryl	479-45-8	N.D.		160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		100	300	5
06918	2,4,6-Trinitrotoluene	118-96-7	480,000		5,000	15,000	250

Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990395
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR3 SDG#: KVM45-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Reporting limits were raised due to interference from the sample matrix.							
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	11,700		7.37	19.2	1
06944	Antimony	7440-36-0	0.588	J	0.394	1.92	1
06935	Arsenic	7440-38-2	1.49	J	0.558	1.92	1
06946	Barium	7440-39-3	36.7		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.413	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.206	J	0.0413	0.481	1
01650	Calcium	7440-70-2	749		3.20	19.2	1
06951	Chromium	7440-47-3	13.8		0.0942	1.44	1
06952	Cobalt	7440-48-4	5.72		0.0779	0.481	1
06953	Copper	7440-50-8	15.8		0.269	0.962	1
01654	Iron	7439-89-6	21,100		3.20	19.2	1
06955	Lead	7439-92-1	140		0.308	1.44	1
01657	Magnesium	7439-95-4	916		1.61	9.62	1
06958	Manganese	7439-96-5	155		0.0798	0.481	1
06961	Nickel	7440-02-0	9.54		0.221	0.962	1
01662	Potassium	7440-09-7	620		16.2	48.1	1
06936	Selenium	7782-49-2	2.71		0.798	1.92	1
06966	Silver	7440-22-4	0.127	J	0.115	0.481	1
01667	Sodium	7440-23-5	55.1	J	16.1	96.2	1
06925	Thallium	7440-28-0	0.881	J	0.721	2.88	1
06971	Vanadium	7440-62-2	28.8		0.144	0.481	1
06972	Zinc	7440-66-6	29.5		0.740	1.92	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0267	J	0.0098	0.0982	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	11,400		407	1,220	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 19:55	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 18:00	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 18:43	James H Place	250

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990395
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 07:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR3 SDG#: KVM45-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 11:21	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 08:33	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/05/2015 22:56	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR3

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990395
Sample wt/vol: 30.28(g/mL) g Lab File ID: oh0390.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.24347-58-8	2,3-Butanediol, [R-(R*,R*)]-	2.707	8000	J
2.513-85-9	2,3-Butanediol	2.931	5700	J
3.107-92-6	Butanoic acid	4.031	8100	J
4.112-40-3	Dodecane	6.925	850	J
5.	Unknown Alkane	7.313	630	J
6.2051-30-1	Octane, 2,6-dimethyl-	7.360	860	J
7.629-50-5	Tridecane	7.531	2300	J
8.	Unknown	7.619	630	J
9.	Unknown Alkane	7.801	1000	J
10.629-59-4	Tetradecane	8.083	3500	J
11.629-62-9	Pentadecane	8.601	1900	J
12.	Unknown	9.542	1600	J
13.	Unknown	9.695	51000	J
14.	Unknown	10.236	15000	J
15.	Unknown	10.419	1900	J
16.19406-51-0	p-Toluidine, 3,5-dinitro-	10.707	48000	J
17.57-10-3	n-Hexadecanoic acid	10.754	14000	J
18.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.966	37000	J
19.59229-75-3	1,3-Benzenediamine, 2-methyl	10.983	2600	J
20.	Unknown	11.042	1400	J
21.60-33-3	9,12-Octadecadienoic acid (Z	11.454	51000	J
22.57-11-4	Octadecanoic acid	11.513	7100	J
23.60-33-3	9,12-Octadecadienoic acid (Z	11.560	1600	J
24.31208-76-1	5,7-Dinitro-1H-indazole	11.901	1600	J
25.	Unknown	12.154	6100	J
26.				
27.SVOCTIC	Total SVOC TICs		270000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990396
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR4 SDG#: KVM45-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	12	J	3	17	1
10727	Acenaphthylene	208-96-8	13	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	6	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	93	J	66	160	1
10727	Benzo(a)anthracene	56-55-3	58		3	17	1
10727	Benzo(a)pyrene	50-32-8	52		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	72		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	38		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	45		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	65		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	4,200		130	330	2
10727	2,6-Dinitrotoluene	606-20-2	980		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	88		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	32		3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	9	J	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990396
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR4 SDG#: KVM45-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	N.D.	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	11 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	45	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	43	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	64	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	9,900	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,500	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	99	300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	500	500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	99	300	5
06918	HMX	2691-41-0	N.D.	410	740	5
06918	Nitrobenzene	98-95-3	N.D.	99	300	5
06918	Nitroglycerin	55-63-0	N.D.	2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.	99	300	5
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.	250	500	5
06918	4-Nitrotoluene	99-99-0	N.D.	620	620	5
06918	PETN	78-11-5	N.D.	2,000	5,900	5
06918	RDX	121-82-4	N.D.	130	300	5
06918	Tetryl	479-45-8	N.D.	160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	2,500	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,200,000	9,900	30,000	500
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990396
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR4 SDG#: KVM45-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Reporting limits were raised due to interference from the sample matrix.							
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,000		7.58	19.8	1
06944	Antimony	7440-36-0	N.D.		0.406	1.98	1
06935	Arsenic	7440-38-2	2.17		0.574	1.98	1
06946	Barium	7440-39-3	38.5		0.0663	0.495	1
06947	Beryllium	7440-41-7	0.417	J	0.0663	0.495	1
06949	Cadmium	7440-43-9	0.164	J	0.0426	0.495	1
01650	Calcium	7440-70-2	529		3.30	19.8	1
06951	Chromium	7440-47-3	11.0		0.0970	1.49	1
06952	Cobalt	7440-48-4	4.27		0.0802	0.495	1
06953	Copper	7440-50-8	13.0		0.277	0.990	1
01654	Iron	7439-89-6	15,700		3.30	19.8	1
06955	Lead	7439-92-1	147		0.317	1.49	1
01657	Magnesium	7439-95-4	878		1.65	9.90	1
06958	Manganese	7439-96-5	135		0.0822	0.495	1
06961	Nickel	7440-02-0	5.74		0.228	0.990	1
01662	Potassium	7440-09-7	551		16.6	49.5	1
06936	Selenium	7782-49-2	1.94	J	0.822	1.98	1
06966	Silver	7440-22-4	0.141	J	0.119	0.495	1
01667	Sodium	7440-23-5	37.1	J	16.5	99.0	1
06925	Thallium	7440-28-0	1.04	J	0.743	2.97	1
06971	Vanadium	7440-62-2	24.2		0.149	0.495	1
06972	Zinc	7440-66-6	30.8		0.762	1.98	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0290	J	0.010	0.0996	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,320		331	993	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 20:19	Catherine E Bachman	1
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/09/2015 14:59	Linda M Hartenstine	2
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 19:25	James H Place	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990396
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR4 SDG#: KVM45-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/11/2015 20:31	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 11:53	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 08:53	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/05/2015 23:07	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR4

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990396
Sample wt/vol: 30.45(g/mL) g Lab File ID: oh0391.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.378	510	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	6.766	460	J
3.112-40-3	Dodecane	6.919	860	J
4.17301-23-4	Undecane, 2,6-dimethyl-	7.001	400	J
5.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.148	430	J
6.	Unknown Alkane	7.248	520	J
7.	Unknown Alkane	7.313	530	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	7.354	700	J
9.	Unknown	7.484	520	J
10.629-50-5	Tridecane	7.531	2200	J
11.	Unknown	7.584	450	J
12.	Unknown	7.619	530	J
13.	Unknown Alkane	7.801	900	J
14.629-59-4	Tetradecane	8.084	3100	J
15.	Unknown Alkane	8.331	670	J
16.	Unknown Alkane	8.360	850	J
17.629-62-9	Pentadecane	8.601	1800	J
18.	Unknown	9.066	580	J
19.	Unknown	9.813	130000	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	10.642	3400	J
21.57-10-3	n-Hexadecanoic acid	10.666	560	J
22.	Unknown	10.695	580	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.854	5900	J
24.	Unknown	10.977	1600	J
25.1000336-66-8	6-Octadecenoic acid	11.348	2600	J
26.				
27.SVOCTIC	Total SVOC TICs		160000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990397
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR5 SDG#: KVM45-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	18		3	17	1
10727	Acenaphthylene	208-96-8	18		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	10	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	95	J	66	170	1
10727	Benzo(a)anthracene	56-55-3	89		3	17	1
10727	Benzo(a)pyrene	50-32-8	74		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	120		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	46		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	45		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	84		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	15	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	3,700		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	870		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	130		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	46		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	7	J	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990397
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR5 SDG#: KVM45-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	12 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	29 J	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	47	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	110	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000	150	390	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,900	98	290	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	98	290	5
06918	1,3-Dinitrobenzene	99-65-0	470	98	290	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	98	290	5
06918	HMX	2691-41-0	N.D.	250	740	5
06918	Nitrobenzene	98-95-3	N.D.	98	290	5
06918	Nitroglycerin	55-63-0	N.D.	2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.	98	290	5
06918	2-Nitrotoluene	88-72-2	N.D.	200	390	5
06918	3-Nitrotoluene	99-08-1	N.D.	250	490	5
06918	4-Nitrotoluene	99-99-0	N.D.	200	390	5
06918	PETN	78-11-5	N.D.	2,000	5,900	5
06918	RDX	121-82-4	N.D.	130	290	5
06918	Tetryl	479-45-8	N.D.	160	390	5
06918	1,3,5-Trinitrobenzene	99-35-4	2,000	98	290	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,300,000	9,800	29,000	500
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990397
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR5 SDG#: KVM45-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,000		7.66	20.0	1
06944	Antimony	7440-36-0	N.D.		0.410	2.00	1
06935	Arsenic	7440-38-2	2.02		0.580	2.00	1
06946	Barium	7440-39-3	38.6		0.0670	0.500	1
06947	Beryllium	7440-41-7	0.411	J	0.0670	0.500	1
06949	Cadmium	7440-43-9	0.156	J	0.0430	0.500	1
01650	Calcium	7440-70-2	564		3.33	20.0	1
06951	Chromium	7440-47-3	11.4		0.0980	1.50	1
06952	Cobalt	7440-48-4	3.45		0.0810	0.500	1
06953	Copper	7440-50-8	12.0		0.280	1.00	1
01654	Iron	7439-89-6	16,200		3.33	20.0	1
06955	Lead	7439-92-1	132		0.320	1.50	1
01657	Magnesium	7439-95-4	859		1.67	10.0	1
06958	Manganese	7439-96-5	133		0.0830	0.500	1
06961	Nickel	7440-02-0	5.50		0.230	1.00	1
01662	Potassium	7440-09-7	584		16.8	50.0	1
06936	Selenium	7782-49-2	1.38	J	0.830	2.00	1
06966	Silver	7440-22-4	0.176	J	0.120	0.500	1
01667	Sodium	7440-23-5	36.9	J	16.7	100	1
06925	Thallium	7440-28-0	0.948	J	0.750	3.00	1
06971	Vanadium	7440-62-2	28.0		0.150	0.500	1
06972	Zinc	7440-66-6	23.8		0.770	2.00	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0278	J	0.0094	0.0936	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,380		296	888	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 20:43	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 21:33	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/11/2015 21:14	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990397
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:40 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR5 SDG#: KVM45-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 11:56	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 08:55	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/05/2015 23:16	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR5

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990397
Sample wt/vol: 30.26(g/mL) g Lab File ID: oh0392.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.378	540	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	6.766	460	J
3.112-40-3	Dodecane	6.919	890	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.148	470	J
5.	Unknown Alkane	7.189	500	J
6.	Unknown	7.248	560	J
7.	Unknown Alkane	7.313	640	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	7.354	830	J
9.	Unknown	7.489	540	J
10.629-50-5	Tridecane	7.531	2300	J
11.	Unknown	7.584	440	J
12.	Unknown	7.619	530	J
13.	Unknown Alkane	7.801	920	J
14.1560-96-9	Tridecane, 2-methyl-	7.884	720	J
15.629-59-4	Tetradecane	8.084	3200	J
16.	Unknown Alkane	8.331	650	J
17.99-65-0	Benzene, 1,3-dinitro-	8.360	800	J
18.629-62-9	Pentadecane	8.601	1900	J
19.	Unknown	9.536	560	J
20.	Unknown	9.819	86000	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	10.630	2900	J
22.57-10-3	n-Hexadecanoic acid	10.666	460	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.848	6000	J
24.	Unknown	10.972	1500	J
25.1000336-66-8	6-Octadecenoic acid	11.342	1700	J
26.				
27.SVOCTIC	Total SVOC TICs		120000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990398
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:45 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR6 SDG#: KVM45-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	12	J	3	17	1
10727	Acenaphthylene	208-96-8	7	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	5	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	71	J	66	170	1
10727	Benzo(a)anthracene	56-55-3	35		3	17	1
10727	Benzo(a)pyrene	50-32-8	35		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	53		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	24		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	23		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	42		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	8	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	3,400		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	840		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	66		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	22		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990398
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:45 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR6 SDG#: KVM45-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	6 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	31 J	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	31	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	50	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000	150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,400	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	99	300	5
06918	1,3-Dinitrobenzene	99-65-0	160 J	99	300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	99	300	5
06918	HMX	2691-41-0	N.D.	250	740	5
06918	Nitrobenzene	98-95-3	N.D.	99	300	5
06918	Nitroglycerin	55-63-0	N.D.	2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.	99	300	5
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.	250	500	5
06918	4-Nitrotoluene	99-99-0	N.D.	200	400	5
06918	PETN	78-11-5	N.D.	2,000	5,900	5
06918	RDX	121-82-4	N.D.	130	300	5
06918	Tetryl	479-45-8	N.D.	160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	2,500	99	300	5
06918	2,4,6-Trinitrotoluene	118-96-7	950,000	5,000	15,000	250

Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990398
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:45 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR6 SDG#: KVM45-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,800		7.37	19.2	1
06944	Antimony	7440-36-0	0.399	J	0.394	1.92	1
06935	Arsenic	7440-38-2	2.30		0.558	1.92	1
06946	Barium	7440-39-3	40.5		0.0644	0.481	1
06947	Beryllium	7440-41-7	0.442	J	0.0644	0.481	1
06949	Cadmium	7440-43-9	0.158	J	0.0413	0.481	1
01650	Calcium	7440-70-2	642		3.20	19.2	1
06951	Chromium	7440-47-3	11.1		0.0942	1.44	1
06952	Cobalt	7440-48-4	3.47		0.0779	0.481	1
06953	Copper	7440-50-8	13.0		0.269	0.962	1
01654	Iron	7439-89-6	15,800		3.20	19.2	1
06955	Lead	7439-92-1	152		0.308	1.44	1
01657	Magnesium	7439-95-4	912		1.61	9.62	1
06958	Manganese	7439-96-5	129		0.0798	0.481	1
06961	Nickel	7440-02-0	5.85		0.221	0.962	1
01662	Potassium	7440-09-7	597		16.2	48.1	1
06936	Selenium	7782-49-2	1.75	J	0.798	1.92	1
06966	Silver	7440-22-4	0.159	J	0.115	0.481	1
01667	Sodium	7440-23-5	44.1	J	16.1	96.2	1
06925	Thallium	7440-28-0	0.749	J	0.721	2.88	1
06971	Vanadium	7440-62-2	23.8		0.144	0.481	1
06972	Zinc	7440-66-6	25.9		0.740	1.92	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0262	J	0.0096	0.0956	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,810		431	1,290	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 21:07	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 22:58	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/07/2015 23:40	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990398
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:45 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR6 SDG#: KVM45-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 11:59	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 08:57	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/05/2015 23:23	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR6

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990398
Sample wt/vol: 30.16(g/mL) g Lab File ID: oh0393.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.578	1700	J
2.	2958-76-1	Naphthalene, decahydro-2-met	6.378	510	J
3.	1618-22-0	Naphthalene, decahydro-2,6-d	6.766	390	J
4.	112-40-3	Dodecane	6.919	820	J
5.	17301-23-4	Undecane, 2,6-dimethyl-	7.001	320	J
6.	66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.148	360	J
7.		Unknown Alkane	7.248	460	J
8.		Unknown Alkane	7.313	380	J
9.	61141-72-8	Dodecane, 4,6-dimethyl-	7.354	690	J
10.		Unknown	7.489	360	J
11.	629-50-5	Tridecane	7.531	1900	J
12.		Unknown	7.619	400	J
13.		Unknown	7.801	920	J
14.	1560-96-9	Tridecane, 2-methyl-	7.883	690	J
15.	629-59-4	Tetradecane	8.083	4100	J
16.	629-62-9	Pentadecane	8.595	2300	J
17.		Unknown	9.542	1200	J
18.		Unknown	9.813	220000	J
19.		Unknown	10.407	630	J
20.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.642	5100	J
21.		Unknown	10.695	830	J
22.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.854	5100	J
23.		Unknown	10.977	1500	J
24.	1000336-66-8	6-Octadecenoic acid	11.342	1500	J
25.	74685-29-3	9-Eicosene, (E)-	13.189	960	J
26.					
27.	SVOCTIC	Total SVOC TICs		250000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990399
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:50 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR7 SDG#: KVM45-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	19		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	12	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	96	J	66	170	1
10727	Benzo(a)anthracene	56-55-3	78		3	17	1
10727	Benzo(a)pyrene	50-32-8	55		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	89		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	42		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	47		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	84		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	16	J	3	17	1
10727	Dibenzofuran	132-64-9	17	J	17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,300		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	420		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	130		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	40		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990399
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:50 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR7 SDG#: KVM45-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	28	J	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	11	J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	110	J	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	54		3	17	1
10727	Phenol	108-95-2	170		17	33	1
10727	Pyrene	129-00-0	92		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	14,000		150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,500		100	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		100	300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		100	300	5
06918	1,4-Dinitrobenzene	100-25-4	180	J	100	300	5
06918	HMX	2691-41-0	N.D.		250	750	5
06918	Nitrobenzene	98-95-3	N.D.		100	300	5
06918	Nitroglycerin	55-63-0	N.D.		2,000	6,000	5
06918	1-Nitronaphthalene	86-57-7	150	J	100	300	5
06918	2-Nitrotoluene	88-72-2	N.D.		200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.		720	720	5
06918	4-Nitrotoluene	99-99-0	N.D.		720	720	5
06918	PETN	78-11-5	N.D.		2,000	6,000	5
06918	RDX	121-82-4	N.D.		1,500	1,500	5
06918	Tetryl	479-45-8	N.D.		160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		100	300	5
06918	2,4,6-Trinitrotoluene	118-96-7	51,000		5,000	15,000	250
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990399
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:50 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR7 SDG#: KVM45-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Reporting limits were raised due to interference from the sample matrix.							
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,600		7.44	19.4	1
06944	Antimony	7440-36-0	0.575	J	0.398	1.94	1
06935	Arsenic	7440-38-2	0.953	J	0.563	1.94	1
06946	Barium	7440-39-3	36.7		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.364	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.196	J	0.0417	0.485	1
01650	Calcium	7440-70-2	899		3.23	19.4	1
06951	Chromium	7440-47-3	14.4		0.0951	1.46	1
06952	Cobalt	7440-48-4	7.34		0.0786	0.485	1
06953	Copper	7440-50-8	20.5		0.272	0.971	1
01654	Iron	7439-89-6	25,600		3.23	19.4	1
06955	Lead	7439-92-1	146		0.311	1.46	1
01657	Magnesium	7439-95-4	838		1.62	9.71	1
06958	Manganese	7439-96-5	137		0.0806	0.485	1
06961	Nickel	7440-02-0	13.7		0.223	0.971	1
01662	Potassium	7440-09-7	730		16.3	48.5	1
06936	Selenium	7782-49-2	3.07		0.806	1.94	1
06966	Silver	7440-22-4	0.150	J	0.117	0.485	1
01667	Sodium	7440-23-5	51.5	J	16.2	97.1	1
06925	Thallium	7440-28-0	0.809	J	0.728	2.91	1
06971	Vanadium	7440-62-2	25.8		0.146	0.485	1
06972	Zinc	7440-66-6	37.5		0.748	1.94	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0258	J	0.0095	0.0945	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,000		442	1,330	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 21:31	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 00:22	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 01:05	James H Place	250

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990399
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 09:50 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR7 SDG#: KVM45-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 12:02	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 08:59	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/06/2015 00:09	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR7

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990399
Sample wt/vol: 30.12(g/mL) g Lab File ID: oh0394.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	1.613	5200	J
2.	24347-58-8	2,3-Butanediol, [R-(R*,R*)]-	3.043	22000	J
3.	513-85-9	2,3-Butanediol	3.325	14000	J
4.	1000152-47-3	trans-Decalin, 2-methyl-	6.378	710	J
5.	112-40-3	Dodecane	6.925	1100	J
6.	61141-72-8	Dodecane, 4,6-dimethyl-	7.360	990	J
7.	629-50-5	Tridecane	7.536	2800	J
8.		Unknown Alkane	7.807	1700	J
9.		Unknown	7.925	1900	J
10.	66563-30-2	Bacchotricuneatin c	7.948	2600	J
11.	629-59-4	Tetradecane	8.089	7300	J
12.	629-62-9	Pentadecane	8.601	3800	J
13.		Unknown	9.648	38000	J
14.		Unknown	10.207	8800	J
15.		Unknown	10.577	10000	J
16.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.625	11000	J
17.	57-10-3	n-Hexadecanoic acid	10.801	45000	J
18.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.866	12000	J
19.	112-79-8	9-Octadecenoic acid, (E)-	11.548	120000	J
20.	57-11-4	Octadecanoic acid	11.583	13000	J
21.	56554-35-9	9,17-Octadecadienal, (Z)-	11.613	2000	J
22.	60-33-3	9,12-Octadecadienoic acid (Z	12.042	6200	J
23.		Unknown	12.107	7400	J
24.		Unknown	12.171	4500	J
25.	83-46-5	.beta.-Sitosterol	15.224	4500	J
26.					
27.	SVOCTIC	Total SVOC TICs		350000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990400
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:00 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR8 SDG#: KVM45-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	10	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	11	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	76	J	66	160	1
10727	Benzo(a)anthracene	56-55-3	59		3	17	1
10727	Benzo(a)pyrene	50-32-8	39		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	68		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	30		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	38		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	68		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,300		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	510		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	100		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	28		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990400
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:00 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR8 SDG#: KVM45-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	9 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	49	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	69	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	160,000	7,400	20,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	89,000	5,000	15,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.	99	300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	99	300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	99	300	5
06918	HMX	2691-41-0	N.D.	250	740	5
06918	Nitrobenzene	98-95-3	N.D.	99	300	5
06918	Nitroglycerin	55-63-0	N.D.	2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.	99	300	5
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.	250	500	5
06918	4-Nitrotoluene	99-99-0	N.D.	200	400	5
06918	PETN	78-11-5	N.D.	2,000	5,900	5
06918	RDX	121-82-4	N.D.	130	300	5
06918	Tetryl	479-45-8	N.D.	160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	99	300	5
06918	2,4,6-Trinitrotoluene	118-96-7	67,000	5,000	15,000	250
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990400
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:00 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR8 SDG#: KVM45-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	9,390		7.51	19.6	1
06944	Antimony	7440-36-0	0.453	J	0.402	1.96	1
06935	Arsenic	7440-38-2	1.28	J	0.569	1.96	1
06946	Barium	7440-39-3	33.1		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.318	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.173	J	0.0422	0.490	1
01650	Calcium	7440-70-2	889		3.26	19.6	1
06951	Chromium	7440-47-3	13.4		0.0961	1.47	1
06952	Cobalt	7440-48-4	6.42		0.0794	0.490	1
06953	Copper	7440-50-8	16.1		0.275	0.980	1
01654	Iron	7439-89-6	23,000		3.26	19.6	1
06955	Lead	7439-92-1	140		0.314	1.47	1
01657	Magnesium	7439-95-4	726		1.64	9.80	1
06958	Manganese	7439-96-5	126		0.0814	0.490	1
06961	Nickel	7440-02-0	11.1		0.225	0.980	1
01662	Potassium	7440-09-7	658		16.5	49.0	1
06936	Selenium	7782-49-2	2.48		0.814	1.96	1
06966	Silver	7440-22-4	0.160	J	0.118	0.490	1
01667	Sodium	7440-23-5	47.8	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	25.6		0.147	0.490	1
06972	Zinc	7440-66-6	31.2		0.755	1.96	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0242	J	0.0097	0.0974	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	11,800		485	1,460	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 21:55	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 01:47	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 02:30	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990400
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:00 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR8 SDG#: KVM45-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 12:05	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 09:01	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/06/2015 00:52	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASHR8

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990400
Sample wt/vol: 30.31(g/mL) g Lab File ID: oh0395.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	1.613	4500	J
2.	513-85-9	2,3-Butanediol	2.760	4100	J
3.		Unknown	2.878	7900	J
4.		Unknown	3.225	10000	J
5.		Unknown	4.172	5700	J
6.	1000152-47-3	trans-Decalin, 2-methyl-	6.383	480	J
7.	112-40-3	Dodecane	6.925	760	J
8.	66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.148	450	J
9.		Unknown Cycloalkane	7.189	380	J
10.		Unknown	7.248	440	J
11.		Unknown Alkane	7.360	780	J
12.		Unknown	7.624	410	J
13.		Unknown Cycloalkane	7.807	2100	J
14.	629-59-4	Tetradecane	8.089	7100	J
15.		Unknown	10.218	32000	J
16.	57-10-3	n-Hexadecanoic acid	10.765	54000	J
17.		Unknown Aromatic	10.930	49000	J
18.	59229-75-3	1,3-Benzenediamine, 2-methyl	10.960	11000	J
19.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.024	3400	J
20.	60-33-3	9,12-Octadecadienoic acid (Z	11.477	170000	J
21.	57-11-4	Octadecanoic acid	11.536	22000	J
22.		Unknown	11.636	3900	J
23.		Unknown	11.918	4300	J
24.	112-95-8	Eicosane	14.442	2800	J
25.	83-47-6	.gamma.-Sitosterol	15.224	3600	J
26.					
27.	SVOCTIC	Total SVOC TICs		400000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990401
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:10 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR9 SDG#: KVM45-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	12	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	11	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	75		3	17	1
10727	Benzo(a)pyrene	50-32-8	58		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	93		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	41		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	37		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	78		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	1,800		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	700		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	110		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990401
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:10 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR9 SDG#: KVM45-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	10 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	44	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	80	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	240,000	7,300	19,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	130,000	4,900	15,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.	97	290	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	190	290	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	380	380	5
06918	HMX	2691-41-0	N.D.	240	730	5
06918	Nitrobenzene	98-95-3	N.D.	97	290	5
06918	Nitroglycerin	55-63-0	N.D.	1,900	5,800	5
06918	1-Nitronaphthalene	86-57-7	N.D.	97	290	5
06918	2-Nitrotoluene	88-72-2	N.D.	190	390	5
06918	3-Nitrotoluene	99-08-1	N.D.	240	490	5
06918	4-Nitrotoluene	99-99-0	N.D.	190	390	5
06918	PETN	78-11-5	N.D.	1,900	5,800	5
06918	RDX	121-82-4	N.D.	130	290	5
06918	Tetryl	479-45-8	N.D.	160	390	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	97	290	5
06918	2,4,6-Trinitrotoluene	118-96-7	120,000	4,900	15,000	250
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990401
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:10 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR9 SDG#: KVM45-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Reporting limits were raised due to interference from the sample matrix.							
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,200		7.44	19.4	1
06944	Antimony	7440-36-0	0.687	J	0.398	1.94	1
06935	Arsenic	7440-38-2	1.59	J	0.563	1.94	1
06946	Barium	7440-39-3	33.6		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.350	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.195	J	0.0417	0.485	1
01650	Calcium	7440-70-2	981		3.23	19.4	1
06951	Chromium	7440-47-3	11.2		0.0951	1.46	1
06952	Cobalt	7440-48-4	4.53		0.0786	0.485	1
06953	Copper	7440-50-8	14.1		0.272	0.971	1
01654	Iron	7439-89-6	17,800		3.23	19.4	1
06955	Lead	7439-92-1	159		0.311	1.46	1
01657	Magnesium	7439-95-4	773		1.62	9.71	1
06958	Manganese	7439-96-5	119		0.0806	0.485	1
06961	Nickel	7440-02-0	7.70		0.223	0.971	1
01662	Potassium	7440-09-7	630		16.3	48.5	1
06936	Selenium	7782-49-2	2.26		0.806	1.94	1
06966	Silver	7440-22-4	0.135	J	0.117	0.485	1
01667	Sodium	7440-23-5	43.7	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	24.3		0.146	0.485	1
06972	Zinc	7440-66-6	29.6		0.748	1.94	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0258	J	0.0097	0.0972	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,200		419	1,260	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 22:19	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 03:12	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 03:55	James H Place	250

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990401
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:10 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASHR9 SDG#: KVM45-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 12:08	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 09:03	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/06/2015 01:05	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
ASHR9

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990401
Sample wt/vol: 30.08(g/mL) g Lab File ID: oh0396.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.513-85-9	2,3-Butanediol	2.743	9600	J
2.	Unknown	3.007	11000	J
3.112-40-3	Dodecane	6.925	660	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.148	640	J
5.	Unknown Cycloalkane	7.190	500	J
6.	Unknown	7.248	590	J
7.	Unknown Alkane	7.313	610	J
8.	Unknown	7.360	1100	J
9.	Unknown	7.489	520	J
10.629-50-5	Tridecane	7.537	1800	J
11.	Unknown	7.589	540	J
12.	Unknown	7.625	590	J
13.	Unknown Alkane	7.807	1200	J
14.1560-96-9	Tridecane, 2-methyl-	7.889	740	J
15.	Unknown Alkane	7.925	860	J
16.3178-23-2	Cyclohexane, 1,1'-methyleneb	8.013	980	J
17.629-59-4	Tetradecane	8.089	2300	J
18.	Unknown Alkane	8.131	1100	J
19.629-62-9	Pentadecane	8.601	1200	J
20.	Unknown Aromatic	9.695	72000	J
21.	Unknown	10.248	29000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	10.730	100000	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.960	450	J
24.				
25.SVOCTIC	Total SVOC TICs		240000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990402
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:20 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH10 SDG#: KVM45-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	10	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	9	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	150	J	66	170	1
10727	Benzo(a)anthracene	56-55-3	57		3	17	1
10727	Benzo(a)pyrene	50-32-8	49		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	82		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	33		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	43		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	73		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	11	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	3,800		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	110		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	35		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990402
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:20 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH10 SDG#: KVM45-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	14 J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	45	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	75	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000	7,400	20,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	16,000	99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	99	300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	340	340	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	99	300	5
06918	HMX	2691-41-0	N.D.	250	740	5
06918	Nitrobenzene	98-95-3	N.D.	99	300	5
06918	Nitroglycerin	55-63-0	N.D.	2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.	99	300	5
06918	2-Nitrotoluene	88-72-2	N.D.	200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.	610	610	5
06918	4-Nitrotoluene	99-99-0	N.D.	610	610	5
06918	PETN	78-11-5	N.D.	2,000	5,900	5
06918	RDX	121-82-4	N.D.	130	300	5
06918	Tetryl	479-45-8	N.D.	160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	3,000	99	300	5
06918	2,4,6-Trinitrotoluene	118-96-7	980,000	9,900	30,000	500
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990402
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:20 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH10 SDG#: KVM45-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Reporting limits were raised due to interference from the sample matrix.							
Metals		**SW-846 6010B**	**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,400		7.51	19.6	1
06944	Antimony	7440-36-0	N.D.		0.402	1.96	1
06935	Arsenic	7440-38-2	1.92	J	0.569	1.96	1
06946	Barium	7440-39-3	34.3		0.0657	0.490	1
06947	Beryllium	7440-41-7	0.345	J	0.0657	0.490	1
06949	Cadmium	7440-43-9	0.186	J	0.0422	0.490	1
01650	Calcium	7440-70-2	1,770		3.26	19.6	1
06951	Chromium	7440-47-3	10.4		0.0961	1.47	1
06952	Cobalt	7440-48-4	3.04		0.0794	0.490	1
06953	Copper	7440-50-8	10.8		0.275	0.980	1
01654	Iron	7439-89-6	12,800		3.26	19.6	1
06955	Lead	7439-92-1	150		0.314	1.47	1
01657	Magnesium	7439-95-4	781		1.64	9.80	1
06958	Manganese	7439-96-5	104		0.0814	0.490	1
06961	Nickel	7440-02-0	4.93		0.225	0.980	1
01662	Potassium	7440-09-7	573		16.5	49.0	1
06936	Selenium	7782-49-2	1.49	J	0.814	1.96	1
06966	Silver	7440-22-4	0.120	J	0.118	0.490	1
01667	Sodium	7440-23-5	58.1	J	16.4	98.0	1
06925	Thallium	7440-28-0	N.D.		0.735	2.94	1
06971	Vanadium	7440-62-2	21.7		0.147	0.490	1
06972	Zinc	7440-66-6	21.2		0.755	1.96	1
		SW-846 7471A	**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0286	J	0.0098	0.0979	1
Wet Chemistry		**Lloyd Kahn modified**	**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,930		428	1,280	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 22:43	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 05:20	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 06:02	James H Place	250

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990402
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:20 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH10 SDG#: KVM45-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/11/2015 21:56	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 12:11	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 09:05	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531A	08/06/2015 01:15	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASH10

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990402
Sample wt/vol: 30.22(g/mL) g Lab File ID: oh0397.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.384	510	J
2.	Unknown	6.495	350	J
3.	Unknown	6.772	390	J
4.112-40-3	Dodecane	6.931	790	J
5.17301-23-4	Undecane, 2,6-dimethyl-	7.007	320	J
6.58462-32-1	trans,trans-3-Ethylbicyclo[4	7.154	440	J
7.	Unknown Cycloalkane	7.195	390	J
8.	Unknown	7.254	430	J
9.	Unknown Alkane	7.319	360	J
10.	Unknown Alkane	7.366	650	J
11.	Unknown	7.495	310	J
12.629-50-5	Tridecane	7.542	1700	J
13.	Unknown Alkane	7.625	380	J
14.	Unknown Cycloalkane	7.807	2500	J
15.	Unknown Alkane	7.890	1500	J
16.629-59-4	Tetradecane	8.095	8000	J
17.	Unknown Alkane	8.401	3000	J
18.629-62-9	Pentadecane	8.607	4200	J
19.629-59-4	Tetradecane	9.089	2000	J
20.	Unknown	9.825	310000	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	10.678	21000	J
22.618-87-1	Benzenamine, 3,5-dinitro-	10.719	2300	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.883	7500	J
24.	Unknown	10.995	1200	J
25.593-39-5	6-Octadecenoic acid, (Z)-	11.366	2800	J
26.				
27.SVOCTIC	Total SVOC TICs		370000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990403
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH11 SDG#: KVM45-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	14	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	9	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	140	J	66	160	1
10727	Benzo(a)anthracene	56-55-3	53		3	17	1
10727	Benzo(a)pyrene	50-32-8	41		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	75		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	30		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	38		3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	66		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	3,600		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	1,000		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	100		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	33		3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990403
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH11 SDG#: KVM45-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		16	33	1
10727	4-Methylphenol	106-44-5	N.D.		16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	16	J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		16	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	160	1
10727	4-Nitroaniline	100-01-6	N.D.		66	160	1
10727	Nitrobenzene	98-95-3	N.D.		16	33	1
10727	2-Nitrophenol	88-75-5	N.D.		16	33	1
10727	4-Nitrophenol	100-02-7	N.D.		160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	160	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	42		3	17	1
10727	Phenol	108-95-2	N.D.		16	33	1
10727	Pyrene	129-00-0	74		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		16	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000		150	400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,800		99	300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		99	300	5
06918	1,3-Dinitrobenzene	99-65-0	440		99	300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		99	300	5
06918	HMX	2691-41-0	N.D.		250	740	5
06918	Nitrobenzene	98-95-3	N.D.		99	300	5
06918	Nitroglycerin	55-63-0	N.D.		2,000	5,900	5
06918	1-Nitronaphthalene	86-57-7	N.D.		99	300	5
06918	2-Nitrotoluene	88-72-2	N.D.		200	400	5
06918	3-Nitrotoluene	99-08-1	N.D.		250	500	5
06918	4-Nitrotoluene	99-99-0	N.D.		200	400	5
06918	PETN	78-11-5	N.D.		2,000	5,900	5
06918	RDX	121-82-4	N.D.		130	300	5
06918	Tetryl	479-45-8	N.D.		160	400	5
06918	1,3,5-Trinitrobenzene	99-35-4	2,300		99	300	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,200,000		9,900	30,000	500
	Accurate surrogate recoveries could not be determined due to the dilution required for analysis of the sample.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990403
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH11 SDG#: KVM45-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,600		7.44	19.4	1
06944	Antimony	7440-36-0	0.541	J	0.398	1.94	1
06935	Arsenic	7440-38-2	1.90	J	0.563	1.94	1
06946	Barium	7440-39-3	34.6		0.0650	0.485	1
06947	Beryllium	7440-41-7	0.350	J	0.0650	0.485	1
06949	Cadmium	7440-43-9	0.159	J	0.0417	0.485	1
01650	Calcium	7440-70-2	868		3.23	19.4	1
06951	Chromium	7440-47-3	9.18		0.0951	1.46	1
06952	Cobalt	7440-48-4	3.11		0.0786	0.485	1
06953	Copper	7440-50-8	11.7		0.272	0.971	1
01654	Iron	7439-89-6	12,900		3.23	19.4	1
06955	Lead	7439-92-1	143		0.311	1.46	1
01657	Magnesium	7439-95-4	761		1.62	9.71	1
06958	Manganese	7439-96-5	111		0.0806	0.485	1
06961	Nickel	7440-02-0	5.29		0.223	0.971	1
01662	Potassium	7440-09-7	505		16.3	48.5	1
06936	Selenium	7782-49-2	1.35	J	0.806	1.94	1
06966	Silver	7440-22-4	N.D.		0.117	0.485	1
01667	Sodium	7440-23-5	34.9	J	16.2	97.1	1
06925	Thallium	7440-28-0	N.D.		0.728	2.91	1
06971	Vanadium	7440-62-2	19.9		0.146	0.485	1
06972	Zinc	7440-66-6	23.7		0.748	1.94	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0264	J	0.0096	0.0962	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,840		350	1,050	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15217SLB026	08/07/2015 23:07	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15217SLB026	08/05/2015 14:30	Kelli M Barto	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/08/2015 06:45	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152160023A	08/11/2015 22:39	James H Place	500
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152160023A	08/04/2015 16:00	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-08032015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 7990403
LL Group # 1581570
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/03/2015 10:30 by SM

Submitted: 08/03/2015 18:45
Reported: 08/13/2015 15:05

Ashland Specialty Ingredients
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ASH11 SDG#: KVM45-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152195708003	08/10/2015 12:14	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152195711001	08/10/2015 09:07	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152195708003	08/09/2015 21:59	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152195711001	08/10/2015 02:20	Annamaria Kuhns	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15217049531B	08/06/2015 01:25	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ASH11

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 7990403
Sample wt/vol: 30.4 (g/mL) g Lab File ID: oh0398.d
Level: (low/med) LOW Date Received: 08/03/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 08/05/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.384	480	J
2.	Unknown	6.772	380	J
3.112-40-3	Dodecane	6.925	740	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.154	440	J
5.	Unknown Cycloalkane	7.195	380	J
6.	Unknown Alkane	7.254	460	J
7.	Unknown Alkane	7.319	480	J
8.66563-30-2	Bacchotricuneatin c	7.360	720	J
9.	Unknown	7.495	420	J
10.629-50-5	Tridecane	7.537	2000	J
11.	Unknown Alkane	7.590	360	J
12.	Unknown	7.625	450	J
13.	Unknown Cycloalkane	7.807	2400	J
14.	Unknown Alkane	7.890	1400	J
15.	Unknown Alkane	7.925	1700	J
16.629-59-4	Tetradecane	8.095	7000	J
17.	Unknown Alkane	8.337	1300	J
18.	Unknown Cycloalkane	8.366	1400	J
19.629-62-9	Pentadecane	8.607	3400	J
20.	Unknown Alkane	9.084	1700	J
21.	Unknown Aromatic	9.866	250000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	10.660	9900	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.872	14000	J
24.	Unknown	10.989	3200	J
25.1000336-66-8	6-Octadecenoic acid	11.360	5200	J
26.				
27.SVOCTIC	Total SVOC TICs		310000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1581570
Reported: 08/13/2015 15:05

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15217SLB026	Sample number(s): 7990393-7990403								
Acenaphthene	N.D.	3.	17	ug/kg	98		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	96		83-127		
Acetophenone	N.D.	17.	33	ug/kg	88		74-116		
Anthracene	N.D.	3.	17	ug/kg	101		82-118		
Atrazine	N.D.	33.	170	ug/kg	125		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	22		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	95		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	95		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	97		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	93		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	102		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	84		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	103		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	92		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	101		84-120		
Caprolactam	N.D.	33.	170	ug/kg	97		71-129		
Carbazole	N.D.	17.	33	ug/kg	97		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	110		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	52		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	94		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	96		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	79		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	104		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	105		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	91		63-126		
Chrysene	N.D.	3.	17	ug/kg	99		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	94		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	98		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	56		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	108		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	101		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	100		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	100		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	104		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	99		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	110		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	111		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	91		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	104		81-117		
Fluorene	N.D.	3.	17	ug/kg	105		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	97		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	100		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	78		68-145		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1581570
Reported: 08/13/2015 15:05

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachloroethane	N.D.	33.	170	ug/kg	92		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	90		81-118		
Isophorone	N.D.	17.	33	ug/kg	96		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	97		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	109		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	101		75-119		
Naphthalene	N.D.	3.	17	ug/kg	96		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	107		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	103		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	80		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	94		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	106		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	74		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	95		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	99		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	102		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	100		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	97		80-114		
Phenol	N.D.	17.	33	ug/kg	99		73-122		
Pyrene	N.D.	3.	17	ug/kg	95		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	104		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	106		81-123		
Batch number: 152160023A	Sample number(s): 7990393-7990403								
4-Amino-2,6-Dinitrotoluene	N.D.	30.	80	ug/kg	108		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	20.	60	ug/kg	93		79-120		
1,2-Dinitrobenzene	N.D.	20.	60	ug/kg	120		94-129		
1,3-Dinitrobenzene	N.D.	20.	60	ug/kg	101		94-124		
1,4-Dinitrobenzene	N.D.	20.	60	ug/kg	97		83-122		
HMX	N.D.	50.	150	ug/kg	91		65-121		
Nitrobenzene	N.D.	20.	60	ug/kg	109		81-116		
Nitroglycerin	N.D.	400.	1,200	ug/kg	86		70-118		
1-Nitronaphthalene	N.D.	20.	60	ug/kg	108		83-122		
2-Nitrotoluene	N.D.	40.	80	ug/kg	94		86-113		
3-Nitrotoluene	N.D.	50.	100	ug/kg	107		85-135		
4-Nitrotoluene	N.D.	40.	80	ug/kg	109		80-122		
PETN	N.D.	400.	1,200	ug/kg	99		64-121		
RDX	N.D.	26.	60	ug/kg	101		84-122		
Tetryl	N.D.	32.	80	ug/kg	103		67-152		
1,3,5-Trinitrobenzene	N.D.	20.	60	ug/kg	99		83-119		
2,4,6-Trinitrotoluene	N.D.	20.	60	ug/kg	93		82-133		
Batch number: 152195708003	Sample number(s): 7990393-7990403								
Aluminum	N.D.	7.66	20.0	mg/kg	96		80-120		
Antimony	N.D.	0.410	2.00	mg/kg	104		80-120		
Arsenic	N.D.	0.580	2.00	mg/kg	102		80-120		
Barium	N.D.	0.0670	0.500	mg/kg	101		80-120		
Beryllium	N.D.	0.0670	0.500	mg/kg	102		80-120		
Cadmium	0.0550 J	0.0430	0.500	mg/kg	104		80-120		
Calcium	N.D.	3.33	20.0	mg/kg	99		80-120		
Chromium	N.D.	0.0980	1.50	mg/kg	101		80-120		
Cobalt	N.D.	0.0810	0.500	mg/kg	104		80-120		
Copper	N.D.	0.280	1.00	mg/kg	103		80-120		
Iron	N.D.	3.33	20.0	mg/kg	101		80-120		
Lead	N.D.	0.320	1.50	mg/kg	103		80-120		
Magnesium	N.D.	1.67	10.0	mg/kg	98		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1581570
Reported: 08/13/2015 15:05

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Manganese	N.D.	0.0830	0.500	mg/kg	102		80-120		
Nickel	N.D.	0.230	1.00	mg/kg	105		80-120		
Potassium	N.D.	16.8	50.0	mg/kg	96		80-120		
Selenium	N.D.	0.830	2.00	mg/kg	104		80-120		
Silver	N.D.	0.120	0.500	mg/kg	106		80-120		
Sodium	N.D.	16.7	100	mg/kg	97		80-120		
Thallium	N.D.	0.750	3.00	mg/kg	115		80-120		
Vanadium	N.D.	0.150	0.500	mg/kg	104		80-120		
Zinc	N.D.	0.770	2.00	mg/kg	102		80-120		
Batch number: 152195711001	Sample number(s): 7990393-7990403								
Mercury	N.D.	0.0100	0.100	mg/kg	107		80-120		
Batch number: 15217049531A	Sample number(s): 7990393-7990402								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	137		47-143		
Batch number: 15217049531B	Sample number(s): 7990403								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	137		47-143		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15217SLB026	Sample number(s): 7990393-7990403 UNSPK: 7990393								
Acenaphthene	77*	83	83-116	8	30				
Acenaphthylene	77*	84	83-127	8	30				
Acetophenone	79	84	74-116	6	30				
Anthracene	87	92	82-118	5	30				
Atrazine	73	89	63-148	20	30				
Benzaldehyde	38	35	10-69	7	30				
Benzo(a)anthracene	98	99	76-119	1	30				
Benzo(a)pyrene	83*	89	85-117	6	30				
Benzo(b)fluoranthene	96	89	78-129	7	30				
Benzo(g,h,i)perylene	89	91	82-119	3	30				
Benzo(k)fluoranthene	79	96	79-120	19	30				
1,1'-Biphenyl	73*	77*	80-116	5	30				
4-Bromophenyl-phenylether	90	95	84-120	5	30				
Butylbenzylphthalate	99	103	80-118	4	30				
Di-n-butylphthalate	82*	98	84-120	17	30				
Caprolactam	20*	19*	71-129	6	30				
Carbazole	77*	83	78-117	7	30				
4-Chloro-3-methylphenol	100	104	79-127	4	30				
4-Chloroaniline	0*	0*	10-103	0	30				
bis(2-Chloroethoxy)methane	88	92	77-116	4	30				
bis(2-Chloroethyl)ether	85	95	77-115	12	30				
2-Chloronaphthalene	74	82	63-146	11	30				
2-Chlorophenol	92	98	85-123	7	30				
4-Chlorophenyl-phenylether	86	92	81-120	7	30				
2,2'-oxybis(1-Chloropropane)	81	87	63-126	6	30				
Chrysene	98	103	80-121	4	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1581570
Reported: 08/13/2015 15:05

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Dibenz(a,h)anthracene	92	96	81-123	5	30				
Dibenzofuran	82*	87	85-115	6	30				
3,3'-Dichlorobenzidine	0*	14	10-104	200*	30				
2,4-Dichlorophenol	93	97	81-123	4	30				
Diethylphthalate	77*	83	81-118	7	30				
2,4-Dimethylphenol	87	91	83-120	4	30				
Dimethylphthalate	78*	84	82-113	8	30				
4,6-Dinitro-2-methylphenol	98	102	59-131	4	30				
2,4-Dinitrophenol	76	78	27-140	2	30				
2,4-Dinitrotoluene	92	74*	81-122	7	30				
2,6-Dinitrotoluene	84	78*	83-120	4	30				
bis(2-Ethylhexyl)phthalate	98	102	81-121	4	30				
Fluoranthene	87	89	81-117	2	30				
Fluorene	83*	89	86-118	7	30				
Hexachlorobenzene	83	87	75-123	5	30				
Hexachlorobutadiene	97	101	72-120	3	30				
Hexachlorocyclopentadiene	0*	0*	68-145	0	30				
Hexachloroethane	71*	78	78-114	10	30				
Indeno(1,2,3-cd)pyrene	87	90	81-118	4	30				
Isophorone	92	95	78-125	4	30				
2-Methylnaphthalene	88	91	83-109	4	30				
2-Methylphenol	93	100	82-125	7	30				
4-Methylphenol	84	91	75-119	9	30				
Naphthalene	97	98	83-112	2	30				
2-Nitroaniline	84	91	84-126	8	30				
3-Nitroaniline	19*	35*	66-119	61*	30				
4-Nitroaniline	32*	41*	50-100	25	30				
Nitrobenzene	90	91	70-122	2	30				
2-Nitrophenol	103	105	83-120	2	30				
4-Nitrophenol	75	81	60-129	9	30				
N-Nitroso-di-n-propylamine	87	94	67-121	7	30				
N-Nitrosodiphenylamine	79*	91	83-118	14	30				
Di-n-octylphthalate	98	104	74-146	7	30				
Pentachlorophenol	94	102	57-126	8	30				
Phenanthrene	85	89	80-114	4	30				
Phenol	86	94	73-122	9	30				
Pyrene	89	89	81-114	0	30				
2,4,5-Trichlorophenol	93	99	86-123	6	30				
2,4,6-Trichlorophenol	95	103	81-123	8	30				
Batch number: 152160023A	Sample number(s): 7990393-7990403 UNSPK: 7990393								
4-Amino-2,6-Dinitrotoluene	1964 (2)	1103 (2)	85-118	7	50				
2-Amino-4,6-Dinitrotoluene	1116 (2)	404 (2)	69-113	8	50				
1,2-Dinitrobenzene	73*	70*	80-120	4	50				
1,3-Dinitrobenzene	47*	66*	89-119	25	50				
1,4-Dinitrobenzene	74*	70*	82-117	6	50				
HMX	0*	698*	72-107	200*	50				
Nitrobenzene	120*	105	86-108	15	50				
Nitroglycerin	103	84	73-116	21	50				
1-Nitronaphthalene	33*	34*	89-131	4	50				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1581570
Reported: 08/13/2015 15:05

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2-Nitrotoluene	124*	141*	79-112	12	50				
3-Nitrotoluene	77	101	72-119	26	50				
4-Nitrotoluene	83*	93	90-118	10	50				
PETN	0*	91	71-133	200*	50				
RDX	53*	56*	75-108	5	50				
Tetryl	72	0*	58-125	200*	50				
1,3,5-Trinitrobenzene	33*	42*	58-135	10	50				
2,4,6-Trinitrotoluene	10282 (2)	26133 (2)	92-114	25	50				
Batch number: 152195708003	Sample number(s): 7990393-7990403 UNSPK: 7990395 BKG: 7990395								
Aluminum	1492 (2)	1935 (2)	75-125	6	20	11,700	11,400	3	20
Antimony	79	79	75-125	1	20	0.588 J	0.656 J	11 (1)	20
Arsenic	94	104	75-125	9	20	1.49 J	1.92 J	25* (1)	20
Barium	105	105	75-125	0	20	36.7	35.0	5	20
Beryllium	103	103	75-125	0	20	0.413 J	0.424 J	3 (1)	20
Cadmium	97	98	75-125	0	20	0.206 J	0.174 J	17 (1)	20
Calcium	81	99	75-125	6	20	749	699	7	20
Chromium	115	106	75-125	5	20	13.8	17.4	23*	20
Cobalt	98	99	75-125	1	20	5.72	5.58	3	20
Copper	109	109	75-125	0	20	15.8	18.7	17	20
Iron	1535 (2)	863 (2)	75-125	3	20	21,100	22,100	5	20
Lead	13 (2)	99 (2)	75-125	8	20	140	133	5	20
Magnesium	106 (2)	163 (2)	75-125	9	20	916	830	10	20
Manganese	73*	82	75-125	2	20	155	146	6	20
Nickel	102	102	75-125	0	20	9.54	9.51	0	20
Potassium	149*	153*	75-125	2	20	620	591	5	20
Selenium	98	96	75-125	2	20	2.71	2.88	6 (1)	20
Silver	112	109	75-125	2	20	0.127 J	0.193 J	41* (1)	20
Sodium	95	96	75-125	1	20	55.1 J	43.1 J	24* (1)	20
Thallium	112	112	75-125	0	20	0.881 J	1.06 J	19 (1)	20
Vanadium	114	103	75-125	7	20	28.8	29.0	0	20
Zinc	102	104	75-125	1	20	29.5	28.8	2	20
Batch number: 152195711001	Sample number(s): 7990393-7990403 UNSPK: 7990395 BKG: 7990395								
Mercury	103	101	80-120	1	20	0.0267 J	0.0222 J	18 (1)	20
Batch number: 15217049531A	Sample number(s): 7990393-7990402 UNSPK: 7990393 BKG: 7990393								
TOC by Lloyd Kahn	123		47-143			8,920	9,920	11*	7
Batch number: 15217049531B	Sample number(s): 7990403 UNSPK: 7990403 BKG: 7990403								
TOC by Lloyd Kahn	120		47-143			7,840	8,210	5	7

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Ashland Specialty Ingredients Group Number: 1581570
Reported: 08/13/2015 15:05

Surrogate Quality Control

Analysis Name: TCL 8270 (microwave)
Batch number: 15217SLB026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7990393	102	101	91	94	90	112
7990394	100	100	94	90	92	114
7990395	104	107	96	95	95	119
7990396	101	106	95	100	97	102
7990397	101	104	94	96	97	101
7990398	100	102	96	95	95	100
7990399	105	106	98	88	97	118
7990400	102	104	94	93	95	116
7990401	103	106	93	99	95	118
7990402	96	101	89	99	94	99
7990403	97	100	87	96	93	99
Blank	102	104	114	96	103	107
LCS	109	107	112	95	99	100
MS	93	95	88	91	88	108
MSD	100	101	92	95	92	111
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152160023A

	2-Nitro-m-xylene
7990393	0*
7990394	0*
7990395	0*
7990396	0*
7990397	0*
7990398	0*
7990399	0*
7990400	0*
7990401	216*
7990402	0*
7990403	0*
Blank	118
LCS	124
MS	0*
MSD	0*
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1581570 Sample # 7990393-403
Instructions on reverse side correspond with circled numbers.

Barcode

Client Information

Client: ARCadis-US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ007,000,NJ
Sampler: S. Manning	Quote #:
Name of state where samples were collected: NJ	

Matrix: Sediment ☐ Soil ☒ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

Analysis Requested — Preservation Codes

For Lab Use Only
FSC: ____
SCR#: ____

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	SVOC (SW8270, HTC)	E+E (SW846, 8330, TTC)	Metals (SW846, 6000)	TOC	% Moisture	Grain Size					Remarks
TNT-PS-F-08032015	8/3/15	0730		X				1	X	X	X	X	X						
TNT-PS-E-08032015	8/3/15	0735		X				1	X	X	X	X	X						
TNT-PS-D-08032015	8/3/15	0740		X				1	X	X	X	X	X						
TNT-PS-C-08032015	8/3/15	0930		X				1	X	X	X	X	X						
TNT-PS-J-08032015	8/3/15	0940		X				1	X	X	X	X	X						
TNT-PS-B-08032015	8/3/15	0945		X				1	X	X	X	X	X						
TNT-PS-G-08032015	8/3/15	0950		X				1	X	X	X	X	X						
TNT-PS-H-08032015	8/3/15	1000		X				1	X	X	X	X	X						
TNT-PS-I-08032015	8/3/15	1010		X				1	X	X	X	X	X						
TNT-PS-K-08032015	8/3/15	1020		X				1	X	X	X	X	X						

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 5 day TAT

E-mail address: James.mclaughlin@arcadis-us.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/3/15	1435	[signature]	8/3/15	1435
[signature]	8/3/15	1845			
			[signature]	8/3/15	1845

Data Package Options (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 8.1°C °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0614

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1581570 Sample # 7990393-403
Instructions on reverse side correspond with circled numbers.

Barcode

Client Information

Client: ARCadis-US	Acct. #: 06716
Project Name/#: Ashland / Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ007,000,NJ
Sampler: S. Manning	Quote #:
Name of state where samples were collected: NJ	

Matrix: Sediment ☐ Soil ☒ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other:

Analysis Requested — Preservation Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Sediment	Water	Other	Total # of Containers	SVOC (SW8270+TIC)	E+E (SW846,8330,TIC)	Metals (SW846,6000)	TOC	% Moisture	Grain Size					Remarks
TNT-PS-A-0803201S	8/3/15	1030		X				1	X	X	X	X	X						
Process combined	8/3/15	1035	X					1						X					
process sediment	8/3/15	1040	X					1						X					
process Flock	8/3/15	1045	X					1						X					

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 5 day TAT

E-mail address: James.mclaughlin@arcadis-us.com

Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/3/15	1435	[signature]	8/3/15	1435
[signature]	8/3/15	1845			
			[signature]	8/3/15	1845

EDD Required? Yes No
If yes, format:

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____

Temperature upon receipt 8.1°C °C

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

August 26, 2015

Project: Kenvil TNT Bioremediation Pilot

Submittal Date: 08/17/2015
Group Number: 1585374
SDG: KVM46
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-08172015 Composite Soil Sample	8010282
TNT-PS-B-08172015 Composite Soil Sample	8010283
TNT-PS-C-08172015 Composite Soil Sample	8010284
TNT-PS-D-08172015 Composite Soil Sample	8010285
TNT-PS-E-08172015 Composite Soil Sample	8010286
TNT-PS-F-08172015 Composite Soil Sample	8010287
TNT-PS-G-08172015 Composite Soil Sample	8010288
TNT-PS-H-08172015 Composite Soil Sample	8010289
TNT-PS-I-08172015 Composite Soil Sample	8010290
TNT-PS-J-08172015 Composite Soil Sample	8010291
TNT-PS-K-08172015 Composite Soil Sample	8010292

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-A-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010282
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:57 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSA SDG#: KVM46-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,300	5
10727	Benzo(a)anthracene	56-55-3	58	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	66	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	60	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	30	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	270	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	85	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		540	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	1,200		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	97	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010282
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:57 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSA SDG#: KVM46-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	N.D.		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	64	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	76	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	39,000		1,100	3,000	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	27,000		750	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		750	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		750	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		750	2,200	5
06918	HMX	2691-41-0	N.D.		1,900	5,600	5
06918	Nitrobenzene	98-95-3	N.D.		750	2,200	5
06918	Nitroglycerin	55-63-0	N.D.		15,000	45,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		750	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,500	3,000	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,900	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,500	3,000	5
06918	PETN	78-11-5	N.D.		15,000	45,000	5
06918	RDX	121-82-4	N.D.		970	2,200	5
06918	Tetryl	479-45-8	N.D.		1,200	3,000	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		2,000	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,900,000		37,000	110,000	250
	Reporting limits were raised due to interference from the sample matrix.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010282
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:57 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSA SDG#: KVM46-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,550	163	490	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	38.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 01:41	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 13:45	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 14:28	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/20/2015 21:09	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005A	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSA

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010282
Sample wt/vol: 30.48(g/mL) g Lab File ID: bh0800.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 38.8 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 89-82-7	Pulegone	6.358	2300	J
2.	Unknown Alkane	6.836	4200	J
3.	Unknown Alkane	6.918	2400	J
4.	Unknown Alkane	7.145	2500	J
5.	Unknown Alkane	7.192	1800	J
6.	Unknown	7.221	2400	J
7. 17312-82-2	Undecane, 4,6-dimethyl-	7.268	4600	J
8. 629-50-5	Tridecane	7.437	12000	J
9.	Unknown	7.483	2200	J
10.	Unknown Alkane	7.524	2700	J
11.	Unknown	7.571	2400	J
12.	Unknown Cycloalkane	7.728	1500	J
13. 1560-96-9	Tridecane, 2-methyl-	7.792	1600	J
14. 629-59-4	Tetradecane	7.990	6500	J
15.	Unknown Alkane	8.031	1200	J
16. 544-76-3	Hexadecane	8.993	1400	J
17.	Unknown	9.582	880000	J
18. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.479	20000	J
19. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.701	15000	J
20.	Unknown	14.309	2600	J
21.	Unknown	14.478	2400	J
22. 1000260-51-5	Pyrazol-3(2H)-one, 4-(4-fluo	14.559	2800	J
23.	Unknown	14.653	2400	J
24.	Unknown	14.717	2400	J
25.	Unknown	14.973	3200	J
26.				
27. SVOCTIC	Total SVOC TICs		980000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010283
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:22 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSB SDG#: KVM46-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,300	5
10727	Benzo(a)anthracene	56-55-3	100	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	99	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	150		27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	81	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	43	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		57	270	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	120	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	57	J	27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		810	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,100	5
10727	2,4-Dinitrotoluene	121-14-2	4,000		540	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	880		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	180		27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	72	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010283
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:22 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSB SDG#: KVM46-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	N.D.		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	92	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	140		27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	19,000		1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	19,000		810	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		810	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		810	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		810	2,400	5
06918	HMX	2691-41-0	N.D.		2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.		810	2,400	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		810	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,300	5
06918	PETN	78-11-5	N.D.		16,000	49,000	5
06918	RDX	121-82-4	N.D.		1,100	2,400	5
06918	Tetryl	479-45-8	N.D.		1,300	3,300	5
06918	1,3,5-Trinitrobenzene	99-35-4	1,800	J	810	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,900,000		41,000	120,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010283
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:22 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSB SDG#: KVM46-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,240	413	1,240	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	38.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 02:02	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 15:52	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 16:35	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/20/2015 22:20	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005A	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSB

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010283
Sample wt/vol: 30.27(g/mL) g Lab File ID: bh0801.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 38.8 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown Alkane	6.836	2700	J
2.	Unknown	6.918	2400	J
3.	Unknown Alkane	7.099	1700	J
4.	Unknown Alkane	7.145	2000	J
5.	Unknown Alkane	7.192	1500	J
6.	Unknown Alkane	7.221	1800	J
7.17312-82-2	Undecane, 4,6-dimethyl-	7.268	3300	J
8.	Unknown	7.308	1500	J
9.	Unknown	7.367	2100	J
10.544-76-3	Hexadecane	7.431	8400	J
11.	Unknown	7.477	1800	J
12.	Unknown Alkane	7.530	2400	J
13.	Unknown	7.565	2100	J
14.	Unknown Alkane	7.629	1500	J
15.	Unknown Alkane	7.728	1200	J
16.593-49-7	Heptacosane	7.792	1400	J
17.629-59-4	Tetradecane	7.990	4900	J
18.	Unknown Alkane	8.031	1300	J
19.	Unknown	9.576	820000	J
20.	Unknown	9.960	2400	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	10.473	8400	J
22.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.695	7400	J
23.	Unknown	10.841	2200	J
24.				
25.SVOCTIC	Total SVOC TICs		880000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010284
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 08:45 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSC SDG#: KVM46-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		26	130	5
10727	Acenaphthylene	208-96-8	N.D.		26	130	5
10727	Acetophenone	98-86-2	N.D.		130	260	5
10727	Anthracene	120-12-7	N.D.		26	130	5
10727	Atrazine	1912-24-9	N.D.		260	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	46	J	26	130	5
10727	Benzo(a)pyrene	50-32-8	53	J	26	130	5
10727	Benzo(b)fluoranthene	205-99-2	77	J	26	130	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		26	130	5
10727	Benzo(k)fluoranthene	207-08-9	27	J	26	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	260	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	260	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		260	1,300	5
10727	Carbazole	86-74-8	N.D.		130	260	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	260	5
10727	4-Chloroaniline	106-47-8	N.D.		260	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	260	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	260	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	260	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	260	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	260	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	58	J	26	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		26	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	260	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		790	2,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	260	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	260	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	7,900	5
10727	2,4-Dinitrotoluene	121-14-2	4,100		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	900		130	260	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,300	5
10727	Fluoranthene	206-44-0	84	J	26	130	5
10727	Fluorene	86-73-7	N.D.		26	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		26	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	260	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		260	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	36	J	26	130	5
10727	Isophorone	78-59-1	N.D.		130	260	5
10727	2-Methylnaphthalene	91-57-6	N.D.		26	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010284
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 08:45 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSC SDG#: KVM46-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	260	5
10727	4-Methylphenol	106-44-5	N.D.		130	260	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		26	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	260	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	260	5
10727	2-Nitrophenol	88-75-5	N.D.		130	260	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	260	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	260	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		260	1,300	5
10727	Phenanthrene	85-01-8	48	J	26	130	5
10727	Phenol	108-95-2	N.D.		130	260	5
10727	Pyrene	129-00-0	78	J	26	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	260	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	260	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	20,000		1,000	2,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	19,000		690	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		690	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	1,200	J	690	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		690	2,100	5
06918	HMX	2691-41-0	N.D.		1,700	5,200	5
06918	Nitrobenzene	98-95-3	N.D.		690	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		690	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,800	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,500	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,800	5
06918	PETN	78-11-5	N.D.		14,000	41,000	5
06918	RDX	121-82-4	N.D.		900	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	2,300		690	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,000,000		35,000	100,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010284
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 08:45 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSC SDG#: KVM46-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,730	256	767	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	37.0	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 02:24	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 18:00	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 19:25	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/20/2015 22:32	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSC

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010284
Sample wt/vol: 30.12(g/mL) g Lab File ID: bh0802.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 37 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.358	1500	J
2. 112-40-3	Dodecane	6.836	2600	J
3. 17301-23-4	Undecane, 2,6-dimethyl-	6.918	1600	J
4.	Unknown	7.145	1600	J
5.	Unknown Alkane	7.192	1400	J
6.	Unknown	7.221	1800	J
7.	Unknown Alkane	7.268	2900	J
8.	Unknown	7.308	1200	J
9.	Unknown Alkane	7.431	8100	J
10.	Unknown	7.478	1500	J
11.	Unknown Alkane	7.524	1900	J
12.	Unknown	7.571	1700	J
13.	Unknown Alkane	7.629	1100	J
14.	Unknown Cycloalkane	7.728	1200	J
15. 629-93-6	Octadecane, 1-iodo-	7.792	1300	J
16. 629-59-4	Tetradecane	7.985	5100	J
17.	Unknown Alkane	8.031	1100	J
18.	Unknown Alkane	8.993	1100	J
19.	Unknown	9.576	820000	J
20.	Unknown	9.961	2400	J
21. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.473	10000	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.695	7000	J
23.	Unknown	10.841	2200	J
24.				
25. SVOCTIC	Total SVOC TICs		890000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010285
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 09:35 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSD SDG#: KVM46-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		24	120	5
10727	Acenaphthylene	208-96-8	N.D.		24	120	5
10727	Acetophenone	98-86-2	N.D.		120	240	5
10727	Anthracene	120-12-7	N.D.		24	120	5
10727	Atrazine	1912-24-9	N.D.		240	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		480	1,200	5
10727	Benzo(a)anthracene	56-55-3	73	J	24	120	5
10727	Benzo(a)pyrene	50-32-8	70	J	24	120	5
10727	Benzo(b)fluoranthene	205-99-2	76	J	24	120	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		24	120	5
10727	Benzo(k)fluoranthene	207-08-9	32	J	24	120	5
10727	1,1'-Biphenyl	92-52-4	N.D.		120	240	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		120	240	5
10727	Butylbenzylphthalate	85-68-7	N.D.		480	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		480	1,200	5
10727	Caprolactam	105-60-2	N.D.		240	1,200	5
10727	Carbazole	86-74-8	N.D.		120	240	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		120	240	5
10727	4-Chloroaniline	106-47-8	N.D.		240	480	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		120	240	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		120	240	5
10727	2-Chloronaphthalene	91-58-7	N.D.		50	240	5
10727	2-Chlorophenol	95-57-8	N.D.		120	240	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		120	240	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		120	240	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	69	J	24	120	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		24	120	5
10727	Dibenzofuran	132-64-9	N.D.		120	240	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		710	2,400	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		120	240	5
10727	Diethylphthalate	84-66-2	N.D.		480	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		120	240	5
10727	Dimethylphthalate	131-11-3	N.D.		480	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,600	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,100	7,100	5
10727	2,4-Dinitrotoluene	121-14-2	1,100	J	480	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	260		120	240	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		480	1,200	5
10727	Fluoranthene	206-44-0	100	J	24	120	5
10727	Fluorene	86-73-7	N.D.		24	120	5
10727	Hexachlorobenzene	118-74-1	N.D.		24	120	5
10727	Hexachlorobutadiene	87-68-3	N.D.		120	240	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,600	5
10727	Hexachloroethane	67-72-1	N.D.		240	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		24	120	5
10727	Isophorone	78-59-1	N.D.		120	240	5
10727	2-Methylnaphthalene	91-57-6	N.D.		24	120	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010285
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 09:35 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSD SDG#: KVM46-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		120	240	5
10727	4-Methylphenol	106-44-5	N.D.		120	240	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		24	120	5
10727	2-Nitroaniline	88-74-4	N.D.		120	240	5
10727	3-Nitroaniline	99-09-2	N.D.		480	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		480	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		120	240	5
10727	2-Nitrophenol	88-75-5	N.D.		120	240	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,600	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		120	240	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		120	240	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		480	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		240	1,200	5
10727	Phenanthrene	85-01-8	39	J	24	120	5
10727	Phenol	108-95-2	N.D.		120	240	5
10727	Pyrene	129-00-0	75	J	24	120	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		120	240	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		120	240	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	130,000		47,000	130,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	130,000		31,000	94,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.		630	1,900	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		630	1,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		630	1,900	5
06918	HMX	2691-41-0	N.D.		1,600	4,700	5
06918	Nitrobenzene	98-95-3	N.D.		630	1,900	5
06918	Nitroglycerin	55-63-0	N.D.		13,000	38,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		630	1,900	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,300	2,500	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,600	3,100	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	2,500	5
06918	PETN	78-11-5	N.D.		13,000	38,000	5
06918	RDX	121-82-4	N.D.		820	1,900	5
06918	Tetryl	479-45-8	N.D.		1,000	2,500	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		630	1,900	5
06918	2,4,6-Trinitrotoluene	118-96-7	550,000		31,000	94,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010285
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 09:35 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSD SDG#: KVM46-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	14,000	360	1,080	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	30.6	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 02:46	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 20:50	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 21:32	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/20/2015 22:40	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSD

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010285
Sample wt/vol: 30.25(g/mL) g Lab File ID: bh0803.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 30.6 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.774	6700	J
2.	Unknown	2.832	8000	J
3.	Unknown	2.855	6300	J
4.	Unknown	2.919	14000	J
5.79-09-4	Propanoic acid	2.954	11000	J
6.	Unknown	3.619	14000	J
7.	Unknown	3.759	21000	J
8.107-92-6	Butanoic acid	3.776	6700	J
9.	Unknown Carboxylic Acid	5.315	7500	J
10.17312-53-7	Decane, 3,6-dimethyl-	6.836	3600	J
11.	Unknown Alkane	7.267	3600	J
12.629-50-5	Tridecane	7.437	10000	J
13.	Unknown Alkane	7.530	2500	J
14.629-62-9	Pentadecane	7.990	5400	J
15.	Unknown	9.500	96000	J
16.	Unknown	10.106	26000	J
17.	Unknown	10.427	54000	J
18.19406-51-0	p-Toluidine, 3,5-dinitro-	10.491	43000	J
19.57-10-3	n-Hexadecanoic acid	10.584	51000	J
20.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.724	14000	J
21.59229-75-3	1,3-Benzenediamine, 2-methyl	10.759	2300	J
22.60-33-3	9,12-Octadecadienoic acid (Z	11.260	40000	J
23.	Unknown	11.971	2800	J
24.	Unknown	12.035	1200	J
25.83-46-5	.beta.-Sitosterol	15.567	4700	J
26.				
27.SVOCTIC	Total SVOC TICs		460000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010286
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 09:43 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSE SDG#: KVM46-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		120	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		500	1,200	5
10727	Benzo(a)anthracene	56-55-3	65	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	67	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	93	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	59	J	25	130	5
10727	Benzo(k)fluoranthene	207-08-9	58	J	25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		120	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		120	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		500	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		500	1,200	5
10727	Caprolactam	105-60-2	N.D.		250	1,200	5
10727	Carbazole	86-74-8	N.D.		120	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		120	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	500	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		120	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		120	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		52	250	5
10727	2-Chlorophenol	95-57-8	N.D.		120	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		120	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		120	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	85	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		25	130	5
10727	Dibenzofuran	132-64-9	N.D.		120	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		740	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		120	250	5
10727	Diethylphthalate	84-66-2	N.D.		500	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		120	250	5
10727	Dimethylphthalate	131-11-3	N.D.		500	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,700	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,200	7,400	5
10727	2,4-Dinitrotoluene	121-14-2	1,100	J	500	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	370		120	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		500	1,300	5
10727	Fluoranthene	206-44-0	130		25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		120	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,700	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	43	J	25	130	5
10727	Isophorone	78-59-1	N.D.		120	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010286
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 09:43 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSE SDG#: KVM46-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		120	250	5
10727	4-Methylphenol	106-44-5	N.D.		120	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		120	250	5
10727	3-Nitroaniline	99-09-2	N.D.		500	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		500	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		120	250	5
10727	2-Nitrophenol	88-75-5	N.D.		120	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,700	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		120	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		120	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		500	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	51	J	25	130	5
10727	Phenol	108-95-2	N.D.		120	250	5
10727	Pyrene	129-00-0	94	J	25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		120	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		120	250	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	120,000		970	2,600	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	87,000		650	1,900	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		650	1,900	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		650	1,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		650	1,900	5
06918	HMX	2691-41-0	N.D.		1,600	4,900	5
06918	Nitrobenzene	98-95-3	N.D.		650	1,900	5
06918	Nitroglycerin	55-63-0	N.D.		13,000	39,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		650	1,900	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,300	2,600	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,600	3,200	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	2,600	5
06918	PETN	78-11-5	N.D.		13,000	39,000	5
06918	RDX	121-82-4	N.D.		1,200	1,900	5
06918	Tetryl	479-45-8	N.D.		1,000	2,600	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		650	1,900	5
06918	2,4,6-Trinitrotoluene	118-96-7	47,000		650	1,900	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010286
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 09:43 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSE SDG#: KVM46-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,300	340	1,020	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	33.5	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 03:07	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/21/2015 22:57	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/20/2015 22:47	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

!--PSE

Lab Name:___Lancaster Laboratories___ Contract:_____
Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____
Matrix: (soil/water) SOIL Lab Sample ID: 8010286
Sample wt/vol: 30.29(g/mL) g Lab File ID: bh0804.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 33.5 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.797	8100	J
2.	Unknown	2.821	6600	J
3.79-09-4	Propanoic acid	2.873	9800	J
4.24347-58-8	2,3-Butanediol, [R-(R*,R*)]-	3.444	6100	J
5.	Unknown	3.584	8800	J
6.107-92-6	Butanoic acid	3.724	6100	J
7.112-40-3	Dodecane	6.836	2600	J
8.	Unknown Alkane	7.268	3000	J
9.112-40-3	Dodecane	7.431	8800	J
10.	Unknown Alkane	7.711	4100	J
11.629-59-4	Tetradecane	7.985	11000	J
12.	Unknown	9.500	120000	J
13.	Unknown	10.106	37000	J
14.	Unknown	10.322	3700	J
15.	Unknown	10.433	96000	J
16.19406-51-0	p-Toluidine, 3,5-dinitro-	10.485	27000	J
17.	Unknown	10.514	6400	J
18.57-10-3	n-Hexadecanoic acid	10.578	53000	J
19.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.718	9600	J
20.59229-75-3	1,3-Benzenediamine, 2-methyl	10.759	4700	J
21.60-33-3	9,12-Octadecadienoic acid (Z	11.260	44000	J
22.	Unknown	11.721	1000	J
23.112-88-9	1-Octadecene	13.813	3400	J
24.	Unknown	15.568	4700	J
25.	Unknown	15.947	5000	J
26.				
27.SVOCTIC	Total SVOC TICs		490000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010287
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:05 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSF SDG#: KVM46-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		24	120	5
10727	Acenaphthylene	208-96-8	N.D.		24	120	5
10727	Acetophenone	98-86-2	N.D.		120	240	5
10727	Anthracene	120-12-7	N.D.		24	120	5
10727	Atrazine	1912-24-9	N.D.		240	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		490	1,200	5
10727	Benzo(a)anthracene	56-55-3	70	J	24	120	5
10727	Benzo(a)pyrene	50-32-8	75	J	24	120	5
10727	Benzo(b)fluoranthene	205-99-2	92	J	24	120	5
10727	Benzo(g,h,i)perylene	191-24-2	52	J	24	120	5
10727	Benzo(k)fluoranthene	207-08-9	42	J	24	120	5
10727	1,1'-Biphenyl	92-52-4	N.D.		120	240	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		120	240	5
10727	Butylbenzylphthalate	85-68-7	N.D.		490	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		490	1,200	5
10727	Caprolactam	105-60-2	N.D.		240	1,200	5
10727	Carbazole	86-74-8	N.D.		120	240	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		120	240	5
10727	4-Chloroaniline	106-47-8	N.D.		240	490	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		120	240	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		120	240	5
10727	2-Chloronaphthalene	91-58-7	N.D.		51	240	5
10727	2-Chlorophenol	95-57-8	N.D.		120	240	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		120	240	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		120	240	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	85	J	24	120	5
10727	Dibenz(a,h)anthracene	53-70-3	29	J	24	120	5
10727	Dibenzofuran	132-64-9	N.D.		120	240	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		730	2,400	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		120	240	5
10727	Diethylphthalate	84-66-2	N.D.		490	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		120	240	5
10727	Dimethylphthalate	131-11-3	N.D.		490	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,700	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,200	7,300	5
10727	2,4-Dinitrotoluene	121-14-2	2,000		490	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	640		120	240	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		490	1,200	5
10727	Fluoranthene	206-44-0	110	J	24	120	5
10727	Fluorene	86-73-7	N.D.		24	120	5
10727	Hexachlorobenzene	118-74-1	N.D.		24	120	5
10727	Hexachlorobutadiene	87-68-3	N.D.		120	240	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,700	5
10727	Hexachloroethane	67-72-1	N.D.		240	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	52	J	24	120	5
10727	Isophorone	78-59-1	N.D.		120	240	5
10727	2-Methylnaphthalene	91-57-6	N.D.		24	120	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010287
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:05 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSF SDG#: KVM46-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		120	240	5
10727	4-Methylphenol	106-44-5	N.D.		120	240	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		24	120	5
10727	2-Nitroaniline	88-74-4	N.D.		120	240	5
10727	3-Nitroaniline	99-09-2	N.D.		490	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		490	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		120	240	5
10727	2-Nitrophenol	88-75-5	N.D.		120	240	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,700	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		120	240	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		120	240	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		490	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		240	1,200	5
10727	Phenanthrene	85-01-8	47	J	24	120	5
10727	Phenol	108-95-2	N.D.		120	240	5
10727	Pyrene	129-00-0	88	J	24	120	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		120	240	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		120	240	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	350,000		52,000	140,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	320,000		34,000	100,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.		690	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		690	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		690	2,100	5
06918	HMX	2691-41-0	N.D.		1,700	5,200	5
06918	Nitrobenzene	98-95-3	N.D.		690	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		690	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,800	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,800	5
06918	PETN	78-11-5	N.D.		14,000	41,000	5
06918	RDX	121-82-4	N.D.		900	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		690	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	280,000		34,000	100,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010287
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:05 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSF SDG#: KVM46-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	13,200	375	1,130	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 03:29	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 01:04	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 01:47	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/20/2015 22:55	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSF

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010287
Sample wt/vol: 30.4 (g/mL) g Lab File ID: bh0805.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 32.8 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.409	7000	J
2. 544-76-3	Hexadecane	6.836	3600	J
3.	Unknown Alkane	6.918	2500	J
4.	Unknown	7.011	2300	J
5.	Unknown Alkane	7.145	2300	J
6.	Unknown Alkane	7.221	2400	J
7. 61141-72-8	Dodecane, 4,6-dimethyl-	7.268	4200	J
8. 629-50-5	Tridecane	7.437	10000	J
9.	Unknown Cycloalkane	7.477	2300	J
10.	Unknown	7.530	3200	J
11.	Unknown	7.571	2800	J
12.	Unknown Cycloalkane	7.728	1400	J
13. 54833-23-7	Eicosane, 10-methyl-	7.792	1600	J
14. 13287-21-3	Tridecane, 6-methyl-	7.985	5500	J
15.	Unknown Alkane	8.031	1600	J
16.	Unknown	9.506	150000	J
17.	Unknown	10.106	29000	J
18.	Unknown	10.316	4500	J
19.	Unknown	10.438	39000	J
20. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.508	120000	J
21. 57-10-3	n-Hexadecanoic acid	10.572	24000	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.742	54000	J
23. 59229-75-3	1,3-Benzenediamine, 2-methyl	10.776	5700	J
24. 60-33-3	9,12-Octadecadienoic acid (Z	11.249	21000	J
25. 112-79-8	9-Octadecenoic acid, (E)-	11.266	17000	J
26.				
27. SVOCTIC	Total SVOC TICs		520000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010288
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:26 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSG SDG#: KVM46-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		120	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		490	1,200	5
10727	Benzo(a)anthracene	56-55-3	74	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	71	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	81	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	40	J	25	130	5
10727	Benzo(k)fluoranthene	207-08-9	53	J	25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		120	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		120	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		490	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		490	1,200	5
10727	Caprolactam	105-60-2	N.D.		250	1,200	5
10727	Carbazole	86-74-8	N.D.		120	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		120	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	490	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		120	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		120	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		52	240	5
10727	2-Chlorophenol	95-57-8	N.D.		120	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		120	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		120	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	85	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		25	130	5
10727	Dibenzofuran	132-64-9	N.D.		120	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		740	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		120	250	5
10727	Diethylphthalate	84-66-2	N.D.		490	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		120	250	5
10727	Dimethylphthalate	131-11-3	N.D.		490	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,700	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,200	7,400	5
10727	2,4-Dinitrotoluene	121-14-2	690	J	490	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	260		120	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		490	1,300	5
10727	Fluoranthene	206-44-0	120	J	25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		120	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,700	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	32	J	25	130	5
10727	Isophorone	78-59-1	N.D.		120	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010288
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:26 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSG SDG#: KVM46-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		120	250	5
10727	4-Methylphenol	106-44-5	120	J	120	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		120	250	5
10727	3-Nitroaniline	99-09-2	N.D.		490	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		490	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		120	250	5
10727	2-Nitrophenol	88-75-5	N.D.		120	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,700	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		120	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		120	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		490	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	55	J	25	130	5
10727	Phenol	108-95-2	N.D.		120	250	5
10727	Pyrene	129-00-0	97	J	25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		120	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		120	250	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,700		930	2,500	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,300		620	1,900	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		620	1,900	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		620	1,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		620	1,900	5
06918	HMX	2691-41-0	N.D.		1,600	4,700	5
06918	Nitrobenzene	98-95-3	N.D.		620	1,900	5
06918	Nitroglycerin	55-63-0	N.D.		12,000	37,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		620	1,900	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,200	2,500	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,600	3,100	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,200	2,500	5
06918	PETN	78-11-5	N.D.		12,000	37,000	5
06918	RDX	121-82-4	N.D.		1,200	1,900	5
06918	Tetryl	479-45-8	N.D.		990	2,500	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		620	1,900	5
06918	2,4,6-Trinitrotoluene	118-96-7	13,000		620	1,900	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010288
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:26 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSG SDG#: KVM46-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,300	349	1,050	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.9	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 03:50	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 03:54	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/20/2015 23:56	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSG

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010288
Sample wt/vol: 30.29(g/mL) g Lab File ID: bh0806.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 32.9 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 513-85-9	2,3-Butanediol	3.333	22000	J
2.	Unknown	3.438	19000	J
3.	Unknown	3.590	10000	J
4.	Unknown	3.747	22000	J
5.	Unknown	3.858	35000	J
6. 107-92-6	Butanoic acid	3.893	17000	J
7.	Unknown	7.099	3300	J
8.	Unknown Alkane	7.268	5300	J
9. 112-40-3	Dodecane	7.431	9600	J
10.	Unknown	7.553	4400	J
11. 501-52-0	Hydrocinnamic acid	7.606	3200	J
12.	Unknown Alkane	7.711	2300	J
13. 629-59-4	Tetradecane	7.985	5500	J
14.	Unknown	9.477	36000	J
15.	Unknown	10.392	15000	J
16. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.468	15000	J
17. 57-10-3	n-Hexadecanoic acid	10.584	83000	J
18. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.695	1600	J
19. 60-33-3	9,12-Octadecadienoic acid (Z	11.260	16000	J
20. 17351-34-7	14-Pentadecenoic acid	11.284	13000	J
21. 74685-28-2	7-Hexadecyne	11.423	2600	J
22.	Unknown	11.971	1800	J
23.	Unknown	12.047	4700	J
24. 1000351-76-5	Heneicosyl trifluoroacetate	13.819	5300	J
25.				
26. SVOCTIC	Total SVOC TICs		360000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010289
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:32 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSH SDG#: KVM46-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		24	120	5
10727	Acenaphthylene	208-96-8	N.D.		24	120	5
10727	Acetophenone	98-86-2	N.D.		120	240	5
10727	Anthracene	120-12-7	N.D.		24	120	5
10727	Atrazine	1912-24-9	N.D.		240	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		490	1,200	5
10727	Benzo(a)anthracene	56-55-3	61	J	24	120	5
10727	Benzo(a)pyrene	50-32-8	35	J	24	120	5
10727	Benzo(b)fluoranthene	205-99-2	78	J	24	120	5
10727	Benzo(g,h,i)perylene	191-24-2	55	J	24	120	5
10727	Benzo(k)fluoranthene	207-08-9	33	J	24	120	5
10727	1,1'-Biphenyl	92-52-4	N.D.		120	240	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		120	240	5
10727	Butylbenzylphthalate	85-68-7	N.D.		490	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		490	1,200	5
10727	Caprolactam	105-60-2	N.D.		240	1,200	5
10727	Carbazole	86-74-8	N.D.		120	240	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		120	240	5
10727	4-Chloroaniline	106-47-8	N.D.		240	490	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		120	240	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		120	240	5
10727	2-Chloronaphthalene	91-58-7	N.D.		51	240	5
10727	2-Chlorophenol	95-57-8	N.D.		120	240	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		120	240	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		120	240	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	68	J	24	120	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		24	120	5
10727	Dibenzofuran	132-64-9	N.D.		120	240	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		730	2,400	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		120	240	5
10727	Diethylphthalate	84-66-2	N.D.		490	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		120	240	5
10727	Dimethylphthalate	131-11-3	N.D.		490	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,700	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,200	7,300	5
10727	2,4-Dinitrotoluene	121-14-2	710	J	490	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	230	J	120	240	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		490	1,200	5
10727	Fluoranthene	206-44-0	95	J	24	120	5
10727	Fluorene	86-73-7	N.D.		24	120	5
10727	Hexachlorobenzene	118-74-1	N.D.		24	120	5
10727	Hexachlorobutadiene	87-68-3	N.D.		120	240	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,700	5
10727	Hexachloroethane	67-72-1	N.D.		240	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	47	J	24	120	5
10727	Isophorone	78-59-1	N.D.		120	240	5
10727	2-Methylnaphthalene	91-57-6	N.D.		24	120	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010289
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:32 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSH SDG#: KVM46-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		120	240	5
10727	4-Methylphenol	106-44-5	N.D.		120	240	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		24	120	5
10727	2-Nitroaniline	88-74-4	N.D.		120	240	5
10727	3-Nitroaniline	99-09-2	N.D.		490	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		490	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		120	240	5
10727	2-Nitrophenol	88-75-5	N.D.		120	240	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,700	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		120	240	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		120	240	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		490	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		240	1,200	5
10727	Phenanthrene	85-01-8	43	J	24	120	5
10727	Phenol	108-95-2	N.D.		120	240	5
10727	Pyrene	129-00-0	85	J	24	120	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		120	240	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		120	240	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	61,000		1,000	2,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	34,000		690	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		690	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,300	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		690	2,100	5
06918	HMX	2691-41-0	N.D.		1,700	5,200	5
06918	Nitrobenzene	98-95-3	N.D.		690	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		690	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,800	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,500	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,800	5
06918	PETN	78-11-5	N.D.		14,000	41,000	5
06918	RDX	121-82-4	N.D.		910	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		690	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	410,000		35,000	100,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010289
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:32 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSH SDG#: KVM46-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	13,000	320	959	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.1	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 04:12	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 06:01	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 06:44	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/21/2015 00:04	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSH

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010289
Sample wt/vol: 30.14(g/mL) g Lab File ID: bh0807.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 32.1 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 513-85-9	2,3-Butanediol	3.316	12000	J
2.	Unknown	3.421	12000	J
3.	Unknown	3.619	7600	J
4.	Unknown Carboxylic Acid	3.741	14000	J
5.	Unknown	3.823	23000	J
6. 1000152-47-3	trans-Decalin, 2-methyl-	6.358	2200	J
7. 629-50-5	Tridecane	6.836	3500	J
8.	Unknown Alkane	7.268	3200	J
9. 544-76-3	Hexadecane	7.431	9900	J
10.	Unknown Alkane	7.530	2400	J
11.	Unknown Alkane	7.711	1500	J
12. 13287-21-3	Tridecane, 6-methyl-	7.985	4700	J
13.	Unknown	9.477	29000	J
14.	Unknown	10.100	22000	J
15.	Unknown	10.415	55000	J
16. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.479	21000	J
17.	Unknown	10.508	4100	J
18. 57-10-3	n-Hexadecanoic acid	10.573	44000	J
19. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.707	5700	J
20. 59229-75-3	1,3-Benzenediamine, 2-methyl	10.747	2700	J
21. 60-33-3	9,12-Octadecadienoic acid (Z	11.249	18000	J
22.	Unknown	11.272	15000	J
23. 1000336-36-2	Methyl 9,12-heptadecadienoat	11.412	1200	J
24.	Unknown	11.721	980	J
25.	Unknown	12.036	1400	J
26.				
27. SVOCTIC	Total SVOC TICs		320000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010290
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:45 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSI SDG#: KVM46-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		130	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		500	1,300	5
10727	Benzo(a)anthracene	56-55-3	68	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	83	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	94	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	70	J	25	130	5
10727	Benzo(k)fluoranthene	207-08-9	64	J	25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		500	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		500	1,300	5
10727	Caprolactam	105-60-2	N.D.		250	1,300	5
10727	Carbazole	86-74-8	N.D.		130	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	500	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	250	5
10727	2-Chlorophenol	95-57-8	N.D.		130	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	95	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		25	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		750	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	250	5
10727	Diethylphthalate	84-66-2	N.D.		500	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	250	5
10727	Dimethylphthalate	131-11-3	N.D.		500	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	3,800	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,300	7,500	5
10727	2,4-Dinitrotoluene	121-14-2	1,400		500	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	620		130	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		500	1,300	5
10727	Fluoranthene	206-44-0	120	J	25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	3,800	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	40	J	25	130	5
10727	Isophorone	78-59-1	N.D.		130	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010290
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:45 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSI SDG#: KVM46-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	250	5
10727	4-Methylphenol	106-44-5	N.D.		130	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	250	5
10727	3-Nitroaniline	99-09-2	N.D.		500	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		500	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	250	5
10727	2-Nitrophenol	88-75-5	N.D.		130	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	3,800	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		500	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	71	J	25	130	5
10727	Phenol	108-95-2	N.D.		130	250	5
10727	Pyrene	129-00-0	100	J	25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	250	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	220,000		50,000	130,000	250
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	130,000		33,000	100,000	250
06918	1,2-Dinitrobenzene	528-29-0	N.D.		670	2,000	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		670	2,000	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		670	2,000	5
06918	HMX	2691-41-0	N.D.		1,700	5,000	5
06918	Nitrobenzene	98-95-3	N.D.		670	2,000	5
06918	Nitroglycerin	55-63-0	N.D.		13,000	40,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		670	2,000	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,300	2,700	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,300	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	2,700	5
06918	PETN	78-11-5	N.D.		13,000	40,000	5
06918	RDX	121-82-4	N.D.		930	2,000	5
06918	Tetryl	479-45-8	N.D.		1,100	2,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		670	2,000	5
06918	2,4,6-Trinitrotoluene	118-96-7	190,000		33,000	100,000	250

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010290
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:45 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSI SDG#: KVM46-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	14,500	398	1,200	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	34.0	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 04:34	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 09:34	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 10:59	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/21/2015 00:56	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSI

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010290
Sample wt/vol: 30.14(g/mL) g Lab File ID: bh0808.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 34 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.671	17000	J
2.		Unknown	3.770	14000	J
3.	112-40-3	Dodecane	6.836	3400	J
4.		Unknown Alkane	6.918	3300	J
5.	58462-32-1	trans,trans-3-Ethylbicyclo[4	7.099	2700	J
6.		Unknown Alkane	7.221	2700	J
7.		Unknown Alkane	7.268	4000	J
8.		Unknown	7.361	3200	J
9.	629-50-5	Tridecane	7.437	10000	J
10.		Unknown Alkane	7.530	3400	J
11.		Unknown	7.565	3300	J
12.		Unknown Alkane	7.711	2800	J
13.	56862-62-5	10-Methylnonadecane	7.792	1900	J
14.	544-76-3	Hexadecane	7.990	6200	J
15.		Unknown Alkane	8.031	1900	J
16.		Unknown	9.500	160000	J
17.		Unknown	10.106	43000	J
18.		Unknown	10.444	120000	J
19.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.502	90000	J
20.	57-10-3	n-Hexadecanoic acid	10.584	64000	J
21.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.724	13000	J
22.	59229-75-3	1,3-Benzenediamine, 2-methyl	10.771	3700	J
23.	60-33-3	9,12-Octadecadienoic acid (Z	11.254	30000	J
24.		Unknown	11.412	1300	J
25.		Unknown	12.035	1800	J
26.					
27.	SVOCTIC	Total SVOC TICs		610000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010291
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:15 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSJ SDG#: KVM46-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		130	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		500	1,200	5
10727	Benzo(a)anthracene	56-55-3	59	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	53	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	74	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		25	130	5
10727	Benzo(k)fluoranthene	207-08-9	35	J	25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		500	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		500	1,200	5
10727	Caprolactam	105-60-2	N.D.		250	1,200	5
10727	Carbazole	86-74-8	N.D.		130	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	500	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		52	250	5
10727	2-Chlorophenol	95-57-8	N.D.		130	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	58	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		25	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		750	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	250	5
10727	Diethylphthalate	84-66-2	N.D.		500	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	250	5
10727	Dimethylphthalate	131-11-3	N.D.		500	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,700	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,200	7,500	5
10727	2,4-Dinitrotoluene	121-14-2	4,000		500	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	1,000		130	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		500	1,300	5
10727	Fluoranthene	206-44-0	96	J	25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,700	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	25	J	25	130	5
10727	Isophorone	78-59-1	N.D.		130	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010291
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:15 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSJ SDG#: KVM46-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	250	5
10727	4-Methylphenol	106-44-5	N.D.		130	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	250	5
10727	3-Nitroaniline	99-09-2	N.D.		500	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		500	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		130	250	5
10727	2-Nitrophenol	88-75-5	N.D.		130	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,700	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		500	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	N.D.		25	130	5
10727	Phenol	108-95-2	N.D.		130	250	5
10727	Pyrene	129-00-0	68	J	25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	250	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	26,000		1,000	2,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	24,000		670	2,000	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		670	2,000	5
06918	1,3-Dinitrobenzene	99-65-0	770	J	670	2,000	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		670	2,000	5
06918	HMX	2691-41-0	N.D.		1,700	5,000	5
06918	Nitrobenzene	98-95-3	N.D.		670	2,000	5
06918	Nitroglycerin	55-63-0	N.D.		13,000	40,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		670	2,000	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,300	2,700	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,300	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	2,700	5
06918	PETN	78-11-5	N.D.		13,000	40,000	5
06918	RDX	121-82-4	N.D.		870	2,000	5
06918	Tetryl	479-45-8	N.D.		1,100	2,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	3,800		670	2,000	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,800,000		33,000	100,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010291
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:15 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSJ SDG#: KVM46-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,870	352	1,050	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	34.0	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 04:55	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 12:23	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 13:06	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531A	08/21/2015 01:09	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSJ

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010291
Sample wt/vol: 30.31(g/mL) g Lab File ID: bh0809.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 34 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 19 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	6.726	1200	J
2.	6044-71-9	Dodecane, 6-methyl-	6.918	2500	J
3.		Unknown Alkane	7.011	1600	J
4.	66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.099	1100	J
5.		Unknown Cycloalkane	7.122	1100	J
6.		Unknown Alkane	7.145	1800	J
7.		Unknown Alkane	7.192	1700	J
8.		Unknown Alkane	7.268	4600	J
9.	629-50-5	Tridecane	7.431	8600	J
10.		Unknown	7.477	2100	J
11.		Unknown	7.565	2200	J
12.		Unknown Alkane	7.623	1500	J
13.		Unknown Alkane	7.711	2100	J
14.		Unknown Alkane	8.031	1300	J
15.		Unknown	10.403	1300	J
16.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.473	15000	J
17.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.701	12000	J
18.		Unknown	10.841	2400	J
19.		Unknown	15.568	2400	J
20.					
21.	SVOCTIC	Total SVOC TICs		67000	J
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010292
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:52 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSK SDG#: KVM46-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		29	150	5
10727	Acenaphthylene	208-96-8	N.D.		29	150	5
10727	Acetophenone	98-86-2	N.D.		150	290	5
10727	Anthracene	120-12-7	N.D.		29	150	5
10727	Atrazine	1912-24-9	N.D.		290	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		580	1,500	5
10727	Benzo(a)anthracene	56-55-3	88	J	29	150	5
10727	Benzo(a)pyrene	50-32-8	82	J	29	150	5
10727	Benzo(b)fluoranthene	205-99-2	110	J	29	150	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		29	150	5
10727	Benzo(k)fluoranthene	207-08-9	53	J	29	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	290	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	290	5
10727	Butylbenzylphthalate	85-68-7	N.D.		580	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		580	1,500	5
10727	Caprolactam	105-60-2	N.D.		290	1,500	5
10727	Carbazole	86-74-8	N.D.		150	290	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	290	5
10727	4-Chloroaniline	106-47-8	N.D.		290	580	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	290	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	290	5
10727	2-Chloronaphthalene	91-58-7	N.D.		61	290	5
10727	2-Chlorophenol	95-57-8	N.D.		150	290	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	290	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	290	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	94	J	29	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		29	150	5
10727	Dibenzofuran	132-64-9	N.D.		150	290	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		870	2,900	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	290	5
10727	Diethylphthalate	84-66-2	N.D.		580	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	290	5
10727	Dimethylphthalate	131-11-3	N.D.		580	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,400	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,700	5
10727	2,4-Dinitrotoluene	121-14-2	3,500		580	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	1,200		150	290	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		580	1,500	5
10727	Fluoranthene	206-44-0	130	J	29	150	5
10727	Fluorene	86-73-7	N.D.		29	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		29	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	290	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,400	5
10727	Hexachloroethane	67-72-1	N.D.		290	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	45	J	29	150	5
10727	Isophorone	78-59-1	N.D.		150	290	5
10727	2-Methylnaphthalene	91-57-6	N.D.		29	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010292
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:52 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSK SDG#: KVM46-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	290	5
10727	4-Methylphenol	106-44-5	N.D.		150	290	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		29	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	290	5
10727	3-Nitroaniline	99-09-2	N.D.		580	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		580	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	290	5
10727	2-Nitrophenol	88-75-5	N.D.		150	290	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,400	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	290	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	290	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		580	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		290	1,500	5
10727	Phenanthrene	85-01-8	72	J	29	150	5
10727	Phenol	108-95-2	N.D.		150	290	5
10727	Pyrene	129-00-0	130	J	29	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	290	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	290	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	70,000		1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	47,000		810	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		810	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		810	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		810	2,400	5
06918	HMX	2691-41-0	N.D.		2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.		810	2,400	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	48,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		810	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,000	4,000	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,200	5
06918	PETN	78-11-5	N.D.		16,000	48,000	5
06918	RDX	121-82-4	N.D.		1,100	2,400	5
06918	Tetryl	479-45-8	N.D.		1,300	3,200	5
06918	1,3,5-Trinitrobenzene	99-35-4	4,300		810	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,700,000		40,000	120,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-08172015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8010292
LL Group # 1585374
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 08/17/2015 10:52 by SL

Submitted: 08/17/2015 18:25
Reported: 08/26/2015 13:53

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

--PSK SDG#: KVM46-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	14,500	380	1,140	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	42.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15231SLA026	08/22/2015 05:17	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15231SLA026	08/19/2015 17:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 14:31	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152310012A	08/22/2015 15:13	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152310012A	08/19/2015 14:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15232049531B	08/21/2015 01:19	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15231820005B	08/19/2015 21:00	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

--PSK

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8010292
Sample wt/vol: 30.01(g/mL) g Lab File ID: bh0810.d
Level: (low/med) LOW Date Received: 08/17/15
% Moisture: 42.7 Decanted: (Y/N) Date Extracted: 08/19/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/22/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	6.353	2400	J
2.	Unknown	6.463	1200	J
3. 1618-22-0	Naphthalene, decahydro-2,6-d	6.726	1400	J
4. 1120-21-4	Undecane	6.836	3500	J
5.	Unknown Alkane	6.918	2300	J
6. 6044-71-9	Dodecane, 6-methyl-	7.145	2000	J
7.	Unknown Alkane	7.192	1800	J
8.	Unknown Alkane	7.221	2100	J
9.	Unknown	7.268	5200	J
10.	Unknown	7.396	1200	J
11. 629-50-5	Tridecane	7.431	12000	J
12.	Unknown	7.478	1900	J
13.	Unknown Alkane	7.524	2200	J
14.	Unknown	7.565	1500	J
15.	Unknown Alkane	7.711	2200	J
16. 1560-96-9	Tridecane, 2-methyl-	7.792	1300	J
17. 629-59-4	Tetradecane	7.985	6300	J
18.	Unknown Alkane	8.993	1300	J
19.	Unknown	9.564	740000	J
20. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.485	40000	J
21. 618-87-1	Benzenamine, 3,5-dinitro-	10.543	2600	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.707	25000	J
23.	Unknown	10.841	2900	J
24.				
25. SVOCTIC	Total SVOC TICs		860000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1585374
Reported: 08/26/2015 13:53

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15231SLA026	Sample number(s): 8010282-8010292								
Acenaphthene	N.D.	3.	17	ug/kg	100		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	105		83-127		
Acetophenone	N.D.	17.	33	ug/kg	100		74-116		
Anthracene	N.D.	3.	17	ug/kg	101		82-118		
Atrazine	N.D.	33.	170	ug/kg	90		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	62		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	97		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	99		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	100		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	95		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	102		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	97		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	95		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	103		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	101		84-120		
Caprolactam	N.D.	33.	170	ug/kg	114		71-129		
Carbazole	N.D.	17.	33	ug/kg	99		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	113		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	59		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	106		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	97		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	102		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	104		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	105		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	101		63-126		
Chrysene	N.D.	3.	17	ug/kg	100		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	95		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	101		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	62		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	112		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	104		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	108		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	104		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	94		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	95		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	109		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	115		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	100		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	99		81-117		
Fluorene	N.D.	3.	17	ug/kg	106		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	96		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	92		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	107		68-145		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1585374
Reported: 08/26/2015 13:53

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachloroethane	N.D.	33.	170	ug/kg	97		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	94		81-118		
Isophorone	N.D.	17.	33	ug/kg	102		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	103		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	110		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	106		75-119		
Naphthalene	N.D.	3.	17	ug/kg	102		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	111		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	107		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	82		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	105		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	106		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	108		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	100		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	95		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	110		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	97		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	95		80-114		
Phenol	N.D.	17.	33	ug/kg	108		73-122		
Pyrene	N.D.	3.	17	ug/kg	97		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	107		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	104		81-123		
Batch number: 152310012A	Sample number(s): 8010282-8010292								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	111		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	109		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	113		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	108		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	103		83-122		
HMX	N.D.	250.	750	ug/kg	85		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	111		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	93		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	111		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	109		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	106		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	100		80-122		
PETN	N.D.	2,000.	6,000	ug/kg	100		64-121		
RDX	N.D.	130.	300	ug/kg	110		84-122		
Tetryl	N.D.	160.	400	ug/kg	104		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	100		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	101		82-133		
Batch number: 15232049531A	Sample number(s): 8010282-8010291								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	93		47-143		
Batch number: 15232049531B	Sample number(s): 8010292								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	93		47-143		
Batch number: 15231820005A	Sample number(s): 8010282-8010283								
Moisture					100		99-101		
Batch number: 15231820005B	Sample number(s): 8010284-8010292								
Moisture					100		99-101		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1585374
Reported: 08/26/2015 13:53

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15231SLA026	Sample number(s): 8010282-8010292 UNSPK: P998397								
Acenaphthene	97	97	83-116	0	30				
Acenaphthylene	99	100	83-127	2	30				
Acetophenone	94	101	74-116	8	30				
Anthracene	96	95	82-118	0	30				
Atrazine	87	92	63-148	6	30				
Benzaldehyde	66	68	10-69	3	30				
Benzo(a)anthracene	104	85	76-119	14	30				
Benzo(a)pyrene	100	87	85-117	10	30				
Benzo(b)fluoranthene	98	86	78-129	9	30				
Benzo(g,h,i)perylene	99	90	82-119	8	30				
Benzo(k)fluoranthene	94	87	79-120	6	30				
1,1'-Biphenyl	96	96	80-116	0	30				
4-Bromophenyl-phenylether	98	102	84-120	5	30				
Butylbenzylphthalate	103	103	80-118	1	30				
Di-n-butylphthalate	101	99	84-120	2	30				
Caprolactam	97	100	71-129	4	30				
Carbazole	96	91	78-117	4	30				
4-Chloro-3-methylphenol	101	102	79-127	2	30				
4-Chloroaniline	63	45	10-103	33*	30				
bis(2-Chloroethoxy)methane	101	101	77-116	0	30				
bis(2-Chloroethyl)ether	94	96	77-115	2	30				
2-Chloronaphthalene	99	99	63-146	0	30				
2-Chlorophenol	91	98	85-123	9	30				
4-Chlorophenyl-phenylether	100	100	81-120	0	30				
2,2'-oxybis(1-Chloropropane)	99	103	63-126	5	30				
Chrysene	101	83	80-121	14	30				
Dibenz(a,h)anthracene	97	93	81-123	3	30				
Dibenzofuran	94	95	85-115	2	30				
3,3'-Dichlorobenzidine	49	34	10-104	35*	30				
2,4-Dichlorophenol	87	92	81-123	6	30				
Diethylphthalate	97	98	81-118	1	30				
2,4-Dimethylphenol	97	98	83-120	1	30				
Dimethylphthalate	96	96	82-113	1	30				
4,6-Dinitro-2-methylphenol	64	43*	59-131	39*	30				
2,4-Dinitrophenol	47	25*	27-140	62*	30				
2,4-Dinitrotoluene	98	101	81-122	3	30				
2,6-Dinitrotoluene	100	106	83-120	5	30				
bis(2-Ethylhexyl)phthalate	97	90	81-121	5	30				
Fluoranthene	94	69*	81-117	16	30				
Fluorene	97	98	86-118	2	30				
Hexachlorobenzene	96	98	75-123	3	30				
Hexachlorobutadiene	97	93	72-120	4	30				
Hexachlorocyclopentadiene	0*	0*	68-145	0	30				
Hexachloroethane	93	93	78-114	0	30				
Indeno(1,2,3-cd)pyrene	96	89	81-118	6	30				
Isophorone	96	97	78-125	1	30				
2-Methylnaphthalene	97	98	83-109	1	30				
2-Methylphenol	102	110	82-125	8	30				
4-Methylphenol	94	101	75-119	8	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1585374
Reported: 08/26/2015 13:53

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Naphthalene	101	98	83-112	2	30				
2-Nitroaniline	106	105	84-126	1	30				
3-Nitroaniline	96	92	66-119	4	30				
4-Nitroaniline	80	72	50-100	10	30				
Nitrobenzene	101	101	70-122	1	30				
2-Nitrophenol	75*	70*	83-120	7	30				
4-Nitrophenol	67	59*	60-129	12	30				
N-Nitroso-di-n-propylamine	89	96	67-121	7	30				
N-Nitrosodiphenylamine	99	101	83-118	3	30				
Di-n-octylphthalate	108	113	74-146	4	30				
Pentachlorophenol	55*	46*	57-126	16	30				
Phenanthrene	85	81	80-114	3	30				
Phenol	99	103	73-122	5	30				
Pyrene	97	84	81-114	9	30				
2,4,5-Trichlorophenol	75*	73*	86-123	2	30				
2,4,6-Trichlorophenol	70*	66*	81-123	5	30				
Batch number: 152310012A	Sample number(s): 8010282-8010292 UNSPK: 8010289								
4-Amino-2,6-Dinitrotoluene	539 (2)	600 (2)	85-118	6	50				
2-Amino-4,6-Dinitrotoluene	357 (2)	455 (2)	69-113	13	50				
1,2-Dinitrobenzene	94	95	80-120	6	50				
1,3-Dinitrobenzene	100	105	89-119	9	50				
1,4-Dinitrobenzene	88	95	82-117	13	50				
HMX	0*	0*	72-107	0	50				
Nitrobenzene	102	106	86-108	9	50				
Nitroglycerin	109	102	73-116	2	50				
1-Nitronaphthalene	121	119	89-131	3	50				
2-Nitrotoluene	94	96	79-112	7	50				
3-Nitrotoluene	98	103	72-119	10	50				
4-Nitrotoluene	85*	83*	90-118	2	50				
PETN	115	125	71-133	13	50				
RDX	120*	124*	75-108	8	50				
Tetryl	43*	53*	58-125	26	50				
1,3,5-Trinitrobenzene	97	100	58-135	8	50				
2,4,6-Trinitrotoluene	-4408 (2)	-5068 (2)	92-114	61*	50				
Batch number: 15232049531A	Sample number(s): 8010282-8010291 UNSPK: 8010282 BKG: 8010282								
TOC by Lloyd Kahn	97		47-143			5,230	5,890	12*	7
Batch number: 15232049531B	Sample number(s): 8010292 UNSPK: P012640 BKG: P012640								
TOC by Lloyd Kahn	67		47-143			23,200	21,700	7	7
Batch number: 15231820005A	Sample number(s): 8010282-8010283 BKG: 8010283								
Moisture						38.8	38.1	2	5
Batch number: 15231820005B	Sample number(s): 8010284-8010292 BKG: 8010289								
Moisture						32.1	32.0	0	5

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1585374
Reported: 08/26/2015 13:53

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15231SLA026

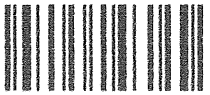
	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8010282	98	97	89	93	93	106
8010283	96	94	82	87	89	101
8010284	90	90	85	84	83	99
8010285	102	98	87	89	95	109
8010286	101	97	90	86	94	106
8010287	98	95	88	88	85	99
8010288	102	94	88	75	91	104
8010289	103	98	86	90	89	107
8010290	99	95	91	90	90	104
8010291	98	96	83	90	89	104
8010292	99	97	82	95	91	105
Blank	91	92	103	88	90	101
LCS	102	102	99	98	93	103
MS	94	89	60	92	92	101
MSD	100	91	57	93	94	101
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152310012A

	2-Nitro-m-xylene
8010282	233*
8010283	247*
8010284	220*
8010285	253*
8010286	267*
8010287	232*
8010288	308*
8010289	287*
8010290	0*
8010291	242*
8010292	259*
Blank	99
LCS	113
MS	414*
MSD	267*
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody



eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1585374 Sample # 8010282-92
Instructions on reverse side correspond with circled numbers.

1 Client Information

Client: Arcadis-US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NS007000 NJ 78
Sampler: S. Lemoine	Quote #:

Name of state where samples were collected: NJ

4 Matrix: Sediment ☐ Soil ☒ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: ____

5 Analysis Requested — Preservation Codes

For Lab Use Only: FSC: ____ SCR#: 175117

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, O=Other

6 Remarks: Note: TNT concentrations between 500 - 1500 mg/kg

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	SVOC (SW846, 8270, Tics)	E+E (SW846, 8330, Tics)	TOC	% Moisture
TNT-PS-A-08172015	8/17/15	1057	X	X	1	X	X	X	X
TNT-PS-B-08172015		1022		X	1	X	X	X	X
TNT-PS-C-08172015		845		X	1	X	X	X	X
TNT-PS-D-08172015		935		X	1	X	X	X	X
TNT-PS-E-08172015		943		X	1	X	X	X	X
TNT-PS-F-08172015		1005		X	1	X	X	X	X
TNT-PS-G-08172015		1026		X	1	X	X	X	X
TNT-PS-H-08172015		1032		X	1	X	X	X	X
TNT-PS-I-08172015		1045		X	1	X	X	X	X
TNT-PS-J-08172015		1015		X	1	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)
Standard (Rush)
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 8/24/15

E-mail address: ____

8 Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) — Type VI (Raw Data Only)
Type III (Reduced non-CLP) — TX TRRP-13
NYSDEC Category A or B — MA MCP — CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Bottle Storage	7/27/15	6130	[illegible]	7/27/15	6130
[illegible]	7/27/15	10:00	[illegible]		
[illegible]	8/17/15	1420	[illegible]	8/17/15	1420
[illegible]	8/17/15	1825			
			[illegible]	8/17/15	1825

9

EDD Required? Yes No
If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 4.1 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1585374 Sample # 8010282-92
Instructions on reverse side correspond with circled numbers.

384020

1 Client Information

Client: Arcadis - US	Acct. #: 06716
Project Name/#: Ashland / Herakes	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ007000, NJ578
Sampler: S. Lemoine	Quote #:

Name of state where samples were collected: NJ

4 Matrix: Sediment ☐ Soil ☒ Water: Ground ☐ Potable ☐ Surface ☐ NPDES ☐ Other: ____

5 Analysis Requested — Preservation Codes

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	SVOC (SW846, 8270, TCL)	Et+E (SW846, 8330, Trg)	TOC	% Moisture
TNT-PS-K-08172015	8/17/15	1052		X	1	X	X	X	

For Lab Use Only
FSC: ____
SCR#: ____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks
Note: TNT Concentrations between 500 - 1500 mg/kg

7 Turnaround Time (TAT) Requested (please circle)
Standard (Rush)
(Rush TAT is subject to laboratory approval and surcharge.)
Date results are needed: 8/24/15
E-mail address: ____

8 Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Steve Lemoine	8/17/15	1420	Don Powell	8/17/15	1426
Don Powell	8/17/15	1825			
			Fed Ex	8/17/15	1825

9

EDD Required? Yes No
If yes, format: ____
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____
Temperature upon receipt 4.1 °C

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

September 15, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 08/31/2015
Group Number: 1589100
SDG: KVM48
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-08312015 Composite Soil Sample	8029163
TNT-PS-B-08312015 Composite Soil Sample	8029164
TNT-PS-C-08312015 Composite Soil Sample	8029165
TNT-PS-D-08312015 Composite Soil Sample	8029166
TNT-PS-E-08312015 Composite Soil Sample	8029167
TNT-PS-F-08312015 Composite Soil Sample	8029168
TNT-PS-G-08312015 Composite Soil Sample	8029169
TNT-PS-H-08312015 Composite Soil Sample	8029170
TNT-PS-I-08312015 Composite Soil Sample	8029171
TNT-PS-K-08312015 Composite Soil Sample	8029172
TNT-PS-J-08312015 Composite Soil Sample	8029173

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-A-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029163
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 13:20 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4801 SDG#: KVM48-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		16	84	5
10727	Acenaphthylene	208-96-8	N.D.		16	84	5
10727	Acetophenone	98-86-2	N.D.		82	160	5
10727	Anthracene	120-12-7	N.D.		16	84	5
10727	Atrazine	1912-24-9	N.D.		160	820	5
10727	Benzaldehyde	100-52-7	N.D.		330	820	5
10727	Benzo(a)anthracene	56-55-3	27	J	16	84	5
10727	Benzo(a)pyrene	50-32-8	N.D.		16	84	5
10727	Benzo(b)fluoranthene	205-99-2	23	J	16	84	5
10727	Benzo(g,h,i)perylene	191-24-2	22	J	16	84	5
10727	Benzo(k)fluoranthene	207-08-9	21	J	16	84	5
10727	1,1'-Biphenyl	92-52-4	N.D.		82	160	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		82	160	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	820	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	820	5
10727	Caprolactam	105-60-2	N.D.		160	820	5
10727	Carbazole	86-74-8	N.D.		82	160	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		82	160	5
10727	4-Chloroaniline	106-47-8	N.D.		160	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		82	160	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		82	160	5
10727	2-Chloronaphthalene	91-58-7	N.D.		34	160	5
10727	2-Chlorophenol	95-57-8	N.D.		82	160	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		82	160	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		82	160	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	31	J	16	84	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		16	84	5
10727	Dibenzofuran	132-64-9	N.D.		82	160	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		490	1,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		82	160	5
10727	Diethylphthalate	84-66-2	N.D.		330	820	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		82	160	5
10727	Dimethylphthalate	131-11-3	N.D.		330	820	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		820	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	4,900	5
10727	2,4-Dinitrotoluene	121-14-2	1,200		330	820	5
10727	2,6-Dinitrotoluene	606-20-2	330		82	160	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	840	5
10727	Fluoranthene	206-44-0	35	J	16	84	5
10727	Fluorene	86-73-7	N.D.		16	84	5
10727	Hexachlorobenzene	118-74-1	N.D.		16	84	5
10727	Hexachlorobutadiene	87-68-3	N.D.		82	160	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		820	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		160	820	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	21	J	16	84	5
10727	Isophorone	78-59-1	N.D.		82	160	5
10727	2-Methylnaphthalene	91-57-6	N.D.		16	84	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029163
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 13:20 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4801 SDG#: KVM48-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		82	160	5
10727	4-Methylphenol	106-44-5	N.D.		82	160	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		16	84	5
10727	2-Nitroaniline	88-74-4	N.D.		82	160	5
10727	3-Nitroaniline	99-09-2	N.D.		330	820	5
10727	4-Nitroaniline	100-01-6	N.D.		330	820	5
10727	Nitrobenzene	98-95-3	N.D.		82	160	5
10727	2-Nitrophenol	88-75-5	N.D.		82	160	5
10727	4-Nitrophenol	100-02-7	N.D.		820	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		82	160	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		82	160	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	820	5
10727	Pentachlorophenol	87-86-5	N.D.		160	840	5
10727	Phenanthrene	85-01-8	20	J	16	84	5
10727	Phenol	108-95-2	N.D.		82	160	5
10727	Pyrene	129-00-0	30	J	16	84	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		82	160	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		82	160	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	33,000		740	2,000	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	19,000		500	1,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		500	1,500	5
06918	1,3-Dinitrobenzene	99-65-0	1,000	J	500	1,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		500	1,500	5
06918	HMX	2691-41-0	N.D.		1,200	3,700	5
06918	Nitrobenzene	98-95-3	N.D.		500	1,500	5
06918	Nitroglycerin	55-63-0	N.D.		9,900	30,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		500	1,500	5
06918	2-Nitrotoluene	88-72-2	N.D.		990	2,000	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,200	2,500	5
06918	4-Nitrotoluene	99-99-0	N.D.		990	2,000	5
06918	PETN	78-11-5	N.D.		9,900	30,000	5
06918	RDX	121-82-4	N.D.		640	1,500	5
06918	Tetryl	479-45-8	N.D.		790	2,000	5
06918	1,3,5-Trinitrobenzene	99-35-4	1,900		500	1,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,100,000		25,000	74,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029163
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 13:20 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4801 SDG#: KVM48-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	9,120	340	1,020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/05/2015 21:20	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/09/2015 19:50	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/09/2015 20:32	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/02/2015 23:10	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K4801

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029163
Sample wt/vol: 30.47(g/mL) g Lab File ID: bi0216.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/05/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 23 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.17301-23-4	Undecane, 2,6-dimethyl-	6.877	800	J
2.1000309-18-4	Sulfurous acid, butyl heptad	6.976	770	J
3.	Unknown	7.064	900	J
4.	Unknown	7.122	820	J
5.	Unknown	7.151	690	J
6.	Unknown Alkane	7.186	840	J
7.	Unknown Alkane	7.227	1200	J
8.	Unknown	7.273	720	J
9.629-50-5	Tridecane	7.396	3100	J
10.	Unknown	7.442	760	J
11.	Unknown Alkane	7.489	980	J
12.	Unknown Alkane	7.588	670	J
13.	Unknown Alkane	7.676	1200	J
14.	Unknown Alkane	7.751	870	J
15.	Unknown Alkane	7.815	730	J
16.	Unknown Alkane	7.949	2900	J
17.	Unknown	8.014	940	J
18.	Unknown Alkane	8.200	720	J
19.	Unknown Cycloalkane	8.253	1600	J
20.544-76-3	Hexadecane	8.958	880	J
21.	Unknown	9.517	230000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	10.444	6000	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.671	4100	J
24.				
25.SVOCTIC	Total SVOC TICs		260000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029164
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 11:07 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4802 SDG#: KVM48-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	4	J	3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		16	33	1
10727	Anthracene	120-12-7	N.D.		3	17	1
10727	Atrazine	1912-24-9	N.D.		33	160	1
10727	Benzaldehyde	100-52-7	N.D.		66	160	1
10727	Benzo(a)anthracene	56-55-3	14	J	3	17	1
10727	Benzo(a)pyrene	50-32-8	12	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	17	J	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	12	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	9	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	160	1
10727	Caprolactam	105-60-2	N.D.		33	160	1
10727	Carbazole	86-74-8	N.D.		16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		16	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	14	J	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		16	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		16	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	1,400		66	160	1
10727	2,6-Dinitrotoluene	606-20-2	380		16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	24		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		160	490	1
10727	Hexachloroethane	67-72-1	N.D.		33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	11	J	3	17	1
10727	Isophorone	78-59-1	N.D.		16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029164
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 11:07 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4802 SDG#: KVM48-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		16	33	1
10727	4-Methylphenol	106-44-5	N.D.		16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		16	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	160	1
10727	4-Nitroaniline	100-01-6	N.D.		66	160	1
10727	Nitrobenzene	98-95-3	N.D.		16	33	1
10727	2-Nitrophenol	88-75-5	N.D.		16	33	1
10727	4-Nitrophenol	100-02-7	N.D.		160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	160	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	12	J	3	17	1
10727	Phenol	108-95-2	N.D.		16	33	1
10727	Pyrene	129-00-0	18		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		16	33	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	14,000		720	1,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	13,000		480	1,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		480	1,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		480	1,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		480	1,400	5
06918	HMX	2691-41-0	N.D.		1,200	3,600	5
06918	Nitrobenzene	98-95-3	N.D.		480	1,400	5
06918	Nitroglycerin	55-63-0	N.D.		9,600	29,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		480	1,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		960	1,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,200	2,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		960	1,900	5
06918	PETN	78-11-5	N.D.		9,600	29,000	5
06918	RDX	121-82-4	N.D.		620	1,400	5
06918	Tetryl	479-45-8	N.D.		770	1,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	1,300	J	480	1,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,300,000		24,000	72,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029164
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 11:07 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4802 SDG#: KVM48-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	6,840	340	1,020	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/05/2015 22:24	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/09/2015 21:58	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/09/2015 22:40	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/02/2015 23:36	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K4802

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029164
Sample wt/vol: 30.32(g/mL) g Lab File ID: bi0219.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.922	1200	JAB
2. 1000152-47-3	trans-Decalin, 2-methyl-	6.318	290	J
3.	Unknown Alkane	6.801	510	J
4. 17301-23-4	Undecane, 2,6-dimethyl-	6.877	370	J
5.	Unknown Alkane	6.976	360	J
6. 58462-32-1	trans,trans-3-Ethylbicyclo[4	7.064	570	J
7.	Unknown Alkane	7.110	380	J
8.	Unknown Alkane	7.151	320	J
9.	Unknown Alkane	7.186	360	J
10.	Unknown Alkane	7.227	590	J
11. 629-59-4	Tetradecane	7.396	1500	J
12.	Unknown	7.442	400	J
13.	Unknown Alkane	7.489	400	J
14.	Unknown	7.530	460	J
15.	Unknown Alkane	7.588	310	J
16.	Unknown Alkane	7.676	420	J
17. 1560-96-9	Tridecane, 2-methyl-	7.751	320	J
18. 544-76-3	Hexadecane	7.950	970	J
19. 629-50-5	Tridecane	7.996	300	J
20.	Unknown	8.200	260	J
21.	Unknown	8.253	570	J
22.	Unknown	8.964	260	J
23.	Unknown	9.628	93000	J
24. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.473	950	J
25. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.701	2400	J
26.				
27. SVOCTIC	Total SVOC TICs		110000	JAB
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029165
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:38 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4803 SDG#: KVM48-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	15	J	3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	19		3	17	1
10727	Benzo(a)pyrene	50-32-8	15	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	23		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	18		3	17	1
10727	Benzo(k)fluoranthene	207-08-9	12	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	22		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	8	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	990	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	27		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	13	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029165
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:38 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4803 SDG#: KVM48-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		17	33	1
10727	4-Methylphenol	106-44-5	N.D.		17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	4	J	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.		17	33	1
10727	3-Nitroaniline	99-09-2	N.D.		66	170	1
10727	4-Nitroaniline	100-01-6	N.D.		66	170	1
10727	Nitrobenzene	98-95-3	N.D.		17	33	1
10727	2-Nitrophenol	88-75-5	N.D.		17	33	1
10727	4-Nitrophenol	100-02-7	N.D.		170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		66	170	1
10727	Pentachlorophenol	87-86-5	N.D.		33	170	1
10727	Phenanthrene	85-01-8	13	J	3	17	1
10727	Phenol	108-95-2	N.D.		17	33	1
10727	Pyrene	129-00-0	26		3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		17	33	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	17,000		690	1,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	16,000		460	1,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		460	1,400	5
06918	1,3-Dinitrobenzene	99-65-0	470	J	460	1,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		460	1,400	5
06918	HMX	2691-41-0	N.D.		1,200	3,500	5
06918	Nitrobenzene	98-95-3	N.D.		460	1,400	5
06918	Nitroglycerin	55-63-0	N.D.		9,200	28,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		460	1,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		920	1,800	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,200	2,300	5
06918	4-Nitrotoluene	99-99-0	N.D.		920	1,800	5
06918	PETN	78-11-5	N.D.		9,200	28,000	5
06918	RDX	121-82-4	N.D.		600	1,400	5
06918	Tetryl	479-45-8	N.D.		740	1,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	1,700		460	1,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,800,000		23,000	69,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029165
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:38 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4803 SDG#: KVM48-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	6,920	352	1,060	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/07/2015 17:19	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 00:05	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 00:48	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/02/2015 23:49	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K4803

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029165
Sample wt/vol: 30.3 (g/mL) g Lab File ID: bi0281.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/07/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	3.534	940	JAB
2.	Unknown	6.290	450	J
3.65-85-0	Benzoic acid	6.314	510	J
4.	Unknown Alkane	6.460	430	J
5.17301-23-4	Undecane, 2,6-dimethyl-	6.541	240	J
6.	Unknown Alkane	6.844	280	J
7.61141-72-8	Dodecane, 4,6-dimethyl-	6.891	500	J
8.	Unknown	7.031	420	J
9.629-50-5	Tridecane	7.054	1000	J
10.85-44-9	Phthalic anhydride	7.165	580	J
11.	Unknown	7.334	690	J
12.17301-27-8	Undecane, 2,10-dimethyl-	7.410	460	J
13.	Unknown Alkane	7.450	470	J
14.629-59-4	Tetradecane	7.608	1800	J
15.	Unknown Alkane	7.922	700	J
16.629-62-9	Pentadecane	8.126	990	J
17.	Unknown	8.313	680	J
18.	Unknown	8.663	3500	J
19.	Unknown	9.234	110000	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	10.108	2900	J
21.	Unknown	10.172	870	J
22.	Unknown	10.225	650	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.324	4000	J
24.	Unknown	10.458	610	J
25.	Unknown	14.404	420	J
26.				
27.SVOCTIC	Total SVOC TICs		140000	JAB
28.				
29.				
30.				

Sample Description: TNT-PS-D-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029166
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:53 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4804 SDG#: KVM48-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		17	84	5
10727	Acenaphthylene	208-96-8	N.D.		17	84	5
10727	Acetophenone	98-86-2	N.D.		83	170	5
10727	Anthracene	120-12-7	N.D.		17	84	5
10727	Atrazine	1912-24-9	N.D.		170	830	5
10727	Benzaldehyde	100-52-7	N.D.		330	830	5
10727	Benzo(a)anthracene	56-55-3	37	J	17	84	5
10727	Benzo(a)pyrene	50-32-8	34	J	17	84	5
10727	Benzo(b)fluoranthene	205-99-2	48	J	17	84	5
10727	Benzo(g,h,i)perylene	191-24-2	27	J	17	84	5
10727	Benzo(k)fluoranthene	207-08-9	20	J	17	84	5
10727	1,1'-Biphenyl	92-52-4	N.D.		83	170	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		83	170	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	830	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	830	5
10727	Caprolactam	105-60-2	N.D.		170	830	5
10727	Carbazole	86-74-8	N.D.		83	170	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		83	170	5
10727	4-Chloroaniline	106-47-8	N.D.		170	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		83	170	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		83	170	5
10727	2-Chloronaphthalene	91-58-7	N.D.		35	160	5
10727	2-Chlorophenol	95-57-8	N.D.		83	170	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		83	170	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		83	170	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	46	J	17	84	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		17	84	5
10727	Dibenzofuran	132-64-9	N.D.		83	170	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		500	1,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		83	170	5
10727	Diethylphthalate	84-66-2	N.D.		330	830	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		83	170	5
10727	Dimethylphthalate	131-11-3	N.D.		330	830	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		830	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	5,000	5
10727	2,4-Dinitrotoluene	121-14-2	390	J	330	830	5
10727	2,6-Dinitrotoluene	606-20-2	110	J	83	170	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	840	5
10727	Fluoranthene	206-44-0	66	J	17	84	5
10727	Fluorene	86-73-7	N.D.		17	84	5
10727	Hexachlorobenzene	118-74-1	N.D.		17	84	5
10727	Hexachlorobutadiene	87-68-3	N.D.		83	170	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		830	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		170	830	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	28	J	17	84	5
10727	Isophorone	78-59-1	N.D.		83	170	5
10727	2-Methylnaphthalene	91-57-6	N.D.		17	84	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029166
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:53 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4804 SDG#: KVM48-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		83	170	5
10727	4-Methylphenol	106-44-5	N.D.		83	170	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		17	84	5
10727	2-Nitroaniline	88-74-4	N.D.		83	170	5
10727	3-Nitroaniline	99-09-2	N.D.		330	830	5
10727	4-Nitroaniline	100-01-6	N.D.		330	830	5
10727	Nitrobenzene	98-95-3	N.D.		83	170	5
10727	2-Nitrophenol	88-75-5	N.D.		83	170	5
10727	4-Nitrophenol	100-02-7	N.D.		830	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		83	170	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		83	170	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	830	5
10727	Pentachlorophenol	87-86-5	N.D.		170	840	5
10727	Phenanthrene	85-01-8	30	J	17	84	5
10727	Phenol	108-95-2	N.D.		83	170	5
10727	Pyrene	129-00-0	55	J	17	84	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		83	170	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		83	170	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,400		630	1,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,000		420	1,300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		420	1,300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		420	1,300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		420	1,300	5
06918	HMX	2691-41-0	N.D.		1,100	3,200	5
06918	Nitrobenzene	98-95-3	N.D.		420	1,300	5
06918	Nitroglycerin	55-63-0	N.D.		8,400	25,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		420	1,300	5
06918	2-Nitrotoluene	88-72-2	N.D.		840	1,700	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,100	2,100	5
06918	4-Nitrotoluene	99-99-0	N.D.		840	1,700	5
06918	PETN	78-11-5	N.D.		8,400	25,000	5
06918	RDX	121-82-4	N.D.		550	1,300	5
06918	Tetryl	479-45-8	N.D.		680	1,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		420	1,300	5
06918	2,4,6-Trinitrotoluene	118-96-7	47,000		420	1,300	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029166
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:53 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4804 SDG#: KVM48-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	11,500	451	1,350	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/05/2015 23:07	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 02:55	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/02/2015 23:56	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K4804

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029166
Sample wt/vol: 30.26(g/mL) g Lab File ID: bi0221.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/05/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.710	5000	J
2.	Unknown	2.780	5700	J
3.	Unknown	2.937	7100	J
4.	Unknown	2.972	6900	J
5.	Unknown	3.059	17000	J
6.	Unknown	3.083	6400	J
7.	Unknown	3.123	12000	J
8.	Unknown	3.141	5700	J
9.79-09-4	Propanoic acid	3.234	37000	J
10.79-31-2	Propanoic acid, 2-methyl-	3.386	5200	J
11.	Unknown	3.601	5200	J
12.	Unknown	3.724	5800	J
13.	Unknown	3.753	6600	J
14.	Unknown	3.794	7500	J
15.	Unknown	3.846	13000	J
16.	Unknown	3.881	11000	J
17.	Unknown	4.552	9200	J
18.142-62-1	Hexanoic acid	5.321	6500	J
19.629-50-5	Tridecane	7.396	5600	J
20.629-59-4	Tetradecane	7.950	3400	J
21.	Unknown	9.453	21000	J
22.	Unknown	10.363	5000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	10.438	3700	J
24.57-10-3	n-Hexadecanoic acid	10.543	14000	J
25.60-33-3	9,12-Octadecadienoic acid (Z	11.219	12000	J
26.				
27.SVOCTIC	Total SVOC TICs		240000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029167
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:58 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4805 SDG#: KVM48-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		17	85	5
10727	Acenaphthylene	208-96-8	N.D.		17	85	5
10727	Acetophenone	98-86-2	N.D.		83	170	5
10727	Anthracene	120-12-7	N.D.		17	85	5
10727	Atrazine	1912-24-9	N.D.		170	830	5
10727	Benzaldehyde	100-52-7	N.D.		330	830	5
10727	Benzo(a)anthracene	56-55-3	28	J	17	85	5
10727	Benzo(a)pyrene	50-32-8	19	J	17	85	5
10727	Benzo(b)fluoranthene	205-99-2	31	J	17	85	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		17	85	5
10727	Benzo(k)fluoranthene	207-08-9	28	J	17	85	5
10727	1,1'-Biphenyl	92-52-4	N.D.		83	170	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		83	170	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	830	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	830	5
10727	Caprolactam	105-60-2	N.D.		170	830	5
10727	Carbazole	86-74-8	N.D.		83	170	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		83	170	5
10727	4-Chloroaniline	106-47-8	N.D.		170	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		83	170	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		83	170	5
10727	2-Chloronaphthalene	91-58-7	N.D.		35	160	5
10727	2-Chlorophenol	95-57-8	N.D.		83	170	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		83	170	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		83	170	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	31	J	17	85	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		17	85	5
10727	Dibenzofuran	132-64-9	N.D.		83	170	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		500	1,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		83	170	5
10727	Diethylphthalate	84-66-2	N.D.		330	830	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		83	170	5
10727	Dimethylphthalate	131-11-3	N.D.		330	830	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		830	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	5,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		330	830	5
10727	2,6-Dinitrotoluene	606-20-2	86	J	83	170	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	850	5
10727	Fluoranthene	206-44-0	42	J	17	85	5
10727	Fluorene	86-73-7	N.D.		17	85	5
10727	Hexachlorobenzene	118-74-1	N.D.		17	85	5
10727	Hexachlorobutadiene	87-68-3	N.D.		83	170	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		830	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		170	830	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		17	85	5
10727	Isophorone	78-59-1	N.D.		83	170	5
10727	2-Methylnaphthalene	91-57-6	N.D.		17	85	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029167
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:58 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4805 SDG#: KVM48-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		83	170	5
10727	4-Methylphenol	106-44-5	N.D.		83	170	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		17	85	5
10727	2-Nitroaniline	88-74-4	N.D.		83	170	5
10727	3-Nitroaniline	99-09-2	N.D.		330	830	5
10727	4-Nitroaniline	100-01-6	N.D.		330	830	5
10727	Nitrobenzene	98-95-3	N.D.		83	170	5
10727	2-Nitrophenol	88-75-5	N.D.		83	170	5
10727	4-Nitrophenol	100-02-7	N.D.		830	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		83	170	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		83	170	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	830	5
10727	Pentachlorophenol	87-86-5	N.D.		170	850	5
10727	Phenanthrene	85-01-8	N.D.		17	85	5
10727	Phenol	108-95-2	N.D.		83	170	5
10727	Pyrene	129-00-0	41	J	17	85	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		83	170	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		83	170	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,800		740	2,000	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,700		500	1,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		500	1,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		500	1,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		500	1,500	5
06918	HMX	2691-41-0	N.D.		1,200	3,700	5
06918	Nitrobenzene	98-95-3	N.D.		500	1,500	5
06918	Nitroglycerin	55-63-0	N.D.		9,900	30,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		500	1,500	5
06918	2-Nitrotoluene	88-72-2	N.D.		990	2,000	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,200	2,500	5
06918	4-Nitrotoluene	99-99-0	N.D.		990	2,000	5
06918	PETN	78-11-5	N.D.		9,900	30,000	5
06918	RDX	121-82-4	N.D.		640	1,500	5
06918	Tetryl	479-45-8	N.D.		790	2,000	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		500	1,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	11,000		500	1,500	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029167
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 09:58 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4805 SDG#: KVM48-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	11,900	525	1,580	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/05/2015 23:29	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 05:03	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/03/2015 00:03	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K4805

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029167
Sample wt/vol: 30.13(g/mL) g Lab File ID: bi0222.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/05/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	2.803	3200	J
2.		Unknown	2.844	6200	J
3.		Unknown	2.890	8200	J
4.		Unknown	2.925	6900	J
5.		Unknown	2.995	16000	J
6.	79-09-4	Propanoic acid	3.065	19000	J
7.		Unknown	3.601	4200	J
8.		Unknown	3.666	6100	J
9.	107-92-6	Butanoic acid	3.765	22000	J
10.		Unknown	4.499	3100	J
11.		Unknown Alkane	6.796	1800	J
12.		Unknown	7.064	2200	J
13.	6418-41-3	Tridecane, 3-methyl-	7.227	1900	J
14.	629-50-5	Tridecane	7.396	4900	J
15.		Unknown Alkane	7.676	1200	J
16.	544-76-3	Hexadecane	7.950	3300	J
17.		Unknown	9.448	15000	J
18.		Unknown	10.060	1600	J
19.		Unknown	10.357	4800	J
20.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.438	2400	J
21.	57-10-3	n-Hexadecanoic acid	10.532	5800	J
22.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.666	1700	J
23.	60-33-3	9,12-Octadecadienoic acid (Z	11.208	1600	J
24.		Unknown	11.225	2900	J
25.	58-95-7	.alpha.-Tocopheryl acetate	14.781	2100	J
26.					
27.	SVOCTIC	Total SVOC TICs		150000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029168
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 10:58 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4806 SDG#: KVM48-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		17	85	5
10727	Acenaphthylene	208-96-8	N.D.		17	85	5
10727	Acetophenone	98-86-2	N.D.		83	170	5
10727	Anthracene	120-12-7	N.D.		17	85	5
10727	Atrazine	1912-24-9	N.D.		170	830	5
10727	Benzaldehyde	100-52-7	N.D.		330	830	5
10727	Benzo(a)anthracene	56-55-3	32	J	17	85	5
10727	Benzo(a)pyrene	50-32-8	N.D.		17	85	5
10727	Benzo(b)fluoranthene	205-99-2	30	J	17	85	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		17	85	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		17	85	5
10727	1,1'-Biphenyl	92-52-4	N.D.		83	170	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		83	170	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	830	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	830	5
10727	Caprolactam	105-60-2	N.D.		170	830	5
10727	Carbazole	86-74-8	N.D.		83	170	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		83	170	5
10727	4-Chloroaniline	106-47-8	N.D.		170	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		83	170	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		83	170	5
10727	2-Chloronaphthalene	91-58-7	N.D.		35	160	5
10727	2-Chlorophenol	95-57-8	N.D.		83	170	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		83	170	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		83	170	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	32	J	17	85	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		17	85	5
10727	Dibenzofuran	132-64-9	N.D.		83	170	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		500	1,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		83	170	5
10727	Diethylphthalate	84-66-2	N.D.		330	830	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		83	170	5
10727	Dimethylphthalate	131-11-3	N.D.		330	830	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		830	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	5,000	5
10727	2,4-Dinitrotoluene	121-14-2	360	J	330	830	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		83	170	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	850	5
10727	Fluoranthene	206-44-0	37	J	17	85	5
10727	Fluorene	86-73-7	N.D.		17	85	5
10727	Hexachlorobenzene	118-74-1	N.D.		17	85	5
10727	Hexachlorobutadiene	87-68-3	N.D.		83	170	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		830	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		170	830	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		17	85	5
10727	Isophorone	78-59-1	N.D.		83	170	5
10727	2-Methylnaphthalene	91-57-6	N.D.		17	85	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029168
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 10:58 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4806 SDG#: KVM48-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		83	170	5
10727	4-Methylphenol	106-44-5	N.D.		83	170	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		17	85	5
10727	2-Nitroaniline	88-74-4	N.D.		83	170	5
10727	3-Nitroaniline	99-09-2	N.D.		330	830	5
10727	4-Nitroaniline	100-01-6	N.D.		330	830	5
10727	Nitrobenzene	98-95-3	N.D.		83	170	5
10727	2-Nitrophenol	88-75-5	N.D.		83	170	5
10727	4-Nitrophenol	100-02-7	N.D.		830	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		83	170	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		83	170	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	830	5
10727	Pentachlorophenol	87-86-5	N.D.		170	850	5
10727	Phenanthrene	85-01-8	18	J	17	85	5
10727	Phenol	108-95-2	N.D.		83	170	5
10727	Pyrene	129-00-0	34	J	17	85	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		83	170	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		83	170	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	78,000		690	1,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	58,000		460	1,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		460	1,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		460	1,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		460	1,400	5
06918	HMX	2691-41-0	N.D.		1,200	3,500	5
06918	Nitrobenzene	98-95-3	N.D.		460	1,400	5
06918	Nitroglycerin	55-63-0	N.D.		9,200	28,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		460	1,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		920	1,800	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,200	2,300	5
06918	4-Nitrotoluene	99-99-0	N.D.		920	1,800	5
06918	PETN	78-11-5	N.D.		9,200	28,000	5
06918	RDX	121-82-4	N.D.		1,400	1,400	5
06918	Tetryl	479-45-8	N.D.		740	1,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		460	1,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	94,000		23,000	69,000	250
	Reporting limits were raised due to interference from the sample matrix.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029168
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 10:58 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4806 SDG#: KVM48-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	10,300	278	834	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/05/2015 23:50	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 07:10	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 07:53	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/03/2015 00:13	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K4806

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029168
Sample wt/vol: 30.04(g/mL) g Lab File ID: bi0223.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/05/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	2.744	9700	J
2.	79-09-4	Propanoic acid	2.838	3800	J
3.		Unknown	3.531	3700	J
4.		Unknown Alkane	6.801	2100	J
5.	17301-23-4	Undecane, 2,6-dimethyl-	6.877	1400	J
6.		Unknown	6.970	1400	J
7.	58462-32-1	trans,trans-3-Ethylbicyclo[4	7.063	1700	J
8.		Unknown	7.122	1500	J
9.		Unknown Alkane	7.186	1400	J
10.		Unknown Alkane	7.227	2300	J
11.	629-50-5	Tridecane	7.396	5900	J
12.		Unknown	7.442	1500	J
13.		Unknown Alkane	7.675	1400	J
14.		Unknown Alkane	7.751	1200	J
15.	629-59-4	Tetradecane	7.949	3400	J
16.		Unknown Alkane	7.990	1000	J
17.		Unknown Cycloalkane	8.253	1700	J
18.		Unknown	9.447	14000	J
19.		Unknown	10.071	11000	J
20.		Unknown	10.386	30000	J
21.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.456	13000	J
22.	57-10-3	n-Hexadecanoic acid	10.532	4300	J
23.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.683	14000	J
24.	59229-75-3	1,3-Benzenediamine, 2-methyl	10.724	5500	J
25.	60-33-3	9,12-Octadecadienoic acid (Z	11.208	4700	J
26.					
27.	SVOCTIC	Total SVOC TICs		140000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029169
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:17 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4807 SDG#: KVM48-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		17	85	5
10727	Acenaphthylene	208-96-8	N.D.		17	85	5
10727	Acetophenone	98-86-2	N.D.		83	170	5
10727	Anthracene	120-12-7	N.D.		17	85	5
10727	Atrazine	1912-24-9	N.D.		170	830	5
10727	Benzaldehyde	100-52-7	N.D.		330	830	5
10727	Benzo(a)anthracene	56-55-3	32	J	17	85	5
10727	Benzo(a)pyrene	50-32-8	17	J	17	85	5
10727	Benzo(b)fluoranthene	205-99-2	35	J	17	85	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		17	85	5
10727	Benzo(k)fluoranthene	207-08-9	24	J	17	85	5
10727	1,1'-Biphenyl	92-52-4	N.D.		83	170	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		83	170	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	830	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	830	5
10727	Caprolactam	105-60-2	N.D.		170	830	5
10727	Carbazole	86-74-8	N.D.		83	170	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		83	170	5
10727	4-Chloroaniline	106-47-8	N.D.		170	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		83	170	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		83	170	5
10727	2-Chloronaphthalene	91-58-7	N.D.		35	160	5
10727	2-Chlorophenol	95-57-8	N.D.		83	170	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		83	170	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		83	170	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	31	J	17	85	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		17	85	5
10727	Dibenzofuran	132-64-9	N.D.		83	170	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		500	1,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		83	170	5
10727	Diethylphthalate	84-66-2	N.D.		330	830	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		83	170	5
10727	Dimethylphthalate	131-11-3	N.D.		330	830	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		830	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	5,000	5
10727	2,4-Dinitrotoluene	121-14-2	490	J	330	830	5
10727	2,6-Dinitrotoluene	606-20-2	150	J	83	170	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	850	5
10727	Fluoranthene	206-44-0	45	J	17	85	5
10727	Fluorene	86-73-7	N.D.		17	85	5
10727	Hexachlorobenzene	118-74-1	N.D.		17	85	5
10727	Hexachlorobutadiene	87-68-3	N.D.		83	170	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		830	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		170	830	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	22	J	17	85	5
10727	Isophorone	78-59-1	N.D.		83	170	5
10727	2-Methylnaphthalene	91-57-6	N.D.		17	85	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029169
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:17 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4807 SDG#: KVM48-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		83	170	5
10727	4-Methylphenol	106-44-5	1,100		83	170	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		17	85	5
10727	2-Nitroaniline	88-74-4	N.D.		83	170	5
10727	3-Nitroaniline	99-09-2	N.D.		330	830	5
10727	4-Nitroaniline	100-01-6	N.D.		330	830	5
10727	Nitrobenzene	98-95-3	N.D.		83	170	5
10727	2-Nitrophenol	88-75-5	N.D.		83	170	5
10727	4-Nitrophenol	100-02-7	N.D.		830	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		83	170	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		83	170	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	830	5
10727	Pentachlorophenol	87-86-5	N.D.		170	850	5
10727	Phenanthrene	85-01-8	N.D.		17	85	5
10727	Phenol	108-95-2	200		83	170	5
10727	Pyrene	129-00-0	36	J	17	85	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		83	170	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		83	170	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,100		730	1,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,800		490	1,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		490	1,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		490	1,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		490	1,500	5
06918	HMX	2691-41-0	N.D.		1,200	3,600	5
06918	Nitrobenzene	98-95-3	N.D.		490	1,500	5
06918	Nitroglycerin	55-63-0	N.D.		9,700	29,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		490	1,500	5
06918	2-Nitrotoluene	88-72-2	N.D.		970	1,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,200	2,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		970	1,900	5
06918	PETN	78-11-5	N.D.		9,700	29,000	5
06918	RDX	121-82-4	N.D.		840	1,500	5
06918	Tetryl	479-45-8	N.D.		780	1,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		490	1,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	14,000		490	1,500	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029169
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:17 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4807 SDG#: KVM48-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	13,100	558	1,670	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/06/2015 00:12	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 10:00	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/03/2015 01:32	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K4807

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029169
Sample wt/vol: 30.06(g/mL) g Lab File ID: bi0224.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/06/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79-09-4	Propanoic acid	2.815	6100	J
2. 513-85-9	2,3-Butanediol	3.333	19000	J
3.	Unknown	3.438	12000	J
4.	Unknown	3.561	5800	J
5.	Unknown	3.712	14000	J
6.	Unknown	3.741	5800	J
7.	Unknown	3.788	10000	J
8.	Unknown	3.829	6200	J
9.	Unknown	3.899	22000	J
10.	Unknown	3.928	14000	J
11.	Unknown	3.992	26000	J
12.	Unknown	4.021	16000	J
13. 107-92-6	Butanoic acid	4.044	12000	J
14.	Unknown Carboxylic Acid	4.260	7400	J
15.	Unknown Carboxylic Acid	4.586	8800	J
16. 142-62-1	Hexanoic acid	5.321	7000	J
17. 629-50-5	Tridecane	7.396	3100	J
18. 629-59-4	Tetradecane	7.950	3100	J
19.	Unknown Alkane	8.253	1500	J
20.	Unknown	9.488	100000	J
21.	Unknown	10.363	4700	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.444	4500	J
23. 57-10-3	n-Hexadecanoic acid	10.538	6400	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.672	5200	J
25. 13126-39-1	cis-13-Octadecenoic acid	11.225	2800	J
26.				
27. SVOCTIC	Total SVOC TICs		330000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029170
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:22 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4808 SDG#: KVM48-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		16	84	5
10727	Acenaphthylene	208-96-8	N.D.		16	84	5
10727	Acetophenone	98-86-2	N.D.		82	160	5
10727	Anthracene	120-12-7	18	J	16	84	5
10727	Atrazine	1912-24-9	N.D.		160	820	5
10727	Benzaldehyde	100-52-7	N.D.		330	820	5
10727	Benzo(a)anthracene	56-55-3	56	J	16	84	5
10727	Benzo(a)pyrene	50-32-8	43	J	16	84	5
10727	Benzo(b)fluoranthene	205-99-2	71	J	16	84	5
10727	Benzo(g,h,i)perylene	191-24-2	52	J	16	84	5
10727	Benzo(k)fluoranthene	207-08-9	36	J	16	84	5
10727	1,1'-Biphenyl	92-52-4	N.D.		82	160	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		82	160	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	820	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	820	5
10727	Caprolactam	105-60-2	N.D.		160	820	5
10727	Carbazole	86-74-8	N.D.		82	160	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		82	160	5
10727	4-Chloroaniline	106-47-8	N.D.		160	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		82	160	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		82	160	5
10727	2-Chloronaphthalene	91-58-7	N.D.		34	160	5
10727	2-Chlorophenol	95-57-8	N.D.		82	160	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		82	160	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		82	160	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	66	J	16	84	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		16	84	5
10727	Dibenzofuran	132-64-9	N.D.		82	160	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		490	1,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		82	160	5
10727	Diethylphthalate	84-66-2	N.D.		330	820	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		82	160	5
10727	Dimethylphthalate	131-11-3	N.D.		330	820	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		820	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	4,900	5
10727	2,4-Dinitrotoluene	121-14-2	380	J	330	820	5
10727	2,6-Dinitrotoluene	606-20-2	180		82	160	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	840	5
10727	Fluoranthene	206-44-0	91		16	84	5
10727	Fluorene	86-73-7	N.D.		16	84	5
10727	Hexachlorobenzene	118-74-1	N.D.		16	84	5
10727	Hexachlorobutadiene	87-68-3	N.D.		82	160	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		820	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		160	820	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	51	J	16	84	5
10727	Isophorone	78-59-1	N.D.		82	160	5
10727	2-Methylnaphthalene	91-57-6	N.D.		16	84	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029170
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:22 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4808 SDG#: KVM48-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		82	160	5
10727	4-Methylphenol	106-44-5	760		82	160	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		16	84	5
10727	2-Nitroaniline	88-74-4	N.D.		82	160	5
10727	3-Nitroaniline	99-09-2	N.D.		330	820	5
10727	4-Nitroaniline	100-01-6	N.D.		330	820	5
10727	Nitrobenzene	98-95-3	N.D.		82	160	5
10727	2-Nitrophenol	88-75-5	N.D.		82	160	5
10727	4-Nitrophenol	100-02-7	N.D.		820	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		82	160	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		82	160	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	820	5
10727	Pentachlorophenol	87-86-5	N.D.		160	840	5
10727	Phenanthrene	85-01-8	60	J	16	84	5
10727	Phenol	108-95-2	N.D.		82	160	5
10727	Pyrene	129-00-0	91		16	84	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		82	160	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		82	160	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,700		710	1,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,400		470	1,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		470	1,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		470	1,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		470	1,400	5
06918	HMX	2691-41-0	N.D.		1,200	3,600	5
06918	Nitrobenzene	98-95-3	N.D.		470	1,400	5
06918	Nitroglycerin	55-63-0	N.D.		9,500	28,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		470	1,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		950	1,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,200	2,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		950	1,900	5
06918	PETN	78-11-5	N.D.		9,500	28,000	5
06918	RDX	121-82-4	N.D.		1,500	1,500	5
06918	Tetryl	479-45-8	N.D.		760	1,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		470	1,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	14,000		470	1,400	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029170
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:22 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4808 SDG#: KVM48-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,900	586	1,760	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/06/2015 00:33	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 12:08	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/03/2015 01:40	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K4808

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029170
Sample wt/vol: 30.49(g/mL) g Lab File ID: bi0225.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/06/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79-09-4	Propanoic acid	2.774	5500	J
2. 513-85-9	2,3-Butanediol	3.316	12000	J
3.	Unknown	3.427	7600	J
4.	Unknown	3.689	16000	J
5.	Unknown	3.730	7800	J
6.	Unknown	3.823	18000	J
7.	Unknown	3.870	12000	J
8. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.928	20000	JAB
9. 107-92-6	Butanoic acid	3.986	18000	J
10.	Unknown Carboxylic Acid	4.237	6600	J
11. 629-50-5	Tridecane	6.801	2400	J
12.	Unknown Carboxylic Acid	7.081	1800	J
13.	Unknown Alkane	7.227	3900	J
14. 544-76-3	Hexadecane	7.396	7200	J
15.	Unknown Alkane	7.489	1900	J
16.	Unknown Alkane	7.676	1600	J
17. 1560-96-9	Tridecane, 2-methyl-	7.751	1200	J
18. 13287-21-3	Tridecane, 6-methyl-	7.950	4200	J
19.	Unknown Cycloalkane	8.253	1800	J
20.	Unknown	9.453	18000	J
21.	Unknown	10.363	7200	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.444	5800	J
23. 57-10-3	n-Hexadecanoic acid	10.538	8400	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.672	2900	J
25. 593-39-5	6-Octadecenoic acid, (Z)-	11.231	4900	J
26.				
27. SVOCTIC	Total SVOC TICs		200000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029171
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:25 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4809 SDG#: KVM48-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**	**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.	3	17	1
10727	Acenaphthylene	208-96-8	6 J	3	17	1
10727	Acetophenone	98-86-2	N.D.	16	33	1
10727	Anthracene	120-12-7	6 J	3	17	1
10727	Atrazine	1912-24-9	N.D.	33	160	1
10727	Benzaldehyde	100-52-7	N.D.	66	160	1
10727	Benzo(a)anthracene	56-55-3	46	3	17	1
10727	Benzo(a)pyrene	50-32-8	29	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	52	3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	21	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	25	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.	16	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	16	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.	66	160	1
10727	Di-n-butylphthalate	84-74-2	N.D.	66	160	1
10727	Caprolactam	105-60-2	N.D.	33	160	1
10727	Carbazole	86-74-8	N.D.	16	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	16	33	1
10727	4-Chloroaniline	106-47-8	N.D.	33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	16	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	16	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	33	1
10727	2-Chlorophenol	95-57-8	N.D.	16	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	16	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	16	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	46	3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.	3	17	1
10727	Dibenzofuran	132-64-9	N.D.	16	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	99	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	16	33	1
10727	Diethylphthalate	84-66-2	N.D.	66	160	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	16	33	1
10727	Dimethylphthalate	131-11-3	N.D.	66	160	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	160	490	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	300	990	1
10727	2,4-Dinitrotoluene	121-14-2	800	66	160	1
10727	2,6-Dinitrotoluene	606-20-2	200	16	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	66	170	1
10727	Fluoranthene	206-44-0	74	3	17	1
10727	Fluorene	86-73-7	N.D.	3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.	16	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	160	490	1
10727	Hexachloroethane	67-72-1	N.D.	33	160	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	22	3	17	1
10727	Isophorone	78-59-1	N.D.	16	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.	3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029171
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:25 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4809 SDG#: KVM48-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	16	33	1
10727	4-Methylphenol	106-44-5	63	16	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	16	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	160	1
10727	4-Nitroaniline	100-01-6	N.D.	66	160	1
10727	Nitrobenzene	98-95-3	N.D.	16	33	1
10727	2-Nitrophenol	88-75-5	N.D.	16	33	1
10727	4-Nitrophenol	100-02-7	N.D.	160	490	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	16	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	16	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	160	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	23	3	17	1
10727	Phenol	108-95-2	N.D.	16	33	1
10727	Pyrene	129-00-0	58	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	16	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	16	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	72,000	620	1,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	43,000	420	1,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	420	1,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	420	1,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	420	1,200	5
06918	HMX	2691-41-0	N.D.	1,000	3,100	5
06918	Nitrobenzene	98-95-3	N.D.	420	1,200	5
06918	Nitroglycerin	55-63-0	N.D.	8,300	25,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	420	1,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	830	1,700	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,000	2,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	830	1,700	5
06918	PETN	78-11-5	N.D.	8,300	25,000	5
06918	RDX	121-82-4	N.D.	1,700	1,700	5
06918	Tetryl	479-45-8	N.D.	670	1,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	420	1,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	220,000	21,000	62,000	250

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029171
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 12:25 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4809 SDG#: KVM48-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	8,440	533	1,600	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/06/2015 00:55	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 14:15	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 14:58	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/03/2015 01:48	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K4809

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029171
Sample wt/vol: 30.45(g/mL) g Lab File ID: bi0226.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/06/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.077	4700	J
2.		Unknown	3.141	3500	J
3.		Unknown Organic Acid	3.228	3200	J
4.	79-09-4	Propanoic acid	3.269	3100	J
5.	513-85-9	2,3-Butanediol	3.491	6700	J
6.	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.969	4800	JAB
7.	107-92-6	Butanoic acid	4.062	7800	J
8.		Unknown Organic Acid	4.114	4800	J
9.		Unknown Organic Acid	4.214	14000	J
10.	112-40-3	Dodecane	6.801	780	J
11.		Unknown Organic Acid	7.122	600	J
12.		Unknown Alkane	7.233	960	J
13.	629-50-5	Tridecane	7.402	2300	J
14.		Unknown Alkane	7.821	300	J
15.	629-59-4	Tetradecane	7.955	950	J
16.		Unknown	9.553	60000	J
17.		Unknown	10.124	23000	J
18.		Unknown	10.485	26000	J
19.		Unknown	10.508	2200	J
20.		Unknown	10.538	3400	J
21.	57-10-3	n-Hexadecanoic acid	10.567	2100	J
22.		Unknown	10.596	4300	J
23.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.747	6700	J
24.	59229-75-3	1,3-Benzenediamine, 2-methyl	10.794	3400	J
25.	60-33-3	9,12-Octadecadienoic acid (Z	11.237	3000	J
26.					
27.	SVOCTIC	Total SVOC TICs		190000	JAB
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029172
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 13:15 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4810 SDG#: KVM48-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	19		3	17	1
10727	Benzo(a)pyrene	50-32-8	14	J	3	17	1
10727	Benzo(b)fluoranthene	205-99-2	30		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	11	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	7	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	21		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	5	J	3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	870		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	360		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	32		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	10	J	3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029172
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 13:15 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4810 SDG#: KVM48-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	16 J	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	26	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	39,000	720	1,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	26,000	480	1,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	480	1,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	480	1,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	480	1,400	5
06918	HMX	2691-41-0	N.D.	1,200	3,600	5
06918	Nitrobenzene	98-95-3	N.D.	480	1,400	5
06918	Nitroglycerin	55-63-0	N.D.	9,700	29,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	480	1,400	5
06918	2-Nitrotoluene	88-72-2	N.D.	970	1,900	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,200	2,400	5
06918	4-Nitrotoluene	99-99-0	N.D.	970	1,900	5
06918	PETN	78-11-5	N.D.	9,700	29,000	5
06918	RDX	121-82-4	N.D.	630	1,400	5
06918	Tetryl	479-45-8	N.D.	770	1,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	1,600	1,600	5
06918	2,4,6-Trinitrotoluene	118-96-7	750,000	24,000	72,000	250
	Reporting limits were raised due to interference from the sample matrix.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029172
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 13:15 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4810 SDG#: KVM48-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	6,560	505	1,520	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/06/2015 01:16	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 16:23	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 17:48	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531A	09/03/2015 01:55	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K4810

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029172
Sample wt/vol: 30.15(g/mL) g Lab File ID: bi0227.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/06/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 112-40-3	Dodecane	6.801	610	J
2.	Unknown Alkane	6.877	450	J
3.	Unknown Alkane	6.976	430	J
4.	Unknown Alkane	7.122	470	J
5.	Unknown Alkane	7.151	380	J
6.	Unknown Alkane	7.186	440	J
7.	Unknown Alkane	7.227	730	J
8.	Unknown	7.361	360	J
9. 629-50-5	Tridecane	7.402	1800	J
10.	Unknown	7.442	480	J
11.	Unknown	7.489	500	J
12.	Unknown	7.530	560	J
13.	Unknown Alkane	7.588	380	J
14.	Unknown Alkane	7.676	480	J
15. 1560-96-9	Tridecane, 2-methyl-	7.757	330	J
16.	Unknown Alkane	7.821	370	J
17. 544-76-3	Hexadecane	7.955	1200	J
18.	Unknown Alkane	7.996	320	J
19.	Unknown Alkane	8.206	310	J
20.	Unknown Cycloalkane	8.253	620	J
21.	Unknown Alkane	8.509	220	J
22.	Unknown	8.964	260	J
23.	Unknown	9.593	79000	J
24. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.491	5200	J
25. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.712	7500	J
26.				
27. SVOCTIC	Total SVOC TICs		100000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029173
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 11:02 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4811 SDG#: KVM48-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		3	17	1
10727	Acenaphthylene	208-96-8	N.D.		3	17	1
10727	Acetophenone	98-86-2	N.D.		17	33	1
10727	Anthracene	120-12-7	4	J	3	17	1
10727	Atrazine	1912-24-9	N.D.		33	170	1
10727	Benzaldehyde	100-52-7	N.D.		66	170	1
10727	Benzo(a)anthracene	56-55-3	26		3	17	1
10727	Benzo(a)pyrene	50-32-8	20		3	17	1
10727	Benzo(b)fluoranthene	205-99-2	34		3	17	1
10727	Benzo(g,h,i)perylene	191-24-2	13	J	3	17	1
10727	Benzo(k)fluoranthene	207-08-9	14	J	3	17	1
10727	1,1'-Biphenyl	92-52-4	N.D.		17	33	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		17	33	1
10727	Butylbenzylphthalate	85-68-7	N.D.		66	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.		66	170	1
10727	Caprolactam	105-60-2	N.D.		33	170	1
10727	Carbazole	86-74-8	N.D.		17	33	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		17	33	1
10727	4-Chloroaniline	106-47-8	N.D.		33	66	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		17	33	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		17	33	1
10727	2-Chloronaphthalene	91-58-7	N.D.		7	33	1
10727	2-Chlorophenol	95-57-8	N.D.		17	33	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		17	33	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		17	33	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	30		3	17	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		3	17	1
10727	Dibenzofuran	132-64-9	N.D.		17	33	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		100	330	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		17	33	1
10727	Diethylphthalate	84-66-2	N.D.		66	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		17	33	1
10727	Dimethylphthalate	131-11-3	N.D.		66	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		170	500	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		300	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	2,500		66	170	1
10727	2,6-Dinitrotoluene	606-20-2	790		17	33	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		66	170	1
10727	Fluoranthene	206-44-0	45		3	17	1
10727	Fluorene	86-73-7	N.D.		3	17	1
10727	Hexachlorobenzene	118-74-1	N.D.		3	17	1
10727	Hexachlorobutadiene	87-68-3	N.D.		17	33	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		170	500	1
10727	Hexachloroethane	67-72-1	N.D.		33	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	17		3	17	1
10727	Isophorone	78-59-1	N.D.		17	33	1
10727	2-Methylnaphthalene	91-57-6	N.D.		3	17	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029173
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 11:02 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4811 SDG#: KVM48-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	17	33	1
10727	4-Methylphenol	106-44-5	N.D.	17	33	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	17	1
10727	2-Nitroaniline	88-74-4	N.D.	17	33	1
10727	3-Nitroaniline	99-09-2	N.D.	66	170	1
10727	4-Nitroaniline	100-01-6	N.D.	66	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	33	1
10727	2-Nitrophenol	88-75-5	N.D.	17	33	1
10727	4-Nitrophenol	100-02-7	N.D.	170	500	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	33	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	33	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	66	170	1
10727	Pentachlorophenol	87-86-5	N.D.	33	170	1
10727	Phenanthrene	85-01-8	26	3	17	1
10727	Phenol	108-95-2	N.D.	17	33	1
10727	Pyrene	129-00-0	37	3	17	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	33	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	33	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	20,000	620	1,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	17,000	420	1,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	420	1,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	420	1,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	420	1,200	5
06918	HMX	2691-41-0	N.D.	1,000	3,100	5
06918	Nitrobenzene	98-95-3	N.D.	420	1,200	5
06918	Nitroglycerin	55-63-0	N.D.	8,300	25,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	420	1,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	830	1,700	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,000	2,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	830	1,700	5
06918	PETN	78-11-5	N.D.	8,300	25,000	5
06918	RDX	121-82-4	N.D.	540	1,200	5
06918	Tetryl	479-45-8	N.D.	670	1,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	1,500	420	1,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,400,000	21,000	62,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-08312015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8029173
LL Group # 1589100
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 08/31/2015 11:02 by SL

Submitted: 08/31/2015 18:30
Reported: 09/15/2015 15:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K4811 SDG#: KVM48-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	6,770	400	1,200	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15246SLC026	09/06/2015 01:38	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15246SLC026	09/03/2015 17:00	JoElla L Rice	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/10/2015 23:28	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152480006A	09/11/2015 00:10	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152480006A	09/07/2015 14:25	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15245049531B	09/03/2015 02:08	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K4811

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8029173
Sample wt/vol: 30.09(g/mL) g Lab File ID: bi0228.d
Level: (low/med) LOW Date Received: 08/31/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 09/03/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/06/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	6.318	410	J
2.	Unknown	6.691	410	J
3.112-40-3	Dodecane	6.801	900	J
4.	Unknown	6.836	400	J
5.6044-71-9	Dodecane, 6-methyl-	6.883	610	J
6.	Unknown Alkane	7.122	530	J
7.	Unknown	7.157	490	J
8.	Unknown	7.186	620	J
9.	Unknown Alkane	7.233	1300	J
10.629-50-5	Tridecane	7.402	2300	J
11.	Unknown	7.443	540	J
12.	Unknown Alkane	7.489	650	J
13.92-51-3	1,1'-Bicyclohexyl	7.536	710	J
14.	Unknown Alkane	7.594	480	J
15.	Unknown	7.647	250	J
16.	Unknown Cycloalkane	7.693	300	J
17.1560-96-9	Tridecane, 2-methyl-	7.757	350	J
18.	Unknown Alkane	7.792	220	J
19.	Unknown Alkane	7.821	360	J
20.629-59-4	Tetradecane	7.955	1100	J
21.	Unknown Alkane	7.996	370	J
22.	Unknown Alkane	8.206	470	J
23.	Unknown	9.675	160000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.503	3400	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.724	7300	J
26.				
27.SVOCTIC	Total SVOC TICs		180000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1589100
Reported: 09/15/2015 15:41

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15246SLC026	Sample number(s): 8029163-8029173								
Acenaphthene	N.D.	3.	17	ug/kg	99		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	99		83-127		
Acetophenone	N.D.	17.	33	ug/kg	89		74-116		
Anthracene	N.D.	3.	17	ug/kg	101		82-118		
Atrazine	N.D.	33.	170	ug/kg	83		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	69		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	107		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	95		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	98		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	109		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	94		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	89		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	101		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	100		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	103		84-120		
Caprolactam	N.D.	33.	170	ug/kg	93		71-129		
Carbazole	N.D.	17.	33	ug/kg	100		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	102		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	35		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	93		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	97		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	112		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	104		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	97		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	107		63-126		
Chrysene	N.D.	3.	17	ug/kg	109		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	110		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	94		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	40		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	101		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	98		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	101		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	96		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	97		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	95		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	104		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	101		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	99		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	103		81-117		
Fluorene	N.D.	3.	17	ug/kg	103		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	98		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	99		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	110		68-145		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1589100
Reported: 09/15/2015 15:41

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachloroethane	N.D.	33.	170	ug/kg	100		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	105		81-118		
Isophorone	N.D.	17.	33	ug/kg	97		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	91		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	108		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	98		75-119		
Naphthalene	N.D.	3.	17	ug/kg	96		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	98		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	91		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	76		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	101		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	100		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	103		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	94		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	98		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	94		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	101		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	96		80-114		
Phenol	N.D.	17.	33	ug/kg	104		73-122		
Pyrene	N.D.	3.	17	ug/kg	92		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	100		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	99		81-123		
Batch number: 152480006A	Sample number(s): 8029163-8029173								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	116		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	112		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	103		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	120		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	100		83-122		
HMX	N.D.	250.	750	ug/kg	87		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	110		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	102		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	110		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	111		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	107		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	110		80-122		
PETN	N.D.	2,000.	6,000	ug/kg	106		64-121		
RDX	N.D.	130.	300	ug/kg	106		84-122		
Tetryl	N.D.	160.	400	ug/kg	107		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	98		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	109		82-133		
Batch number: 15245049531A	Sample number(s): 8029163-8029172								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	106		47-143		
Batch number: 15245049531B	Sample number(s): 8029173								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	106		47-143		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

MS	MSD	MS/MSD	RPD	BKG	DUP	DUP	Dup RPD

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1589100
Reported: 09/15/2015 15:41

Analysis Name	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD	Max
Batch number: 15246SLC026	Sample number(s): 8029163-8029173 UNSPK: 8029163								
Acenaphthene	88	91	83-116	2	30				
Acenaphthylene	88	90	83-127	2	30				
Acetophenone	77	75	74-116	3	30				
Anthracene	88	91	82-118	2	30				
Atrazine	67	72	63-148	7	30				
Benzaldehyde	63	63	10-69	1	30				
Benzo(a)anthracene	91	95	76-119	3	30				
Benzo(a)pyrene	86	85	85-117	2	30				
Benzo(b)fluoranthene	88	91	78-129	2	30				
Benzo(g,h,i)perylene	102	104	82-119	1	30				
Benzo(k)fluoranthene	84	87	79-120	3	30				
1,1'-Biphenyl	83	84	80-116	0	30				
4-Bromophenyl-phenylether	88	89	84-120	1	30				
Butylbenzylphthalate	89	96	80-118	7	30				
Di-n-butylphthalate	93	96	84-120	2	30				
Caprolactam	96	88	71-129	9	30				
Carbazole	83	84	78-117	1	30				
4-Chloro-3-methylphenol	89	88	79-127	2	30				
4-Chloroaniline	60	58	10-103	3	30				
bis(2-Chloroethoxy)methane	83	85	77-116	2	30				
bis(2-Chloroethyl)ether	81	82	77-115	1	30				
2-Chloronaphthalene	80	83	63-146	3	30				
2-Chlorophenol	84*	87	85-123	3	30				
4-Chlorophenyl-phenylether	89	87	81-120	3	30				
2,2'-oxybis(1-Chloropropane)	92	89	63-126	4	30				
Chrysene	95	96	80-121	1	30				
Dibenz(a,h)anthracene	100	100	81-123	1	30				
Dibenzofuran	83*	87	85-115	3	30				
3,3'-Dichlorobenzidine	36	56	10-104	41*	30				
2,4-Dichlorophenol	85	88	81-123	2	30				
Diethylphthalate	85	86	81-118	0	30				
2,4-Dimethylphenol	80*	89	83-120	9	30				
Dimethylphthalate	85	89	82-113	3	30				
4,6-Dinitro-2-methylphenol	79	79	59-131	1	30				
2,4-Dinitrophenol	68	71	27-140	4	30				
2,4-Dinitrotoluene	133*	129*	81-122	2	30				
2,6-Dinitrotoluene	105	94	83-120	10	30				
bis(2-Ethylhexyl)phthalate	92	101	81-121	9	30				
Fluoranthene	85	85	81-117	0	30				
Fluorene	88	91	86-118	2	30				
Hexachlorobenzene	89	94	75-123	6	30				
Hexachlorobutadiene	87	96	72-120	10	30				
Hexachlorocyclopentadiene	35*	59*	68-145	51*	30				
Hexachloroethane	86	86	78-114	1	30				
Indeno(1,2,3-cd)pyrene	96	94	81-118	3	30				
Isophorone	102	102	78-125	0	30				
2-Methylnaphthalene	81*	84	83-109	3	30				
2-Methylphenol	100	98	82-125	2	30				
4-Methylphenol	85	81	75-119	6	30				
Naphthalene	91	96	83-112	5	30				
2-Nitroaniline	85	94	84-126	8	30				
3-Nitroaniline	80	85	66-119	6	30				
4-Nitroaniline	71	66	50-100	8	30				
Nitrobenzene	89	93	70-122	4	30				
2-Nitrophenol	96	96	83-120	1	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1589100
Reported: 09/15/2015 15:41

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
4-Nitrophenol	97	97	60-129	1	30				
N-Nitroso-di-n-propylamine	83	79	67-121	5	30				
N-Nitrosodiphenylamine	91	93	83-118	1	30				
Di-n-octylphthalate	91	95	74-146	4	30				
Pentachlorophenol	70	73	57-126	2	30				
Phenanthrene	85	86	80-114	1	30				
Phenol	79	82	73-122	3	30				
Pyrene	84	84	81-114	0	30				
2,4,5-Trichlorophenol	93	94	86-123	0	30				
2,4,6-Trichlorophenol	90	94	81-123	3	30				
Batch number: 152480006A	Sample number(s): 8029163-8029173 UNSPK: 8029172								
4-Amino-2,6-Dinitrotoluene	346 (2)	363 (2)	85-118	1	50				
2-Amino-4,6-Dinitrotoluene	238 (2)	247 (2)	69-113	2	50				
1,2-Dinitrobenzene	120	109	80-120	19	50				
1,3-Dinitrobenzene	153*	161*	89-119	5	50				
1,4-Dinitrobenzene	95	99	82-117	5	50				
HMX	67*	103	72-107	33	50				
Nitrobenzene	102	111*	86-108	1	50				
Nitroglycerin	114	111	73-116	12	50				
1-Nitronaphthalene	80*	80*	89-131	10	50				
2-Nitrotoluene	108	118*	79-112	1	50				
3-Nitrotoluene	112	105	72-119	17	50				
4-Nitrotoluene	136*	144*	90-118	4	50				
PETN	93	102	71-133	0	50				
RDX	101	96	75-108	14	50				
Tetryl	142*	152*	58-125	3	50				
1,3,5-Trinitrobenzene	132	141*	58-135	3	50				
2,4,6-Trinitrotoluene	2944 (2)	2933 (2)	92-114	1	50				
Batch number: 15245049531A	Sample number(s): 8029163-8029172 UNSPK: 8029163 BKG: 8029163								
TOC by Lloyd Kahn	96		47-143			9,120	8,850	3	7
Batch number: 15245049531B	Sample number(s): 8029173 UNSPK: 8029173 BKG: 8029173								
TOC by Lloyd Kahn	107		47-143			6,770	7,860	15*	7

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15246SLC026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8029163	80	83	77	83	72	82
8029164	92	97	65	91	68	80
8029165	89	87	47	88	63	74
8029166	87	93	86	80	89	93

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1589100
Reported: 09/15/2015 15:41

Surrogate Quality Control

8029167	85	87	78	77	78	81
8029168	77	80	73	77	82	84
8029169	85	90	78	82	79	82
8029170	88	91	85	84	92	91
8029171	93	98	79	96	93	95
8029172	90	96	74	94	84	89
8029173	90	97	80	94	99	97
Blank	92	99	99	97	97	99
LCS	101	107	95	98	95	95
MS	80	86	78	87	87	88
MSD	83	87	82	92	93	89
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152480006A

	2-Nitro-m-xylene
8029163	121
8029164	123
8029165	132
8029166	135
8029167	136
8029168	100
8029169	108
8029170	107
8029171	101
8029172	110
8029173	90
Blank	118
LCS	123
MS	112
MSD	137
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1589100 Sample # 807163-73
Instructions on reverse side correspond with circled numbers.

1 Client Information

Client: Arcadis - US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ007000.NJ78
Sampler: S. Lemoine	Quote #:

Name of state where samples were collected: NJ

4 Matrix

Soil [X] Sediment [ ] Water: Potable [ ] Ground [ ] NPDES [ ] Surface [ ] Other: ____

5 Analysis Requested

Preservation Codes

3 Grab / Composite

2 Sample Identification

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	Amino DNTs + TNs (SW846 8330)	DNTs (SW846 8270)	TOC	% Moisture
TNT-PS-A-08312015	8/31/15	1320		X	1	X	X	X	X
TNT-PS-B-08312015		1107		X	1	X	X	X	X
TNT-PS-C-08312015		938		X	1	X	X	X	X
TNT-PS-D-08312015		953		X	1	X	X	X	X
TNT-PS-E-08312015		958		X	1	X	X	X	X
TNT-PS-F-08312015		1058		X	1	X	X	X	X
TNT-PS-G-08312015		1217		X	1	X	X	X	X
TNT-PS-H-08312015		1222		X	1	X	X	X	X
TNT-PS-I-08312015		1225		X	1	X	X	X	X
TNT-PS-K-08312015		1315		X	1	X	X	X	X

For Lab Use Only
FSC:
SCR#:

Preservation Codes

H=HCl	T=Thiosulfate
N=HNO_3	B=NaOH
S=H_2SO_4	O=Other

6 Remarks

Note: TNT conc. between 500-1500 mg/kg
Please call Mitch Wacksman @ 616-405-1448 prior to Analysis

7 Turnaround Time (TAT) Requested (please circle)

(Standard) Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: _____

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

9

Relinquished by	Date	Time	Received by	Date	Time
	8/31/15	1400		8/31/15	1400
	8/31/15	1830			
				8/31/15	1830

EDD Required? Yes No
If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.9°C °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental use only Group # 1589100 Sample # 8029163-73

Instructions on reverse side correspond with circled numbers.

384031

1 Client Information

Client: Arcadis-US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ00X000. NJTB
Sampler: S. Lemoine	Quote #:

Name of state where samples were collected: NJ

4 Matrix

Sediment ☐ Soil ☒ | Ground ☐ Potable ☐ Water | Surface ☐ NPDES ☐ | Other: ____

5 Analysis Requested

Preservation Codes

For Lab Use Only

FSC: ____

SCR#: ____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

Note: TNT Conc. between 500-1500 mg/kg

Please call Mitch Wacksman @ 616-405-1448 prior to Analysis

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	Amino DNTs (SW846 8330)	DNTs (SW846, 8270)	TOC	% Moisture
TNT-PS-J-08312015	8/31/15	1102		X	1	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ____

E-mail address: ____

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	8/31/15	1400		8/31/15	1400
	8/31/15	1830			
				8/31/15	1830

9

EDD Required? Yes No

If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 1.9°C °C

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

October 21, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 09/14/2015
Group Number: 1592598
SDG: KVM50
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-1-09142015 Composite Soil Sample	8046547
TNT-PS-A-2-09142015 Composite Soil Sample	8046548
TNT-PS-A-3-09142015 Composite Soil Sample	8046549
TNT-PS-A-4-09142015 Composite Soil Sample	8046550
TNT-PS-B-1-09142015 Composite Soil Sample	8046551
TNT-PS-B-2-09142015 Composite Soil Sample	8046552
TNT-PS-B-3-09142015 Composite Soil Sample	8046553
TNT-PS-B-4-09142015 Composite Soil Sample	8046554
TNT-PS-C-1-09142015 Composite Soil Sample	8046555
TNT-PS-C-2-09142015 Composite Soil Sample	8046556
TNT-PS-C-3-09142015 Composite Soil Sample	8046557
TNT-PS-C-4-09142015 Composite Soil Sample	8046558
TNT-PS-J-1-09142015 Composite Soil Sample	8046559
TNT-PS-J-2-09142015 Composite Soil Sample	8046560
TNT-PS-J-3-09142015 Composite Soil Sample	8046561
TNT-PS-J-4-09142015 Composite Soil Sample	8046562
TNT-PS-K-1-09142015 Composite Soil Sample	8046563
TNT-PS-K-2-09142015 Composite Soil Sample	8046564
TNT-PS-K-3-09142015 Composite Soil Sample	8046565
TNT-PS-K-4-09142015 Composite Soil Sample	8046566

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-A-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046547
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5001 SDG#: KVM50-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	N.D.		5	27	1
10727	Acetophenone	98-86-2	N.D.		27	54	1
10727	Anthracene	120-12-7	22	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		54	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	92		5	27	1
10727	Benzo(a)pyrene	50-32-8	70		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	140		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	56		5	27	1
10727	Benzo(k)fluoranthene	207-08-9	49		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	54	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	54	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		54	270	1
10727	Carbazole	86-74-8	N.D.		27	54	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	54	1
10727	4-Chloroaniline	106-47-8	N.D.		54	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	54	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	54	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	53	1
10727	2-Chlorophenol	95-57-8	N.D.		27	54	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	54	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	54	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	25	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		27	54	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	540	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	54	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	54	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	810	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		480	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	4,500		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	2,800		27	54	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	270	1
10727	Fluoranthene	206-44-0	160		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	54	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	810	1
10727	Hexachloroethane	67-72-1	N.D.		54	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	63		5	27	1
10727	Isophorone	78-59-1	N.D.		27	54	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046547
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5001 SDG#: KVM50-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	27	54	1
10727	4-Methylphenol	106-44-5	N.D.	27	54	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.	27	54	1
10727	3-Nitroaniline	99-09-2	N.D.	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.	110	270	1
10727	Nitrobenzene	98-95-3	N.D.	27	54	1
10727	2-Nitrophenol	88-75-5	N.D.	27	54	1
10727	4-Nitrophenol	100-02-7	N.D.	270	810	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	27	54	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	27	54	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	270	1
10727	Pentachlorophenol	87-86-5	N.D.	54	270	1
10727	Phenanthrene	85-01-8	79	5	27	1
10727	Phenol	108-95-2	N.D.	27	54	1
10727	Pyrene	129-00-0	120	5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	27	54	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	27	54	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	71,000	1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	48,000	800	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	800	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	1,600	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	800	2,400	5
06918	HMX	2691-41-0	N.D.	2,000	6,000	5
06918	Nitrobenzene	98-95-3	N.D.	800	2,400	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	48,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	800	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	4,000	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,200	5
06918	PETN	78-11-5	N.D.	16,000	48,000	5
06918	RDX	121-82-4	N.D.	1,000	2,400	5
06918	Tetryl	479-45-8	N.D.	1,300	3,200	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046547
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5001 SDG#: KVM50-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	4,400	800	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,700,000	40,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,400	12.5	32.5	1
06944	Antimony	7440-36-0	N.D.	0.667	3.25	1
06935	Arsenic	7440-38-2	3.42	0.943	3.25	1
06946	Barium	7440-39-3	55.8	0.109	0.813	1
06947	Beryllium	7440-41-7	0.647 J	0.109	0.813	1
06949	Cadmium	7440-43-9	N.D.	0.0699	0.813	1
01650	Calcium	7440-70-2	1,510	5.41	32.5	1
06951	Chromium	7440-47-3	16.4	0.159	2.44	1
06952	Cobalt	7440-48-4	4.74	0.132	0.813	1
06953	Copper	7440-50-8	30.5	0.455	1.63	1
01654	Iron	7439-89-6	24,700	5.41	32.5	1
06955	Lead	7439-92-1	242	0.520	2.44	1
01657	Magnesium	7439-95-4	1,320	2.72	16.3	1
06958	Manganese	7439-96-5	178	0.135	0.813	1
06961	Nickel	7440-02-0	9.20	0.374	1.63	1
01662	Potassium	7440-09-7	733	27.3	81.3	1
06936	Selenium	7782-49-2	3.71	1.35	3.25	1
06966	Silver	7440-22-4	N.D.	0.195	0.813	1
01667	Sodium	7440-23-5	51.6 J	27.2	163	1
06925	Thallium	7440-28-0	N.D.	1.22	4.88	1
06971	Vanadium	7440-62-2	35.1	0.244	0.813	1
06972	Zinc	7440-66-6	35.0	1.25	3.25	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0691 J	0.0161	0.161	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,400	333	1,000	1
	The holding time was not met. The client was notified and the data reported.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	38.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046547
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5001 SDG#: KVM50-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 13:01	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/29/2015 23:32	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 16:32	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 18:50	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 18:50	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/20/2015 18:50	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 18:50	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:23	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 08:51	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15272049531A	09/29/2015 01:25	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5001

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046547
Sample wt/vol: 30.22(g/mL) g Lab File ID: oi0951.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 38.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.692	1300	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	6.092	1000	J
3.112-40-3	Dodecane	6.298	2600	J
4.17301-28-9	Undecane, 3,6-dimethyl-	6.375	1100	J
5.	Unknown Alkane	6.463	960	J
6.	Unknown Cycloalkane	6.534	1400	J
7.	Unknown Alkane	6.610	1900	J
8.6117-97-1	Dodecane, 4-methyl-	6.651	1200	J
9.1560-97-0	Dodecane, 2-methyl-	6.687	1700	J
10.	Unknown Alkane	6.734	2400	J
11.	Unknown PAH	6.822	920	J
12.629-50-5	Tridecane	6.910	6700	J
13.92-51-3	1,1'-Bicyclohexyl	6.945	1900	J
14.13287-21-3	Tridecane, 6-methyl-	6.992	1300	J
15.	Unknown Alkane	7.086	5900	J
16.5617-41-4	Heptylcyclohexane	7.151	6500	J
17.	Unknown Alkane	7.286	7900	J
18.74645-98-0	Dodecane, 2,7,10-trimethyl-	7.316	12000	J
19.629-59-4	Tetradecane	7.457	37000	J
20.26730-20-1	Hexadecane, 7-methyl-	7.757	12000	J
21.544-76-3	Hexadecane	7.963	18000	J
22.	Unknown	9.245	780000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	9.986	35000	J
24.	Unknown Amine	10.016	5000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.180	2100	J
26.				
27.SVOCTIC	Total SVOC TICs		950000	J
28.				
29.				
30.				

Sample Description: TNT-PS-A-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046548
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5002 SDG#: KVM50-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		7	34	1
10727	Acenaphthylene	208-96-8	N.D.		7	34	1
10727	Acetophenone	98-86-2	N.D.		34	68	1
10727	Anthracene	120-12-7	22	J	7	34	1
10727	Atrazine	1912-24-9	N.D.		68	340	1
10727	Benzaldehyde	100-52-7	N.D.		140	340	1
10727	Benzo(a)anthracene	56-55-3	83		7	34	1
10727	Benzo(a)pyrene	50-32-8	77		7	34	1
10727	Benzo(b)fluoranthene	205-99-2	120		7	34	1
10727	Benzo(g,h,i)perylene	191-24-2	45		7	34	1
10727	Benzo(k)fluoranthene	207-08-9	54		7	34	1
10727	1,1'-Biphenyl	92-52-4	N.D.		34	68	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		34	68	1
10727	Butylbenzylphthalate	85-68-7	N.D.		140	340	1
10727	Di-n-butylphthalate	84-74-2	N.D.		140	340	1
10727	Caprolactam	105-60-2	N.D.		68	340	1
10727	Carbazole	86-74-8	N.D.		34	68	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		34	68	1
10727	4-Chloroaniline	106-47-8	N.D.		68	140	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		34	68	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		34	68	1
10727	2-Chloronaphthalene	91-58-7	N.D.		14	67	1
10727	2-Chlorophenol	95-57-8	N.D.		34	68	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		34	68	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		34	68	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	100		7	34	1
10727	Dibenz(a,h)anthracene	53-70-3	17	J	7	34	1
10727	Dibenzofuran	132-64-9	N.D.		34	68	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		200	680	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		34	68	1
10727	Diethylphthalate	84-66-2	N.D.		140	340	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		34	68	1
10727	Dimethylphthalate	131-11-3	N.D.		140	340	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		340	1,000	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		610	2,000	1
10727	2,4-Dinitrotoluene	121-14-2	4,700		140	340	1
10727	2,6-Dinitrotoluene	606-20-2	2,800		34	68	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		140	340	1
10727	Fluoranthene	206-44-0	130		7	34	1
10727	Fluorene	86-73-7	N.D.		7	34	1
10727	Hexachlorobenzene	118-74-1	N.D.		7	34	1
10727	Hexachlorobutadiene	87-68-3	N.D.		34	68	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		340	1,000	1
10727	Hexachloroethane	67-72-1	N.D.		68	340	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	48		7	34	1
10727	Isophorone	78-59-1	N.D.		34	68	1
10727	2-Methylnaphthalene	91-57-6	N.D.		7	34	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046548
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5002 SDG#: KVM50-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	34	68	1
10727	4-Methylphenol	106-44-5	N.D.	34	68	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	7	34	1
10727	2-Nitroaniline	88-74-4	N.D.	34	68	1
10727	3-Nitroaniline	99-09-2	N.D.	140	340	1
10727	4-Nitroaniline	100-01-6	N.D.	140	340	1
10727	Nitrobenzene	98-95-3	N.D.	34	68	1
10727	2-Nitrophenol	88-75-5	N.D.	34	68	1
10727	4-Nitrophenol	100-02-7	N.D.	340	1,000	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	34	68	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	34	68	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	140	340	1
10727	Pentachlorophenol	87-86-5	N.D.	68	340	1
10727	Phenanthrene	85-01-8	68	7	34	1
10727	Phenol	108-95-2	N.D.	34	68	1
10727	Pyrene	129-00-0	110	7	34	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	34	68	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	34	68	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	77,000	1,400	3,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	47,000	940	2,800	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	940	2,800	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	940	2,800	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	940	2,800	5
06918	HMX	2691-41-0	N.D.	2,300	7,000	5
06918	Nitrobenzene	98-95-3	N.D.	940	2,800	5
06918	Nitroglycerin	55-63-0	N.D.	19,000	56,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	940	2,800	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,900	3,800	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,300	4,700	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,900	3,800	5
06918	PETN	78-11-5	N.D.	19,000	56,000	5
06918	RDX	121-82-4	N.D.	1,200	2,800	5
06918	Tetryl	479-45-8	N.D.	1,500	3,800	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046548
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5002 SDG#: KVM50-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	3,600		940	2,800	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,200,000		47,000	140,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	24,100		15.3	39.9	1
06944	Antimony	7440-36-0	1.34	J	0.817	3.99	1
06935	Arsenic	7440-38-2	5.32		1.16	3.99	1
06946	Barium	7440-39-3	72.1		0.134	0.997	1
06947	Beryllium	7440-41-7	0.803	J	0.134	0.997	1
06949	Cadmium	7440-43-9	N.D.		0.0857	0.997	1
01650	Calcium	7440-70-2	1,980		6.64	39.9	1
06951	Chromium	7440-47-3	20.9		0.195	2.99	1
06952	Cobalt	7440-48-4	5.83		0.161	0.997	1
06953	Copper	7440-50-8	33.4		0.558	1.99	1
01654	Iron	7439-89-6	29,800		6.64	39.9	1
06955	Lead	7439-92-1	312		0.638	2.99	1
01657	Magnesium	7439-95-4	1,780		3.33	19.9	1
06958	Manganese	7439-96-5	234		0.165	0.997	1
06961	Nickel	7440-02-0	11.4		0.459	1.99	1
01662	Potassium	7440-09-7	1,020		33.5	99.7	1
06936	Selenium	7782-49-2	4.38		1.65	3.99	1
06966	Silver	7440-22-4	N.D.		0.239	0.997	1
01667	Sodium	7440-23-5	64.7	J	33.3	199	1
06925	Thallium	7440-28-0	1.58	J	1.50	5.98	1
06971	Vanadium	7440-62-2	43.1		0.299	0.997	1
06972	Zinc	7440-66-6	43.5		1.54	3.99	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0804	J	0.0205	0.205	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	20,600		466	1,400	1
	The holding time was not met. The client was notified and the data reported.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	51.3		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046548
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5002 SDG#: KVM50-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 13:26	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 00:15	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 17:15	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 18:56	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 18:56	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 18:56	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:26	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 08:53	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15272049531A	09/29/2015 01:52	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5002

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046548
Sample wt/vol: 30.42(g/mL) g Lab File ID: oi0952.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 51.3 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	5.687	1800	J
2.	Unknown PAH	6.092	1300	J
3.112-40-3	Dodecane	6.287	3400	J
4.	Unknown Alkane	6.604	2000	J
5.1560-97-0	Dodecane, 2-methyl-	6.681	1900	J
6.17312-82-2	Undecane, 4,6-dimethyl-	6.722	2900	J
7.	Unknown	6.810	1200	J
8.629-50-5	Tridecane	6.898	9000	J
9.92-51-3	1,1'-Bicyclohexyl	6.939	2300	J
10.	Unknown Alkane	6.981	1700	J
11.5617-41-4	Heptylcyclohexane	7.145	3100	J
12.26730-12-1	Tridecane, 4-methyl-	7.216	2600	J
13.17301-27-8	Undecane, 2,10-dimethyl-	7.245	5800	J
14.	Unknown	7.310	6000	J
15.629-59-4	Tetradecane	7.451	18000	J
16.66563-30-2	Bacchotricuneatin c	7.751	5400	J
17.1560-95-8	Tetradecane, 2-methyl-	7.769	2500	J
18.629-78-7	Heptadecane	7.957	9500	J
19.	Unknown	8.381	3400	J
20.	Unknown	8.839	2100	J
21.	Unknown	9.204	380000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	9.957	16000	J
23.618-87-1	Benzenamine, 3,5-dinitro-	9.998	2700	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.157	3300	J
25.	Unknown Alkane	10.269	620	J
26.				
27.SVOCTIC	Total SVOC TICs		490000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046549
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5003 SDG#: KVM50-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	N.D.		5	27	1
10727	Acetophenone	98-86-2	N.D.		27	54	1
10727	Anthracene	120-12-7	24	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		54	270	1
10727	Benzaldehyde	100-52-7	130	J	110	270	1
10727	Benzo(a)anthracene	56-55-3	91		5	27	1
10727	Benzo(a)pyrene	50-32-8	67		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	130		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	46		5	27	1
10727	Benzo(k)fluoranthene	207-08-9	55		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	54	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	54	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		54	270	1
10727	Carbazole	86-74-8	N.D.		27	54	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	54	1
10727	4-Chloroaniline	106-47-8	N.D.		54	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	54	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	54	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	53	1
10727	2-Chlorophenol	95-57-8	N.D.		27	54	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	54	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	54	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	15	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		27	54	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	540	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	54	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	54	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	800	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		480	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	4,700		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	2,900		27	54	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	270	1
10727	Fluoranthene	206-44-0	150		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	54	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	800	1
10727	Hexachloroethane	67-72-1	N.D.		54	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	54		5	27	1
10727	Isophorone	78-59-1	N.D.		27	54	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046549
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5003 SDG#: KVM50-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	2-Methylphenol	95-48-7	N.D.		27	54	1
10727	4-Methylphenol	106-44-5	N.D.		27	54	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	27	1
10727	2-Nitroaniline	88-74-4	N.D.		27	54	1
10727	3-Nitroaniline	99-09-2	N.D.		110	270	1
10727	4-Nitroaniline	100-01-6	N.D.		110	270	1
10727	Nitrobenzene	98-95-3	N.D.		27	54	1
10727	2-Nitrophenol	88-75-5	N.D.		27	54	1
10727	4-Nitrophenol	100-02-7	N.D.		270	800	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		27	54	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		27	54	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	140	J	110	270	1
10727	Pentachlorophenol	87-86-5	N.D.		54	270	1
10727	Phenanthrene	85-01-8	85		5	27	1
10727	Phenol	108-95-2	N.D.		27	54	1
10727	Pyrene	129-00-0	120		5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		27	54	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		27	54	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		ug/kg		ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	63,000		1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	39,000		790	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		790	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	1,600	J	790	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		790	2,400	5
06918	HMX	2691-41-0	N.D.		2,000	5,900	5
06918	Nitrobenzene	98-95-3	N.D.		790	2,400	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	47,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		790	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,000	3,900	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,200	5
06918	PETN	78-11-5	N.D.		16,000	47,000	5
06918	RDX	121-82-4	N.D.		1,000	2,400	5
06918	Tetryl	479-45-8	N.D.		1,300	3,200	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046549
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5003 SDG#: KVM50-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	3,400		790	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,800,000		39,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,700		12.4	32.3	1
06944	Antimony	7440-36-0	1.28	J	0.662	3.23	1
06935	Arsenic	7440-38-2	5.34		0.937	3.23	1
06946	Barium	7440-39-3	56.8		0.108	0.808	1
06947	Beryllium	7440-41-7	0.651	J	0.108	0.808	1
06949	Cadmium	7440-43-9	N.D.		0.0695	0.808	1
01650	Calcium	7440-70-2	1,520		5.38	32.3	1
06951	Chromium	7440-47-3	16.3		0.158	2.42	1
06952	Cobalt	7440-48-4	4.65		0.131	0.808	1
06953	Copper	7440-50-8	27.6		0.452	1.62	1
01654	Iron	7439-89-6	24,700		5.38	32.3	1
06955	Lead	7439-92-1	251		0.517	2.42	1
01657	Magnesium	7439-95-4	1,330		2.70	16.2	1
06958	Manganese	7439-96-5	186		0.134	0.808	1
06961	Nickel	7440-02-0	9.42		0.372	1.62	1
01662	Potassium	7440-09-7	754		27.1	80.8	1
06936	Selenium	7782-49-2	3.12	J	1.34	3.23	1
06966	Silver	7440-22-4	N.D.		0.194	0.808	1
01667	Sodium	7440-23-5	50.2	J	27.0	162	1
06925	Thallium	7440-28-0	N.D.		1.21	4.85	1
06971	Vanadium	7440-62-2	35.2		0.242	0.808	1
06972	Zinc	7440-66-6	35.2		1.24	3.23	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0483	J	0.0161	0.161	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,200		423	1,270	1
	The holding time was not met. The client was notified and the data reported.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	38.1		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046549
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5003 SDG#: KVM50-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 13:50	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 00:57	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 17:57	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 19:02	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 19:02	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 19:02	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:36	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 08:55	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15272049531A	09/29/2015 02:01	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5003

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046549
Sample wt/vol: 30.14(g/mL) g Lab File ID: oi0953.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 38.1 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.692	870	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	6.092	660	J
3.112-40-3	Dodecane	6.298	1400	J
4.	Unknown Alkane	6.610	1000	J
5.17301-27-8	Undecane, 2,10-dimethyl-	6.687	1000	J
6.	Unknown Alkane	6.734	1500	J
7.629-50-5	Tridecane	6.910	4400	J
8.92-51-3	1,1'-Bicyclohexyl	6.945	1200	J
9.13287-21-3	Tridecane, 6-methyl-	6.992	910	J
10.1560-96-9	Tridecane, 2-methyl-	7.086	3700	J
11.5617-41-4	Heptylcyclohexane	7.151	3800	J
12.	Unknown Alkane	7.175	3300	J
13.	Unknown	7.192	3500	J
14.26730-12-1	Tridecane, 4-methyl-	7.222	3200	J
15.3891-98-3	Dodecane, 2,6,10-trimethyl-	7.316	7800	J
16.629-59-4	Tetradecane	7.463	21000	J
17.	Unknown Alkane	7.492	3200	J
18.	Unknown	7.516	3400	J
19.6165-40-8	Pentadecane, 7-methyl-	7.757	8600	J
20.18435-22-8	Tetradecane, 3-methyl-	7.810	4000	J
21.629-78-7	Heptadecane	7.963	11000	J
22.	Unknown Alkane	8.898	7600	J
23.	Unknown	9.245	510000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	9.998	35000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.192	2100	J
26.				
27.SVOCTIC	Total SVOC TICs		650000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046550
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5004 SDG#: KVM50-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	N.D.		5	26	1
10727	Acetophenone	98-86-2	N.D.		26	51	1
10727	Anthracene	120-12-7	19	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		51	260	1
10727	Benzaldehyde	100-52-7	110	J	100	260	1
10727	Benzo(a)anthracene	56-55-3	87		5	26	1
10727	Benzo(a)pyrene	50-32-8	72		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	110		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	47		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	58		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	51	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	51	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		51	260	1
10727	Carbazole	86-74-8	N.D.		26	51	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	51	1
10727	4-Chloroaniline	106-47-8	N.D.		51	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	51	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	51	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	51	1
10727	2-Chlorophenol	95-57-8	N.D.		26	51	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	51	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	51	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	97		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	22	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		26	51	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	510	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	51	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	51	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	770	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		460	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	5,000		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	2,600		26	51	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	130		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	51	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	770	1
10727	Hexachloroethane	67-72-1	N.D.		51	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	52		5	26	1
10727	Isophorone	78-59-1	N.D.		26	51	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046550
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5004 SDG#: KVM50-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		26	51	1
10727	4-Methylphenol	106-44-5	N.D.		26	51	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	26	1
10727	2-Nitroaniline	88-74-4	N.D.		26	51	1
10727	3-Nitroaniline	99-09-2	N.D.		100	260	1
10727	4-Nitroaniline	100-01-6	N.D.		100	260	1
10727	Nitrobenzene	98-95-3	N.D.		26	51	1
10727	2-Nitrophenol	88-75-5	N.D.		26	51	1
10727	4-Nitrophenol	100-02-7	N.D.		260	770	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		26	51	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		26	51	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	260	1
10727	Pentachlorophenol	87-86-5	N.D.		51	260	1
10727	Phenanthrene	85-01-8	68		5	26	1
10727	Phenol	108-95-2	N.D.		26	51	1
10727	Pyrene	129-00-0	110		5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		26	51	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		26	51	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	66,000		980	2,600	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	38,000		650	2,000	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		650	2,000	5
06918	1,3-Dinitrobenzene	99-65-0	1,300	J	650	2,000	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		650	2,000	5
06918	HMX	2691-41-0	N.D.		1,600	4,900	5
06918	Nitrobenzene	98-95-3	N.D.		650	2,000	5
06918	Nitroglycerin	55-63-0	N.D.		13,000	39,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		650	2,000	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,300	2,600	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,600	3,300	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	2,600	5
06918	PETN	78-11-5	N.D.		13,000	39,000	5
06918	RDX	121-82-4	N.D.		850	2,000	5
06918	Tetryl	479-45-8	N.D.		1,000	2,600	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046550
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5004 SDG#: KVM50-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,800		650	2,000	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,700,000		33,000	98,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,600		11.8	30.7	1
06944	Antimony	7440-36-0	1.34	J	0.629	3.07	1
06935	Arsenic	7440-38-2	4.39		0.890	3.07	1
06946	Barium	7440-39-3	56.2		0.103	0.768	1
06947	Beryllium	7440-41-7	0.596	J	0.103	0.768	1
06949	Cadmium	7440-43-9	N.D.		0.0660	0.768	1
01650	Calcium	7440-70-2	1,440		5.11	30.7	1
06951	Chromium	7440-47-3	15.3		0.150	2.30	1
06952	Cobalt	7440-48-4	4.45		0.124	0.768	1
06953	Copper	7440-50-8	25.9		0.430	1.54	1
01654	Iron	7439-89-6	22,600		5.11	30.7	1
06955	Lead	7439-92-1	242		0.491	2.30	1
01657	Magnesium	7439-95-4	1,270		2.56	15.4	1
06958	Manganese	7439-96-5	171		0.127	0.768	1
06961	Nickel	7440-02-0	8.73		0.353	1.54	1
01662	Potassium	7440-09-7	700		25.8	76.8	1
06936	Selenium	7782-49-2	2.90	J	1.27	3.07	1
06966	Silver	7440-22-4	N.D.		0.184	0.768	1
01667	Sodium	7440-23-5	47.3	J	25.6	154	1
06925	Thallium	7440-28-0	1.25	J	1.15	4.61	1
06971	Vanadium	7440-62-2	32.8		0.230	0.768	1
06972	Zinc	7440-66-6	35.7		1.18	3.07	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0494	J	0.0151	0.151	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	19,400		491	1,470	1
	The holding time was not met. The client was notified and the data reported.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	35.5		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046550
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5004 SDG#: KVM50-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 14:14	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 01:40	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 18:40	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 19:14	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 19:14	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 19:14	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:39	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 08:57	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15272049531A	09/29/2015 02:09	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5004

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046550
Sample wt/vol: 30.24(g/mL) g Lab File ID: oi0954.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 35.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	5.687	1200	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	6.092	890	J
3.112-40-3	Dodecane	6.292	2200	J
4.6044-71-9	Dodecane, 6-methyl-	6.369	930	J
5.	Unknown Alkane	6.604	1500	J
6.6117-97-1	Dodecane, 4-methyl-	6.645	860	J
7.1560-97-0	Dodecane, 2-methyl-	6.681	1300	J
8.	Unknown Alkane	6.728	2000	J
9.629-50-5	Tridecane	6.904	5000	J
10.92-51-3	1,1'-Bicyclohexyl	6.945	1200	J
11.	Unknown Alkane	6.987	980	J
12.5617-41-4	Heptylcyclohexane	7.151	3600	J
13.	Unknown Alkane	7.286	4200	J
14.3891-98-3	Dodecane, 2,6,10-trimethyl-	7.310	6100	J
15.629-59-4	Tetradecane	7.457	22000	J
16.	Unknown	7.704	7100	J
17.629-62-9	Pentadecane	7.963	13000	J
18.	Unknown Alcohol	8.386	4300	J
19.544-76-3	Hexadecane	8.433	4000	J
20.	Unknown	8.839	3100	J
21.	Unknown Alkane	8.898	8400	J
22.	Unknown	9.245	590000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	9.998	32000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.192	2000	J
25.	Unknown	10.298	430	J
26.				
27.SVOCTIC	Total SVOC TICs		720000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046551
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5005 SDG#: KVM50-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	32	1
10727	Acenaphthylene	208-96-8	N.D.		6	32	1
10727	Acetophenone	98-86-2	N.D.		31	63	1
10727	Anthracene	120-12-7	21	J	6	32	1
10727	Atrazine	1912-24-9	N.D.		63	310	1
10727	Benzaldehyde	100-52-7	N.D.		130	310	1
10727	Benzo(a)anthracene	56-55-3	69		6	32	1
10727	Benzo(a)pyrene	50-32-8	66		6	32	1
10727	Benzo(b)fluoranthene	205-99-2	100		6	32	1
10727	Benzo(g,h,i)perylene	191-24-2	44		6	32	1
10727	Benzo(k)fluoranthene	207-08-9	46		6	32	1
10727	1,1'-Biphenyl	92-52-4	N.D.		31	63	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		31	63	1
10727	Butylbenzylphthalate	85-68-7	N.D.		130	310	1
10727	Di-n-butylphthalate	84-74-2	N.D.		130	310	1
10727	Caprolactam	105-60-2	N.D.		63	310	1
10727	Carbazole	86-74-8	N.D.		31	63	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		31	63	1
10727	4-Chloroaniline	106-47-8	N.D.		63	130	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		31	63	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		31	63	1
10727	2-Chloronaphthalene	91-58-7	N.D.		13	62	1
10727	2-Chlorophenol	95-57-8	N.D.		31	63	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		31	63	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		31	63	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	83		6	32	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	6	32	1
10727	Dibenzofuran	132-64-9	N.D.		31	63	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		190	630	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		31	63	1
10727	Diethylphthalate	84-66-2	N.D.		130	310	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		31	63	1
10727	Dimethylphthalate	131-11-3	N.D.		130	310	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		310	940	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		570	1,900	1
10727	2,4-Dinitrotoluene	121-14-2	5,900		130	310	1
10727	2,6-Dinitrotoluene	606-20-2	1,900		31	63	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		130	320	1
10727	Fluoranthene	206-44-0	120		6	32	1
10727	Fluorene	86-73-7	N.D.		6	32	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	32	1
10727	Hexachlorobutadiene	87-68-3	N.D.		31	63	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		310	940	1
10727	Hexachloroethane	67-72-1	N.D.		63	310	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38		6	32	1
10727	Isophorone	78-59-1	N.D.		31	63	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	32	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046551
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5005 SDG#: KVM50-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	31	63	1
10727	4-Methylphenol	106-44-5	N.D.	31	63	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	32	1
10727	2-Nitroaniline	88-74-4	N.D.	31	63	1
10727	3-Nitroaniline	99-09-2	N.D.	130	310	1
10727	4-Nitroaniline	100-01-6	N.D.	130	310	1
10727	Nitrobenzene	98-95-3	N.D.	31	63	1
10727	2-Nitrophenol	88-75-5	N.D.	31	63	1
10727	4-Nitrophenol	100-02-7	N.D.	310	940	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	31	63	1
10727	N-Nitrosodiphenylamine	86-30-6	71	31	63	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	130	310	1
10727	Pentachlorophenol	87-86-5	N.D.	63	320	1
10727	Phenanthrene	85-01-8	65	6	32	1
10727	Phenol	108-95-2	N.D.	31	63	1
10727	Pyrene	129-00-0	89	6	32	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	31	63	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	31	63	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	27,000	1,300	3,600	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	25,000	890	2,700	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	890	2,700	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	890	2,700	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	890	2,700	5
06918	HMX	2691-41-0	N.D.	2,200	6,700	5
06918	Nitrobenzene	98-95-3	N.D.	890	2,700	5
06918	Nitroglycerin	55-63-0	N.D.	18,000	54,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	890	2,700	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,800	3,600	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,200	4,500	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,800	3,600	5
06918	PETN	78-11-5	N.D.	18,000	54,000	5
06918	RDX	121-82-4	N.D.	1,200	2,700	5
06918	Tetryl	479-45-8	N.D.	1,400	3,600	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046551
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5005 SDG#: KVM50-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,400	J	890	2,700	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,100,000		45,000	130,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,200		14.3	37.4	1
06944	Antimony	7440-36-0	1.12	J	0.767	3.74	1
06935	Arsenic	7440-38-2	3.11	J	1.09	3.74	1
06946	Barium	7440-39-3	60.8		0.125	0.935	1
06947	Beryllium	7440-41-7	0.703	J	0.125	0.935	1
06949	Cadmium	7440-43-9	N.D.		0.0805	0.935	1
01650	Calcium	7440-70-2	1,160		6.23	37.4	1
06951	Chromium	7440-47-3	18.3		0.183	2.81	1
06952	Cobalt	7440-48-4	4.96		0.152	0.935	1
06953	Copper	7440-50-8	29.4		0.524	1.87	1
01654	Iron	7439-89-6	25,700		6.23	37.4	1
06955	Lead	7439-92-1	233		0.599	2.81	1
01657	Magnesium	7439-95-4	1,430		3.12	18.7	1
06958	Manganese	7439-96-5	194		0.155	0.935	1
06961	Nickel	7440-02-0	10.2		0.430	1.87	1
01662	Potassium	7440-09-7	813		31.4	93.5	1
06936	Selenium	7782-49-2	3.72	J	1.55	3.74	1
06966	Silver	7440-22-4	N.D.		0.225	0.935	1
01667	Sodium	7440-23-5	52.5	J	31.2	187	1
06925	Thallium	7440-28-0	1.61	J	1.40	5.61	1
06971	Vanadium	7440-62-2	37.4		0.281	0.935	1
06972	Zinc	7440-66-6	39.0		1.44	3.74	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0526	J	0.0181	0.181	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,400		513	1,540	1
	The holding time was not met. The client was notified and the data reported.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	47.6		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046551
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5005 SDG#: KVM50-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 14:39	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 02:22	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 19:22	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 19:21	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 19:21	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 19:21	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:42	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 08:36	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15272049531A	09/29/2015 02:18	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5005

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046551
Sample wt/vol: 30.34(g/mL) g Lab File ID: oi0955.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 47.6 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	5.687	1200	J
2. 112-40-3	Dodecane	6.287	2200	J
3. 6044-71-9	Dodecane, 6-methyl-	6.363	1000	J
4. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.469	990	J
5.	Unknown Cycloalkane	6.528	1100	J
6.	Unknown Alkane	6.610	1700	J
7. 6117-97-1	Dodecane, 4-methyl-	6.645	1000	J
8. 1000309-18-4	Sulfurous acid, butyl heptad	6.675	1500	J
9.	Unknown Alkane	6.722	2200	J
10.	Unknown PAH	6.810	990	J
11. 629-50-5	Tridecane	6.898	5800	J
12. 92-51-3	1,1'-Bicyclohexyl	6.939	1400	J
13. 13287-21-3	Tridecane, 6-methyl-	6.981	1100	J
14. 1560-96-9	Tridecane, 2-methyl-	7.245	3100	J
15.	Unknown Alkane	7.281	2000	J
16. 66563-30-2	Bacchotricuneatin c	7.304	2500	J
17. 629-59-4	Tetradecane	7.445	9000	J
18. 99-65-0	Benzene, 1,3-dinitro-	7.686	1600	J
19.	Unknown Cycloalkane	7.698	2000	J
20.	Unknown Alkane	7.951	5400	J
21.	Unknown	9.251	600000	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	9.957	11000	J
23.	Unknown Amine	10.004	2900	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.157	2100	J
25.	Unknown	10.280	660	J
26.				
27. SVOCTIC	Total SVOC TICs		670000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046552
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5006 SDG#: KVM50-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		7	37	1
10727	Acenaphthylene	208-96-8	N.D.		7	37	1
10727	Acetophenone	98-86-2	N.D.		36	72	1
10727	Anthracene	120-12-7	21	J	7	37	1
10727	Atrazine	1912-24-9	N.D.		72	360	1
10727	Benzaldehyde	100-52-7	N.D.		140	360	1
10727	Benzo(a)anthracene	56-55-3	84		7	37	1
10727	Benzo(a)pyrene	50-32-8	86		7	37	1
10727	Benzo(b)fluoranthene	205-99-2	140		7	37	1
10727	Benzo(g,h,i)perylene	191-24-2	68		7	37	1
10727	Benzo(k)fluoranthene	207-08-9	65		7	37	1
10727	1,1'-Biphenyl	92-52-4	N.D.		36	72	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		36	72	1
10727	Butylbenzylphthalate	85-68-7	N.D.		140	360	1
10727	Di-n-butylphthalate	84-74-2	N.D.		140	360	1
10727	Caprolactam	105-60-2	N.D.		72	360	1
10727	Carbazole	86-74-8	N.D.		36	72	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		36	72	1
10727	4-Chloroaniline	106-47-8	N.D.		72	140	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		36	72	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		36	72	1
10727	2-Chloronaphthalene	91-58-7	N.D.		15	72	1
10727	2-Chlorophenol	95-57-8	N.D.		36	72	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		36	72	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		36	72	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		7	37	1
10727	Dibenz(a,h)anthracene	53-70-3	22	J	7	37	1
10727	Dibenzofuran	132-64-9	N.D.		36	72	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		220	720	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		36	72	1
10727	Diethylphthalate	84-66-2	N.D.		140	360	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		36	72	1
10727	Dimethylphthalate	131-11-3	N.D.		140	360	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		360	1,100	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		650	2,200	1
10727	2,4-Dinitrotoluene	121-14-2	6,400		140	360	1
10727	2,6-Dinitrotoluene	606-20-2	2,200		36	72	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		140	370	1
10727	Fluoranthene	206-44-0	150		7	37	1
10727	Fluorene	86-73-7	N.D.		7	37	1
10727	Hexachlorobenzene	118-74-1	N.D.		7	37	1
10727	Hexachlorobutadiene	87-68-3	N.D.		36	72	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		360	1,100	1
10727	Hexachloroethane	67-72-1	N.D.		72	360	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	65		7	37	1
10727	Isophorone	78-59-1	N.D.		36	72	1
10727	2-Methylnaphthalene	91-57-6	N.D.		7	37	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046552
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5006 SDG#: KVM50-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		36	72	1
10727	4-Methylphenol	106-44-5	N.D.		36	72	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		7	37	1
10727	2-Nitroaniline	88-74-4	N.D.		36	72	1
10727	3-Nitroaniline	99-09-2	N.D.		140	360	1
10727	4-Nitroaniline	100-01-6	N.D.		140	360	1
10727	Nitrobenzene	98-95-3	N.D.		36	72	1
10727	2-Nitrophenol	88-75-5	N.D.		36	72	1
10727	4-Nitrophenol	100-02-7	N.D.		360	1,100	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		36	72	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		36	72	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		140	360	1
10727	Pentachlorophenol	87-86-5	N.D.		72	370	1
10727	Phenanthrene	85-01-8	85		7	37	1
10727	Phenol	108-95-2	N.D.		36	72	1
10727	Pyrene	129-00-0	120		7	37	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		36	72	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		36	72	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	40,000		1,600	4,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	36,000		1,100	3,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,100	3,200	5
06918	1,3-Dinitrobenzene	99-65-0	1,400	J	1,100	3,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,100	3,200	5
06918	HMX	2691-41-0	N.D.		2,700	8,100	5
06918	Nitrobenzene	98-95-3	N.D.		1,100	3,200	5
06918	Nitroglycerin	55-63-0	N.D.		22,000	65,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		1,100	3,200	5
06918	2-Nitrotoluene	88-72-2	N.D.		2,200	4,300	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,700	5,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		2,200	4,300	5
06918	PETN	78-11-5	N.D.		22,000	65,000	5
06918	RDX	121-82-4	N.D.		1,400	3,200	5
06918	Tetryl	479-45-8	N.D.		1,700	4,300	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046552
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5006 SDG#: KVM50-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	4,100		1,100	3,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	4,800,000		54,000	160,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	23,500		16.6	43.4	1
06944	Antimony	7440-36-0	0.910	J	0.890	4.34	1
06935	Arsenic	7440-38-2	4.81		1.26	4.34	1
06946	Barium	7440-39-3	88.5		0.145	1.09	1
06947	Beryllium	7440-41-7	0.779	J	0.145	1.09	1
06949	Cadmium	7440-43-9	N.D.		0.0934	1.09	1
01650	Calcium	7440-70-2	1,140		7.23	43.4	1
06951	Chromium	7440-47-3	20.1		0.213	3.26	1
06952	Cobalt	7440-48-4	6.00		0.176	1.09	1
06953	Copper	7440-50-8	32.7		0.608	2.17	1
01654	Iron	7439-89-6	28,500		7.23	43.4	1
06955	Lead	7439-92-1	262		0.695	3.26	1
01657	Magnesium	7439-95-4	1,750		3.63	21.7	1
06958	Manganese	7439-96-5	316		0.180	1.09	1
06961	Nickel	7440-02-0	11.5		0.499	2.17	1
01662	Potassium	7440-09-7	1,010		36.5	109	1
06936	Selenium	7782-49-2	3.63	J	1.80	4.34	1
06966	Silver	7440-22-4	N.D.		0.261	1.09	1
01667	Sodium	7440-23-5	54.5	J	36.3	217	1
06925	Thallium	7440-28-0	N.D.		1.63	6.51	1
06971	Vanadium	7440-62-2	41.3		0.326	1.09	1
06972	Zinc	7440-66-6	48.9		1.67	4.34	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0579	J	0.0208	0.208	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	21,900		298	895	1
	The holding time was not met. The client was notified and the data reported.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	54.4		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046552
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5006 SDG#: KVM50-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 15:03	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 03:05	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 20:05	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 19:27	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 19:27	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/20/2015 19:27	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 19:27	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:45	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 08:59	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15272049531A	09/29/2015 02:27	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5006

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046552
Sample wt/vol: 30.27(g/mL) g Lab File ID: oi0956.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 54.4 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	5.687	1500	J
2.	Unknown	6.087	1300	J
3.112-40-3	Dodecane	6.287	2900	J
4.6044-71-9	Dodecane, 6-methyl-	6.363	1300	J
5.	Unknown Alkane	6.610	2100	J
6.6117-97-1	Dodecane, 4-methyl-	6.645	1200	J
7.17301-27-8	Undecane, 2,10-dimethyl-	6.675	1900	J
8.	Unknown Alkane	6.722	2700	J
9.629-50-5	Tridecane	6.898	7300	J
10.92-51-3	1,1'-Bicyclohexyl	6.940	2000	J
11.107770-99-0	3,5-Dimethyldodecane	6.981	1600	J
12.	Unknown Alkane	7.169	3200	J
13.1560-96-9	Tridecane, 2-methyl-	7.245	3700	J
14.	Unknown Alkane	7.281	2700	J
15.3891-98-3	Dodecane, 2,6,10-trimethyl-	7.310	3600	J
16.629-59-4	Tetradecane	7.445	14000	J
17.	Unknown Alkane	7.687	2700	J
18.6165-40-8	Pentadecane, 7-methyl-	7.751	4000	J
19.	Unknown	7.769	2600	J
20.629-62-9	Pentadecane	7.957	8200	J
21.	Unknown	9.257	670000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	9.963	15000	J
23.618-87-1	Benzenamine, 3,5-dinitro-	10.010	4100	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.163	2600	J
25.	Unknown	10.286	680	J
26.				
27.SVOCTIC	Total SVOC TICs		770000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046553
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5007 SDG#: KVM50-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		28	57	1
10727	Anthracene	120-12-7	16	J	6	29	1
10727	Atrazine	1912-24-9	N.D.		57	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	63		6	29	1
10727	Benzo(a)pyrene	50-32-8	60		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	93		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	44		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	47		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	57	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	57	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		57	280	1
10727	Carbazole	86-74-8	N.D.		28	57	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	57	1
10727	4-Chloroaniline	106-47-8	N.D.		57	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	57	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	57	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	56	1
10727	2-Chlorophenol	95-57-8	N.D.		28	57	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	57	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	57	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	79		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	6	29	1
10727	Dibenzofuran	132-64-9	N.D.		28	57	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	570	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	57	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	57	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	850	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		510	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	5,600		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	1,800		28	57	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	290	1
10727	Fluoranthene	206-44-0	110		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	57	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	850	1
10727	Hexachloroethane	67-72-1	N.D.		57	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	44		6	29	1
10727	Isophorone	78-59-1	N.D.		28	57	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046553
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5007 SDG#: KVM50-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	57	1
10727	4-Methylphenol	106-44-5	N.D.	28	57	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.	28	57	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	57	1
10727	2-Nitrophenol	88-75-5	N.D.	28	57	1
10727	4-Nitrophenol	100-02-7	N.D.	280	850	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	57	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	57	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	57	290	1
10727	Phenanthrene	85-01-8	59	6	29	1
10727	Phenol	108-95-2	N.D.	28	57	1
10727	Pyrene	129-00-0	93	6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	57	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	57	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	23,000	1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	21,000	810	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	810	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	810	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	810	2,400	5
06918	HMX	2691-41-0	N.D.	2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.	810	2,400	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	810	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,200	5
06918	PETN	78-11-5	N.D.	16,000	49,000	5
06918	RDX	121-82-4	N.D.	1,100	2,400	5
06918	Tetryl	479-45-8	N.D.	1,300	3,200	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046553
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5007 SDG#: KVM50-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,300	J	810	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	4,400,000		41,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	19,000		13.1	34.2	1
06944	Antimony	7440-36-0	1.75	J	0.701	3.42	1
06935	Arsenic	7440-38-2	4.79		0.991	3.42	1
06946	Barium	7440-39-3	58.4		0.115	0.855	1
06947	Beryllium	7440-41-7	0.831	J	0.115	0.855	1
06949	Cadmium	7440-43-9	N.D.		0.0735	0.855	1
01650	Calcium	7440-70-2	1,040		5.69	34.2	1
06951	Chromium	7440-47-3	17.1		0.168	2.56	1
06952	Cobalt	7440-48-4	4.87		0.138	0.855	1
06953	Copper	7440-50-8	28.3		0.479	1.71	1
01654	Iron	7439-89-6	24,800		5.69	34.2	1
06955	Lead	7439-92-1	223		0.547	2.56	1
01657	Magnesium	7439-95-4	1,420		2.85	17.1	1
06958	Manganese	7439-96-5	188		0.142	0.855	1
06961	Nickel	7440-02-0	9.53		0.393	1.71	1
01662	Potassium	7440-09-7	842		28.7	85.5	1
06936	Selenium	7782-49-2	3.39	J	1.42	3.42	1
06966	Silver	7440-22-4	N.D.		0.205	0.855	1
01667	Sodium	7440-23-5	64.2	J	28.5	171	1
06925	Thallium	7440-28-0	1.29	J	1.28	5.13	1
06971	Vanadium	7440-62-2	37.8		0.256	0.855	1
06972	Zinc	7440-66-6	37.2		1.32	3.42	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0444	J	0.0171	0.171	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	24,100		1,500	1,520	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046553
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5007 SDG#: KVM50-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 15:28	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 03:47	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 21:30	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 18:08	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 18:08	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 18:08	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:04	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:01	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5007

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046553
Sample wt/vol: 30.07(g/mL) g Lab File ID: oi0957.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 41.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	5.686	660	J
2.	Unknown Cycloalkane	5.845	500	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	6.086	480	J
4.112-40-3	Dodecane	6.286	1100	J
5.6044-71-9	Dodecane, 6-methyl-	6.363	510	J
6.1560-97-0	Dodecane, 2-methyl-	6.675	720	J
7.2051-30-1	Octane, 2,6-dimethyl-	6.722	1100	J
8.	Unknown Cycloalkane	6.833	580	J
9.629-50-5	Tridecane	6.892	3100	J
10.92-51-3	1,1'-Bicyclohexyl	6.939	810	J
11.13287-21-3	Tridecane, 6-methyl-	6.980	610	J
12.3891-98-3	Dodecane, 2,6,10-trimethyl-	7.304	2800	J
13.629-59-4	Tetradecane	7.445	9900	J
14.	Unknown	7.686	1700	J
15.	Unknown Cycloalkane	7.698	1600	J
16.6165-40-8	Pentadecane, 7-methyl-	7.745	2500	J
17.112-40-3	Dodecane	7.951	5500	J
18.	Unknown	8.380	2000	J
19.544-76-3	Hexadecane	8.433	1900	J
20.	Unknown	8.839	1500	J
21.	Unknown	9.251	380000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	9.969	7400	J
23.	Unknown Amine	10.010	2000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.163	2100	J
25.	Unknown	10.280	570	J
26.				
27.SVOCTIC	Total SVOC TICs		430000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046554
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5008 SDG#: KVM50-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	33	1
10727	Acenaphthylene	208-96-8	N.D.		6	33	1
10727	Acetophenone	98-86-2	N.D.		32	64	1
10727	Anthracene	120-12-7	14	J	6	33	1
10727	Atrazine	1912-24-9	N.D.		64	320	1
10727	Benzaldehyde	100-52-7	N.D.		130	320	1
10727	Benzo(a)anthracene	56-55-3	65		6	33	1
10727	Benzo(a)pyrene	50-32-8	56		6	33	1
10727	Benzo(b)fluoranthene	205-99-2	100		6	33	1
10727	Benzo(g,h,i)perylene	191-24-2	40		6	33	1
10727	Benzo(k)fluoranthene	207-08-9	45		6	33	1
10727	1,1'-Biphenyl	92-52-4	N.D.		32	64	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		32	64	1
10727	Butylbenzylphthalate	85-68-7	N.D.		130	320	1
10727	Di-n-butylphthalate	84-74-2	N.D.		130	320	1
10727	Caprolactam	105-60-2	N.D.		64	320	1
10727	Carbazole	86-74-8	N.D.		32	64	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		32	64	1
10727	4-Chloroaniline	106-47-8	N.D.		64	130	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		32	64	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		32	64	1
10727	2-Chloronaphthalene	91-58-7	N.D.		14	64	1
10727	2-Chlorophenol	95-57-8	N.D.		32	64	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		32	64	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		32	64	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	74		6	33	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	6	33	1
10727	Dibenzofuran	132-64-9	N.D.		32	64	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		190	640	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		32	64	1
10727	Diethylphthalate	84-66-2	N.D.		130	320	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		32	64	1
10727	Dimethylphthalate	131-11-3	N.D.		130	320	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		320	970	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		580	1,900	1
10727	2,4-Dinitrotoluene	121-14-2	5,500		130	320	1
10727	2,6-Dinitrotoluene	606-20-2	1,800		32	64	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		130	330	1
10727	Fluoranthene	206-44-0	110		6	33	1
10727	Fluorene	86-73-7	N.D.		6	33	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	33	1
10727	Hexachlorobutadiene	87-68-3	N.D.		32	64	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		320	970	1
10727	Hexachloroethane	67-72-1	N.D.		64	320	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	35		6	33	1
10727	Isophorone	78-59-1	N.D.		32	64	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	33	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046554
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5008 SDG#: KVM50-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	32	64	1
10727	4-Methylphenol	106-44-5	N.D.	32	64	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	10 J	6	33	1
10727	2-Nitroaniline	88-74-4	N.D.	32	64	1
10727	3-Nitroaniline	99-09-2	N.D.	130	320	1
10727	4-Nitroaniline	100-01-6	N.D.	130	320	1
10727	Nitrobenzene	98-95-3	N.D.	32	64	1
10727	2-Nitrophenol	88-75-5	N.D.	32	64	1
10727	4-Nitrophenol	100-02-7	N.D.	320	970	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	32	64	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	32	64	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	130	320	1
10727	Pentachlorophenol	87-86-5	N.D.	64	330	1
10727	Phenanthrene	85-01-8	51	6	33	1
10727	Phenol	108-95-2	N.D.	32	64	1
10727	Pyrene	129-00-0	84	6	33	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	32	64	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	32	64	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	28,000	1,400	3,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	26,000	960	2,900	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	960	2,900	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	960	2,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	960	2,900	5
06918	HMX	2691-41-0	N.D.	2,400	7,200	5
06918	Nitrobenzene	98-95-3	N.D.	960	2,900	5
06918	Nitroglycerin	55-63-0	N.D.	19,000	58,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	960	2,900	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,900	3,800	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,400	4,800	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,900	3,800	5
06918	PETN	78-11-5	N.D.	19,000	58,000	5
06918	RDX	121-82-4	N.D.	1,200	2,900	5
06918	Tetryl	479-45-8	N.D.	1,500	3,800	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046554
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5008 SDG#: KVM50-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,200	J	960	2,900	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,400,000		48,000	140,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	21,500		15.0	39.1	1
06944	Antimony	7440-36-0	1.53	J	0.802	3.91	1
06935	Arsenic	7440-38-2	5.65		1.14	3.91	1
06946	Barium	7440-39-3	67.3		0.131	0.978	1
06947	Beryllium	7440-41-7	0.699	J	0.131	0.978	1
06949	Cadmium	7440-43-9	N.D.		0.0841	0.978	1
01650	Calcium	7440-70-2	1,090		6.52	39.1	1
06951	Chromium	7440-47-3	17.1		0.192	2.94	1
06952	Cobalt	7440-48-4	5.24		0.159	0.978	1
06953	Copper	7440-50-8	29.6		0.548	1.96	1
01654	Iron	7439-89-6	23,400		6.52	39.1	1
06955	Lead	7439-92-1	255		0.626	2.94	1
01657	Magnesium	7439-95-4	1,490		3.27	19.6	1
06958	Manganese	7439-96-5	191		0.162	0.978	1
06961	Nickel	7440-02-0	10.3		0.450	1.96	1
01662	Potassium	7440-09-7	900		32.9	97.8	1
06936	Selenium	7782-49-2	2.65	J	1.62	3.91	1
06966	Silver	7440-22-4	N.D.		0.235	0.978	1
01667	Sodium	7440-23-5	62.3	J	32.7	196	1
06925	Thallium	7440-28-0	N.D.		1.47	5.87	1
06971	Vanadium	7440-62-2	37.3		0.294	0.978	1
06972	Zinc	7440-66-6	38.9		1.51	3.91	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0526	J	0.0187	0.187	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	30,300		1,320	1,330	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	48.9		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046554
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5008 SDG#: KVM50-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 15:52	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 06:37	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 23:37	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 19:33	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 19:33	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 19:33	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:48	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:03	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5008

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046554
Sample wt/vol: 30.37(g/mL) g Lab File ID: oi0958.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 48.9 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.687	720	J
2.112-40-3	Dodecane	6.287	1200	J
3.6044-71-9	Dodecane, 6-methyl-	6.363	550	J
4.1618-23-1	Naphthalene, 2-ethyldecahydr	6.469	580	J
5.	Unknown	6.598	570	J
6.6117-97-1	Dodecane, 4-methyl-	6.639	550	J
7.1560-97-0	Dodecane, 2-methyl-	6.675	820	J
8.	Unknown Alkane	6.722	1100	J
9.629-50-5	Tridecane	6.892	3200	J
10.	Unknown Alkane	6.939	840	J
11.13287-21-3	Tridecane, 6-methyl-	6.981	600	J
12.	Unknown Alkane	7.239	3200	J
13.74645-98-0	Dodecane, 2,7,10-trimethyl-	7.304	2100	J
14.629-59-4	Tetradecane	7.445	7600	J
15.	Unknown	7.686	2600	J
16.638-36-8	Hexadecane, 2,6,10,14-tetram	7.745	3100	J
17.	Unknown Alkane	7.951	4200	J
18.	Unknown	8.381	1800	J
19.544-76-3	Hexadecane	8.433	1600	J
20.	Unknown	8.839	1400	J
21.	Unknown	9.239	380000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	9.957	8000	J
23.	Unknown Amine	10.004	2400	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.157	2400	J
25.	Unknown	10.280	690	J
26.				
27.SVOCTIC	Total SVOC TICs		430000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046555
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5009 SDG#: KVM50-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		7	37	1
10727	Acenaphthylene	208-96-8	N.D.		7	37	1
10727	Acetophenone	98-86-2	N.D.		37	73	1
10727	Anthracene	120-12-7	19	J	7	37	1
10727	Atrazine	1912-24-9	N.D.		73	370	1
10727	Benzaldehyde	100-52-7	N.D.		150	370	1
10727	Benzo(a)anthracene	56-55-3	100		7	37	1
10727	Benzo(a)pyrene	50-32-8	94		7	37	1
10727	Benzo(b)fluoranthene	205-99-2	170		7	37	1
10727	Benzo(g,h,i)perylene	191-24-2	74		7	37	1
10727	Benzo(k)fluoranthene	207-08-9	57		7	37	1
10727	1,1'-Biphenyl	92-52-4	N.D.		37	73	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		37	73	1
10727	Butylbenzylphthalate	85-68-7	N.D.		150	370	1
10727	Di-n-butylphthalate	84-74-2	N.D.		150	370	1
10727	Caprolactam	105-60-2	N.D.		73	370	1
10727	Carbazole	86-74-8	N.D.		37	73	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		37	73	1
10727	4-Chloroaniline	106-47-8	N.D.		73	150	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		37	73	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		37	73	1
10727	2-Chloronaphthalene	91-58-7	N.D.		15	72	1
10727	2-Chlorophenol	95-57-8	N.D.		37	73	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		37	73	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		37	73	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	120		7	37	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	7	37	1
10727	Dibenzofuran	132-64-9	N.D.		37	73	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		220	730	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		37	73	1
10727	Diethylphthalate	84-66-2	N.D.		150	370	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		37	73	1
10727	Dimethylphthalate	131-11-3	N.D.		150	370	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		370	1,100	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		660	2,200	1
10727	2,4-Dinitrotoluene	121-14-2	8,400		290	730	2
10727	2,6-Dinitrotoluene	606-20-2	3,100		37	73	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		150	370	1
10727	Fluoranthene	206-44-0	200		7	37	1
10727	Fluorene	86-73-7	N.D.		7	37	1
10727	Hexachlorobenzene	118-74-1	N.D.		7	37	1
10727	Hexachlorobutadiene	87-68-3	N.D.		37	73	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		370	1,100	1
10727	Hexachloroethane	67-72-1	N.D.		73	370	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	69		7	37	1
10727	Isophorone	78-59-1	N.D.		37	73	1
10727	2-Methylnaphthalene	91-57-6	N.D.		7	37	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046555
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5009 SDG#: KVM50-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	2-Methylphenol	95-48-7	N.D.		37	73	1
10727	4-Methylphenol	106-44-5	N.D.		37	73	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		7	37	1
10727	2-Nitroaniline	88-74-4	N.D.		37	73	1
10727	3-Nitroaniline	99-09-2	N.D.		150	370	1
10727	4-Nitroaniline	100-01-6	N.D.		150	370	1
10727	Nitrobenzene	98-95-3	N.D.		37	73	1
10727	2-Nitrophenol	88-75-5	N.D.		37	73	1
10727	4-Nitrophenol	100-02-7	N.D.		370	1,100	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		37	73	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		37	73	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		150	370	1
10727	Pentachlorophenol	87-86-5	N.D.		73	370	1
10727	Phenanthrene	85-01-8	100		7	37	1
10727	Phenol	108-95-2	N.D.		37	73	1
10727	Pyrene	129-00-0	150		7	37	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		37	73	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		37	73	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		ug/kg		ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	58,000		1,500	3,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	54,000		980	2,900	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		980	2,900	5
06918	1,3-Dinitrobenzene	99-65-0	2,000	J	980	2,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		980	2,900	5
06918	HMX	2691-41-0	N.D.		2,400	7,300	5
06918	Nitrobenzene	98-95-3	N.D.		980	2,900	5
06918	Nitroglycerin	55-63-0	N.D.		20,000	59,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		980	2,900	5
06918	2-Nitrotoluene	88-72-2	N.D.		2,000	3,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,400	4,900	5
06918	4-Nitrotoluene	99-99-0	N.D.		2,000	3,900	5
06918	PETN	78-11-5	N.D.		20,000	59,000	5
06918	RDX	121-82-4	N.D.		1,300	2,900	5
06918	Tetryl	479-45-8	N.D.		1,600	3,900	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046555
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5009 SDG#: KVM50-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	6,100		980	2,900	5
06918	2,4,6-Trinitrotoluene	118-96-7	4,800,000		49,000	150,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	27,900		16.1	42.0	1
06944	Antimony	7440-36-0	1.70	J	0.862	4.20	1
06935	Arsenic	7440-38-2	5.43		1.22	4.20	1
06946	Barium	7440-39-3	85.7		0.141	1.05	1
06947	Beryllium	7440-41-7	0.898	J	0.141	1.05	1
06949	Cadmium	7440-43-9	N.D.		0.0904	1.05	1
01650	Calcium	7440-70-2	1,230		7.00	42.0	1
06951	Chromium	7440-47-3	20.5		0.206	3.15	1
06952	Cobalt	7440-48-4	6.24		0.170	1.05	1
06953	Copper	7440-50-8	37.6		0.589	2.10	1
01654	Iron	7439-89-6	28,600		7.00	42.0	1
06955	Lead	7439-92-1	343		0.673	3.15	1
01657	Magnesium	7439-95-4	1,820		3.51	21.0	1
06958	Manganese	7439-96-5	244		0.174	1.05	1
06961	Nickel	7440-02-0	13.0		0.484	2.10	1
01662	Potassium	7440-09-7	1,020		35.3	105	1
06936	Selenium	7782-49-2	3.05	J	1.74	4.20	1
06966	Silver	7440-22-4	N.D.		0.252	1.05	1
01667	Sodium	7440-23-5	69.8	J	35.1	210	1
06925	Thallium	7440-28-0	N.D.		1.58	6.31	1
06971	Vanadium	7440-62-2	44.3		0.315	1.05	1
06972	Zinc	7440-66-6	49.5		1.62	4.20	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0706	J	0.0218	0.218	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	53,000		1,290	1,300	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	54.7		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046555
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5009 SDG#: KVM50-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 16:17	Linda M Hartenstine	1
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/22/2015 23:28	Catherine E Bachman	2
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 07:20	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 00:20	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/20/2015 19:39	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 19:39	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 19:39	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 19:39	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:51	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:09	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5009

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046555
Sample wt/vol: 30.15(g/mL) g Lab File ID: oi0959.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 54.7 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.6044-71-9	Dodecane, 6-methyl-	6.363	900	J
2.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.!	6.469	840	J
3.61142-20-9	Cyclohexane, (4-methylpentyl!	6.528	820	J
4.17301-23-4	Undecane, 2,6-dimethyl-	6.598	1200	J
5.2051-30-1	Octane, 2,6-dimethyl-	6.722	1500	J
6.3588-18-9	5,7-Octadien-4-one, 2,6-dime!	6.810	1700	J
7.92-51-3	1,1'-Bicyclohexyl	6.939	1200	J
8.13287-21-3	Tridecane, 6-methyl-	6.981	1000	J
9.6305-52-8	Naphthalene, 2-butyldecahydr!	7.063	3100	J
10.62108-26-3	Decane, 2,6,8-trimethyl-	7.163	4700	J
11.1560-96-9	Tridecane, 2-methyl-	7.245	4500	J
12.6418-41-3	Tridecane, 3-methyl-	7.280	3000	J
13.629-59-4	Tetradecane	7.445	12000	J
14.13287-21-3	Tridecane, 6-methyl-	7.686	5000	J
15.6165-40-8	Pentadecane, 7-methyl-	7.751	3500	J
16.629-62-9	Pentadecane	7.951	6500	J
17.	Unknown	9.104	45000	J
18.6001-87-2	Propanoic acid, 3-chloro-, m!	9.122	28000	J
19.118-96-7	Benzene, 2-methyl-1,3,5-trin!	9.139	49000	J
20.	Unknown	9.222	85000	J
21.	Unknown	9.280	56000	J
22.99-35-4	1,3,5-Trinitrobenzene	9.298	34000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	9.998	15000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di!	10.192	3000	J
25.	Unknown	10.304	820	J
26.				
27.SVOCTIC	Total SVOC TICs		370000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046556
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5010 SDG#: KVM50-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		29	57	1
10727	Anthracene	120-12-7	10	J	6	29	1
10727	Atrazine	1912-24-9	N.D.		57	290	1
10727	Benzaldehyde	100-52-7	N.D.		110	290	1
10727	Benzo(a)anthracene	56-55-3	57		6	29	1
10727	Benzo(a)pyrene	50-32-8	56		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	84		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	41		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	53		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		29	57	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		29	57	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	290	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	290	1
10727	Caprolactam	105-60-2	N.D.		57	290	1
10727	Carbazole	86-74-8	N.D.		29	57	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		29	57	1
10727	4-Chloroaniline	106-47-8	N.D.		57	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		29	57	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		29	57	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	57	1
10727	2-Chlorophenol	95-57-8	N.D.		29	57	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		29	57	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		29	57	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	70		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		6	29	1
10727	Dibenzofuran	132-64-9	N.D.		29	57	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	570	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		29	57	1
10727	Diethylphthalate	84-66-2	N.D.		110	290	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		29	57	1
10727	Dimethylphthalate	131-11-3	N.D.		110	290	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		290	860	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		510	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	5,200		110	290	1
10727	2,6-Dinitrotoluene	606-20-2	2,200		29	57	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	290	1
10727	Fluoranthene	206-44-0	93		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		29	57	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		290	860	1
10727	Hexachloroethane	67-72-1	N.D.		57	290	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	40		6	29	1
10727	Isophorone	78-59-1	N.D.		29	57	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046556
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5010 SDG#: KVM50-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	29	57	1
10727	4-Methylphenol	106-44-5	N.D.	29	57	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.	29	57	1
10727	3-Nitroaniline	99-09-2	N.D.	110	290	1
10727	4-Nitroaniline	100-01-6	N.D.	110	290	1
10727	Nitrobenzene	98-95-3	N.D.	29	57	1
10727	2-Nitrophenol	88-75-5	N.D.	29	57	1
10727	4-Nitrophenol	100-02-7	N.D.	290	860	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	29	57	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	29	57	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	290	1
10727	Pentachlorophenol	87-86-5	N.D.	57	290	1
10727	Phenanthrene	85-01-8	52	6	29	1
10727	Phenol	108-95-2	N.D.	29	57	1
10727	Pyrene	129-00-0	82	6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	29	57	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	29	57	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000	1,100	3,000	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	24,000	740	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	740	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	740	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	740	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.	740	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	740	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	3,000	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	3,000	5
06918	PETN	78-11-5	N.D.	15,000	44,000	5
06918	RDX	121-82-4	N.D.	960	2,200	5
06918	Tetryl	479-45-8	N.D.	1,200	3,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046556
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5010 SDG#: KVM50-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,600		740	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,700,000		37,000	110,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	19,300		12.7	33.2	1
06944	Antimony	7440-36-0	1.18	J	0.681	3.32	1
06935	Arsenic	7440-38-2	6.57		0.963	3.32	1
06946	Barium	7440-39-3	58.4		0.111	0.830	1
06947	Beryllium	7440-41-7	0.669	J	0.111	0.830	1
06949	Cadmium	7440-43-9	N.D.		0.0714	0.830	1
01650	Calcium	7440-70-2	876		5.53	33.2	1
06951	Chromium	7440-47-3	16.7		0.163	2.49	1
06952	Cobalt	7440-48-4	4.89		0.135	0.830	1
06953	Copper	7440-50-8	27.9		0.465	1.66	1
01654	Iron	7439-89-6	27,300		5.53	33.2	1
06955	Lead	7439-92-1	284		0.531	2.49	1
01657	Magnesium	7439-95-4	1,390		2.77	16.6	1
06958	Manganese	7439-96-5	216		0.138	0.830	1
06961	Nickel	7440-02-0	9.64		0.382	1.66	1
01662	Potassium	7440-09-7	702		27.9	83.0	1
06936	Selenium	7782-49-2	4.46		1.38	3.32	1
06966	Silver	7440-22-4	N.D.		0.199	0.830	1
01667	Sodium	7440-23-5	50.5	J	27.7	166	1
06925	Thallium	7440-28-0	N.D.		1.25	4.98	1
06971	Vanadium	7440-62-2	35.0		0.249	0.830	1
06972	Zinc	7440-66-6	35.4		1.28	3.32	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0452	J	0.0160	0.160	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	27,100		1,010	1,020	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.1		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046556
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5010 SDG#: KVM50-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/22/2015 23:54	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 08:02	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 01:02	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 20:45	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 20:45	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/20/2015 20:45	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 20:45	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:55	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:11	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008A	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5010

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046556
Sample wt/vol: 30.26(g/mL) g Lab File ID: oi1016.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 42.1 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	7.434	690	J
2. 1618-22-0	Naphthalene, decahydro-2,6-d	7.816	620	J
3.	Unknown Alkane	7.916	1200	J
4. 17301-28-9	Undecane, 3,6-dimethyl-	7.998	540	J
5. 1618-23-1	Naphthalene, 2-ethyldecahydr	8.198	820	J
6. 1560-97-0	Dodecane, 2-methyl-	8.310	740	J
7.	Unknown Alkane	8.351	1300	J
8. 629-50-5	Tridecane	8.522	3100	J
9.	Unknown Alkane	8.581	580	J
10. 107770-99-0	3,5-Dimethyldodecane	8.616	690	J
11.	Unknown Alkane	8.804	830	J
12.	Unknown Cycloalkane	8.822	1100	J
13. 1560-96-9	Tridecane, 2-methyl-	8.881	1000	J
14.	Unknown Alkane	8.922	880	J
15. 74645-98-0	Dodecane, 2,7,10-trimethyl-	8.945	1400	J
16. 629-59-4	Tetradecane	9.081	4800	J
17.	Unknown Alkane	9.334	840	J
18.	Unknown Aromatic	9.416	1300	J
19. 629-62-9	Pentadecane	9.604	2400	J
20. 544-76-3	Hexadecane	10.098	1400	J
21.	Unknown Aromatic	10.833	320000	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.651	4000	J
23. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.875	6300	J
24.	Unknown Aromatic	12.010	1800	J
25. 1000336-66-8	6-Octadecenoic acid	12.363	2500	J
26.				
27. SVOCTIC	Total SVOC TICs		360000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046557
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5011 SDG#: KVM50-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	28	1
10727	Acenaphthylene	208-96-8	N.D.		6	28	1
10727	Acetophenone	98-86-2	N.D.		28	56	1
10727	Anthracene	120-12-7	23	J	6	28	1
10727	Atrazine	1912-24-9	N.D.		56	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	80		6	28	1
10727	Benzo(a)pyrene	50-32-8	67		6	28	1
10727	Benzo(b)fluoranthene	205-99-2	130		6	28	1
10727	Benzo(g,h,i)perylene	191-24-2	45		6	28	1
10727	Benzo(k)fluoranthene	207-08-9	44		6	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	56	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	56	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		56	280	1
10727	Carbazole	86-74-8	N.D.		28	56	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	56	1
10727	4-Chloroaniline	106-47-8	N.D.		56	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	56	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	56	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	55	1
10727	2-Chlorophenol	95-57-8	N.D.		28	56	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	56	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	56	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	96		6	28	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	6	28	1
10727	Dibenzofuran	132-64-9	N.D.		28	56	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	560	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	56	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	56	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	840	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	5,800		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	2,200		28	56	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	120	J	110	280	1
10727	Fluoranthene	206-44-0	150		6	28	1
10727	Fluorene	86-73-7	N.D.		6	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	56	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	840	1
10727	Hexachloroethane	67-72-1	N.D.		56	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	48		6	28	1
10727	Isophorone	78-59-1	N.D.		28	56	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046557
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5011 SDG#: KVM50-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	56	1
10727	4-Methylphenol	106-44-5	N.D.	28	56	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	28	1
10727	2-Nitroaniline	88-74-4	N.D.	28	56	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	56	1
10727	2-Nitrophenol	88-75-5	N.D.	28	56	1
10727	4-Nitrophenol	100-02-7	N.D.	280	840	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	56	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	56	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	56	280	1
10727	Phenanthrene	85-01-8	81	6	28	1
10727	Phenol	108-95-2	N.D.	28	56	1
10727	Pyrene	129-00-0	120	6	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	56	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	56	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	30,000	30,000	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	29,000	29,000	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	740	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	740	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	740	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.	740	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	740	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	3,000	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	3,000	5
06918	PETN	78-11-5	N.D.	740,000	2,200,000	250
06918	RDX	121-82-4	N.D.	960	2,200	5
06918	Tetryl	479-45-8	N.D.	1,200	3,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046557
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5011 SDG#: KVM50-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	3,200		740	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,500,000		37,000	110,000	250
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,900		12.4	32.3	1
06944	Antimony	7440-36-0	1.06	J	0.661	3.23	1
06935	Arsenic	7440-38-2	4.23		0.936	3.23	1
06946	Barium	7440-39-3	63.6		0.108	0.807	1
06947	Beryllium	7440-41-7	0.757	J	0.108	0.807	1
06949	Cadmium	7440-43-9	N.D.		0.0694	0.807	1
01650	Calcium	7440-70-2	935		5.37	32.3	1
06951	Chromium	7440-47-3	17.7		0.158	2.42	1
06952	Cobalt	7440-48-4	5.52		0.131	0.807	1
06953	Copper	7440-50-8	30.5		0.452	1.61	1
01654	Iron	7439-89-6	29,800		5.37	32.3	1
06955	Lead	7439-92-1	269		0.516	2.42	1
01657	Magnesium	7439-95-4	1,430		2.69	16.1	1
06958	Manganese	7439-96-5	215		0.134	0.807	1
06961	Nickel	7440-02-0	10.4		0.371	1.61	1
01662	Potassium	7440-09-7	787		27.1	80.7	1
06936	Selenium	7782-49-2	4.35		1.34	3.23	1
06966	Silver	7440-22-4	N.D.		0.194	0.807	1
01667	Sodium	7440-23-5	46.1	J	26.9	161	1
06925	Thallium	7440-28-0	1.52	J	1.21	4.84	1
06971	Vanadium	7440-62-2	39.8		0.242	0.807	1
06972	Zinc	7440-66-6	69.6		1.24	3.23	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0391	J	0.0162	0.162	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	24,500		1,170	1,180	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.4		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046557
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5011 SDG#: KVM50-11

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/21/2015 17:06	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 08:45	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 01:45	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 20:51	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 20:51	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 20:51	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 16:58	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:13	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5011

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046557
Sample wt/vol: 30.13(g/mL) g Lab File ID: oi0961.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 40.4 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.687	650	J
2.	Unknown	5.845	520	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	6.087	500	J
4.112-40-3	Dodecane	6.287	1100	J
5.6044-71-9	Dodecane, 6-methyl-	6.363	510	J
6.	Unknown Cycloalkane	6.528	490	J
7.	Unknown Alkane	6.604	810	J
8.6117-97-1	Dodecane, 4-methyl-	6.645	500	J
9.1560-97-0	Dodecane, 2-methyl-	6.681	740	J
10.61141-72-8	Dodecane, 4,6-dimethyl-	6.722	1100	J
11.629-50-5	Tridecane	6.898	2900	J
12.92-51-3	1,1'-Bicyclohexyl	6.939	690	J
13.13287-21-3	Tridecane, 6-methyl-	6.981	590	J
14.1560-96-9	Tridecane, 2-methyl-	7.245	5200	J
15.	Unknown Alkane	7.281	3600	J
16.3891-98-3	Dodecane, 2,6,10-trimethyl-	7.310	5100	J
17.629-59-4	Tetradecane	7.451	15000	J
18.6165-40-8	Pentadecane, 7-methyl-	7.751	4800	J
19.629-62-9	Pentadecane	7.957	8500	J
20.544-76-3	Hexadecane	8.433	2600	J
21.	Unknown	8.839	1900	J
22.	Unknown	9.298	420000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	9.986	9100	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.186	1700	J
25.	Unknown	10.298	480	J
26.				
27.SVOCTIC	Total SVOC TICs		490000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046558
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5012 SDG#: KVM50-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	30	1
10727	Acenaphthylene	208-96-8	N.D.		6	30	1
10727	Acetophenone	98-86-2	N.D.		30	59	1
10727	Anthracene	120-12-7	19	J	6	30	1
10727	Atrazine	1912-24-9	N.D.		59	300	1
10727	Benzaldehyde	100-52-7	N.D.		120	300	1
10727	Benzo(a)anthracene	56-55-3	67		6	30	1
10727	Benzo(a)pyrene	50-32-8	65		6	30	1
10727	Benzo(b)fluoranthene	205-99-2	130		6	30	1
10727	Benzo(g,h,i)perylene	191-24-2	50		6	30	1
10727	Benzo(k)fluoranthene	207-08-9	50		6	30	1
10727	1,1'-Biphenyl	92-52-4	N.D.		30	59	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		30	59	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	300	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	300	1
10727	Caprolactam	105-60-2	N.D.		59	300	1
10727	Carbazole	86-74-8	N.D.		30	59	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		30	59	1
10727	4-Chloroaniline	106-47-8	N.D.		59	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		30	59	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		30	59	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	59	1
10727	2-Chlorophenol	95-57-8	N.D.		30	59	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		30	59	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		30	59	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	94		6	30	1
10727	Dibenz(a,h)anthracene	53-70-3	19	J	6	30	1
10727	Dibenzofuran	132-64-9	N.D.		30	59	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		180	590	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		30	59	1
10727	Diethylphthalate	84-66-2	N.D.		120	300	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		30	59	1
10727	Dimethylphthalate	131-11-3	N.D.		120	300	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		300	890	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		530	1,800	1
10727	2,4-Dinitrotoluene	121-14-2	5,200		120	300	1
10727	2,6-Dinitrotoluene	606-20-2	2,200		30	59	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		120	300	1
10727	Fluoranthene	206-44-0	130		6	30	1
10727	Fluorene	86-73-7	N.D.		6	30	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	30	1
10727	Hexachlorobutadiene	87-68-3	N.D.		30	59	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		300	890	1
10727	Hexachloroethane	67-72-1	N.D.		59	300	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	50		6	30	1
10727	Isophorone	78-59-1	N.D.		30	59	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	30	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046558
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5012 SDG#: KVM50-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	30	59	1
10727	4-Methylphenol	106-44-5	N.D.	30	59	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	30	1
10727	2-Nitroaniline	88-74-4	N.D.	30	59	1
10727	3-Nitroaniline	99-09-2	N.D.	120	300	1
10727	4-Nitroaniline	100-01-6	N.D.	120	300	1
10727	Nitrobenzene	98-95-3	N.D.	30	59	1
10727	2-Nitrophenol	88-75-5	N.D.	30	59	1
10727	4-Nitrophenol	100-02-7	N.D.	300	890	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	30	59	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	30	59	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	120	300	1
10727	Pentachlorophenol	87-86-5	N.D.	59	300	1
10727	Phenanthrene	85-01-8	69	6	30	1
10727	Phenol	108-95-2	N.D.	30	59	1
10727	Pyrene	129-00-0	110	6	30	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	30	59	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	30	59	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	31,000	1,200	3,100	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	29,000	780	2,300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	780	2,300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	780	2,300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	780	2,300	5
06918	HMX	2691-41-0	N.D.	1,900	5,800	5
06918	Nitrobenzene	98-95-3	N.D.	780	2,300	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	47,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	780	2,300	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,100	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,900	3,900	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,100	5
06918	PETN	78-11-5	N.D.	16,000	47,000	5
06918	RDX	121-82-4	N.D.	1,000	2,300	5
06918	Tetryl	479-45-8	N.D.	1,200	3,100	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046558
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5012 SDG#: KVM50-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	3,600		780	2,300	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,300,000		39,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,900		13.5	35.4	1
06944	Antimony	7440-36-0	2.07	J	0.725	3.54	1
06935	Arsenic	7440-38-2	4.91		1.03	3.54	1
06946	Barium	7440-39-3	51.0		0.118	0.884	1
06947	Beryllium	7440-41-7	0.537	J	0.118	0.884	1
06949	Cadmium	7440-43-9	N.D.		0.0760	0.884	1
01650	Calcium	7440-70-2	1,050		5.89	35.4	1
06951	Chromium	7440-47-3	13.4		0.173	2.65	1
06952	Cobalt	7440-48-4	3.95		0.143	0.884	1
06953	Copper	7440-50-8	23.4		0.495	1.77	1
01654	Iron	7439-89-6	18,300		5.89	35.4	1
06955	Lead	7439-92-1	197		0.566	2.65	1
01657	Magnesium	7439-95-4	1,140		2.95	17.7	1
06958	Manganese	7439-96-5	161		0.147	0.884	1
06961	Nickel	7440-02-0	7.68		0.407	1.77	1
01662	Potassium	7440-09-7	685		29.7	88.4	1
06936	Selenium	7782-49-2	2.78	J	1.47	3.54	1
06966	Silver	7440-22-4	N.D.		0.212	0.884	1
01667	Sodium	7440-23-5	42.6	J	29.5	177	1
06925	Thallium	7440-28-0	N.D.		1.33	5.30	1
06971	Vanadium	7440-62-2	28.6		0.265	0.884	1
06972	Zinc	7440-66-6	29.7		1.36	3.54	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0420	J	0.0172	0.172	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	28,400		1,070	1,080	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	44.0		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046558
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 08:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5012 SDG#: KVM50-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 00:20	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 09:27	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 02:27	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 20:57	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 20:57	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 20:57	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:01	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:15	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5012

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046558
Sample wt/vol: 30.11(g/mL) g Lab File ID: oi1017.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 44 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	7.434	930	J
2.112-40-3	Dodecane	7.916	1400	J
3.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	8.198	880	J
4.	Unknown Alkane	8.275	600	J
5.1560-97-0	Dodecane, 2-methyl-	8.310	760	J
6.638-36-8	Hexadecane, 2,6,10,14-tetram	8.351	1800	J
7.629-50-5	Tridecane	8.528	4000	J
8.	Unknown Alkane	8.581	730	J
9.	Unknown Alkane	8.616	900	J
10.	Unknown Alkane	8.804	730	J
11.	Unknown Cycloalkane	8.822	1200	J
12.1560-96-9	Tridecane, 2-methyl-	8.881	1000	J
13.107770-99-0	3,5-Dimethyldodecane	8.922	860	J
14.	Unknown Alkane	8.951	1300	J
15.629-59-4	Tetradecane	9.086	5000	J
16.112-95-8	Eicosane	9.128	740	J
17.	Unknown	9.333	850	J
18.	Unknown	9.416	1000	J
19.	Unknown Alkane	9.604	2300	J
20.544-76-3	Hexadecane	10.098	1300	J
21.	Unknown	10.833	270000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.651	5400	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.880	7000	J
24.	Unknown Aromatic	12.010	2000	J
25.112-79-8	9-Octadecenoic acid, (E)-	12.369	3800	J
26.				
27.SVOCTIC	Total SVOC TICs		310000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046559
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5013 SDG#: KVM50-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	28	1
10727	Acenaphthylene	208-96-8	N.D.		6	28	1
10727	Acetophenone	98-86-2	N.D.		28	55	1
10727	Anthracene	120-12-7	8	J	6	28	1
10727	Atrazine	1912-24-9	N.D.		55	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	50		6	28	1
10727	Benzo(a)pyrene	50-32-8	43		6	28	1
10727	Benzo(b)fluoranthene	205-99-2	80		6	28	1
10727	Benzo(g,h,i)perylene	191-24-2	40		6	28	1
10727	Benzo(k)fluoranthene	207-08-9	31		6	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	55	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	55	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		55	280	1
10727	Carbazole	86-74-8	N.D.		28	55	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	55	1
10727	4-Chloroaniline	106-47-8	N.D.		55	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	55	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	55	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	55	1
10727	2-Chlorophenol	95-57-8	N.D.		28	55	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	55	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	55	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	51		6	28	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	6	28	1
10727	Dibenzofuran	132-64-9	N.D.		28	55	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	550	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	55	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	55	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	830	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	4,100		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	1,700		28	55	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	79		6	28	1
10727	Fluorene	86-73-7	N.D.		6	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	55	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	830	1
10727	Hexachloroethane	67-72-1	N.D.		55	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	33		6	28	1
10727	Isophorone	78-59-1	N.D.		28	55	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046559
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5013 SDG#: KVM50-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	55	1
10727	4-Methylphenol	106-44-5	N.D.	28	55	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	28	1
10727	2-Nitroaniline	88-74-4	N.D.	28	55	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	55	1
10727	2-Nitrophenol	88-75-5	N.D.	28	55	1
10727	4-Nitrophenol	100-02-7	N.D.	280	830	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	55	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	55	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	55	280	1
10727	Phenanthrene	85-01-8	54	6	28	1
10727	Phenol	108-95-2	N.D.	28	55	1
10727	Pyrene	129-00-0	70	6	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	55	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	55	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	40,000	1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	35,000	820	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	820	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	820	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	820	2,500	5
06918	HMX	2691-41-0	N.D.	2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.	820	2,500	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	820	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,300	5
06918	PETN	78-11-5	N.D.	16,000	49,000	5
06918	RDX	121-82-4	N.D.	1,100	2,500	5
06918	Tetryl	479-45-8	N.D.	1,300	3,300	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046559
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5013 SDG#: KVM50-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,000	J	820	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,600,000		41,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	13,800		12.6	32.8	1
06944	Antimony	7440-36-0	1.47	J	0.673	3.28	1
06935	Arsenic	7440-38-2	2.92	J	0.952	3.28	1
06946	Barium	7440-39-3	49.5		0.110	0.821	1
06947	Beryllium	7440-41-7	0.484	J	0.110	0.821	1
06949	Cadmium	7440-43-9	N.D.		0.0706	0.821	1
01650	Calcium	7440-70-2	792		5.47	32.8	1
06951	Chromium	7440-47-3	13.8		0.161	2.46	1
06952	Cobalt	7440-48-4	3.56		0.133	0.821	1
06953	Copper	7440-50-8	21.2		0.460	1.64	1
01654	Iron	7439-89-6	19,200		5.47	32.8	1
06955	Lead	7439-92-1	167		0.526	2.46	1
01657	Magnesium	7439-95-4	996		2.74	16.4	1
06958	Manganese	7439-96-5	153		0.136	0.821	1
06961	Nickel	7440-02-0	7.09		0.378	1.64	1
01662	Potassium	7440-09-7	559		27.6	82.1	1
06936	Selenium	7782-49-2	2.82	J	1.36	3.28	1
06966	Silver	7440-22-4	N.D.		0.197	0.821	1
01667	Sodium	7440-23-5	31.6	J	27.4	164	1
06925	Thallium	7440-28-0	N.D.		1.23	4.93	1
06971	Vanadium	7440-62-2	28.6		0.246	0.821	1
06972	Zinc	7440-66-6	26.4		1.26	3.28	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0346	J	0.0165	0.165	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	30,000		1,090	1,100	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.3		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046559
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5013 SDG#: KVM50-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 00:46	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 10:10	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 03:10	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:03	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:03	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:03	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:04	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:17	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5013

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046559
Sample wt/vol: 30.4 (g/mL) g Lab File ID: oi1018.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 40.3 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	7.434	780	J
2.1606-08-2	Cyclopentylcyclohexane	7.545	540	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	7.816	540	J
4.112-40-3	Dodecane	7.916	1200	J
5.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	8.198	640	J
6.1560-97-0	Dodecane, 2-methyl-	8.310	560	J
7.	Unknown Alkane	8.351	1200	J
8.629-50-5	Tridecane	8.528	3100	J
9.	Unknown Alkane	8.581	550	J
10.	Unknown Alkane	8.616	670	J
11.	Unknown Alkane	8.804	800	J
12.	Unknown Cycloalkane	8.822	1100	J
13.112-95-8	Eicosane	8.881	930	J
14.107770-99-0	3,5-Dimethyldodecane	8.922	800	J
15.17312-62-8	Decane, 5-propyl-	8.951	1200	J
16.629-59-4	Tetradecane	9.087	4400	J
17.	Unknown Aromatic	9.416	900	J
18.629-62-9	Pentadecane	9.604	2200	J
19.544-76-3	Hexadecane	10.098	1000	J
20.	Unknown	10.804	290000	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	11.651	8900	J
22.	Unknown Amine	11.704	910	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.875	10000	J
24.	Unknown Aromatic	12.004	1800	J
25.112-79-8	9-Octadecenoic acid, (E)-	12.363	2600	J
26.				
27.SVOCTIC	Total SVOC TICs		340000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046560
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5014 SDG#: KVM50-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	28	1
10727	Acenaphthylene	208-96-8	N.D.		6	28	1
10727	Acetophenone	98-86-2	N.D.		28	55	1
10727	Anthracene	120-12-7	10	J	6	28	1
10727	Atrazine	1912-24-9	N.D.		55	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	52		6	28	1
10727	Benzo(a)pyrene	50-32-8	53		6	28	1
10727	Benzo(b)fluoranthene	205-99-2	85		6	28	1
10727	Benzo(g,h,i)perylene	191-24-2	45		6	28	1
10727	Benzo(k)fluoranthene	207-08-9	51		6	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	55	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	55	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		55	280	1
10727	Carbazole	86-74-8	N.D.		28	55	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	55	1
10727	4-Chloroaniline	106-47-8	N.D.		55	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	55	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	55	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	55	1
10727	2-Chlorophenol	95-57-8	N.D.		28	55	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	55	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	55	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	58		6	28	1
10727	Dibenz(a,h)anthracene	53-70-3	11	J	6	28	1
10727	Dibenzofuran	132-64-9	N.D.		28	55	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	550	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	55	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	55	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	830	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	3,500		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	1,500		28	55	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	94		6	28	1
10727	Fluorene	86-73-7	N.D.		6	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	55	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	830	1
10727	Hexachloroethane	67-72-1	N.D.		55	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38		6	28	1
10727	Isophorone	78-59-1	N.D.		28	55	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046560
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5014 SDG#: KVM50-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		28	55	1
10727	4-Methylphenol	106-44-5	N.D.		28	55	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		6	28	1
10727	2-Nitroaniline	88-74-4	N.D.		28	55	1
10727	3-Nitroaniline	99-09-2	N.D.		110	280	1
10727	4-Nitroaniline	100-01-6	N.D.		110	280	1
10727	Nitrobenzene	98-95-3	N.D.		28	55	1
10727	2-Nitrophenol	88-75-5	N.D.		28	55	1
10727	4-Nitrophenol	100-02-7	N.D.		280	830	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		28	55	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		28	55	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	280	1
10727	Pentachlorophenol	87-86-5	N.D.		55	280	1
10727	Phenanthrene	85-01-8	52		6	28	1
10727	Phenol	108-95-2	N.D.		28	55	1
10727	Pyrene	129-00-0	89		6	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		28	55	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		28	55	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	43,000		1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	36,000		810	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		810	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	970	J	810	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		810	2,400	5
06918	HMX	2691-41-0	N.D.		2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.		810	2,400	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	48,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		810	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,000	4,000	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,200	5
06918	PETN	78-11-5	N.D.		16,000	48,000	5
06918	RDX	121-82-4	N.D.		1,100	2,400	5
06918	Tetryl	479-45-8	N.D.		1,300	3,200	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046560
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5014 SDG#: KVM50-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,200	J	810	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,500,000		40,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,400		12.4	32.5	1
06944	Antimony	7440-36-0	1.81	J	0.666	3.25	1
06935	Arsenic	7440-38-2	3.37		0.942	3.25	1
06946	Barium	7440-39-3	62.8		0.109	0.812	1
06947	Beryllium	7440-41-7	0.593	J	0.109	0.812	1
06949	Cadmium	7440-43-9	N.D.		0.0698	0.812	1
01650	Calcium	7440-70-2	1,060		5.41	32.5	1
06951	Chromium	7440-47-3	14.1		0.159	2.44	1
06952	Cobalt	7440-48-4	4.65		0.132	0.812	1
06953	Copper	7440-50-8	25.7		0.455	1.62	1
01654	Iron	7439-89-6	21,400		5.41	32.5	1
06955	Lead	7439-92-1	236		0.520	2.44	1
01657	Magnesium	7439-95-4	1,210		2.71	16.2	1
06958	Manganese	7439-96-5	210		0.135	0.812	1
06961	Nickel	7440-02-0	8.74		0.374	1.62	1
01662	Potassium	7440-09-7	650		27.3	81.2	1
06936	Selenium	7782-49-2	2.85	J	1.35	3.25	1
06966	Silver	7440-22-4	N.D.		0.195	0.812	1
01667	Sodium	7440-23-5	39.7	J	27.1	162	1
06925	Thallium	7440-28-0	N.D.		1.22	4.87	1
06971	Vanadium	7440-62-2	31.0		0.244	0.812	1
06972	Zinc	7440-66-6	38.3		1.25	3.25	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0637	J	0.0167	0.167	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	28,700		880	889	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.8		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046560
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5014 SDG#: KVM50-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 01:12	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 10:52	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 03:52	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:09	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:09	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:09	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:13	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:19	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5014

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046560
Sample wt/vol: 30.44(g/mL) g Lab File ID: oi1019.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 40.8 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	7.434	960	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	7.816	600	J
3.112-40-3	Dodecane	7.916	1400	J
4.	Unknown Alkane	8.204	710	J
5.	Unknown Alkane	8.234	660	J
6.1560-97-0	Dodecane, 2-methyl-	8.310	630	J
7.	Unknown Alkane	8.351	1700	J
8.629-50-5	Tridecane	8.528	4300	J
9.	Unknown Alkane	8.581	520	J
10.	Unknown Alkane	8.616	760	J
11.	Unknown Alkane	8.804	1100	J
12.	Unknown Cycloalkane	8.822	1200	J
13.1560-96-9	Tridecane, 2-methyl-	8.881	1100	J
14.	Unknown Alkane	8.951	1400	J
15.629-59-4	Tetradecane	9.086	6600	J
16.	Unknown Aromatic	9.416	1300	J
17.	Unknown Alkane	9.604	3300	J
18.544-76-3	Hexadecane	10.098	1400	J
19.	Unknown	10.792	330000	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	11.645	11000	J
21.	Unknown Amine	11.704	1100	J
22.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.875	10000	J
23.	Unknown Aromatic	11.998	1600	J
24.112-80-1	Oleic Acid	12.363	2400	J
25.7206-21-5	5-Octadecene, (E)-	14.316	1600	J
26.				
27.SVOCTIC	Total SVOC TICs		390000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046561
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5015 SDG#: KVM50-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		28	56	1
10727	Anthracene	120-12-7	10	J	6	29	1
10727	Atrazine	1912-24-9	N.D.		56	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	66		6	29	1
10727	Benzo(a)pyrene	50-32-8	70		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	95		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	45		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	59		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	56	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	56	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		56	280	1
10727	Carbazole	86-74-8	N.D.		28	56	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	56	1
10727	4-Chloroaniline	106-47-8	N.D.		56	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	56	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	56	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	56	1
10727	2-Chlorophenol	95-57-8	N.D.		28	56	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	56	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	56	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	71		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	6	29	1
10727	Dibenzofuran	132-64-9	N.D.		28	56	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	560	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	56	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	56	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	840	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	4,500		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	2,100		28	56	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	290	1
10727	Fluoranthene	206-44-0	110		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	56	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	840	1
10727	Hexachloroethane	67-72-1	N.D.		56	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	47		6	29	1
10727	Isophorone	78-59-1	N.D.		28	56	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046561
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5015 SDG#: KVM50-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	56	1
10727	4-Methylphenol	106-44-5	N.D.	28	56	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.	28	56	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	56	1
10727	2-Nitrophenol	88-75-5	N.D.	28	56	1
10727	4-Nitrophenol	100-02-7	N.D.	280	840	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	56	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	56	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	56	290	1
10727	Phenanthrene	85-01-8	63	6	29	1
10727	Phenol	108-95-2	N.D.	28	56	1
10727	Pyrene	129-00-0	100	6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	56	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	56	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	47,000	1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	38,000	820	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	820	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	820	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	820	2,500	5
06918	HMX	2691-41-0	N.D.	2,100	6,200	5
06918	Nitrobenzene	98-95-3	N.D.	820	2,500	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	820	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,100	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,300	5
06918	PETN	78-11-5	N.D.	16,000	49,000	5
06918	RDX	121-82-4	N.D.	1,100	2,500	5
06918	Tetryl	479-45-8	N.D.	1,300	3,300	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046561
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5015 SDG#: KVM50-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	3,800		820	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	4,500,000		41,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,100		12.7	33.2	1
06944	Antimony	7440-36-0	0.727	J	0.680	3.32	1
06935	Arsenic	7440-38-2	1.44	J	0.963	3.32	1
06946	Barium	7440-39-3	55.8		0.111	0.830	1
06947	Beryllium	7440-41-7	0.599	J	0.111	0.830	1
06949	Cadmium	7440-43-9	N.D.		0.0714	0.830	1
01650	Calcium	7440-70-2	908		5.53	33.2	1
06951	Chromium	7440-47-3	15.1		0.163	2.49	1
06952	Cobalt	7440-48-4	4.80		0.134	0.830	1
06953	Copper	7440-50-8	26.2		0.465	1.66	1
01654	Iron	7439-89-6	20,900		5.53	33.2	1
06955	Lead	7439-92-1	224		0.531	2.49	1
01657	Magnesium	7439-95-4	1,320		2.77	16.6	1
06958	Manganese	7439-96-5	187		0.138	0.830	1
06961	Nickel	7440-02-0	9.45		0.382	1.66	1
01662	Potassium	7440-09-7	695		27.9	83.0	1
06936	Selenium	7782-49-2	2.81	J	1.38	3.32	1
06966	Silver	7440-22-4	N.D.		0.199	0.830	1
01667	Sodium	7440-23-5	43.9	J	27.7	166	1
06925	Thallium	7440-28-0	N.D.		1.24	4.98	1
06971	Vanadium	7440-62-2	31.7		0.249	0.830	1
06972	Zinc	7440-66-6	33.2		1.28	3.32	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0579	J	0.0168	0.168	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	41,200		1,110	1,120	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046561
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5015 SDG#: KVM50-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 01:37	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 11:35	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 05:17	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:21	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:21	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:21	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:16	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:21	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5015

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046561
Sample wt/vol: 30.48(g/mL) g Lab File ID: oi1020.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 41.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	7.433	740	J
2.112-40-3	Dodecane	7.916	1300	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.998	530	J
4.	Unknown Alkane	8.204	840	J
5.	Unknown Alkane	8.233	600	J
6.6117-97-1	Dodecane, 4-methyl-	8.275	540	J
7.1560-97-0	Dodecane, 2-methyl-	8.310	680	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	8.351	1300	J
9.629-50-5	Tridecane	8.528	3100	J
10.544-76-3	Hexadecane	8.616	610	J
11.	Unknown	8.804	1000	J
12.	Unknown Cycloalkane	8.822	1000	J
13.26730-12-1	Tridecane, 4-methyl-	8.851	510	J
14.1560-96-9	Tridecane, 2-methyl-	8.880	860	J
15.	Unknown	8.922	750	J
16.	Unknown	8.951	1200	J
17.629-59-4	Tetradecane	9.086	4200	J
18.629-62-9	Pentadecane	9.604	2200	J
19.544-76-3	Hexadecane	10.098	1200	J
20.	Unknown	10.816	410000	J
21.	Unknown	11.051	1800	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.657	14000	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.886	12000	J
24.	Unknown Aromatic	12.010	1900	J
25.593-39-5	6-Octadecenoic acid, (Z)-	12.363	2600	J
26.				
27.SVOCTIC	Total SVOC TICs		460000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046562
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5016 SDG#: KVM50-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		29	58	1
10727	Anthracene	120-12-7	13	J	6	29	1
10727	Atrazine	1912-24-9	N.D.		58	290	1
10727	Benzaldehyde	100-52-7	N.D.		120	290	1
10727	Benzo(a)anthracene	56-55-3	40		6	29	1
10727	Benzo(a)pyrene	50-32-8	40		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	62		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	31		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	42		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		29	58	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		29	58	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	290	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	290	1
10727	Caprolactam	105-60-2	N.D.		58	290	1
10727	Carbazole	86-74-8	N.D.		29	58	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		29	58	1
10727	4-Chloroaniline	106-47-8	N.D.		58	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		29	58	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		29	58	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	57	1
10727	2-Chlorophenol	95-57-8	N.D.		29	58	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		29	58	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		29	58	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	47		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	6	J	6	29	1
10727	Dibenzofuran	132-64-9	N.D.		29	58	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	580	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		29	58	1
10727	Diethylphthalate	84-66-2	N.D.		120	290	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		29	58	1
10727	Dimethylphthalate	131-11-3	N.D.		120	290	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		290	870	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		520	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	4,000		120	290	1
10727	2,6-Dinitrotoluene	606-20-2	1,700		29	58	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		120	290	1
10727	Fluoranthene	206-44-0	71		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		29	58	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		290	870	1
10727	Hexachloroethane	67-72-1	N.D.		58	290	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	32		6	29	1
10727	Isophorone	78-59-1	N.D.		29	58	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046562
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5016 SDG#: KVM50-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		29	58	1
10727	4-Methylphenol	106-44-5	N.D.		29	58	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		6	29	1
10727	2-Nitroaniline	88-74-4	N.D.		29	58	1
10727	3-Nitroaniline	99-09-2	N.D.		120	290	1
10727	4-Nitroaniline	100-01-6	N.D.		120	290	1
10727	Nitrobenzene	98-95-3	N.D.		29	58	1
10727	2-Nitrophenol	88-75-5	N.D.		29	58	1
10727	4-Nitrophenol	100-02-7	N.D.		290	870	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		29	58	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		29	58	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	170	J	120	290	1
10727	Pentachlorophenol	87-86-5	N.D.		58	290	1
10727	Phenanthrene	85-01-8	48		6	29	1
10727	Phenol	108-95-2	N.D.		29	58	1
10727	Pyrene	129-00-0	64		6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		29	58	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		29	58	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	43,000		1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	37,000		800	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		800	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		800	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		800	2,400	5
06918	HMX	2691-41-0	N.D.		2,000	6,000	5
06918	Nitrobenzene	98-95-3	N.D.		800	2,400	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	48,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		800	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,000	4,000	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,200	5
06918	PETN	78-11-5	N.D.		16,000	48,000	5
06918	RDX	121-82-4	N.D.		1,000	2,400	5
06918	Tetryl	479-45-8	N.D.		1,300	3,200	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046562
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5016 SDG#: KVM50-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,500		800	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,800,000		40,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,200		12.9	33.8	1
06944	Antimony	7440-36-0	N.D.		0.693	3.38	1
06935	Arsenic	7440-38-2	5.77		0.980	3.38	1
06946	Barium	7440-39-3	53.5		0.113	0.845	1
06947	Beryllium	7440-41-7	0.581	J	0.113	0.845	1
06949	Cadmium	7440-43-9	N.D.		0.0727	0.845	1
01650	Calcium	7440-70-2	869		5.63	33.8	1
06951	Chromium	7440-47-3	14.4		0.166	2.53	1
06952	Cobalt	7440-48-4	4.27		0.137	0.845	1
06953	Copper	7440-50-8	24.8		0.473	1.69	1
01654	Iron	7439-89-6	21,200		5.63	33.8	1
06955	Lead	7439-92-1	190		0.541	2.53	1
01657	Magnesium	7439-95-4	1,210		2.82	16.9	1
06958	Manganese	7439-96-5	184		0.140	0.845	1
06961	Nickel	7440-02-0	8.66		0.389	1.69	1
01662	Potassium	7440-09-7	664		28.4	84.5	1
06936	Selenium	7782-49-2	2.91	J	1.40	3.38	1
06966	Silver	7440-22-4	N.D.		0.203	0.845	1
01667	Sodium	7440-23-5	40.6	J	28.2	169	1
06925	Thallium	7440-28-0	N.D.		1.27	5.07	1
06971	Vanadium	7440-62-2	32.7		0.253	0.845	1
06972	Zinc	7440-66-6	32.5		1.30	3.38	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0354	J	0.0171	0.171	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	39,200		1,010	1,020	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	43.1		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046562
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5016 SDG#: KVM50-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 02:03	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 12:17	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 06:00	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:27	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:27	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:27	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:20	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:23	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5016

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046562
Sample wt/vol: 30.45(g/mL) g Lab File ID: oi1021.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 43.1 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	7.434	680	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	7.816	540	J
3.112-40-3	Dodecane	7.916	1300	J
4.	Unknown Alkane	8.204	820	J
5.	Unknown Alkane	8.275	580	J
6.1560-97-0	Dodecane, 2-methyl-	8.310	740	J
7.	Unknown Alkane	8.351	1500	J
8.629-50-5	Tridecane	8.528	3400	J
9.	Unknown Alkane	8.581	620	J
10.	Unknown Alkane	8.616	780	J
11.13287-21-3	Tridecane, 6-methyl-	8.804	700	J
12.	Unknown Cycloalkane	8.822	960	J
13.1560-96-9	Tridecane, 2-methyl-	8.881	820	J
14.107770-99-0	3,5-Dimethyldodecane	8.922	710	J
15.	Unknown Alkane	8.951	1100	J
16.629-59-4	Tetradecane	9.086	4000	J
17.	Unknown Aromatic	9.416	850	J
18.629-62-9	Pentadecane	9.604	2000	J
19.544-76-3	Hexadecane	10.098	960	J
20.	Unknown Alkane	10.780	340000	J
21.1885-76-3	6-Nitro-o-tolunitrile	10.804	67000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.645	10000	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.874	9800	J
24.	Unknown	12.004	1700	J
25.112-80-1	Oleic Acid	12.363	2400	J
26.				
27.SVOCTIC	Total SVOC TICs		450000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046563
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:52 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5017 SDG#: KVM50-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		28	56	1
10727	Anthracene	120-12-7	11	J	6	29	1
10727	Atrazine	1912-24-9	N.D.		56	280	1
10727	Benzaldehyde	100-52-7	120	J	110	280	1
10727	Benzo(a)anthracene	56-55-3	64		6	29	1
10727	Benzo(a)pyrene	50-32-8	56		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	100		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	42		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	47		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	56	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	56	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		56	280	1
10727	Carbazole	86-74-8	N.D.		28	56	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	56	1
10727	4-Chloroaniline	106-47-8	N.D.		56	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	56	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	56	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	56	1
10727	2-Chlorophenol	95-57-8	N.D.		28	56	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	56	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	56	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	69		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	22	J	6	29	1
10727	Dibenzofuran	132-64-9	N.D.		28	56	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	560	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	56	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	56	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	850	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		510	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	3,500		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	3,200		28	56	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	290	1
10727	Fluoranthene	206-44-0	110		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	56	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	850	1
10727	Hexachloroethane	67-72-1	N.D.		56	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	53		6	29	1
10727	Isophorone	78-59-1	N.D.		28	56	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046563
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:52 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5017 SDG#: KVM50-17

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	56	1
10727	4-Methylphenol	106-44-5	N.D.	28	56	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.	28	56	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	56	1
10727	2-Nitrophenol	88-75-5	N.D.	28	56	1
10727	4-Nitrophenol	100-02-7	N.D.	280	850	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	56	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	56	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	56	290	1
10727	Phenanthrene	85-01-8	62	6	29	1
10727	Phenol	108-95-2	N.D.	28	56	1
10727	Pyrene	129-00-0	91	6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	56	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	56	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	74,000	1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	44,000	730	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	730	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	730	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	730	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.	730	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	730	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	2,900	5
06918	PETN	78-11-5	N.D.	15,000	44,000	5
06918	RDX	121-82-4	N.D.	950	2,200	5
06918	Tetryl	479-45-8	N.D.	1,200	2,900	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046563
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:52 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5017 SDG#: KVM50-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,500		730	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,400,000		37,000	110,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,400		12.5	32.7	1
06944	Antimony	7440-36-0	1.20	J	0.670	3.27	1
06935	Arsenic	7440-38-2	4.82		0.947	3.27	1
06946	Barium	7440-39-3	56.9		0.109	0.817	1
06947	Beryllium	7440-41-7	0.609	J	0.109	0.817	1
06949	Cadmium	7440-43-9	N.D.		0.0702	0.817	1
01650	Calcium	7440-70-2	1,550		5.44	32.7	1
06951	Chromium	7440-47-3	15.9		0.160	2.45	1
06952	Cobalt	7440-48-4	4.27		0.132	0.817	1
06953	Copper	7440-50-8	26.2		0.457	1.63	1
01654	Iron	7439-89-6	22,200		5.44	32.7	1
06955	Lead	7439-92-1	267		0.523	2.45	1
01657	Magnesium	7439-95-4	1,330		2.73	16.3	1
06958	Manganese	7439-96-5	168		0.136	0.817	1
06961	Nickel	7440-02-0	9.11		0.376	1.63	1
01662	Potassium	7440-09-7	770		27.4	81.7	1
06936	Selenium	7782-49-2	3.60		1.36	3.27	1
06966	Silver	7440-22-4	N.D.		0.196	0.817	1
01667	Sodium	7440-23-5	45.0	J	27.3	163	1
06925	Thallium	7440-28-0	N.D.		1.23	4.90	1
06971	Vanadium	7440-62-2	34.0		0.245	0.817	1
06972	Zinc	7440-66-6	35.0		1.26	3.27	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0536	J	0.0168	0.168	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	42,500		985	995	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.7		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046563
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:52 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5017 SDG#: KVM50-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 02:29	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 13:42	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 06:42	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:33	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:33	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:33	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:23	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:25	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5017

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046563
Sample wt/vol: 30.41(g/mL) g Lab File ID: oi1022.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 41.7 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1618-22-0	Naphthalene, decahydro-2,6-d	7.816	680	J
2.103-82-2	Benzeneacetic acid	8.163	560	J
3.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	8.204	1000	J
4.24625-82-9	2- Bromopropionic acid, octy	8.234	1000	J
5.6117-97-1	Dodecane, 4-methyl-	8.275	730	J
6.2051-30-1	Octane, 2,6-dimethyl-	8.357	1800	J
7.540-97-6	Cyclohexasiloxane, dodecamet	8.487	600	J
8.629-50-5	Tridecane	8.528	3700	J
9.26730-14-3	Tridecane, 7-methyl-	8.581	1100	J
10.92-51-3	1,1'-Bicyclohexyl	8.681	990	J
11.1560-96-9	Tridecane, 2-methyl-	8.722	990	J
12.66708-25-6	1-Propanone, 2-methyl-1-(oct	8.787	750	J
13.5617-41-4	Heptylcyclohexane	8.822	1100	J
14.26730-12-1	Tridecane, 4-methyl-	8.851	770	J
15.638-36-8	Hexadecane, 2,6,10,14-tetram	8.951	1200	J
16.15232-86-7	1-Heptylcyclohexene	9.016	810	J
17.629-59-4	Tetradecane	9.128	1400	J
18.66563-30-2	Bacchotricuneatin c	9.334	820	J
19.17312-82-2	Undecane, 4,6-dimethyl-	9.398	1500	J
20.629-62-9	Pentadecane	9.610	1800	J
21.612-23-7	Benzene, 1-(chloromethyl)-2-	10.716	140000	J
22.17132-92-2	2,3-Dicyanoquinoxaline	10.763	84000	J
23.118-96-7	Benzene, 2-methyl-1,3,5-trin	10.816	120000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.892	12000	J
25.112-79-8	9-Octadecenoic acid, (E)-	12.369	3600	J
26.				
27.SVOCTIC	Total SVOC TICs		380000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046564
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5018 SDG#: KVM50-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	32	1
10727	Acenaphthylene	208-96-8	N.D.		6	32	1
10727	Acetophenone	98-86-2	N.D.		32	64	1
10727	Anthracene	120-12-7	11	J	6	32	1
10727	Atrazine	1912-24-9	N.D.		64	320	1
10727	Benzaldehyde	100-52-7	N.D.		130	320	1
10727	Benzo(a)anthracene	56-55-3	67		6	32	1
10727	Benzo(a)pyrene	50-32-8	71		6	32	1
10727	Benzo(b)fluoranthene	205-99-2	130		6	32	1
10727	Benzo(g,h,i)perylene	191-24-2	57		6	32	1
10727	Benzo(k)fluoranthene	207-08-9	73		6	32	1
10727	1,1'-Biphenyl	92-52-4	N.D.		32	64	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		32	64	1
10727	Butylbenzylphthalate	85-68-7	N.D.		130	320	1
10727	Di-n-butylphthalate	84-74-2	N.D.		130	320	1
10727	Caprolactam	105-60-2	N.D.		64	320	1
10727	Carbazole	86-74-8	N.D.		32	64	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		32	64	1
10727	4-Chloroaniline	106-47-8	N.D.		64	130	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		32	64	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		32	64	1
10727	2-Chloronaphthalene	91-58-7	N.D.		13	63	1
10727	2-Chlorophenol	95-57-8	N.D.		32	64	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		32	64	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		32	64	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	81		6	32	1
10727	Dibenz(a,h)anthracene	53-70-3	18	J	6	32	1
10727	Dibenzofuran	132-64-9	N.D.		32	64	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		190	640	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		32	64	1
10727	Diethylphthalate	84-66-2	N.D.		130	320	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		32	64	1
10727	Dimethylphthalate	131-11-3	N.D.		130	320	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		320	960	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		570	1,900	1
10727	2,4-Dinitrotoluene	121-14-2	4,100		130	320	1
10727	2,6-Dinitrotoluene	606-20-2	3,100		32	64	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		130	320	1
10727	Fluoranthene	206-44-0	120		6	32	1
10727	Fluorene	86-73-7	N.D.		6	32	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	32	1
10727	Hexachlorobutadiene	87-68-3	N.D.		32	64	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		320	960	1
10727	Hexachloroethane	67-72-1	N.D.		64	320	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	44		6	32	1
10727	Isophorone	78-59-1	N.D.		32	64	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	32	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046564
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5018 SDG#: KVM50-18

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	32	64	1
10727	4-Methylphenol	106-44-5	N.D.	32	64	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	32	1
10727	2-Nitroaniline	88-74-4	N.D.	32	64	1
10727	3-Nitroaniline	99-09-2	N.D.	130	320	1
10727	4-Nitroaniline	100-01-6	N.D.	130	320	1
10727	Nitrobenzene	98-95-3	N.D.	32	64	1
10727	2-Nitrophenol	88-75-5	N.D.	32	64	1
10727	4-Nitrophenol	100-02-7	N.D.	320	960	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	32	64	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	32	64	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	130	320	1
10727	Pentachlorophenol	87-86-5	N.D.	64	320	1
10727	Phenanthrene	85-01-8	64	6	32	1
10727	Phenol	108-95-2	N.D.	32	64	1
10727	Pyrene	129-00-0	110	6	32	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	32	64	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	32	64	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	120,000	1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	75,000	820	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	820	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	820	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	820	2,400	5
06918	HMX	2691-41-0	N.D.	2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.	820	2,400	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	820	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,300	5
06918	PETN	78-11-5	N.D.	16,000	49,000	5
06918	RDX	121-82-4	N.D.	1,100	2,400	5
06918	Tetryl	479-45-8	N.D.	1,300	3,300	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046564
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5018 SDG#: KVM50-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,400	J	820	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,500,000		41,000	120,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,800		14.3	37.3	1
06944	Antimony	7440-36-0	1.34	J	0.765	3.73	1
06935	Arsenic	7440-38-2	1.82	J	1.08	3.73	1
06946	Barium	7440-39-3	53.6		0.125	0.934	1
06947	Beryllium	7440-41-7	0.599	J	0.125	0.934	1
06949	Cadmium	7440-43-9	N.D.		0.0803	0.934	1
01650	Calcium	7440-70-2	1,730		6.22	37.3	1
06951	Chromium	7440-47-3	16.3		0.183	2.80	1
06952	Cobalt	7440-48-4	4.63		0.151	0.934	1
06953	Copper	7440-50-8	30.3		0.523	1.87	1
01654	Iron	7439-89-6	25,300		6.22	37.3	1
06955	Lead	7439-92-1	230		0.597	2.80	1
01657	Magnesium	7439-95-4	1,440		3.12	18.7	1
06958	Manganese	7439-96-5	187		0.155	0.934	1
06961	Nickel	7440-02-0	9.10		0.429	1.87	1
01662	Potassium	7440-09-7	791		31.4	93.4	1
06936	Selenium	7782-49-2	4.26		1.55	3.73	1
06966	Silver	7440-22-4	N.D.		0.224	0.934	1
01667	Sodium	7440-23-5	43.4	J	31.2	187	1
06925	Thallium	7440-28-0	N.D.		1.40	5.60	1
06971	Vanadium	7440-62-2	34.1		0.280	0.934	1
06972	Zinc	7440-66-6	88.0		1.44	3.73	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0366	J	0.0180	0.180	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	45,600		1,370	1,390	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	48.5		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046564
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5018 SDG#: KVM50-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 02:55	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 14:25	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 07:25	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:39	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:39	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:39	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:26	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:27	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5018

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046564
Sample wt/vol: 30.49(g/mL) g Lab File ID: oi1023.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 48.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	7.433	1000	J
2.	Unknown	7.545	660	J
3.	Unknown Alkane	7.916	1600	J
4.66660-43-3	trans, cis-3-Ethylbicyclo[4.	8.204	1000	J
5.	Unknown Alkane	8.275	690	J
6.55045-08-4	Dodecane, 2-methyl-6-propyl-	8.310	910	J
7.61141-72-8	Dodecane, 4,6-dimethyl-	8.357	1800	J
8.629-50-5	Tridecane	8.527	4300	J
9.	Unknown Alkane	8.580	750	J
10.107770-99-0	3,5-Dimethyldodecane	8.616	940	J
11.	Unknown Cycloalkane	8.822	1300	J
12.55045-13-1	Tetradecane, 6,9-dimethyl-	8.886	1100	J
13.6418-41-3	Tridecane, 3-methyl-	8.922	940	J
14.	Unknown Alkane	8.951	1700	J
15.629-59-4	Tetradecane	9.086	5300	J
16.	Unknown	9.333	820	J
17.	Unknown Alkane	9.398	2000	J
18.629-62-9	Pentadecane	9.610	2600	J
19.544-76-3	Hexadecane	10.098	1600	J
20.	Unknown	10.769	290000	J
21.	Unknown	10.792	58000	J
22.	Unknown Aromatic	10.816	65000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.674	26000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.898	15000	J
25.112-79-8	9-Octadecenoic acid, (E)-	12.363	2400	J
26.				
27.SVOCTIC	Total SVOC TICs		490000	J
28.				
29.				
30.				

Sample Description: TNT-PS-K-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046565
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5019 SDG#: KVM50-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	N.D.		5	27	1
10727	Acetophenone	98-86-2	N.D.		26	53	1
10727	Anthracene	120-12-7	14	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		53	260	1
10727	Benzaldehyde	100-52-7	120	J	110	260	1
10727	Benzo(a)anthracene	56-55-3	83		5	27	1
10727	Benzo(a)pyrene	50-32-8	72		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	140		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	60		5	27	1
10727	Benzo(k)fluoranthene	207-08-9	50		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	53	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	53	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	260	1
10727	Caprolactam	105-60-2	N.D.		53	260	1
10727	Carbazole	86-74-8	N.D.		26	53	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	53	1
10727	4-Chloroaniline	106-47-8	N.D.		53	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	53	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	53	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	52	1
10727	2-Chlorophenol	95-57-8	N.D.		26	53	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	53	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	53	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	84		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	18	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		26	53	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	530	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	53	1
10727	Diethylphthalate	84-66-2	N.D.		110	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	53	1
10727	Dimethylphthalate	131-11-3	N.D.		110	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	790	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		470	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	4,400		110	260	1
10727	2,6-Dinitrotoluene	606-20-2	4,500		26	53	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	270	1
10727	Fluoranthene	206-44-0	150		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	53	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	790	1
10727	Hexachloroethane	67-72-1	N.D.		53	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	53		5	27	1
10727	Isophorone	78-59-1	N.D.		26	53	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046565
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5019 SDG#: KVM50-19

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	26	53	1
10727	4-Methylphenol	106-44-5	N.D.	26	53	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.	26	53	1
10727	3-Nitroaniline	99-09-2	N.D.	110	260	1
10727	4-Nitroaniline	100-01-6	N.D.	110	260	1
10727	Nitrobenzene	98-95-3	N.D.	26	53	1
10727	2-Nitrophenol	88-75-5	N.D.	26	53	1
10727	4-Nitrophenol	100-02-7	N.D.	260	790	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	26	53	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	26	53	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	260	1
10727	Pentachlorophenol	87-86-5	N.D.	53	270	1
10727	Phenanthrene	85-01-8	83	5	27	1
10727	Phenol	108-95-2	N.D.	26	53	1
10727	Pyrene	129-00-0	130	5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	26	53	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	26	53	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	93,000	1,100	3,000	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	58,000	750	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	750	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	750	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	750	2,200	5
06918	HMX	2691-41-0	N.D.	1,900	5,600	5
06918	Nitrobenzene	98-95-3	N.D.	750	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	45,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	750	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	3,000	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,900	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	3,000	5
06918	PETN	78-11-5	N.D.	15,000	45,000	5
06918	RDX	121-82-4	N.D.	970	2,200	5
06918	Tetryl	479-45-8	N.D.	1,200	3,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046565
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5019 SDG#: KVM50-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,900		750	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,900,000		37,000	110,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,200		11.6	30.2	1
06944	Antimony	7440-36-0	1.48	J	0.619	3.02	1
06935	Arsenic	7440-38-2	3.57		0.875	3.02	1
06946	Barium	7440-39-3	61.8		0.101	0.755	1
06947	Beryllium	7440-41-7	0.629	J	0.101	0.755	1
06949	Cadmium	7440-43-9	N.D.		0.0649	0.755	1
01650	Calcium	7440-70-2	1,560		5.03	30.2	1
06951	Chromium	7440-47-3	16.1		0.148	2.26	1
06952	Cobalt	7440-48-4	4.63		0.122	0.755	1
06953	Copper	7440-50-8	27.1		0.423	1.51	1
01654	Iron	7439-89-6	23,200		5.03	30.2	1
06955	Lead	7439-92-1	247		0.483	2.26	1
01657	Magnesium	7439-95-4	1,320		2.52	15.1	1
06958	Manganese	7439-96-5	189		0.125	0.755	1
06961	Nickel	7440-02-0	8.83		0.347	1.51	1
01662	Potassium	7440-09-7	726		25.4	75.5	1
06936	Selenium	7782-49-2	3.02	J	1.25	3.02	1
06966	Silver	7440-22-4	N.D.		0.181	0.755	1
01667	Sodium	7440-23-5	45.9	J	25.2	151	1
06925	Thallium	7440-28-0	1.20	J	1.13	4.53	1
06971	Vanadium	7440-62-2	33.0		0.226	0.755	1
06972	Zinc	7440-66-6	40.1		1.16	3.02	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0485	J	0.0149	0.149	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	25,800		1,010	1,020	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	36.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046565
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5019 SDG#: KVM50-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 03:21	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 15:07	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 08:07	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:45	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:45	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/20/2015 21:45	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:45	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:29	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:33	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5019

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046565
Sample wt/vol: 30.18(g/mL) g Lab File ID: oi1024.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 36.9 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	7.439	930	J
2.2958-76-1	Naphthalene, decahydro-2-met	7.551	550	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	7.816	550	J
4.112-40-3	Dodecane	7.922	1500	J
5.58462-32-1	trans,trans-3-Ethylbicyclo[4	8.204	860	J
6.	Unknown Alkane	8.233	880	J
7.	Unknown Alkane	8.281	640	J
8.1560-97-0	Dodecane, 2-methyl-	8.316	750	J
9.17312-60-6	Undecane, 6-ethyl-	8.357	1500	J
10.629-50-5	Tridecane	8.533	3700	J
11.	Unknown Alkane	8.586	630	J
12.13287-21-3	Tridecane, 6-methyl-	8.622	790	J
13.	Unknown Alkane	8.804	940	J
14.	Unknown Cycloalkane	8.828	1300	J
15.1560-96-9	Tridecane, 2-methyl-	8.886	1000	J
16.6418-41-3	Tridecane, 3-methyl-	8.928	970	J
17.31081-18-2	Nonane, 3-methyl-5-propyl-	8.957	1600	J
18.629-59-4	Tetradecane	9.092	5200	J
19.	Unknown Alkane	9.404	2000	J
20.629-62-9	Pentadecane	9.610	2800	J
21.544-76-3	Hexadecane	10.098	1400	J
22.	Unknown Aromatic	10.857	280000	J
23.19406-51-0	p-Toluidine, 3,5-dinitro-	11.686	14000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.910	14000	J
25.112-80-1	Oleic Acid	12.368	3500	J
26.				
27.SVOCTIC	Total SVOC TICs		340000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046566
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:03 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5020 SDG#: KVM50-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	31	1
10727	Acenaphthylene	208-96-8	N.D.		6	31	1
10727	Acetophenone	98-86-2	N.D.		30	60	1
10727	Anthracene	120-12-7	13	J	6	31	1
10727	Atrazine	1912-24-9	N.D.		60	300	1
10727	Benzaldehyde	100-52-7	150	J	120	300	1
10727	Benzo(a)anthracene	56-55-3	49		6	31	1
10727	Benzo(a)pyrene	50-32-8	46		6	31	1
10727	Benzo(b)fluoranthene	205-99-2	82		6	31	1
10727	Benzo(g,h,i)perylene	191-24-2	41		6	31	1
10727	Benzo(k)fluoranthene	207-08-9	39		6	31	1
10727	1,1'-Biphenyl	92-52-4	N.D.		30	60	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		30	60	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	300	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	300	1
10727	Caprolactam	105-60-2	N.D.		60	300	1
10727	Carbazole	86-74-8	N.D.		30	60	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		30	60	1
10727	4-Chloroaniline	106-47-8	N.D.		60	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		30	60	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		30	60	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	60	1
10727	2-Chlorophenol	95-57-8	N.D.		30	60	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		30	60	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		30	60	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	65		6	31	1
10727	Dibenz(a,h)anthracene	53-70-3	8	J	6	31	1
10727	Dibenzofuran	132-64-9	N.D.		30	60	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		180	600	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		30	60	1
10727	Diethylphthalate	84-66-2	N.D.		120	300	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		30	60	1
10727	Dimethylphthalate	131-11-3	N.D.		120	300	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		300	900	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		540	1,800	1
10727	2,4-Dinitrotoluene	121-14-2	3,300		120	300	1
10727	2,6-Dinitrotoluene	606-20-2	2,800		30	60	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		120	310	1
10727	Fluoranthene	206-44-0	92		6	31	1
10727	Fluorene	86-73-7	N.D.		6	31	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	31	1
10727	Hexachlorobutadiene	87-68-3	N.D.		30	60	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		300	900	1
10727	Hexachloroethane	67-72-1	N.D.		60	300	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	37		6	31	1
10727	Isophorone	78-59-1	N.D.		30	60	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	31	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046566
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:03 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5020 SDG#: KVM50-20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	30	60	1
10727	4-Methylphenol	106-44-5	N.D.	30	60	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	31	1
10727	2-Nitroaniline	88-74-4	N.D.	30	60	1
10727	3-Nitroaniline	99-09-2	N.D.	120	300	1
10727	4-Nitroaniline	100-01-6	N.D.	120	300	1
10727	Nitrobenzene	98-95-3	N.D.	30	60	1
10727	2-Nitrophenol	88-75-5	N.D.	30	60	1
10727	4-Nitrophenol	100-02-7	N.D.	300	900	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	30	60	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	30	60	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	120	300	1
10727	Pentachlorophenol	87-86-5	N.D.	60	310	1
10727	Phenanthrene	85-01-8	55	6	31	1
10727	Phenol	108-95-2	N.D.	30	60	1
10727	Pyrene	129-00-0	82	6	31	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	30	60	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	30	60	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 4,6-Dinitro-2-methylphenol					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	95,000	1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	56,000	810	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	810	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	810	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	810	2,400	5
06918	HMX	2691-41-0	N.D.	2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.	810	2,400	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	810	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,300	5
06918	PETN	78-11-5	N.D.	16,000	49,000	5
06918	RDX	121-82-4	N.D.	1,100	2,400	5
06918	Tetryl	479-45-8	N.D.	1,300	3,300	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046566
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:03 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5020 SDG#: KVM50-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		3,100	3,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,400,000		41,000	120,000	250
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,100		14.0	36.6	1
06944	Antimony	7440-36-0	1.47	J	0.750	3.66	1
06935	Arsenic	7440-38-2	6.13		1.06	3.66	1
06946	Barium	7440-39-3	65.3		0.122	0.914	1
06947	Beryllium	7440-41-7	0.658	J	0.122	0.914	1
06949	Cadmium	7440-43-9	N.D.		0.0786	0.914	1
01650	Calcium	7440-70-2	1,770		6.09	36.6	1
06951	Chromium	7440-47-3	16.0		0.179	2.74	1
06952	Cobalt	7440-48-4	4.76		0.148	0.914	1
06953	Copper	7440-50-8	27.6		0.512	1.83	1
01654	Iron	7439-89-6	21,900		6.09	36.6	1
06955	Lead	7439-92-1	272		0.585	2.74	1
01657	Magnesium	7439-95-4	1,410		3.05	18.3	1
06958	Manganese	7439-96-5	191		0.152	0.914	1
06961	Nickel	7440-02-0	9.71		0.420	1.83	1
01662	Potassium	7440-09-7	821		30.7	91.4	1
06936	Selenium	7782-49-2	3.29	J	1.52	3.66	1
06966	Silver	7440-22-4	N.D.		0.219	0.914	1
01667	Sodium	7440-23-5	45.8	J	30.5	183	1
06925	Thallium	7440-28-0	N.D.		1.37	5.48	1
06971	Vanadium	7440-62-2	33.4		0.274	0.914	1
06972	Zinc	7440-66-6	37.3		1.41	3.66	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0457	J	0.0180	0.180	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	17,400		978	989	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	45.3		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046566
LL Group # 1592598
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 12:03 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:21

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5020 SDG#: KVM50-20

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLE026	09/23/2015 03:47	Catherine E Bachman	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLE026	09/18/2015 18:15	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	09/30/2015 15:50	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680014A	10/01/2015 08:50	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680014A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708005	09/20/2015 21:57	Tara L Snyder	1
01657	Magnesium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708005	09/20/2015 21:57	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708005	09/20/2015 21:57	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708005	09/18/2015 17:32	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711004	09/17/2015 09:35	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708005	09/16/2015 12:23	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711004	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519568	10/15/2015 00:00	LLI Subcontractor	1
00111	Moisture	SM 2540 G-1997	1	15259820008B	09/16/2015 22:30	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5020

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046566
Sample wt/vol: 30.37(g/mL) g Lab File ID: oi1025.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 45.3 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	7.434	960	J
2.112-40-3	Dodecane	7.916	1500	J
3.	Unknown Alkane	8.204	930	J
4.	Unknown Alkane	8.233	900	J
5.6117-97-1	Dodecane, 4-methyl-	8.275	640	J
6.1560-97-0	Dodecane, 2-methyl-	8.310	820	J
7.61141-72-8	Dodecane, 4,6-dimethyl-	8.351	2000	J
8.629-50-5	Tridecane	8.528	3900	J
9.	Unknown Alkane	8.581	720	J
10.73105-67-6	1-Iodo-2-methylundecane	8.616	870	J
11.	Unknown Cycloalkane	8.822	1200	J
12.629-93-6	Octadecane, 1-iodo-	8.881	960	J
13.	Unknown Alkane	8.922	870	J
14.	Unknown Alkane	8.951	1400	J
15.629-59-4	Tetradecane	9.086	5300	J
16.	Unknown	9.333	880	J
17.3891-98-3	Dodecane, 2,6,10-trimethyl-	9.398	2000	J
18.	Unknown Alkane	9.604	2600	J
19.544-76-3	Hexadecane	10.098	1600	J
20.	Unknown	10.792	260000	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	11.663	14000	J
22.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.886	12000	J
23.	Unknown Aromatic	12.004	1400	J
24.1000190-13-7	Octadec-9-enoic acid	12.363	3000	J
25.1740-19-8	Dehydroabietic acid	13.563	2700	J
26.				
27.SVOCTIC	Total SVOC TICs		320000	J
28.				
29.				
30.				

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FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592598
Reported: 10/21/2015 13:21

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15260SLE026	Sample number(s): 8046547-8046566								
Acenaphthene	N.D.	3.	17	ug/kg	94		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	101		83-127		
Acetophenone	N.D.	17.	33	ug/kg	87		74-116		
Anthracene	N.D.	3.	17	ug/kg	104		82-118		
Atrazine	N.D.	33.	170	ug/kg	103		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	59		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	98		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	99		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	108		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	95		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	101		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	87		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	112		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	95		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	100		84-120		
Caprolactam	N.D.	33.	170	ug/kg	95		71-129		
Carbazole	N.D.	17.	33	ug/kg	107		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	105		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	61		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	95		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	91		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	109		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	99		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	101		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	108		63-126		
Chrysene	N.D.	3.	17	ug/kg	105		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	97		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	105		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	68		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	113		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	94		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	99		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	101		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	56*		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	32		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	103		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	109		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	93		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	106		81-117		
Fluorene	N.D.	3.	17	ug/kg	104		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	103		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	112		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	96		68-145		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592598
Reported: 10/21/2015 13:21

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachloroethane	N.D.		33.	170	ug/kg	92		78-114		
Indeno(1,2,3-cd)pyrene	N.D.		3.	17	ug/kg	94		81-118		
Isophorone	N.D.		17.	33	ug/kg	92		78-125		
2-Methylnaphthalene	N.D.		3.	17	ug/kg	99		83-109		
2-Methylphenol	N.D.		17.	33	ug/kg	98		82-125		
4-Methylphenol	N.D.		17.	33	ug/kg	86		75-119		
Naphthalene	N.D.		3.	17	ug/kg	100		83-112		
2-Nitroaniline	N.D.		17.	33	ug/kg	108		84-126		
3-Nitroaniline	N.D.		67.	170	ug/kg	97		66-119		
4-Nitroaniline	N.D.		67.	170	ug/kg	75		50-100		
Nitrobenzene	N.D.		17.	33	ug/kg	95		70-122		
2-Nitrophenol	N.D.		17.	33	ug/kg	99		83-120		
4-Nitrophenol	N.D.		170.	500	ug/kg	69		60-129		
N-Nitroso-di-n-propylamine	N.D.		17.	33	ug/kg	89		67-121		
N-Nitrosodiphenylamine	N.D.		17.	33	ug/kg	103		83-118		
Di-n-octylphthalate	N.D.		67.	170	ug/kg	105		74-146		
Pentachlorophenol	N.D.		33.	170	ug/kg	85		57-126		
Phenanthrene	N.D.		3.	17	ug/kg	97		80-114		
Phenol	N.D.		17.	33	ug/kg	91		73-122		
Pyrene	N.D.		3.	17	ug/kg	95		81-114		
2,4,5-Trichlorophenol	N.D.		17.	33	ug/kg	111		86-123		
2,4,6-Trichlorophenol	N.D.		17.	33	ug/kg	115		81-123		
Batch number: 152680014A	Sample number(s): 8046547-8046566									
4-Amino-2,6-Dinitrotoluene	N.D.		150.	400	ug/kg	108		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.		100.	300	ug/kg	104		79-120		
1,2-Dinitrobenzene	N.D.		100.	300	ug/kg	97		94-129		
1,3-Dinitrobenzene	N.D.		100.	300	ug/kg	113		94-124		
1,4-Dinitrobenzene	N.D.		100.	300	ug/kg	96		83-122		
HMX	N.D.		250.	750	ug/kg	77		65-121		
Nitrobenzene	N.D.		100.	300	ug/kg	109		81-116		
Nitroglycerin	N.D.		2,000.	6,000	ug/kg	103		70-118		
1-Nitronaphthalene	N.D.		100.	300	ug/kg	103		83-122		
2-Nitrotoluene	N.D.		200.	400	ug/kg	103		86-113		
3-Nitrotoluene	N.D.		250.	500	ug/kg	104		85-135		
4-Nitrotoluene	N.D.		200.	400	ug/kg	106		80-122		
PETN	N.D.		2,000.	6,000	ug/kg	102		64-121		
RDX	N.D.		130.	300	ug/kg	103		84-122		
Tetryl	N.D.		160.	400	ug/kg	111		67-152		
1,3,5-Trinitrobenzene	N.D.		100.	300	ug/kg	94		83-119		
2,4,6-Trinitrotoluene	N.D.		100.	300	ug/kg	102		82-133		
Batch number: 152585708005	Sample number(s): 8046547-8046566									
Aluminum	N.D.		7.66	20.0	mg/kg	101		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	102		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	102		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	101		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	104		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	103		80-120		
Calcium	5.28	J	3.33	20.0	mg/kg	102		80-120		
Chromium	0.161	J	0.0980	1.50	mg/kg	101		80-120		
Cobalt	N.D.		0.0810	0.500	mg/kg	103		80-120		
Copper	N.D.		0.280	1.00	mg/kg	107		80-120		
Iron	N.D.		3.33	20.0	mg/kg	100		80-120		
Lead	N.D.		0.320	1.50	mg/kg	104		80-120		
Magnesium	N.D.		1.67	10.0	mg/kg	100		80-120		

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592598
Reported: 10/21/2015 13:21

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Manganese	0.199 J	0.0830	0.500	mg/kg	102		80-120		
Nickel	N.D.	0.230	1.00	mg/kg	105		80-120		
Potassium	N.D.	16.8	50.0	mg/kg	92		80-120		
Selenium	N.D.	0.830	2.00	mg/kg	100		80-120		
Silver	N.D.	0.120	0.500	mg/kg	89		80-120		
Sodium	N.D.	16.7	100	mg/kg	94		80-120		
Thallium	N.D.	0.750	3.00	mg/kg	96		80-120		
Vanadium	N.D.	0.150	0.500	mg/kg	100		80-120		
Zinc	N.D.	0.770	2.00	mg/kg	102		80-120		
Batch number: 152585711004	Sample number(s): 8046547-8046566								
Mercury	N.D.	0.0100	0.100	mg/kg	103		80-120		
Batch number: 1519500	Sample number(s): 8046553-8046557								
TOC Subcontracted - Spectrum	N.D.	99.0	100	mg/kg	106		75-125		
Batch number: 1519568	Sample number(s): 8046558-8046566								
TOC Subcontracted - Spectrum	N.D.	99.0	100	mg/kg	102		75-125		
Batch number: 15272049531A	Sample number(s): 8046547-8046552								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	123		47-143		
Batch number: 15259820008A	Sample number(s): 8046547-8046556								
Moisture					100		99-101		
Batch number: 15259820008B	Sample number(s): 8046557-8046566								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15260SLE026	Sample number(s): 8046547-8046566 UNSPK: 8046548								
Acenaphthene	85	84	83-116	1	30				
Acenaphthylene	87	89	83-127	3	30				
Acetophenone	85	81	74-116	4	30				
Anthracene	92	89	82-118	3	30				
Atrazine	5*	74	63-148	175*	30				
Benzaldehyde	71*	61	10-69	15	30				
Benzo(a)anthracene	92	92	76-119	2	30				
Benzo(a)pyrene	90	89	85-117	0	30				
Benzo(b)fluoranthene	109	92	78-129	15	30				
Benzo(g,h,i)perylene	90	88	82-119	2	30				
Benzo(k)fluoranthene	88	96	79-120	10	30				
1,1'-Biphenyl	78*	77*	80-116	1	30				
4-Bromophenyl-phenylether	106	95	84-120	10	30				
Butylbenzylphthalate	95	91	80-118	4	30				
Di-n-butylphthalate	95	91	84-120	3	30				
Caprolactam	137*	154*	71-129	13	30				
Carbazole	90	86	78-117	4	30				

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592598
Reported: 10/21/2015 13:21

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
4-Chloro-3-methylphenol	89	90	79-127	2	30				
4-Chloroaniline	44	37	10-103	17	30				
bis(2-Chloroethoxy)methane	85	85	77-116	1	30				
bis(2-Chloroethyl)ether	86	84	77-115	2	30				
2-Chloronaphthalene	74	90	63-146	21	30				
2-Chlorophenol	91	88	85-123	2	30				
4-Chlorophenyl-phenylether	90	88	81-120	0	30				
2,2'-oxybis(1-Chloropropane)	102	99	63-126	3	30				
Chrysene	94	92	80-121	1	30				
Dibenz(a,h)anthracene	95	91	81-123	3	30				
Dibenzofuran	92	90	85-115	1	30				
3,3'-Dichlorobenzidine	17	21	10-104	26	30				
2,4-Dichlorophenol	98	96	81-123	2	30				
Diethylphthalate	80*	79*	81-118	0	30				
2,4-Dimethylphenol	87	89	83-120	2	30				
Dimethylphthalate	86	87	82-113	1	30				
4,6-Dinitro-2-methylphenol	109	102	59-131	5	30				
2,4-Dinitrophenol	77	75	27-140	1	30				
2,4-Dinitrotoluene	86	78*	81-122	3	30				
2,6-Dinitrotoluene	52*	52*	83-120	0	30				
bis(2-Ethylhexyl)phthalate	95	92	81-121	3	30				
Fluoranthene	87	85	81-117	1	30				
Fluorene	88	88	86-118	0	30				
Hexachlorobenzene	92	86	75-123	5	30				
Hexachlorobutadiene	103	103	72-120	1	30				
Hexachlorocyclopentadiene	49*	50*	68-145	2	30				
Hexachloroethane	84	81	78-114	3	30				
Indeno(1,2,3-cd)pyrene	92	89	81-118	2	30				
Isophorone	86	84	78-125	2	30				
2-Methylnaphthalene	125*	122*	83-109	2	30				
2-Methylphenol	92	88	82-125	3	30				
4-Methylphenol	78	75	75-119	2	30				
Naphthalene	118*	110	83-112	6	30				
2-Nitroaniline	89	90	84-126	2	30				
3-Nitroaniline	72	69	66-119	4	30				
4-Nitroaniline	55	54	50-100	1	30				
Nitrobenzene	93	113	70-122	20	30				
2-Nitrophenol	97	94	83-120	3	30				
4-Nitrophenol	16*	67	60-129	124*	30				
N-Nitroso-di-n-propylamine	87	83	67-121	4	30				
N-Nitrosodiphenylamine	97	91	83-118	5	30				
Di-n-octylphthalate	110	104	74-146	5	30				
Pentachlorophenol	52*	43*	57-126	19	30				
Phenanthrene	89	85	80-114	4	30				
Phenol	85	82	73-122	3	30				
Pyrene	88	87	81-114	0	30				
2,4,5-Trichlorophenol	93	91	86-123	2	30				
2,4,6-Trichlorophenol	98	98	81-123	1	30				
Batch number: 152680014A	Sample number(s): 8046547-8046566 UNSPK: 8046553								
4-Amino-2,6-Dinitrotoluene	157*	99	85-118	12	50				
2-Amino-4,6-Dinitrotoluene	303*	87	69-113	44	50				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592598
Reported: 10/21/2015 13:21

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,2-Dinitrobenzene	99	93	80-120	4	50				
1,3-Dinitrobenzene	131*	115	89-119	10	50				
1,4-Dinitrobenzene	94	89	82-117	3	50				
HMX	79	75	72-107	2	50				
Nitrobenzene	182*	99	86-108	57*	50				
Nitroglycerin	0*	100	73-116	200*	50				
1-Nitronaphthalene	19*	105	89-131	140*	50				
2-Nitrotoluene	779*	123*	79-112	144*	50				
3-Nitrotoluene	0*	93	72-119	200*	50				
4-Nitrotoluene	0*	95	90-118	200*	50				
PETN	368*	107	71-133	108*	50				
RDX	105	101	75-108	2	50				
Tetryl	183*	125	58-125	35	50				
1,3,5-Trinitrobenzene	86	79	58-135	4	50				
2,4,6-Trinitrotoluene	-36385 (2)	-36803 (2)	92-114	6	50				
Batch number: 152585708005	Sample number(s): 8046547-8046566 UNSPK: 8046553 BKG: 8046553								
Aluminum	555 (2)	1494 (2)	75-125	14	20	11,100	10,300	8	20
Antimony	75	72*	75-125	3	20	1.02 J	0.696 J	38* (1)	20
Arsenic	99	96	75-125	2	20	2.80	1.38 J	68* (1)	20
Barium	99	102	75-125	3	20	34.2	33.6	2	20
Beryllium	101	101	75-125	1	20	0.486 J	0.362 J	29* (1)	20
Cadmium	92	91	75-125	0	20	N.D.	N.D.	0 (1)	20
Calcium	100	146*	75-125	17	20	610	596	2	20
Chromium	98	103	75-125	4	20	10.0	8.62	15	20
Cobalt	95	96	75-125	2	20	2.85	2.59	9	20
Copper	95	104	75-125	6	20	16.5	15.2	8	20
Iron	-3048 (2)	-544 (2)	75-125	19	20	14,500	12,500	15	20
Lead	-56 (2)	30 (2)	75-125	10	20	130	148	13	20
Magnesium	88 (2)	164 (2)	75-125	14	20	829	776	7	20
Manganese	85	140*	75-125	16	20	110	101	8	20
Nickel	98	99	75-125	2	20	5.58	4.97	11 (1)	20
Potassium	136*	144*	75-125	5	20	493	510	3	20
Selenium	94	93	75-125	0	20	1.99 J	1.59 J	22* (1)	20
Silver	80	77	75-125	3	20	N.D.	N.D.	0 (1)	20
Sodium	97	98	75-125	3	20	37.6 J	40.5 J	7 (1)	20
Thallium	96	96	75-125	1	20	0.755 J	0.779 J	3 (1)	20
Vanadium	92	98	75-125	5	20	22.1	18.6	17	20
Zinc	90	101	75-125	8	20	21.7	20.1	8	20
Batch number: 152585711004	Sample number(s): 8046547-8046566 UNSPK: 8046551 BKG: 8046551								
Mercury	102	98	80-120	5	20	0.0275 J	0.0246 J	11 (1)	20
Batch number: 15272049531A	Sample number(s): 8046547-8046552 UNSPK: 8046547 BKG: 8046547								
TOC by Lloyd Kahn	110		47-143			9,450	9,660	2	7
Batch number: 15259820008A	Sample number(s): 8046547-8046556 BKG: 8046556								
Moisture						42.1	44.3	5	5

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592598
Reported: 10/21/2015 13:21

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15259820008B	Sample number(s): 8046557-8046566					BKG: 8046563			
Moisture						41.7	44.5	7*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15260SLE026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8046547	87	88	87	82	87	94
8046548	92	91	91	87	93	99
8046549	89	90	89	86	89	99
8046550	86	86	84	87	88	97
8046551	87	89	90	84	91	94
8046552	90	90	92	87	88	99
8046553	86	87	89	82	89	98
8046554	91	92	94	88	93	97
8046555	86	88	88	82	91	97
8046556	99	99	81	96	98	98
8046557	92	93	88	88	85	101
8046558	99	98	78	92	93	96
8046559	105	104	81	93	94	98
8046560	100	101	80	92	94	98
8046561	98	100	81	91	96	100
8046562	95	97	78	91	95	93
8046563	97	98	79	95	97	98
8046564	97	97	76	91	91	96
8046565	98	98	72	92	92	97
8046566	96	97	78	88	94	97
Blank	90	89	112	90	98	104
LCS	99	99	111	94	101	102
MS	91	90	85	85	89	98
MSD	88	87	87	84	88	95
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152680014A

	2-Nitro-m-xylene
8046547	100
8046548	120
8046549	128
8046550	129
8046551	83
8046552	126
8046553	103
8046554	127
8046555	88

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592598
Reported: 10/21/2015 13:21

Surrogate Quality Control

8046556	108
8046557	133
8046558	119
8046559	83
8046560	112
8046561	123
8046562	132
8046563	133
8046564	85
8046565	94
8046566	83
Blank	117
LCS	102
MS	175358*
MSD	141*
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1592598 Sample # 8046547-66

| | | |

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1597598 Sample # 8046547-66

| | | |

eurofins | Spectrum Analytical

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Report Date:
15-Oct-15 17:36

Laboratory Report

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17605-2425
Attn: Kathy Binkley

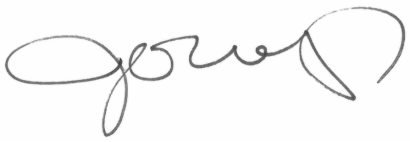
Project: See Chain of Custody
Project #: 1592598

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC13244-01	TNT-PS-B-3-09142015	Soil	14-Sep-15 10:55	06-Oct-15 11:40
SC13244-02	TNT-PS-B-4-09142015	Soil	14-Sep-15 11:00	06-Oct-15 11:40
SC13244-03	TNT-PS-C-1-09142015	Soil	14-Sep-15 08:40	06-Oct-15 11:40
SC13244-04	TNT-PS-C-2-09142015	Soil	14-Sep-15 08:45	06-Oct-15 11:40
SC13244-05	TNT-PS-C-3-09142015	Soil	14-Sep-15 08:50	06-Oct-15 11:40
SC13244-06	TNT-PS-C-4-09142015	Soil	14-Sep-15 08:55	06-Oct-15 11:40
SC13244-07	TNT-PS-J-1-09142015	Soil	14-Sep-15 10:15	06-Oct-15 11:40
SC13244-08	TNT-PS-J-2-09142015	Soil	14-Sep-15 10:25	06-Oct-15 11:40
SC13244-09	TNT-PS-J-3-09142015	Soil	14-Sep-15 10:30	06-Oct-15 11:40
SC13244-10	TNT-PS-J-4-09142015	Soil	14-Sep-15 10:35	06-Oct-15 11:40
SC13244-11	TNT-PS-K-1-09142015	Soil	14-Sep-15 11:52	06-Oct-15 11:40
SC13244-12	TNT-PS-K-2-09142015	Soil	14-Sep-15 11:55	06-Oct-15 11:40
SC13244-13	TNT-PS-K-3-09142015	Soil	14-Sep-15 12:00	06-Oct-15 11:40
SC13244-14	TNT-PS-K-4-09142015	Soil	14-Sep-15 12:03	06-Oct-15 11:40

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435

Authorized by:



June O'Connor
Laboratory Director

Eurofins Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 12 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our Quality web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.2 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

Lloyd Kahn

Samples:

SC13244-01 *TNT-PS-B-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-02 *TNT-PS-B-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-03 *TNT-PS-C-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-04 *TNT-PS-C-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-05 *TNT-PS-C-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-06 *TNT-PS-C-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-07 *TNT-PS-J-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-08 *TNT-PS-J-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-09 *TNT-PS-J-3-09142015*

Lloyd Kahn

Samples:

SC13244-09 *TNT-PS-J-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-10 *TNT-PS-J-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-11 *TNT-PS-K-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-12 *TNT-PS-K-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-13 *TNT-PS-K-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13244-14 *TNT-PS-K-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

Sample Acceptance Check Form

Client:	Eurofins Lancaster Laboratories Environmental, LLC
Project:	See Chain of Custody / 1592598
Work Order:	SC13244
Sample(s) received on:	10/6/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☑	☐	☐
Were custody seals intact?	☑	☐	☐
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☐	☑	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☐	☑	☐

Summary of Hits

Lab ID: SC13244-01 **Client ID:** TNT-PS-B-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	14100	O09	889	mg/kg	Lloyd Kahn

Lab ID: SC13244-02 **Client ID:** TNT-PS-B-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	15500	O09	678	mg/kg	Lloyd Kahn

Lab ID: SC13244-03 **Client ID:** TNT-PS-C-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	24000	O09	588	mg/kg	Lloyd Kahn

Lab ID: SC13244-04 **Client ID:** TNT-PS-C-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	15700	O09	588	mg/kg	Lloyd Kahn

Lab ID: SC13244-05 **Client ID:** TNT-PS-C-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	14600	O09	702	mg/kg	Lloyd Kahn

Lab ID: SC13244-06 **Client ID:** TNT-PS-C-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	15900	O09	606	mg/kg	Lloyd Kahn

Lab ID: SC13244-07 **Client ID:** TNT-PS-J-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	17900	O09	656	mg/kg	Lloyd Kahn

Lab ID: SC13244-08 **Client ID:** TNT-PS-J-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	17000	O09	526	mg/kg	Lloyd Kahn

Lab ID: SC13244-09 **Client ID:** TNT-PS-J-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	24100	O09	656	mg/kg	Lloyd Kahn

Lab ID: SC13244-10 **Client ID:** TNT-PS-J-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	22300	O09	580	mg/kg	Lloyd Kahn

Lab ID: SC13244-11 **Client ID:** TNT-PS-K-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	24800	O09	580	mg/kg	Lloyd Kahn

Lab ID: SC13244-12 **Client ID:** TNT-PS-K-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	23500	O09	714	mg/kg	Lloyd Kahn

Lab ID: SC13244-13 **Client ID:** TNT-PS-K-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	16300	O09	645	mg/kg	Lloyd Kahn

Lab ID: SC13244-14 **Client ID:** TNT-PS-K-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	9510	O09	541	mg/kg	Lloyd Kahn

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification
TNT-PS-B-3-09142015
SC13244-01

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 10:55	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**14,100**	O09	mg/kg	889	880	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-B-4-09142015
SC13244-02

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 11:00	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**15,500**	O09	mg/kg	678	672	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-C-1-09142015
SC13244-03

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 08:40	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**24,000**	O09	mg/kg	588	583	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-C-2-09142015
SC13244-04

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 08:45	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**15,700**	O09	mg/kg	588	583	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-C-3-09142015
SC13244-05

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 08:50	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**14,600**	O09	mg/kg	702	695	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-C-4-09142015
SC13244-06

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 08:55	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**15,900**	O09	mg/kg	606	600	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-J-1-09142015
SC13244-07

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 10:15	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	17,900	O09	mg/kg	656	650	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-J-2-09142015
SC13244-08

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 10:25	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	17,000	O09	mg/kg	526	521	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-J-3-09142015
SC13244-09

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 10:30	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	24,100	O09	mg/kg	656	650	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-J-4-09142015
SC13244-10

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 10:35	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	22,300	O09	mg/kg	580	574	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-K-1-09142015
SC13244-11

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 11:52	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	24,800	O09	mg/kg	580	574	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-K-2-09142015
SC13244-12

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 11:55	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	23,500	O09	mg/kg	714	708	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-K-3-09142015
SC13244-13

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 12:00	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**16,300**	O09	mg/kg	645	639	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

Sample Identification
TNT-PS-K-4-09142015
SC13244-14

Client Project #	Matrix	Collection Date/Time	Received
1592598	Soil	14-Sep-15 12:03	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**9,510**	O09	mg/kg	541	535	1	Lloyd Kahn	14-Oct-15	15-Oct-15	rlt	1519568	X

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1519500 - General Preparation										
Blank (1519500-BLK1)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	< 100		mg/kg	100						
LCS (1519500-BS1)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**8470**		mg/kg	100	8000		106	75-125		
Calibration Blank (1519500-CCB1)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**0.392**		mg/kg							
Calibration Blank (1519500-CCB2)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**-2.50**		mg/kg							
Calibration Blank (1519500-CCB3)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**-6.54**		mg/kg							
Calibration Blank (1519500-CCB4)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**-0.983**		mg/kg							
Calibration Check (1519500-CCV1)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**7920**		mg/kg	100	8000		99	85-115		
Calibration Check (1519500-CCV2)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**8430**		mg/kg	100	8000		105	85-115		
Calibration Check (1519500-CCV3)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**8210**		mg/kg	100	8000		103	85-115		
Calibration Check (1519500-CCV4)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**7850**		mg/kg	100	8000		98	85-115		
Reference (1519500-SRM1)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**4880**		mg/kg	192	5430		90	49-151		
Batch 1519568 - General Preparation										
Blank (1519568-BLK1)						Prepared: 14-Oct-15 Analyzed: 15-Oct-15				
Total Organic Carbon	< 100		mg/kg	100						
LCS (1519568-BS1)						Prepared: 14-Oct-15 Analyzed: 15-Oct-15				
Total Organic Carbon	**8140**		mg/kg	100	8000		102	75-125		
Reference (1519568-SRM1)						Prepared: 14-Oct-15 Analyzed: 15-Oct-15				
Total Organic Carbon	**5690**		mg/kg	280	5430		105	49-151		

Notes and Definitions

O09	This sample was analyzed outside the EPA recommended holding time per client request.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor

Analysis Request / Environmental Services Subcontracting Form

eurofins | Lancaster Laboratories

For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1592598 Sample Nos.: 8046553-66

Date: 10/5/2015

SC 13244 By

Subcontractor: **EUROFINS SPECTRUM ANALYTICAL, INC.**

LLI P.O.# : _____ Courier: FED EX

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: TOC by Lloyd Kahn											Comments
TNT-PS-B-3-09142015 01	09/14/15	10:55		X	X			1	X											8046553
TNT-PS-B-4-09142015 02	09/14/15	11:00		X	X			1	X											8046554
TNT-PS-C-1-09142015 03	09/14/15	08:40		X	X			1	X											8046555
TNT-PS-C-2-09142015 04	09/14/15	08:45		X	X			1	X											8046556
TNT-PS-C-3-09142015 05	09/14/15	08:50		X	X			1	X											8046557
TNT-PS-C-4-09142015 06	09/14/15	08:55		X	X			1	X											8046558
TNT-PS-J-1-09142015 07	09/14/15	10:15		X	X			1	X											8046559
TNT-PS-J-2-09142015 08	09/14/15	10:25		X	X			1	X											8046560
TNT-PS-J-3-09142015 09	09/14/15	10:30		X	X			1	X											8046561
TNT-PS-J-4-09142015 10	09/14/15	10:35		X	X			1	X											8046562

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Temperature of samples upon receipt (if requested)

Turnaround Time Requested (TAT): (Standard) Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

SDG Complete? Yes No

MA MCP
CT RCP

Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-5-15	1434			
FedEx			Emanuele	10/6/15	1140

Copies: White copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the samplers.

1.2/0/1.2/02 VL

Analysis Request / Environmental Services Subcontracting Form

eurofins | Lancaster Laboratories

For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1592598 Sample Nos.: 8046553-66

Date: 10/5/2015

SC13244 By

Subcontractor: **EUROFINS SPECTRUM ANALYTICAL, INC.**

LLI P.O.# : _____ Courier: FED EX

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: TOC by Lloyd Kahn											Comments:
TNT-PS-K-1-09142015 -11	09/14/15	11:52		X	X			1	X											8046563
TNT-PS-K-2-09142015 12	09/14/15	11:55		X	X			1	X											8046564
TNT-PS-K-3-09142015 13	09/14/15	12:00		X	X			1	X											8046565
TNT-PS-K-4-09142015 14	09/14/15	12:03		X	X			1	X											8046566

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Temperature of samples upon receipt (if requested)

Turnaround Time Requested (TAT): (Standard) Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

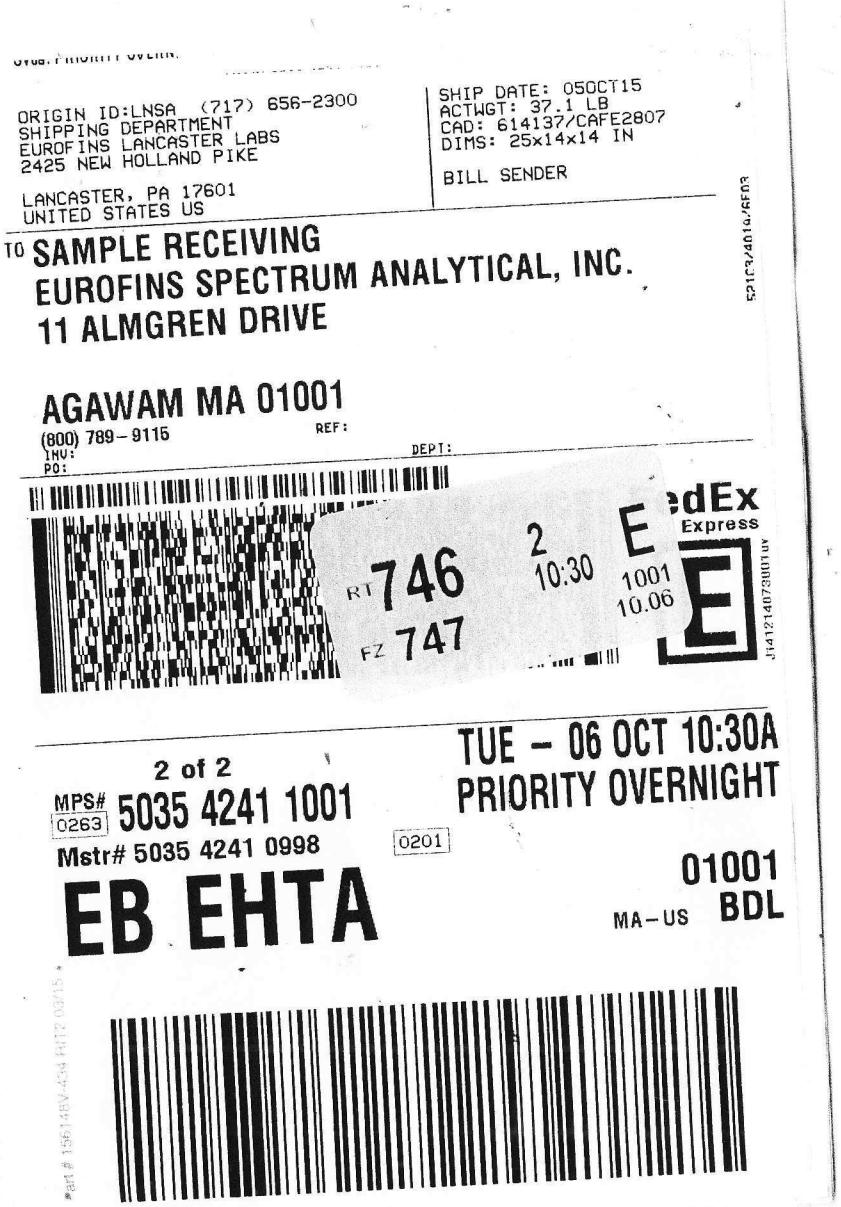
SDG Complete? Yes No

MA MCP
CT RCP

Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-5-15	1434			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Copies: White copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the samplers.



ORIGIN ID:LNSA (717) 656-2300
SHIPPING DEPARTMENT
EUROFINS LANCASTER LABS
2425 NEW HOLLAND PIKE

LANCASTER, PA 17601
UNITED STATES US

SHIP DATE: 05OCT15
ACTWGT: 37.1 LB
CAD: 614137/CAFE2807
DIMS: 25x14x14 IN

BILL SENDER

TO SAMPLE RECEIVING
EUROFINS SPECTRUM ANALYTICAL, INC.
11 ALMGREN DRIVE

AGAWAM MA 01001
(800) 789-9115 REF:
INV: DEPT:
PO:

RT 746 2 10:30 E
FZ 747 1001 10.06

FedEx Express

2 of 2
MPS# 0263 5035 4241 1001
Mstr# 5035 4241 0998
0201

TUE - 06 OCT 10:30A
PRIORITY OVERNIGHT

EB EHTA

01001
MA-US BDL

ORIGIN ID:LNSA (717) 656-2300
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PO:

RT 746 2 10:30 E
FZ 747 0998 10.06

1 of 2
TRK# 0201 5035 4241 0998
MASTER

TUE - 06 OCT 10:30A
PRIORITY OVERNIGHT

EB EHTA

01001
MA-US BDL

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

October 21, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 09/14/2015
Group Number: 1592599
SDG: KVM51
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-I-1-09142015 Composite Soil Sample	8046567
TNT-PS-I-2-09142015 Composite Soil Sample	8046568
TNT-PS-I-3-09142015 Composite Soil Sample	8046569
TNT-PS-I-4-09142015 Composite Soil Sample	8046570
TNT-PS-H-1-09142015 Composite Soil Sample	8046571
TNT-PS-H-2-09142015 Composite Soil Sample	8046572
TNT-PS-H-3-09142015 Composite Soil Sample	8046573
TNT-PS-H-4-09142015 Composite Soil Sample	8046574
TNT-PS-G-1-09142015 Composite Soil Sample	8046575
TNT-PS-G-2-09142015 Composite Soil Sample	8046576
TNT-PS-G-3-09142015 Composite Soil Sample	8046577
TNT-PS-G-4-09142015 Composite Soil Sample	8046578
TNT-PS-D-1-09142015 Composite Soil Sample	8046579
TNT-PS-D-2-09142015 Composite Soil Sample	8046580
TNT-PS-D-3-09142015 Composite Soil Sample	8046581
TNT-PS-D-4-09142015 Composite Soil Sample	8046582
TNT-PS-E-1-09142015 Composite Soil Sample	8046583
TNT-PS-E-2-09142015 Composite Soil Sample	8046584
TNT-PS-E-3-09142015 Composite Soil Sample	8046585
TNT-PS-E-4-09142015 Composite Soil Sample	8046586
TNT-PS-F-1-09142015 Composite Soil Sample	8046587
TNT-PS-F-2-09142015 Composite Soil Sample	8046588
TNT-PS-F-3-09142015 Composite Soil Sample	8046589
TNT-PS-F-4-09142015 Composite Soil Sample	8046590

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-I-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046567
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5101 SDG#: KVM51-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	30	1
10727	Acenaphthylene	208-96-8	N.D.		6	30	1
10727	Acetophenone	98-86-2	N.D.		30	59	1
10727	Anthracene	120-12-7	16	J	6	30	1
10727	Atrazine	1912-24-9	N.D.		59	300	1
10727	Benzaldehyde	100-52-7	N.D.		120	300	1
10727	Benzo(a)anthracene	56-55-3	47		6	30	1
10727	Benzo(a)pyrene	50-32-8	36		6	30	1
10727	Benzo(b)fluoranthene	205-99-2	52		6	30	1
10727	Benzo(g,h,i)perylene	191-24-2	39		6	30	1
10727	Benzo(k)fluoranthene	207-08-9	37		6	30	1
10727	1,1'-Biphenyl	92-52-4	N.D.		30	59	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		30	59	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	300	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	300	1
10727	Caprolactam	105-60-2	N.D.		59	300	1
10727	Carbazole	86-74-8	N.D.		30	59	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		30	59	1
10727	4-Chloroaniline	106-47-8	N.D.		59	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		30	59	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		30	59	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	58	1
10727	2-Chlorophenol	95-57-8	N.D.		30	59	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		30	59	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		30	59	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	57		6	30	1
10727	Dibenz(a,h)anthracene	53-70-3	11	J	6	30	1
10727	Dibenzofuran	132-64-9	N.D.		30	59	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		180	590	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		30	59	1
10727	Diethylphthalate	84-66-2	N.D.		120	300	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		30	59	1
10727	Dimethylphthalate	131-11-3	N.D.		120	300	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		300	890	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		530	1,800	1
10727	2,4-Dinitrotoluene	121-14-2	540		120	300	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		30	59	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		120	300	1
10727	Fluoranthene	206-44-0	77		6	30	1
10727	Fluorene	86-73-7	N.D.		6	30	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	30	1
10727	Hexachlorobutadiene	87-68-3	N.D.		30	59	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		300	890	1
10727	Hexachloroethane	67-72-1	N.D.		59	300	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	30	J	6	30	1
10727	Isophorone	78-59-1	N.D.		30	59	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	30	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046567
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5101 SDG#: KVM51-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	30	59	1
10727	4-Methylphenol	106-44-5	2,200	30	59	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	30	1
10727	2-Nitroaniline	88-74-4	N.D.	30	59	1
10727	3-Nitroaniline	99-09-2	N.D.	120	300	1
10727	4-Nitroaniline	100-01-6	N.D.	120	300	1
10727	Nitrobenzene	98-95-3	N.D.	30	59	1
10727	2-Nitrophenol	88-75-5	N.D.	30	59	1
10727	4-Nitrophenol	100-02-7	N.D.	300	890	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	30	59	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	30	59	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	120	300	1
10727	Pentachlorophenol	87-86-5	N.D.	59	300	1
10727	Phenanthrene	85-01-8	41	6	30	1
10727	Phenol	108-95-2	180	30	59	1
10727	Pyrene	129-00-0	66	6	30	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	30	59	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	30	59	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	15,000	1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,800	820	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	820	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	820	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	820	2,500	5
06918	HMX	2691-41-0	N.D.	2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.	820	2,500	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	820	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,300	5
06918	PETN	78-11-5	N.D.	16,000	49,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046567
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5101 SDG#: KVM51-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	1,500	J	1,100	2,500	5
06918	Tetryl	479-45-8	N.D.		3,400	3,400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		820	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	23,000		820	2,500	5
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,900		13.4	35.0	1
06944	Antimony	7440-36-0	N.D.		0.717	3.50	1
06935	Arsenic	7440-38-2	2.62	J	1.01	3.50	1
06946	Barium	7440-39-3	50.0		0.117	0.874	1
06947	Beryllium	7440-41-7	0.535	J	0.117	0.874	1
06949	Cadmium	7440-43-9	N.D.		0.0751	0.874	1
01650	Calcium	7440-70-2	1,540		5.82	35.0	1
06951	Chromium	7440-47-3	18.9		0.171	2.62	1
06952	Cobalt	7440-48-4	7.62		0.142	0.874	1
06953	Copper	7440-50-8	33.6		0.489	1.75	1
01654	Iron	7439-89-6	29,600		5.82	35.0	1
06955	Lead	7439-92-1	232		0.559	2.62	1
01657	Magnesium	7439-95-4	1,230		2.92	17.5	1
06958	Manganese	7439-96-5	169		0.145	0.874	1
06961	Nickel	7440-02-0	15.0		0.402	1.75	1
01662	Potassium	7440-09-7	848		29.4	87.4	1
06936	Selenium	7782-49-2	5.19		1.45	3.50	1
06966	Silver	7440-22-4	N.D.		0.210	0.874	1
01667	Sodium	7440-23-5	39.6	J	29.2	175	1
06925	Thallium	7440-28-0	N.D.		1.31	5.24	1
06971	Vanadium	7440-62-2	33.1		0.262	0.874	1
06972	Zinc	7440-66-6	45.3		1.35	3.50	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0494	J	0.0177	0.177	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	26,400		478	481	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	43.9		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046567
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:35 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5101 SDG#: KVM51-01

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 13:20	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 15:08	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/20/2015 23:47	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/20/2015 23:47	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/20/2015 23:47	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/20/2015 23:47	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 18:55	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 09:52	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519279	10/10/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5101

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046567
Sample wt/vol: 30.21(g/mL) g Lab File ID: bi0953.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 43.9 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.214	2800	J
2.79-31-2	Propanoic acid, 2-methyl-	3.640	750	J
3.	Unknown	3.943	550	J
4.	Unknown	4.001	540	J
5.107-92-6	Butanoic acid	4.287	1700	J
6.109-52-4	Pentanoic acid	4.712	610	J
7.112-40-3	Dodecane	6.700	1700	J
8.	Unknown	7.009	1400	J
9.103-82-2	Benzeneacetic acid	7.044	1200	J
10.	Unknown	7.085	1200	J
11.	Unknown	7.125	2400	J
12.629-50-5	Tridecane	7.300	4100	J
13.	Unknown	7.586	850	J
14.544-76-3	Hexadecane	7.854	2000	J
15.	Unknown	8.099	750	J
16.1795-15-9	Cyclohexane, octyl-	8.145	940	J
17.	Unknown	9.369	29000	J
18.	Unknown	9.970	10000	J
19.	Unknown	10.279	13000	J
20.57-10-3	n-Hexadecanoic acid	10.500	81000	J
21.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.576	540	J
22.60-33-3	9,12-Octadecadienoic acid (Z	11.135	1700	J
23.112-79-8	9-Octadecenoic acid, (E)-	11.159	2100	J
24.	Unknown	11.864	1100	J
25.	Unknown	11.946	1900	J
26.				
27.SVOCTIC	Total SVOC TICs		160000	J
28.				
29.				
30.				

Sample Description: TNT-PS-I-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046568
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:38 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5102 SDG#: KVM51-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	23	J	5	26	1
10727	Acenaphthylene	208-96-8	22	J	5	26	1
10727	Acetophenone	98-86-2	N.D.		25	50	1
10727	Anthracene	120-12-7	24	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		50	250	1
10727	Benzaldehyde	100-52-7	N.D.		100	250	1
10727	Benzo(a)anthracene	56-55-3	100		5	26	1
10727	Benzo(a)pyrene	50-32-8	86		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	120		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	53		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	61		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	50	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	50	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		50	250	1
10727	Carbazole	86-74-8	N.D.		25	50	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	50	1
10727	4-Chloroaniline	106-47-8	N.D.		50	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	50	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	50	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	50	1
10727	2-Chlorophenol	95-57-8	N.D.		25	50	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	50	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	50	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	25	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		25	50	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	500	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	50	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	50	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	750	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		450	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	910		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	380		25	50	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	160		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	50	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	750	1
10727	Hexachloroethane	67-72-1	N.D.		50	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	52		5	26	1
10727	Isophorone	78-59-1	N.D.		25	50	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046568
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:38 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5102 SDG#: KVM51-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	25	50	1
10727	4-Methylphenol	106-44-5	290	25	50	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.	25	50	1
10727	3-Nitroaniline	99-09-2	N.D.	100	250	1
10727	4-Nitroaniline	100-01-6	N.D.	100	250	1
10727	Nitrobenzene	98-95-3	N.D.	25	50	1
10727	2-Nitrophenol	88-75-5	N.D.	25	50	1
10727	4-Nitrophenol	100-02-7	N.D.	250	750	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	25	50	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	25	50	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	100	250	1
10727	Pentachlorophenol	87-86-5	N.D.	50	260	1
10727	Phenanthrene	85-01-8	71	5	26	1
10727	Phenol	108-95-2	170	25	50	1
10727	Pyrene	129-00-0	140	5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	25	50	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	25	50	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	27,000	1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	17,000	730	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	730	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	730	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	730	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.	730	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	730	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	2,900	5
06918	PETN	78-11-5	N.D.	15,000	44,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046568
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:38 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5102 SDG#: KVM51-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		950	2,200	5
06918	Tetryl	479-45-8	N.D.		3,000	3,000	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		740	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	950,000		36,000	110,000	250
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,400		11.1	29.0	1
06944	Antimony	7440-36-0	N.D.		0.595	2.90	1
06935	Arsenic	7440-38-2	1.77	J	0.841	2.90	1
06946	Barium	7440-39-3	49.7		0.0972	0.725	1
06947	Beryllium	7440-41-7	0.548	J	0.0972	0.725	1
06949	Cadmium	7440-43-9	N.D.		0.0624	0.725	1
01650	Calcium	7440-70-2	1,630		4.83	29.0	1
06951	Chromium	7440-47-3	20.8		0.142	2.18	1
06952	Cobalt	7440-48-4	9.08		0.117	0.725	1
06953	Copper	7440-50-8	34.0		0.406	1.45	1
01654	Iron	7439-89-6	34,900		4.83	29.0	1
06955	Lead	7439-92-1	232		0.464	2.18	1
01657	Magnesium	7439-95-4	1,240		2.42	14.5	1
06958	Manganese	7439-96-5	192		0.120	0.725	1
06961	Nickel	7440-02-0	18.9		0.334	1.45	1
01662	Potassium	7440-09-7	826		24.4	72.5	1
06936	Selenium	7782-49-2	6.56		1.20	2.90	1
06966	Silver	7440-22-4	0.789		0.174	0.725	1
01667	Sodium	7440-23-5	46.3	J	24.2	145	1
06925	Thallium	7440-28-0	1.56	J	1.09	4.35	1
06971	Vanadium	7440-62-2	35.1		0.218	0.725	1
06972	Zinc	7440-66-6	42.2		1.12	2.90	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0378	J	0.0142	0.142	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	25,600		564	569	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	33.7		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046568
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:38 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5102 SDG#: KVM51-02

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 13:42	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 15:51	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 08:54	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/20/2015 23:04	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/20/2015 23:04	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/20/2015 23:04	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/20/2015 23:04	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/20/2015 23:04	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 18:36	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 09:58	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519279	10/10/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5102

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046568
Sample wt/vol: 30.05(g/mL) g Lab File ID: bi0954.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 33.7 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 22 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 107-92-6	Butanoic acid	4.164	49000	J
2.	Unknown Carboxylic Acid	4.281	27000	J
3.	Unknown Carboxylic Acid	4.339	31000	J
4. 58462-32-1	trans,trans-3-Ethylbicyclo[4	6.956	870	J
5.	Unknown Cycloalkane	6.980	810	J
6.	Unknown Alkane	7.014	870	J
7.	Unknown Carboxylic Acid	7.049	1000	J
8.	Unknown Alkane	7.090	910	J
9. 31295-56-4	Dodecane, 2,6,11-trimethyl-	7.131	2200	J
10. 629-50-5	Tridecane	7.306	3400	J
11.	Unknown Alkane	7.487	830	J
12.	Unknown	7.539	460	J
13.	Unknown Cycloalkane	7.586	740	J
14.	Unknown Alkane	7.656	540	J
15. 629-59-4	Tetradecane	7.860	1700	J
16.	Unknown	7.895	540	J
17.	Unknown	8.099	440	J
18.	Unknown	9.970	8900	J
19.	Unknown	10.319	24000	J
20. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.378	20000	J
21. 57-10-3	n-Hexadecanoic acid	10.500	70000	J
22.	Unknown	11.951	290	J
23.				
24. SVOCTIC	Total SVOC TICs		250000	J
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046569
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5103 SDG#: KVM51-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	20	J	5	27	1
10727	Acetophenone	98-86-2	N.D.		26	52	1
10727	Anthracene	120-12-7	26	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		52	260	1
10727	Benzaldehyde	100-52-7	N.D.		100	260	1
10727	Benzo(a)anthracene	56-55-3	91		5	27	1
10727	Benzo(a)pyrene	50-32-8	62		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	130		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	55		5	27	1
10727	Benzo(k)fluoranthene	207-08-9	52		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	52	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	52	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		52	260	1
10727	Carbazole	86-74-8	N.D.		26	52	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	52	1
10727	4-Chloroaniline	106-47-8	N.D.		52	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	52	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	52	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	51	1
10727	2-Chlorophenol	95-57-8	N.D.		26	52	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	52	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	52	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	100		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	18	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		26	52	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	520	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	52	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	52	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	780	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		470	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	1,200		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	750		26	52	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	270	1
10727	Fluoranthene	206-44-0	170		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	52	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	780	1
10727	Hexachloroethane	67-72-1	N.D.		52	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	54		5	27	1
10727	Isophorone	78-59-1	N.D.		26	52	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046569
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5103 SDG#: KVM51-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	26	52	1
10727	4-Methylphenol	106-44-5	480	26	52	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.	26	52	1
10727	3-Nitroaniline	99-09-2	N.D.	100	260	1
10727	4-Nitroaniline	100-01-6	N.D.	100	260	1
10727	Nitrobenzene	98-95-3	N.D.	26	52	1
10727	2-Nitrophenol	88-75-5	N.D.	26	52	1
10727	4-Nitrophenol	100-02-7	N.D.	260	780	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	26	52	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	26	52	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	100	260	1
10727	Pentachlorophenol	87-86-5	N.D.	52	270	1
10727	Phenanthrene	85-01-8	87	5	27	1
10727	Phenol	108-95-2	140	26	52	1
10727	Pyrene	129-00-0	140	5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	26	52	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	26	52	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000	1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	20,000	720	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	720	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	720	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	720	2,100	5
06918	HMX	2691-41-0	N.D.	1,800	5,400	5
06918	Nitrobenzene	98-95-3	N.D.	720	2,100	5
06918	Nitroglycerin	55-63-0	N.D.	14,000	43,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	720	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,400	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,400	2,900	5
06918	PETN	78-11-5	N.D.	14,000	43,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046569
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5103 SDG#: KVM51-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		930	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		720	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	28,000		720	2,100	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,600		11.6	30.3	1
06944	Antimony	7440-36-0	N.D.		0.621	3.03	1
06935	Arsenic	7440-38-2	2.47	J	0.878	3.03	1
06946	Barium	7440-39-3	51.9		0.101	0.757	1
06947	Beryllium	7440-41-7	0.580	J	0.101	0.757	1
06949	Cadmium	7440-43-9	N.D.		0.0651	0.757	1
01650	Calcium	7440-70-2	1,850		5.04	30.3	1
06951	Chromium	7440-47-3	19.1		0.148	2.27	1
06952	Cobalt	7440-48-4	8.13		0.123	0.757	1
06953	Copper	7440-50-8	34.4		0.424	1.51	1
01654	Iron	7439-89-6	32,700		5.04	30.3	1
06955	Lead	7439-92-1	241		0.485	2.27	1
01657	Magnesium	7439-95-4	1,300		2.53	15.1	1
06958	Manganese	7439-96-5	188		0.126	0.757	1
06961	Nickel	7440-02-0	17.0		0.348	1.51	1
01662	Potassium	7440-09-7	863		25.4	75.7	1
06936	Selenium	7782-49-2	5.90		1.26	3.03	1
06966	Silver	7440-22-4	N.D.		0.182	0.757	1
01667	Sodium	7440-23-5	46.3	J	25.3	151	1
06925	Thallium	7440-28-0	1.63	J	1.14	4.54	1
06971	Vanadium	7440-62-2	35.9		0.227	0.757	1
06972	Zinc	7440-66-6	44.6		1.17	3.03	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0492	J	0.0157	0.157	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	28,500		515	521	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	36.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046569
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5103 SDG#: KVM51-03

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 14:03	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 16:36	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/20/2015 23:53	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/20/2015 23:53	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/20/2015 23:53	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/20/2015 23:53	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/20/2015 23:53	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 18:58	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:00	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519279	10/10/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5103

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046569
Sample wt/vol: 30.3 (g/mL) g Lab File ID: bi0955.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 36.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 107-92-6	Butanoic acid	4.054	16000	J
2.	Unknown	4.159	26000	J
3. 112-40-3	Dodecane	6.706	1200	J
4.	Unknown	6.956	1000	J
5. 6044-71-9	Dodecane, 6-methyl-	7.015	1000	J
6.	Unknown Alkane	7.055	1100	J
7. 1000309-17-7	Sulfurous acid, butyl decyl	7.090	1000	J
8.	Unknown	7.137	2400	J
9. 629-50-5	Tridecane	7.312	3900	J
10.	Unknown	7.493	1100	J
11.	Unknown	7.545	520	J
12.	Unknown Alkane	7.580	800	J
13. 1560-96-9	Tridecane, 2-methyl-	7.662	580	J
14. 629-59-4	Tetradecane	7.866	1800	J
15.	Unknown Alkane	7.901	540	J
16.	Unknown Alkane	8.105	720	J
17.	Unknown	9.375	29000	J
18.	Unknown	9.981	20000	J
19.	Unknown	10.331	25000	J
20. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.384	25000	J
21. 57-10-3	n-Hexadecanoic acid	10.535	1300	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.623	210	J
23. 540-08-9	9-Heptadecanone	11.881	280	J
24.	Unknown	11.986	630	J
25.				
26. SVOCTIC	Total SVOC TICs		160000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046570
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:43 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5104 SDG#: KVM51-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	15	J	6	29	1
10727	Acenaphthylene	208-96-8	11	J	6	29	1
10727	Acetophenone	98-86-2	N.D.		28	56	1
10727	Anthracene	120-12-7	18	J	6	29	1
10727	Atrazine	1912-24-9	N.D.		56	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	77		6	29	1
10727	Benzo(a)pyrene	50-32-8	61		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	86		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	36		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	43		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	56	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	56	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		56	280	1
10727	Carbazole	86-74-8	N.D.		28	56	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	56	1
10727	4-Chloroaniline	106-47-8	N.D.		56	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	56	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	56	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	56	1
10727	2-Chlorophenol	95-57-8	N.D.		28	56	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	56	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	56	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	80		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	17	J	6	29	1
10727	Dibenzofuran	132-64-9	N.D.		28	56	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	560	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	56	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	56	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	850	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		510	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	1,300		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	460		28	56	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	290	1
10727	Fluoranthene	206-44-0	110		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	56	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	850	1
10727	Hexachloroethane	67-72-1	N.D.		56	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	40		6	29	1
10727	Isophorone	78-59-1	N.D.		28	56	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046570
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:43 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5104 SDG#: KVM51-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		28	56	1
10727	4-Methylphenol	106-44-5	1,200		28	56	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		6	29	1
10727	2-Nitroaniline	88-74-4	N.D.		28	56	1
10727	3-Nitroaniline	99-09-2	220	J	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.		110	280	1
10727	Nitrobenzene	98-95-3	N.D.		28	56	1
10727	2-Nitrophenol	88-75-5	N.D.		28	56	1
10727	4-Nitrophenol	100-02-7	N.D.		280	850	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		28	56	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		28	56	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	280	1
10727	Pentachlorophenol	87-86-5	N.D.		56	290	1
10727	Phenanthrene	85-01-8	51		6	29	1
10727	Phenol	108-95-2	140		28	56	1
10727	Pyrene	129-00-0	89		6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		28	56	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		28	56	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	110,000		1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	92,000		820	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		820	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		820	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		820	2,500	5
06918	HMX	2691-41-0	N.D.		2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.		820	2,500	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		820	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,300	5
06918	PETN	78-11-5	N.D.		16,000	49,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046570
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:43 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5104 SDG#: KVM51-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,100	2,500	5
06918	Tetryl	479-45-8	N.D.		3,500	3,500	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		820	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	630,000		41,000	120,000	250
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,500		13.2	34.4	1
06944	Antimony	7440-36-0	N.D.		0.704	3.44	1
06935	Arsenic	7440-38-2	2.22	J	0.997	3.44	1
06946	Barium	7440-39-3	49.8		0.115	0.859	1
06947	Beryllium	7440-41-7	0.495	J	0.115	0.859	1
06949	Cadmium	7440-43-9	N.D.		0.0739	0.859	1
01650	Calcium	7440-70-2	1,330		5.72	34.4	1
06951	Chromium	7440-47-3	18.6		0.168	2.58	1
06952	Cobalt	7440-48-4	8.76		0.139	0.859	1
06953	Copper	7440-50-8	30.8		0.481	1.72	1
01654	Iron	7439-89-6	30,900		5.72	34.4	1
06955	Lead	7439-92-1	212		0.550	2.58	1
01657	Magnesium	7439-95-4	1,230		2.87	17.2	1
06958	Manganese	7439-96-5	155		0.143	0.859	1
06961	Nickel	7440-02-0	17.5		0.395	1.72	1
01662	Potassium	7440-09-7	805		28.9	85.9	1
06936	Selenium	7782-49-2	5.53		1.43	3.44	1
06966	Silver	7440-22-4	N.D.		0.206	0.859	1
01667	Sodium	7440-23-5	43.0	J	28.7	172	1
06925	Thallium	7440-28-0	1.37	J	1.29	5.15	1
06971	Vanadium	7440-62-2	31.9		0.258	0.859	1
06972	Zinc	7440-66-6	38.4		1.32	3.44	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0473	J	0.0170	0.170	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	36,600		558	564	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.8		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046570
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:43 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5104 SDG#: KVM51-04

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 14:24	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 17:19	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 11:02	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/20/2015 23:58	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/20/2015 23:58	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/20/2015 23:58	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/20/2015 23:58	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:08	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:02	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519279	10/10/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5104

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046570
Sample wt/vol: 30.42(g/mL) g Lab File ID: bi0956.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 41.8 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.144	12000	J
2.	513-85-9	2,3-Butanediol	3.389	13000	J
3.		Unknown	3.459	10000	J
4.	79-31-2	Propanoic acid, 2-methyl-	3.669	14000	J
5.		Unknown	3.861	12000	JB
6.		Unknown	4.287	36000	J
7.	107-92-6	Butanoic acid	4.351	44000	J
8.		Unknown Carboxylic Acid	4.386	26000	J
9.		Unknown Carboxylic Acid	4.724	9900	J
10.	112-40-3	Dodecane	6.700	1700	J
11.		Unknown	7.131	2300	J
12.	629-50-5	Tridecane	7.300	3900	J
13.		Unknown Cycloalkane	7.586	840	J
14.	629-93-6	Octadecane, 1-iodo-	7.656	640	J
15.	629-59-4	Tetradecane	7.854	2000	J
16.		Unknown Alkane	8.099	670	J
17.		Unknown	9.398	78000	J
18.	544-63-8	Tetradecanoic acid	9.602	6900	J
19.		Unknown	9.981	15000	J
20.		Unknown	10.319	16000	J
21.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.383	24000	J
22.	57-10-3	n-Hexadecanoic acid	10.518	77000	J
23.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.628	2400	J
24.	1000190-13-7	Octadec-9-enoic acid	11.159	3100	J
25.		Unknown	11.940	1300	J
26.					
27.	SVOCTIC	Total SVOC TICs		420000	J
28.					
29.					
30.					

Sample Description: TNT-PS-H-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046571
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5105 SDG#: KVM51-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	22	J	6	28	1
10727	Acenaphthylene	208-96-8	33		6	28	1
10727	Acetophenone	98-86-2	N.D.		28	56	1
10727	Anthracene	120-12-7	29		6	28	1
10727	Atrazine	1912-24-9	N.D.		56	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	100		6	28	1
10727	Benzo(a)pyrene	50-32-8	87		6	28	1
10727	Benzo(b)fluoranthene	205-99-2	130		6	28	1
10727	Benzo(g,h,i)perylene	191-24-2	66		6	28	1
10727	Benzo(k)fluoranthene	207-08-9	62		6	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	56	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	56	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		56	280	1
10727	Carbazole	86-74-8	N.D.		28	56	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	56	1
10727	4-Chloroaniline	106-47-8	N.D.		56	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	56	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	56	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	55	1
10727	2-Chlorophenol	95-57-8	N.D.		28	56	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	56	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	56	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	130		6	28	1
10727	Dibenz(a,h)anthracene	53-70-3	19	J	6	28	1
10727	Dibenzofuran	132-64-9	N.D.		28	56	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	560	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	56	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	56	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	830	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	940		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	410		28	56	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	200		6	28	1
10727	Fluorene	86-73-7	N.D.		6	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	56	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	830	1
10727	Hexachloroethane	67-72-1	N.D.		56	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	61		6	28	1
10727	Isophorone	78-59-1	N.D.		28	56	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046571
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5105 SDG#: KVM51-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	56	1
10727	4-Methylphenol	106-44-5	2,300	28	56	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	28	1
10727	2-Nitroaniline	88-74-4	N.D.	28	56	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	56	1
10727	2-Nitrophenol	88-75-5	N.D.	28	56	1
10727	4-Nitrophenol	100-02-7	N.D.	280	830	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	56	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	56	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	56	280	1
10727	Phenanthrene	85-01-8	74	6	28	1
10727	Phenol	108-95-2	260	28	56	1
10727	Pyrene	129-00-0	160	6	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	56	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	56	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,300	1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,700	720	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	720	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	720	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	720	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,400	5
06918	Nitrobenzene	98-95-3	N.D.	720	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	14,000	43,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	720	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,400	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,400	2,900	5
06918	PETN	78-11-5	N.D.	14,000	43,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046571
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5105 SDG#: KVM51-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		940	2,200	5
06918	Tetryl	479-45-8	N.D.		3,000	3,000	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		720	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	14,000		720	2,200	5
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,800		12.4	32.3	1
06944	Antimony	7440-36-0	N.D.		0.663	3.23	1
06935	Arsenic	7440-38-2	2.69	J	0.937	3.23	1
06946	Barium	7440-39-3	47.9		0.108	0.808	1
06947	Beryllium	7440-41-7	0.480	J	0.108	0.808	1
06949	Cadmium	7440-43-9	N.D.		0.0695	0.808	1
01650	Calcium	7440-70-2	1,510		5.38	32.3	1
06951	Chromium	7440-47-3	14.9		0.158	2.42	1
06952	Cobalt	7440-48-4	6.83		0.131	0.808	1
06953	Copper	7440-50-8	31.5		0.452	1.62	1
01654	Iron	7439-89-6	24,800		5.38	32.3	1
06955	Lead	7439-92-1	228		0.517	2.42	1
01657	Magnesium	7439-95-4	1,130		2.70	16.2	1
06958	Manganese	7439-96-5	186		0.134	0.808	1
06961	Nickel	7440-02-0	14.5		0.372	1.62	1
01662	Potassium	7440-09-7	814		27.1	80.8	1
06936	Selenium	7782-49-2	4.04		1.34	3.23	1
06966	Silver	7440-22-4	N.D.		0.194	0.808	1
01667	Sodium	7440-23-5	48.3	J	27.0	162	1
06925	Thallium	7440-28-0	N.D.		1.21	4.85	1
06971	Vanadium	7440-62-2	28.0		0.242	0.808	1
06972	Zinc	7440-66-6	45.4		1.24	3.23	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0473	J	0.0161	0.161	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	29,700		524	529	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.5		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046571
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:18 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5105 SDG#: KVM51-05

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 14:45	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 18:01	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 00:11	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 00:11	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 00:11	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 00:11	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:11	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:04	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519279	10/10/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5105

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046571
Sample wt/vol: 30.26(g/mL) g Lab File ID: bi0957.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 40.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 22 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.179	10000	J
2.	Unknown	3.267	12000	J
3.	Unknown	3.879	11000	JB
4.	Unknown	4.141	8300	J
5.107-92-6	Butanoic acid	4.188	9600	J
6.112-40-3	Dodecane	6.705	1400	J
7.58462-32-1	trans,trans-3-Ethylbicyclo[4	6.956	1100	J
8.	Unknown	7.055	1400	J
9.	Unknown	7.090	1100	J
10.	Unknown Alkane	7.131	2500	J
11.629-50-5	Tridecane	7.306	4600	J
12.	Unknown	7.487	1000	J
13.	Unknown	7.591	1100	J
14.	Unknown Alkane	7.656	710	J
15.629-59-4	Tetradecane	7.860	2400	J
16.	Unknown	7.895	660	J
17.	Unknown	8.104	770	J
18.	Unknown	10.302	16000	J
19.19406-51-0	p-Toluidine, 3,5-dinitro-	10.372	19000	J
20.57-10-3	n-Hexadecanoic acid	10.547	1800	J
21.	Unknown	11.881	260	J
22.	Unknown	11.980	640	J
23.				
24.SVOCTIC	Total SVOC TICs		110000	J
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046572
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:21 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5106 SDG#: KVM51-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	41		5	26	1
10727	Acetophenone	98-86-2	N.D.		25	51	1
10727	Anthracene	120-12-7	65		5	26	1
10727	Atrazine	1912-24-9	N.D.		51	250	1
10727	Benzaldehyde	100-52-7	N.D.		100	250	1
10727	Benzo(a)anthracene	56-55-3	220		5	26	1
10727	Benzo(a)pyrene	50-32-8	170		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	260		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	140		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	110		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	51	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	51	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		51	250	1
10727	Carbazole	86-74-8	N.D.		25	51	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	51	1
10727	4-Chloroaniline	106-47-8	N.D.		51	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	51	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	51	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	50	1
10727	2-Chlorophenol	95-57-8	N.D.		25	51	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	51	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	51	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	210		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	31		5	26	1
10727	Dibenzofuran	132-64-9	N.D.		25	51	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	510	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	51	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	51	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	760	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		460	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	1,200		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	620		25	51	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	130	J	100	260	1
10727	Fluoranthene	206-44-0	390		5	26	1
10727	Fluorene	86-73-7	8	J	5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	51	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	760	1
10727	Hexachloroethane	67-72-1	N.D.		51	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	120		5	26	1
10727	Isophorone	78-59-1	N.D.		25	51	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046572
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:21 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5106 SDG#: KVM51-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	25	51	1
10727	4-Methylphenol	106-44-5	2,100	25	51	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.	25	51	1
10727	3-Nitroaniline	99-09-2	300	100	250	1
10727	4-Nitroaniline	100-01-6	N.D.	100	250	1
10727	Nitrobenzene	98-95-3	N.D.	25	51	1
10727	2-Nitrophenol	88-75-5	N.D.	25	51	1
10727	4-Nitrophenol	100-02-7	N.D.	250	760	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	25	51	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	25	51	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	100	250	1
10727	Pentachlorophenol	87-86-5	N.D.	51	260	1
10727	Phenanthrene	85-01-8	240	5	26	1
10727	Phenol	108-95-2	240	25	51	1
10727	Pyrene	129-00-0	330	5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	25	51	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	25	51	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	14,000	1,100	2,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,200	700	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	700	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	700	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	700	2,100	5
06918	HMX	2691-41-0	N.D.	1,800	5,300	5
06918	Nitrobenzene	98-95-3	N.D.	700	2,100	5
06918	Nitroglycerin	55-63-0	N.D.	14,000	42,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	700	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,400	2,800	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,500	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,400	2,800	5
06918	PETN	78-11-5	N.D.	14,000	42,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046572
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:21 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5106 SDG#: KVM51-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,100	2,100	5
06918	Tetryl	479-45-8	N.D.		2,700	2,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		700	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	53,000		700	2,100	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,100		11.7	30.4	1
06944	Antimony	7440-36-0	N.D.		0.624	3.04	1
06935	Arsenic	7440-38-2	1.57	J	0.882	3.04	1
06946	Barium	7440-39-3	45.4		0.102	0.760	1
06947	Beryllium	7440-41-7	0.496	J	0.102	0.760	1
06949	Cadmium	7440-43-9	N.D.		0.0654	0.760	1
01650	Calcium	7440-70-2	1,460		5.06	30.4	1
06951	Chromium	7440-47-3	19.9		0.149	2.28	1
06952	Cobalt	7440-48-4	10.8		0.123	0.760	1
06953	Copper	7440-50-8	38.5		0.426	1.52	1
01654	Iron	7439-89-6	38,200		5.06	30.4	1
06955	Lead	7439-92-1	217		0.487	2.28	1
01657	Magnesium	7439-95-4	1,180		2.54	15.2	1
06958	Manganese	7439-96-5	180		0.126	0.760	1
06961	Nickel	7440-02-0	22.6		0.350	1.52	1
01662	Potassium	7440-09-7	875		25.6	76.0	1
06936	Selenium	7782-49-2	7.18		1.26	3.04	1
06966	Silver	7440-22-4	1.00		0.183	0.760	1
01667	Sodium	7440-23-5	48.8	J	25.4	152	1
06925	Thallium	7440-28-0	1.68	J	1.14	4.56	1
06971	Vanadium	7440-62-2	33.4		0.228	0.760	1
06972	Zinc	7440-66-6	46.9		1.17	3.04	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0484	J	0.0148	0.148	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	24,300		922	931	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	34.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046572
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:21 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5106 SDG#: KVM51-06

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 15:06	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 19:26	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 00:17	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 00:17	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 00:17	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 00:17	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 00:17	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:14	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:06	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5106

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046572
Sample wt/vol: 30.36(g/mL) g Lab File ID: bi0958.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 34.9 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.281	27000	J
2.	Unknown	4.427	84000	J
3.	Unknown	6.659	2500	J
4.112-40-3	Dodecane	6.706	3000	J
5.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.962	2500	J
6.	Unknown	7.090	3900	J
7.31295-56-4	Dodecane, 2,6,11-trimethyl-	7.137	5600	J
8.629-50-5	Tridecane	7.312	9900	J
9.	Unknown	7.364	3800	J
10.	Unknown	7.492	2400	J
11.	Unknown	7.545	450	J
12.	Unknown Cycloalkane	7.591	830	J
13.1560-96-9	Tridecane, 2-methyl-	7.661	600	J
14.629-59-4	Tetradecane	7.865	1800	J
15.	Unknown Alkane	7.900	530	J
16.	Unknown Alkane	8.104	720	J
17.	Unknown	9.363	20000	J
18.	Unknown	10.331	21000	J
19.19406-51-0	p-Toluidine, 3,5-dinitro-	10.389	32000	J
20.57-10-3	n-Hexadecanoic acid	10.564	1600	J
21.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.628	250	J
22.57-11-4	Octadecanoic acid	11.275	350	J
23.	Unknown	11.992	690	J
24.				
25.SVOCTIC	Total SVOC TICs		220000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046573
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5107 SDG#: KVM51-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	28	1
10727	Acenaphthylene	208-96-8	22	J	5	28	1
10727	Acetophenone	98-86-2	N.D.		27	54	1
10727	Anthracene	120-12-7	28		5	28	1
10727	Atrazine	1912-24-9	N.D.		54	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	100		5	28	1
10727	Benzo(a)pyrene	50-32-8	81		5	28	1
10727	Benzo(b)fluoranthene	205-99-2	130		5	28	1
10727	Benzo(g,h,i)perylene	191-24-2	56		5	28	1
10727	Benzo(k)fluoranthene	207-08-9	59		5	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	54	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	54	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		54	270	1
10727	Carbazole	86-74-8	N.D.		27	54	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	54	1
10727	4-Chloroaniline	106-47-8	N.D.		54	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	54	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	54	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	54	1
10727	2-Chlorophenol	95-57-8	N.D.		27	54	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	54	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	54	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	130		5	28	1
10727	Dibenz(a,h)anthracene	53-70-3	18	J	5	28	1
10727	Dibenzofuran	132-64-9	N.D.		27	54	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	540	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	54	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	54	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	810	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		490	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	700		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	400		27	54	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	130	J	110	280	1
10727	Fluoranthene	206-44-0	180		5	28	1
10727	Fluorene	86-73-7	8	J	5	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	54	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	810	1
10727	Hexachloroethane	67-72-1	N.D.		54	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	47		5	28	1
10727	Isophorone	78-59-1	N.D.		27	54	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046573
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5107 SDG#: KVM51-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	27	54	1
10727	4-Methylphenol	106-44-5	2,400	27	54	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	28	1
10727	2-Nitroaniline	88-74-4	N.D.	27	54	1
10727	3-Nitroaniline	99-09-2	N.D.	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.	110	270	1
10727	Nitrobenzene	98-95-3	N.D.	27	54	1
10727	2-Nitrophenol	88-75-5	N.D.	27	54	1
10727	4-Nitrophenol	100-02-7	N.D.	270	810	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	27	54	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	27	54	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	270	1
10727	Pentachlorophenol	87-86-5	N.D.	54	280	1
10727	Phenanthrene	85-01-8	89	5	28	1
10727	Phenol	108-95-2	350	27	54	1
10727	Pyrene	129-00-0	150	5	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	27	54	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	27	54	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
2,4-Dimethylphenol
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,200	1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,600	790	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	790	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	790	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	790	2,400	5
06918	HMX	2691-41-0	N.D.	2,000	5,900	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046573
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5107 SDG#: KVM51-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	Nitrobenzene	98-95-3	N.D.		790	2,400	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	48,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		790	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,000	4,000	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,200	5
06918	PETN	78-11-5	N.D.		16,000	48,000	5
06918	RDX	121-82-4	N.D.		1,000	2,400	5
06918	Tetryl	479-45-8	N.D.		3,400	3,400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		790	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	17,000		790	2,400	5
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,100		12.1	31.7	1
06944	Antimony	7440-36-0	N.D.		0.649	3.17	1
06935	Arsenic	7440-38-2	2.64	J	0.919	3.17	1
06946	Barium	7440-39-3	48.1		0.106	0.792	1
06947	Beryllium	7440-41-7	0.518	J	0.106	0.792	1
06949	Cadmium	7440-43-9	N.D.		0.0681	0.792	1
01650	Calcium	7440-70-2	1,350		5.27	31.7	1
06951	Chromium	7440-47-3	18.2		0.155	2.38	1
06952	Cobalt	7440-48-4	8.06		0.128	0.792	1
06953	Copper	7440-50-8	35.3		0.443	1.58	1
01654	Iron	7439-89-6	31,700		5.27	31.7	1
06955	Lead	7439-92-1	215		0.507	2.38	1
01657	Magnesium	7439-95-4	1,210		2.64	15.8	1
06958	Manganese	7439-96-5	165		0.131	0.792	1
06961	Nickel	7440-02-0	17.7		0.364	1.58	1
01662	Potassium	7440-09-7	946		26.6	79.2	1
06936	Selenium	7782-49-2	5.70		1.31	3.17	1
06966	Silver	7440-22-4	0.274	J	0.190	0.792	1
01667	Sodium	7440-23-5	53.4	J	26.4	158	1
06925	Thallium	7440-28-0	1.33	J	1.19	4.75	1
06971	Vanadium	7440-62-2	32.3		0.238	0.792	1
06972	Zinc	7440-66-6	49.7		1.22	3.17	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0441	J	0.0153	0.153	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	42,600		964	974	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	38.7		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046573
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5107 SDG#: KVM51-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 15:27	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 20:09	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 00:23	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 00:23	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 00:23	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 00:23	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 00:23	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:17	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:08	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046573
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:25 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5107 SDG#: KVM51-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5107

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046573
Sample wt/vol: 30.08(g/mL) g Lab File ID: bi0959.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 38.7 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 24 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.879	4600	JB
2.	Unknown	4.170	8800	J
3.	Unknown	4.287	5300	J
4.	Unknown	4.357	8500	J
5.	Unknown	4.433	16000	J
6.112-40-3	Dodecane	6.706	1400	J
7.58462-32-1	trans,trans-3-Ethylbicyclo[4	6.962	1000	J
8.	Unknown Alkane	7.015	900	J
9.	Unknown Alkane	7.055	840	J
10.	Unknown Alkane	7.090	1400	J
11.61141-72-8	Dodecane, 4,6-dimethyl-	7.137	2400	J
12.629-50-5	Tridecane	7.312	3900	J
13.	Unknown Alkane	7.364	1600	J
14.	Unknown	7.428	920	J
15.	Unknown Alkane	7.493	1000	J
16.	Unknown	7.545	590	J
17.	Unknown	7.580	1200	J
18.1560-96-9	Tridecane, 2-methyl-	7.662	880	J
19.629-59-4	Tetradecane	7.866	2600	J
20.	Unknown Alkane	7.901	760	J
21.	Unknown	10.308	11000	J
22.57-10-3	n-Hexadecanoic acid	10.558	1700	J
23.57-11-4	Octadecanoic acid	11.275	390	J
24.	Unknown	11.986	600	J
25.				
26.SVOCTIC	Total SVOC TICs		79000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046574
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:28 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5108 SDG#: KVM51-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	28	1
10727	Acenaphthylene	208-96-8	N.D.		5	28	1
10727	Acetophenone	98-86-2	N.D.		27	55	1
10727	Anthracene	120-12-7	21	J	5	28	1
10727	Atrazine	1912-24-9	N.D.		55	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	79		5	28	1
10727	Benzo(a)pyrene	50-32-8	62		5	28	1
10727	Benzo(b)fluoranthene	205-99-2	110		5	28	1
10727	Benzo(g,h,i)perylene	191-24-2	51		5	28	1
10727	Benzo(k)fluoranthene	207-08-9	40		5	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	55	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	55	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		55	270	1
10727	Carbazole	86-74-8	N.D.		27	55	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	55	1
10727	4-Chloroaniline	106-47-8	N.D.		55	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	55	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	55	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	54	1
10727	2-Chlorophenol	95-57-8	N.D.		27	55	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	55	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	55	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	91		5	28	1
10727	Dibenz(a,h)anthracene	53-70-3	26	J	5	28	1
10727	Dibenzofuran	132-64-9	N.D.		27	55	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	550	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	55	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	55	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	820	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		490	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	790		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		27	55	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	130		5	28	1
10727	Fluorene	86-73-7	N.D.		5	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	55	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	820	1
10727	Hexachloroethane	67-72-1	N.D.		55	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	41		5	28	1
10727	Isophorone	78-59-1	N.D.		27	55	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046574
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:28 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5108 SDG#: KVM51-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	27	55	1
10727	4-Methylphenol	106-44-5	1,400	27	55	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	28	1
10727	2-Nitroaniline	88-74-4	N.D.	27	55	1
10727	3-Nitroaniline	99-09-2	N.D.	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.	110	270	1
10727	Nitrobenzene	98-95-3	N.D.	27	55	1
10727	2-Nitrophenol	88-75-5	N.D.	27	55	1
10727	4-Nitrophenol	100-02-7	N.D.	270	820	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	27	55	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	27	55	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	270	1
10727	Pentachlorophenol	87-86-5	N.D.	55	280	1
10727	Phenanthrene	85-01-8	65	5	28	1
10727	Phenol	108-95-2	230	27	55	1
10727	Pyrene	129-00-0	110	5	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	27	55	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	27	55	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	9,000	1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,700	830	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	830	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	830	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	830	2,500	5
06918	HMX	2691-41-0	N.D.	2,100	6,200	5
06918	Nitrobenzene	98-95-3	N.D.	830	2,500	5
06918	Nitroglycerin	55-63-0	N.D.	17,000	50,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	830	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,700	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,100	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,700	3,300	5
06918	PETN	78-11-5	N.D.	17,000	50,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046574
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:28 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5108 SDG#: KVM51-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,100	2,500	5
06918	Tetryl	479-45-8	N.D.		3,500	3,500	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		830	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	20,000		830	2,500	5
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,200		12.2	31.7	1
06944	Antimony	7440-36-0	N.D.		0.651	3.17	1
06935	Arsenic	7440-38-2	2.55	J	0.921	3.17	1
06946	Barium	7440-39-3	56.4		0.106	0.794	1
06947	Beryllium	7440-41-7	0.571	J	0.106	0.794	1
06949	Cadmium	7440-43-9	N.D.		0.0683	0.794	1
01650	Calcium	7440-70-2	1,480		5.29	31.7	1
06951	Chromium	7440-47-3	18.8		0.156	2.38	1
06952	Cobalt	7440-48-4	11.7		0.129	0.794	1
06953	Copper	7440-50-8	37.3		0.444	1.59	1
01654	Iron	7439-89-6	31,900		5.29	31.7	1
06955	Lead	7439-92-1	239		0.508	2.38	1
01657	Magnesium	7439-95-4	1,290		2.65	15.9	1
06958	Manganese	7439-96-5	195		0.132	0.794	1
06961	Nickel	7440-02-0	17.1		0.365	1.59	1
01662	Potassium	7440-09-7	986		26.7	79.4	1
06936	Selenium	7782-49-2	5.85		1.32	3.17	1
06966	Silver	7440-22-4	N.D.		0.190	0.794	1
01667	Sodium	7440-23-5	47.4	J	26.5	159	1
06925	Thallium	7440-28-0	1.59	J	1.19	4.76	1
06971	Vanadium	7440-62-2	35.0		0.238	0.794	1
06972	Zinc	7440-66-6	50.9		1.22	3.17	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0492	J	0.0157	0.157	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	24,800		1,180	1,190	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.0		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046574
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:28 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5108 SDG#: KVM51-08

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 15:48	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 20:51	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 00:29	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 00:29	Tara L Snyder	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 00:29	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 00:29	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 00:29	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:20	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:10	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5108

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046574
Sample wt/vol: 30.45(g/mL) g Lab File ID: bi0960.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 40 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 22 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.080	2900	J
2.	79-09-4	Propanoic acid	3.255	5200	J
3.	513-85-9	2,3-Butanediol	3.441	3300	J
4.		Unknown	4.147	2800	J
5.	107-92-6	Butanoic acid	4.327	8800	J
6.		Unknown	4.386	7500	J
7.		Unknown	4.427	6800	J
8.	109-52-4	Pentanoic acid	4.823	2500	J
9.	142-62-1	Hexanoic acid	5.586	4500	J
10.		Unknown	7.131	5400	J
11.	629-50-5	Tridecane	7.306	9000	J
12.		Unknown	7.591	610	J
13.	629-59-4	Tetradecane	7.860	1800	J
14.		Unknown	7.895	580	J
15.		Unknown	8.104	730	J
16.		Unknown	8.169	650	J
17.		Unknown	9.363	12000	J
18.		Unknown	9.975	10000	J
19.		Unknown	10.308	16000	J
20.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.372	11000	J
21.	57-10-3	n-Hexadecanoic acid	10.512	920	J
22.		Unknown	11.963	340	J
23.					
24.	SVOCTIC	Total SVOC TICs		110000	J
25.					
26.					
27.					
28.					
29.					
30.					

Sample Description: TNT-PS-G-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046575
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5109 SDG#: KVM51-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		29	58	1
10727	Anthracene	120-12-7	30		6	29	1
10727	Atrazine	1912-24-9	N.D.		58	290	1
10727	Benzaldehyde	100-52-7	N.D.		120	290	1
10727	Benzo(a)anthracene	56-55-3	77		6	29	1
10727	Benzo(a)pyrene	50-32-8	64		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	94		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	45		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	46		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		29	58	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		29	58	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	290	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	290	1
10727	Caprolactam	105-60-2	N.D.		58	290	1
10727	Carbazole	86-74-8	N.D.		29	58	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		29	58	1
10727	4-Chloroaniline	106-47-8	N.D.		58	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		29	58	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		29	58	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	57	1
10727	2-Chlorophenol	95-57-8	N.D.		29	58	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		29	58	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		29	58	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	88		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	9	J	6	29	1
10727	Dibenzofuran	132-64-9	N.D.		29	58	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	580	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		29	58	1
10727	Diethylphthalate	84-66-2	N.D.		120	290	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		29	58	1
10727	Dimethylphthalate	131-11-3	N.D.		120	290	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		290	860	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		520	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	860		120	290	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		29	58	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		120	290	1
10727	Fluoranthene	206-44-0	170		6	29	1
10727	Fluorene	86-73-7	15	J	6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		29	58	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		290	860	1
10727	Hexachloroethane	67-72-1	N.D.		58	290	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	50		6	29	1
10727	Isophorone	78-59-1	N.D.		29	58	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046575
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5109 SDG#: KVM51-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		29	58	1
10727	4-Methylphenol	106-44-5	2,700		29	58	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	27	J	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.		29	58	1
10727	3-Nitroaniline	99-09-2	160	J	120	290	1
10727	4-Nitroaniline	100-01-6	N.D.		120	290	1
10727	Nitrobenzene	98-95-3	N.D.		29	58	1
10727	2-Nitrophenol	88-75-5	N.D.		29	58	1
10727	4-Nitrophenol	100-02-7	N.D.		290	860	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		29	58	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		29	58	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		120	290	1
10727	Pentachlorophenol	87-86-5	N.D.		58	290	1
10727	Phenanthrene	85-01-8	120		6	29	1
10727	Phenol	108-95-2	290		29	58	1
10727	Pyrene	129-00-0	130		6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		29	58	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		29	58	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,100		1,300	3,500	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,600		870	2,600	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		870	2,600	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		870	2,600	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		870	2,600	5
06918	HMX	2691-41-0	N.D.		2,200	6,500	5
06918	Nitrobenzene	98-95-3	N.D.		870	2,600	5
06918	Nitroglycerin	55-63-0	N.D.		17,000	52,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		870	2,600	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,700	3,500	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,200	4,300	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,700	3,500	5
06918	PETN	78-11-5	N.D.		17,000	52,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046575
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5109 SDG#: KVM51-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,100	2,600	5
06918	Tetryl	479-45-8	N.D.		3,500	3,500	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		870	2,600	5
06918	2,4,6-Trinitrotoluene	118-96-7	20,000		870	2,600	5
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,800		12.8	33.4	1
06944	Antimony	7440-36-0	N.D.		0.686	3.34	1
06935	Arsenic	7440-38-2	3.60		0.970	3.34	1
06946	Barium	7440-39-3	63.1		0.112	0.836	1
06947	Beryllium	7440-41-7	0.666	J	0.112	0.836	1
06949	Cadmium	7440-43-9	N.D.		0.0719	0.836	1
01650	Calcium	7440-70-2	1,540		5.57	33.4	1
06951	Chromium	7440-47-3	19.0		0.164	2.51	1
06952	Cobalt	7440-48-4	7.21		0.135	0.836	1
06953	Copper	7440-50-8	41.8		0.468	1.67	1
01654	Iron	7439-89-6	30,000		5.57	33.4	1
06955	Lead	7439-92-1	264		0.535	2.51	1
01657	Magnesium	7439-95-4	1,530		2.79	16.7	1
06958	Manganese	7439-96-5	225		0.139	0.836	1
06961	Nickel	7440-02-0	15.2		0.385	1.67	1
01662	Potassium	7440-09-7	1,160		28.1	83.6	1
06936	Selenium	7782-49-2	4.46		1.39	3.34	1
06966	Silver	7440-22-4	N.D.		0.201	0.836	1
01667	Sodium	7440-23-5	59.1	J	27.9	167	1
06925	Thallium	7440-28-0	1.51	J	1.25	5.02	1
06971	Vanadium	7440-62-2	36.9		0.251	0.836	1
06972	Zinc	7440-66-6	61.3		1.29	3.34	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0566	J	0.0164	0.164	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	34,400		998	1,010	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.5		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046575
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5109 SDG#: KVM51-09

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 16:10	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 21:34	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 00:34	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 00:34	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 00:34	Tara L Snyder	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 00:34	Tara L Snyder	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:23	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:12	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5109

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046575
Sample wt/vol: 30.16(g/mL) g Lab File ID: bi0961.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 42.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 21 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.331	12000	J
2.79-09-4	Propanoic acid	3.401	5400	J
3.	Unknown	3.453	5200	J
4.513-85-9	2,3-Butanediol	3.622	3600	J
5.	Unknown	3.920	4100	J
6.	Unknown	4.059	4700	J
7.107-92-6	Butanoic acid	4.351	16000	J
8.142-62-1	Hexanoic acid	4.374	4400	J
9.	Unknown	4.432	13000	J
10.109-52-4	Pentanoic acid	4.899	11000	J
11.61141-72-8	Dodecane, 4,6-dimethyl-	7.131	1600	J
12.629-50-5	Tridecane	7.306	3800	J
13.501-52-0	Hydrocinnamic acid	7.580	980	J
14.629-59-4	Tetradecane	7.860	2100	J
15.	Unknown	9.364	11000	J
16.	Unknown	9.981	11000	J
17.	Unknown	10.308	12000	J
18.19406-51-0	p-Toluidine, 3,5-dinitro-	10.372	9100	J
19.57-10-3	n-Hexadecanoic acid	10.547	920	J
20.57-11-4	Octadecanoic acid	11.281	370	J
21.	Unknown	11.975	300	J
22.				
23.SVOCTIC	Total SVOC TICs		130000	J
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046576
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:08 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5110 SDG#: KVM51-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	19	J	5	27	1
10727	Acetophenone	98-86-2	52	J	27	54	1
10727	Anthracene	120-12-7	20	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		54	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	80		5	27	1
10727	Benzo(a)pyrene	50-32-8	59		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	100		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	43		5	27	1
10727	Benzo(k)fluoranthene	207-08-9	50		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	54	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	54	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		54	270	1
10727	Carbazole	86-74-8	N.D.		27	54	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	54	1
10727	4-Chloroaniline	106-47-8	N.D.		54	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	54	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	54	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	53	1
10727	2-Chlorophenol	95-57-8	N.D.		27	54	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	54	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	54	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	93		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	23	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		27	54	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	540	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	54	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	54	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	810	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		480	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	310		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		27	54	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	270	1
10727	Fluoranthene	206-44-0	140		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	54	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	810	1
10727	Hexachloroethane	67-72-1	N.D.		54	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	44		5	27	1
10727	Isophorone	78-59-1	N.D.		27	54	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046576
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:08 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5110 SDG#: KVM51-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		27	54	1
10727	4-Methylphenol	106-44-5	2,200		27	54	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	23	J	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.		27	54	1
10727	3-Nitroaniline	99-09-2	260	J	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.		110	270	1
10727	Nitrobenzene	98-95-3	N.D.		27	54	1
10727	2-Nitrophenol	88-75-5	N.D.		27	54	1
10727	4-Nitrophenol	100-02-7	N.D.		270	810	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		27	54	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		27	54	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	270	1
10727	Pentachlorophenol	87-86-5	N.D.		54	270	1
10727	Phenanthrene	85-01-8	68		5	27	1
10727	Phenol	108-95-2	270		27	54	1
10727	Pyrene	129-00-0	110		5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		27	54	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		27	54	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
2,4-Dimethylphenol
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,700		1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,700		710	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		710	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		710	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		710	2,100	5
06918	HMX	2691-41-0	N.D.		1,800	5,400	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046576
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:08 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5110 SDG#: KVM51-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	Nitrobenzene	98-95-3	N.D.		710	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	43,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		710	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,900	5
06918	PETN	78-11-5	N.D.		14,000	43,000	5
06918	RDX	121-82-4	N.D.		930	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		710	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	12,000		710	2,100	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,100		12.3	32.0	1
06944	Antimony	7440-36-0	N.D.		0.657	3.20	1
06935	Arsenic	7440-38-2	N.D.		0.929	3.20	1
06946	Barium	7440-39-3	57.6		0.107	0.801	1
06947	Beryllium	7440-41-7	0.655	J	0.107	0.801	1
06949	Cadmium	7440-43-9	N.D.		0.344	4.00	5
	Reporting limits were raised due to interference from the sample matrix.						
01650	Calcium	7440-70-2	1,830		5.33	32.0	1
06951	Chromium	7440-47-3	26.9		0.157	2.40	1
06952	Cobalt	7440-48-4	15.8		0.130	0.801	1
06953	Copper	7440-50-8	52.0		0.449	1.60	1
01654	Iron	7439-89-6	51,700		26.7	160	5
06955	Lead	7439-92-1	234		0.513	2.40	1
01657	Magnesium	7439-95-4	1,580		2.68	16.0	1
06958	Manganese	7439-96-5	283		0.133	0.801	1
06961	Nickel	7440-02-0	32.5		0.368	1.60	1
01662	Potassium	7440-09-7	1,000		26.9	80.1	1
06936	Selenium	7782-49-2	11.8		1.33	3.20	1
06966	Silver	7440-22-4	4.07		0.192	0.801	1
01667	Sodium	7440-23-5	49.9	J	26.8	160	1
06925	Thallium	7440-28-0	2.43	J	1.20	4.81	1
06971	Vanadium	7440-62-2	42.6		0.240	0.801	1
06972	Zinc	7440-66-6	70.0		1.23	3.20	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0477	J	0.0162	0.162	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	37,700		980	990	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	38.8		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046576
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:08 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5110 SDG#: KVM51-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 16:31	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 22:16	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 07:44	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 07:47	Katlin N Cataldi	5
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/21/2015 07:47	Katlin N Cataldi	5
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 07:44	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 07:44	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 07:44	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:26	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:14	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046576
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:08 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5110 SDG#: KVM51-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009A	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5110

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046576
Sample wt/vol: 30.42(g/mL) g Lab File ID: bi0962.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 38.8 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.855	14000	JB
2.	109-52-4	Pentanoic acid	4.736	7300	J
3.		Unknown	6.210	1000	J
4.	629-50-5	Tridecane	6.700	1200	J
5.		Unknown	6.956	1100	J
6.		Unknown	7.055	1100	J
7.		Unknown	7.090	1400	J
8.	17312-82-2	Undecane, 4,6-dimethyl-	7.131	2600	J
9.	544-76-3	Hexadecane	7.306	4400	J
10.		Unknown	7.393	1600	J
11.		Unknown	7.522	590	J
12.		Unknown	7.580	1600	J
13.	1560-96-9	Tridecane, 2-methyl-	7.656	710	J
14.	6418-41-3	Tridecane, 3-methyl-	7.696	550	J
15.		Unknown	7.860	2200	J
16.	629-59-4	Tetradecane	7.895	680	J
17.		Unknown	8.104	750	J
18.	54833-48-6	Heptadecane, 2,6,10,15-tetra	8.169	760	J
19.	544-63-8	Tetradecanoic acid	9.637	15000	J
20.		Unknown	10.290	11000	J
21.	57-10-3	n-Hexadecanoic acid	10.593	3600	J
22.	57-11-4	Octadecanoic acid	11.281	640	J
23.		Unknown	11.969	340	J
24.		Unknown	15.379	5100	J
25.					
26.	SVOCTIC	Total SVOC TICs		79000	J
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046577
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5111 SDG#: KVM51-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg	ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.	6	29	1
10727	Acenaphthylene	208-96-8	38	6	29	1
10727	Acetophenone	98-86-2	N.D.	29	57	1
10727	Anthracene	120-12-7	63	6	29	1
10727	Atrazine	1912-24-9	N.D.	57	290	1
10727	Benzaldehyde	100-52-7	N.D.	110	290	1
10727	Benzo(a)anthracene	56-55-3	180	6	29	1
10727	Benzo(a)pyrene	50-32-8	130	6	29	1
10727	Benzo(b)fluoranthene	205-99-2	170	6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	82	6	29	1
10727	Benzo(k)fluoranthene	207-08-9	91	6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.	29	57	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	29	57	1
10727	Butylbenzylphthalate	85-68-7	N.D.	110	290	1
10727	Di-n-butylphthalate	84-74-2	N.D.	110	290	1
10727	Caprolactam	105-60-2	N.D.	57	290	1
10727	Carbazole	86-74-8	N.D.	29	57	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	29	57	1
10727	4-Chloroaniline	106-47-8	N.D.	57	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	29	57	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	29	57	1
10727	2-Chloronaphthalene	91-58-7	N.D.	11	57	1
10727	2-Chlorophenol	95-57-8	N.D.	29	57	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	29	57	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	29	57	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	170	6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	40	6	29	1
10727	Dibenzofuran	132-64-9	N.D.	29	57	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	170	570	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	29	57	1
10727	Diethylphthalate	84-66-2	N.D.	110	290	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	29	57	1
10727	Dimethylphthalate	131-11-3	N.D.	110	290	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	290	860	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	510	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	840	110	290	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.	29	57	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	110	290	1
10727	Fluoranthene	206-44-0	320	6	29	1
10727	Fluorene	86-73-7	N.D.	6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.	6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.	29	57	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	290	860	1
10727	Hexachloroethane	67-72-1	N.D.	57	290	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	84	6	29	1
10727	Isophorone	78-59-1	N.D.	29	57	1
10727	2-Methylnaphthalene	91-57-6	N.D.	6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046577
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5111 SDG#: KVM51-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	29	57	1
10727	4-Methylphenol	106-44-5	4,500	29	57	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	21 J	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.	29	57	1
10727	3-Nitroaniline	99-09-2	290	110	290	1
10727	4-Nitroaniline	100-01-6	N.D.	110	290	1
10727	Nitrobenzene	98-95-3	N.D.	29	57	1
10727	2-Nitrophenol	88-75-5	N.D.	29	57	1
10727	4-Nitrophenol	100-02-7	N.D.	290	860	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	29	57	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	29	57	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	290	1
10727	Pentachlorophenol	87-86-5	N.D.	57	290	1
10727	Phenanthrene	85-01-8	150	6	29	1
10727	Phenol	108-95-2	320	29	57	1
10727	Pyrene	129-00-0	250	6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	29	57	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	29	57	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives SW-846 8330			**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,200	1,200	3,200	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,700	790	2,400	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	790	2,400	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	790	2,400	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	790	2,400	5
06918	HMX	2691-41-0	N.D.	2,000	5,900	5
06918	Nitrobenzene	98-95-3	N.D.	790	2,400	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	47,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	790	2,400	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,200	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	3,900	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,200	5
06918	PETN	78-11-5	N.D.	16,000	47,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046577
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5111 SDG#: KVM51-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,000	2,400	5
06918	Tetryl	479-45-8	N.D.		1,300	3,200	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		790	2,400	5
06918	2,4,6-Trinitrotoluene	118-96-7	18,000		790	2,400	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,500		13.0	33.9	1
06944	Antimony	7440-36-0	N.D.		0.694	3.39	1
06935	Arsenic	7440-38-2	2.87	J	0.982	3.39	1
06946	Barium	7440-39-3	71.6		0.113	0.847	1
06947	Beryllium	7440-41-7	0.674	J	0.113	0.847	1
06949	Cadmium	7440-43-9	N.D.		0.0728	0.847	1
01650	Calcium	7440-70-2	1,680		5.64	33.9	1
06951	Chromium	7440-47-3	20.5		0.166	2.54	1
06952	Cobalt	7440-48-4	8.02		0.137	0.847	1
06953	Copper	7440-50-8	47.9		0.474	1.69	1
01654	Iron	7439-89-6	33,500		5.64	33.9	1
06955	Lead	7439-92-1	283		0.542	2.54	1
01657	Magnesium	7439-95-4	1,620		2.83	16.9	1
06958	Manganese	7439-96-5	261		0.141	0.847	1
06961	Nickel	7440-02-0	16.8		0.389	1.69	1
01662	Potassium	7440-09-7	1,110		28.4	84.7	1
06936	Selenium	7782-49-2	5.70		1.41	3.39	1
06966	Silver	7440-22-4	N.D.		0.203	0.847	1
01667	Sodium	7440-23-5	49.3	J	28.3	169	1
06925	Thallium	7440-28-0	1.79	J	1.27	5.08	1
06971	Vanadium	7440-62-2	38.6		0.254	0.847	1
06972	Zinc	7440-66-6	74.1		1.30	3.39	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0645	J	0.0168	0.168	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	39,200		978	986	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.1		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046577
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:12 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5111 SDG#: KVM51-11

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 16:52	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 22:59	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 07:50	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 07:50	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 07:50	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 07:50	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 07:50	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:29	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:16	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5111

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046577
Sample wt/vol: 30.23(g/mL) g Lab File ID: bi0963.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 42.1 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.179	10000	J
2.79-31-2	Propanoic acid, 2-methyl-	3.686	13000	J
3.	Unknown	3.867	9400	JB
4.	Unknown	4.007	7600	J
5.107-92-6	Butanoic acid	4.164	22000	J
6.	Unknown	4.269	12000	J
7.	Unknown	4.426	6500	J
8.	Unknown	4.566	6300	J
9.	Unknown	4.782	11000	J
10.2958-76-1	Naphthalene, decahydro-2-met	6.210	690	J
11.	Unknown	7.055	700	J
12.	Unknown	7.084	950	J
13.61141-72-8	Dodecane, 4,6-dimethyl-	7.131	1200	J
14.629-50-5	Tridecane	7.300	3100	J
15.	Unknown	7.580	1500	J
16.1560-96-9	Tridecane, 2-methyl-	7.656	780	J
17.	Unknown	7.854	2700	J
18.	Unknown	9.381	20000	J
19.	Unknown	9.981	7800	J
20.	Unknown	10.308	11000	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	10.378	10000	J
22.57-10-3	n-Hexadecanoic acid	10.552	2600	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.622	490	J
24.	Unknown	11.963	320	J
25.				
26.SVOCTIC	Total SVOC TICs		160000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046578
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5112 SDG#: KVM51-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	30	1
10727	Acenaphthylene	208-96-8	22	J	6	30	1
10727	Acetophenone	98-86-2	56	J	29	59	1
10727	Anthracene	120-12-7	25	J	6	30	1
10727	Atrazine	1912-24-9	N.D.		59	290	1
10727	Benzaldehyde	100-52-7	N.D.		120	290	1
10727	Benzo(a)anthracene	56-55-3	85		6	30	1
10727	Benzo(a)pyrene	50-32-8	62		6	30	1
10727	Benzo(b)fluoranthene	205-99-2	110		6	30	1
10727	Benzo(g,h,i)perylene	191-24-2	46		6	30	1
10727	Benzo(k)fluoranthene	207-08-9	51		6	30	1
10727	1,1'-Biphenyl	92-52-4	N.D.		29	59	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		29	59	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	290	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	290	1
10727	Caprolactam	105-60-2	N.D.		59	290	1
10727	Carbazole	86-74-8	N.D.		29	59	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		29	59	1
10727	4-Chloroaniline	106-47-8	N.D.		59	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		29	59	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		29	59	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	58	1
10727	2-Chlorophenol	95-57-8	N.D.		29	59	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		29	59	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		29	59	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	97		6	30	1
10727	Dibenz(a,h)anthracene	53-70-3	23	J	6	30	1
10727	Dibenzofuran	132-64-9	N.D.		29	59	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		180	590	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		29	59	1
10727	Diethylphthalate	84-66-2	N.D.		120	290	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		29	59	1
10727	Dimethylphthalate	131-11-3	N.D.		120	290	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		290	880	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		530	1,800	1
10727	2,4-Dinitrotoluene	121-14-2	540		120	290	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		29	59	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		120	300	1
10727	Fluoranthene	206-44-0	140		6	30	1
10727	Fluorene	86-73-7	N.D.		6	30	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	30	1
10727	Hexachlorobutadiene	87-68-3	N.D.		29	59	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		290	880	1
10727	Hexachloroethane	67-72-1	N.D.		59	290	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	51		6	30	1
10727	Isophorone	78-59-1	N.D.		29	59	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	30	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046578
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5112 SDG#: KVM51-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		29	59	1
10727	4-Methylphenol	106-44-5	3,900		29	59	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	27	J	6	30	1
10727	2-Nitroaniline	88-74-4	N.D.		29	59	1
10727	3-Nitroaniline	99-09-2	200	J	120	290	1
10727	4-Nitroaniline	100-01-6	N.D.		120	290	1
10727	Nitrobenzene	98-95-3	N.D.		29	59	1
10727	2-Nitrophenol	88-75-5	N.D.		29	59	1
10727	4-Nitrophenol	100-02-7	N.D.		290	880	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		29	59	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		29	59	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		120	290	1
10727	Pentachlorophenol	87-86-5	N.D.		59	300	1
10727	Phenanthrene	85-01-8	73		6	30	1
10727	Phenol	108-95-2	390		29	59	1
10727	Pyrene	129-00-0	110		6	30	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		29	59	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		29	59	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,400		1,300	3,400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,000		850	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		850	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		850	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		850	2,500	5
06918	HMX	2691-41-0	N.D.		2,100	6,400	5
06918	Nitrobenzene	98-95-3	N.D.		850	2,500	5
06918	Nitroglycerin	55-63-0	N.D.		17,000	51,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		850	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,700	3,400	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,100	4,200	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,700	3,400	5
06918	PETN	78-11-5	N.D.		17,000	51,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046578
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5112 SDG#: KVM51-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,100	2,500	5
06918	Tetryl	479-45-8	N.D.		1,400	3,400	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		850	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	15,000		850	2,500	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	22,900		13.0	33.9	1
06944	Antimony	7440-36-0	N.D.		0.695	3.39	1
06935	Arsenic	7440-38-2	3.71		0.983	3.39	1
06946	Barium	7440-39-3	77.5		0.114	0.847	1
06947	Beryllium	7440-41-7	0.796	J	0.114	0.847	1
06949	Cadmium	7440-43-9	N.D.		0.0729	0.847	1
01650	Calcium	7440-70-2	1,590		5.64	33.9	1
06951	Chromium	7440-47-3	20.8		0.166	2.54	1
06952	Cobalt	7440-48-4	7.86		0.137	0.847	1
06953	Copper	7440-50-8	43.4		0.474	1.69	1
01654	Iron	7439-89-6	33,400		5.64	33.9	1
06955	Lead	7439-92-1	300		0.542	2.54	1
01657	Magnesium	7439-95-4	1,660		2.83	16.9	1
06958	Manganese	7439-96-5	244		0.141	0.847	1
06961	Nickel	7440-02-0	16.4		0.390	1.69	1
01662	Potassium	7440-09-7	1,230		28.5	84.7	1
06936	Selenium	7782-49-2	5.70		1.41	3.39	1
06966	Silver	7440-22-4	N.D.		0.203	0.847	1
01667	Sodium	7440-23-5	69.9	J	28.3	169	1
06925	Thallium	7440-28-0	1.64	J	1.27	5.08	1
06971	Vanadium	7440-62-2	40.9		0.254	0.847	1
06972	Zinc	7440-66-6	68.6		1.30	3.39	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0575	J	0.0169	0.169	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	43,200		1,170	1,190	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	43.8		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046578
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 11:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5112 SDG#: KVM51-12

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 17:13	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/02/2015 23:41	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 07:56	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 07:56	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 07:56	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 07:56	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:33	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:22	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5112

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046578
Sample wt/vol: 30.39(g/mL) g Lab File ID: bi0964.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 43.8 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 21 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.763-93-9	3-Hexen-2-one	3.325	2200	J
2.79-09-4	Propanoic acid	3.395	2100	J
3.	Unknown	3.739	2800	JB
4.	Unknown	3.908	2200	J
5.107-92-6	Butanoic acid	4.304	3600	J
6.	Unknown	4.351	4200	J
7.	Unknown	4.409	6000	J
8.	Unknown	4.549	2100	J
9.	Unknown	4.846	2700	J
10.	Unknown	7.090	920	J
11.	Unknown	7.131	1500	J
12.544-76-3	Hexadecane	7.306	3400	J
13.	Unknown	7.341	920	J
14.	Unknown	7.591	1600	J
15.17301-26-7	Undecane, 2,9-dimethyl-	7.656	1100	J
16.629-59-4	Tetradecane	7.860	2400	J
17.	Unknown	8.151	1000	J
18.	Unknown	10.296	8500	J
19.57-10-3	n-Hexadecanoic acid	10.552	1200	J
20.57-11-4	Octadecanoic acid	11.287	350	J
21.	Unknown	11.986	380	J
22.				
23.SVOCTIC	Total SVOC TICs		51000	J
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Description: TNT-PS-D-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046579
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5113 SDG#: KVM51-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	28	1
10727	Acenaphthylene	208-96-8	16	J	5	28	1
10727	Acetophenone	98-86-2	N.D.		27	54	1
10727	Anthracene	120-12-7	12	J	5	28	1
10727	Atrazine	1912-24-9	N.D.		54	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	59		5	28	1
10727	Benzo(a)pyrene	50-32-8	44		5	28	1
10727	Benzo(b)fluoranthene	205-99-2	82		5	28	1
10727	Benzo(g,h,i)perylene	191-24-2	36		5	28	1
10727	Benzo(k)fluoranthene	207-08-9	31		5	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	54	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	54	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		54	270	1
10727	Carbazole	86-74-8	N.D.		27	54	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	54	1
10727	4-Chloroaniline	106-47-8	N.D.		54	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	54	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	54	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	54	1
10727	2-Chlorophenol	95-57-8	N.D.		27	54	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	54	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	54	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	69		5	28	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		5	28	1
10727	Dibenzofuran	132-64-9	N.D.		27	54	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	540	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	54	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	54	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	810	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		490	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	980		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		27	54	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	100		5	28	1
10727	Fluorene	86-73-7	N.D.		5	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	54	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	810	1
10727	Hexachloroethane	67-72-1	N.D.		54	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	36		5	28	1
10727	Isophorone	78-59-1	N.D.		27	54	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046579
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:05 by SL

Submitted: 09/14/2015 20:45
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Hercules Incorporated
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PO Box 2219
Columbus OH 43016-0381

K5113 SDG#: KVM51-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		27	54	1
10727	4-Methylphenol	106-44-5	970		27	54	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	24	J	5	28	1
10727	2-Nitroaniline	88-74-4	N.D.		27	54	1
10727	3-Nitroaniline	99-09-2	250	J	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.		110	270	1
10727	Nitrobenzene	98-95-3	N.D.		27	54	1
10727	2-Nitrophenol	88-75-5	N.D.		27	54	1
10727	4-Nitrophenol	100-02-7	N.D.		270	810	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		27	54	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		27	54	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	270	1
10727	Pentachlorophenol	87-86-5	N.D.		54	280	1
10727	Phenanthrene	85-01-8	59		5	28	1
10727	Phenol	108-95-2	250		27	54	1
10727	Pyrene	129-00-0	N.D.		5	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		27	54	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		27	54	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
2,4-Dimethylphenol
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,900	1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	19,000	730	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	730	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	730	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	730	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046579
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5113 SDG#: KVM51-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	Nitrobenzene	98-95-3	N.D.		730	2,200	5
06918	Nitroglycerin	55-63-0	N.D.		15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		730	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,500	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,800	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,500	2,900	5
06918	PETN	78-11-5	N.D.		15,000	44,000	5
06918	RDX	121-82-4	N.D.		950	2,200	5
06918	Tetryl	479-45-8	N.D.		1,200	2,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		730	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	13,000		730	2,200	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,000		11.9	31.0	1
06944	Antimony	7440-36-0	N.D.		0.635	3.10	1
06935	Arsenic	7440-38-2	2.55	J	0.898	3.10	1
06946	Barium	7440-39-3	56.8		0.104	0.774	1
06947	Beryllium	7440-41-7	0.641	J	0.104	0.774	1
06949	Cadmium	7440-43-9	N.D.		0.0666	0.774	1
01650	Calcium	7440-70-2	1,210		5.16	31.0	1
06951	Chromium	7440-47-3	20.4		0.152	2.32	1
06952	Cobalt	7440-48-4	9.88		0.125	0.774	1
06953	Copper	7440-50-8	39.3		0.434	1.55	1
01654	Iron	7439-89-6	36,300		5.16	31.0	1
06955	Lead	7439-92-1	206		0.496	2.32	1
01657	Magnesium	7439-95-4	1,370		2.59	15.5	1
06958	Manganese	7439-96-5	228		0.129	0.774	1
06961	Nickel	7440-02-0	20.0		0.356	1.55	1
01662	Potassium	7440-09-7	942		26.0	77.4	1
06936	Selenium	7782-49-2	6.61		1.29	3.10	1
06966	Silver	7440-22-4	0.818		0.186	0.774	1
01667	Sodium	7440-23-5	41.8	J	25.9	155	1
06925	Thallium	7440-28-0	1.75	J	1.16	4.65	1
06971	Vanadium	7440-62-2	38.2		0.232	0.774	1
06972	Zinc	7440-66-6	48.5		1.19	3.10	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0448	J	0.0159	0.159	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	38,400		1,130	1,140	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	38.5		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046579
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5113 SDG#: KVM51-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 17:34	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 00:24	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:02	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 08:02	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:02	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:02	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:02	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:36	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 09:41	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046579
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5113 SDG#: KVM51-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5113

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046579
Sample wt/vol: 30.03(g/mL) g Lab File ID: bi0965.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 38.5 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 20 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.809	120000	J
2.		Unknown	4.059	8500	JB
3.		Unknown	4.188	6200	J
4.	107-92-6	Butanoic acid	4.316	4400	J
5.	109-52-4	Pentanoic acid	4.945	15000	J
6.		Unknown	7.090	950	J
7.		Unknown	7.131	2100	J
8.	629-50-5	Tridecane	7.306	3700	J
9.		Unknown	7.591	830	J
10.	1560-96-9	Tridecane, 2-methyl-	7.656	620	J
11.	544-76-3	Hexadecane	7.860	2000	J
12.		Unknown	8.104	580	J
13.		Unknown	8.168	580	J
14.		Unknown	9.375	15000	J
15.		Unknown	9.987	11000	J
16.		Unknown	10.308	10000	J
17.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.378	8200	J
18.	57-10-3	n-Hexadecanoic acid	10.529	64000	J
19.	57-11-4	Octadecanoic acid	11.293	250	J
20.		Unknown	12.004	250	J
21.					
22.	SVOCTIC	Total SVOC TICs		280000	J
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046580
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:10 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5114 SDG#: KVM51-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	28	1
10727	Acenaphthylene	208-96-8	N.D.		5	28	1
10727	Acetophenone	98-86-2	N.D.		27	54	1
10727	Anthracene	120-12-7	16	J	5	28	1
10727	Atrazine	1912-24-9	N.D.		54	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	69		5	28	1
10727	Benzo(a)pyrene	50-32-8	51		5	28	1
10727	Benzo(b)fluoranthene	205-99-2	91		5	28	1
10727	Benzo(g,h,i)perylene	191-24-2	43		5	28	1
10727	Benzo(k)fluoranthene	207-08-9	35		5	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	54	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	54	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		54	270	1
10727	Carbazole	86-74-8	N.D.		27	54	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	54	1
10727	4-Chloroaniline	106-47-8	N.D.		54	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	54	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	54	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	54	1
10727	2-Chlorophenol	95-57-8	N.D.		27	54	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	54	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	54	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	82		5	28	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		5	28	1
10727	Dibenzofuran	132-64-9	N.D.		27	54	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	540	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	54	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	54	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	820	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		490	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	1,100		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		27	54	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	130		5	28	1
10727	Fluorene	86-73-7	N.D.		5	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	54	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	820	1
10727	Hexachloroethane	67-72-1	N.D.		54	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	43		5	28	1
10727	Isophorone	78-59-1	N.D.		27	54	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046580
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:10 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5114 SDG#: KVM51-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		27	54	1
10727	4-Methylphenol	106-44-5	830		27	54	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	22	J	5	28	1
10727	2-Nitroaniline	88-74-4	N.D.		27	54	1
10727	3-Nitroaniline	99-09-2	170	J	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.		110	270	1
10727	Nitrobenzene	98-95-3	N.D.		27	54	1
10727	2-Nitrophenol	88-75-5	N.D.		27	54	1
10727	4-Nitrophenol	100-02-7	N.D.		270	820	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		27	54	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		27	54	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	270	1
10727	Pentachlorophenol	87-86-5	N.D.		54	280	1
10727	Phenanthrene	85-01-8	65		5	28	1
10727	Phenol	108-95-2	190		27	54	1
10727	Pyrene	129-00-0	100		5	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		27	54	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		27	54	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	13,000		1,000	2,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	14,000		690	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		690	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		690	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		690	2,100	5
06918	HMX	2691-41-0	N.D.		1,700	5,200	5
06918	Nitrobenzene	98-95-3	N.D.		690	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		690	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,700	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,700	5
06918	PETN	78-11-5	N.D.		14,000	41,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046580
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:10 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5114 SDG#: KVM51-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		890	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		820	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	370,000		34,000	100,000	250
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,600		12.0	31.3	1
06944	Antimony	7440-36-0	0.816	J	0.641	3.13	1
06935	Arsenic	7440-38-2	1.43	J	0.907	3.13	1
06946	Barium	7440-39-3	78.5		0.105	0.782	1
06947	Beryllium	7440-41-7	0.683	J	0.105	0.782	1
06949	Cadmium	7440-43-9	N.D.		0.0672	0.782	1
01650	Calcium	7440-70-2	1,020		5.21	31.3	1
06951	Chromium	7440-47-3	22.5		0.153	2.35	1
06952	Cobalt	7440-48-4	12.1		0.127	0.782	1
06953	Copper	7440-50-8	37.8		0.438	1.56	1
01654	Iron	7439-89-6	42,800		26.0	156	5
06955	Lead	7439-92-1	220		0.500	2.35	1
01657	Magnesium	7439-95-4	1,390		2.61	15.6	1
06958	Manganese	7439-96-5	264		0.130	0.782	1
06961	Nickel	7440-02-0	23.7		0.360	1.56	1
01662	Potassium	7440-09-7	844		26.3	78.2	1
06936	Selenium	7782-49-2	8.77		1.30	3.13	1
06966	Silver	7440-22-4	2.15		0.188	0.782	1
01667	Sodium	7440-23-5	35.9	J	26.1	156	1
06925	Thallium	7440-28-0	1.73	J	1.17	4.69	1
06971	Vanadium	7440-62-2	38.6		0.235	0.782	1
06972	Zinc	7440-66-6	56.7		1.20	3.13	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0404	J	0.0153	0.153	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	24,800		1,160	1,170	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.1		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046580
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:10 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5114 SDG#: KVM51-14

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 17:55	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 01:06	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 18:49	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:08	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 08:08	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/21/2015 08:11	Katlin N Cataldi	5
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:08	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:08	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:08	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:45	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:24	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5114

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046580
Sample wt/vol: 30.21(g/mL) g Lab File ID: bi0966.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 39.1 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 22 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.739	51000	J
2.	Unknown	4.024	2300	JB
3.107-92-6	Butanoic acid	4.228	8300	J
4.109-52-4	Pentanoic acid	4.893	4800	J
5.	Unknown	7.090	940	J
6.61141-72-8	Dodecane, 4,6-dimethyl-	7.131	1800	J
7.629-50-5	Tridecane	7.306	3100	J
8.	Unknown	7.591	910	J
9.13187-99-0	2-Bromo dodecane	7.656	650	J
10.629-59-4	Tetradecane	7.860	2100	J
11.	Unknown	7.900	610	J
12.	Unknown	8.104	750	J
13.54833-48-6	Heptadecane, 2,6,10,15-tetra	8.169	710	J
14.	Unknown	9.375	17000	J
15.	Unknown	9.981	10000	J
16.	Unknown	10.313	13000	J
17.19406-51-0	p-Toluidine, 3,5-dinitro-	10.383	11000	J
18.57-10-3	n-Hexadecanoic acid	10.523	54000	J
19.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.622	220	J
20.57-11-4	Octadecanoic acid	11.281	290	J
21.	Unknown	11.922	360	J
22.	Unknown	11.998	360	J
23.				
24.SVOCTIC	Total SVOC TICs		180000	J
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046581
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5115 SDG#: KVM51-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	N.D.		5	26	1
10727	Acetophenone	98-86-2	N.D.		26	51	1
10727	Anthracene	120-12-7	22	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		51	260	1
10727	Benzaldehyde	100-52-7	N.D.		100	260	1
10727	Benzo(a)anthracene	56-55-3	79		5	26	1
10727	Benzo(a)pyrene	50-32-8	68		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	120		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	58		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	42		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	51	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	51	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		51	260	1
10727	Carbazole	86-74-8	N.D.		26	51	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	51	1
10727	4-Chloroaniline	106-47-8	N.D.		51	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	51	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	51	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	51	1
10727	2-Chlorophenol	95-57-8	N.D.		26	51	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	51	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	51	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	21	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		26	51	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	510	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	51	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	51	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	770	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		460	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	690		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		26	51	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	100	J	100	260	1
10727	Fluoranthene	206-44-0	160		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	51	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	770	1
10727	Hexachloroethane	67-72-1	N.D.		51	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	51		5	26	1
10727	Isophorone	78-59-1	N.D.		26	51	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046581
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5115 SDG#: KVM51-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		26	51	1
10727	4-Methylphenol	106-44-5	790		26	51	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	22	J	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.		26	51	1
10727	3-Nitroaniline	99-09-2	130	J	100	260	1
10727	4-Nitroaniline	100-01-6	N.D.		100	260	1
10727	Nitrobenzene	98-95-3	N.D.		26	51	1
10727	2-Nitrophenol	88-75-5	N.D.		26	51	1
10727	4-Nitrophenol	100-02-7	N.D.		260	770	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		26	51	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		26	51	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	260	1
10727	Pentachlorophenol	87-86-5	N.D.		51	260	1
10727	Phenanthrene	85-01-8	82		5	26	1
10727	Phenol	108-95-2	220		26	51	1
10727	Pyrene	129-00-0	130		5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		26	51	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		26	51	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
2,4-Dimethylphenol
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,900		1,000	2,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,800		680	2,000	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		680	2,000	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		680	2,000	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		680	2,000	5
06918	HMX	2691-41-0	N.D.		1,700	5,100	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046581
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5115 SDG#: KVM51-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	Nitrobenzene	98-95-3	N.D.		680	2,000	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		680	2,000	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,700	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,700	5
06918	PETN	78-11-5	N.D.		14,000	41,000	5
06918	RDX	121-82-4	N.D.		890	2,000	5
06918	Tetryl	479-45-8	N.D.		1,100	2,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		680	2,000	5
06918	2,4,6-Trinitrotoluene	118-96-7	14,000		680	2,000	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,800		11.4	29.7	1
06944	Antimony	7440-36-0	N.D.		0.608	2.97	1
06935	Arsenic	7440-38-2	2.55	J	0.861	2.97	1
06946	Barium	7440-39-3	57.2		0.0994	0.742	1
06947	Beryllium	7440-41-7	0.608	J	0.0994	0.742	1
06949	Cadmium	7440-43-9	N.D.		0.0638	0.742	1
01650	Calcium	7440-70-2	1,220		4.94	29.7	1
06951	Chromium	7440-47-3	18.7		0.145	2.23	1
06952	Cobalt	7440-48-4	8.97		0.120	0.742	1
06953	Copper	7440-50-8	36.7		0.415	1.48	1
01654	Iron	7439-89-6	32,600		4.94	29.7	1
06955	Lead	7439-92-1	201		0.475	2.23	1
01657	Magnesium	7439-95-4	1,310		2.48	14.8	1
06958	Manganese	7439-96-5	231		0.123	0.742	1
06961	Nickel	7440-02-0	17.6		0.341	1.48	1
01662	Potassium	7440-09-7	906		24.9	74.2	1
06936	Selenium	7782-49-2	6.09		1.23	2.97	1
06966	Silver	7440-22-4	0.444	J	0.178	0.742	1
01667	Sodium	7440-23-5	46.5	J	24.8	148	1
06925	Thallium	7440-28-0	1.76	J	1.11	4.45	1
06971	Vanadium	7440-62-2	34.5		0.223	0.742	1
06972	Zinc	7440-66-6	50.3		1.14	2.97	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0413	J	0.0150	0.150	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	28,700		1,070	1,080	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	35.2		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046581
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5115 SDG#: KVM51-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 18:16	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 01:49	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:20	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 08:20	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:20	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:20	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:20	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:48	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:26	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046581
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:15 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5115 SDG#: KVM51-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5115

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046581
Sample wt/vol: 30.19(g/mL) g Lab File ID: bi0967.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 35.2 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 18 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.809	270000	J
2.	Unknown	4.065	14000	JB
3.107-92-6	Butanoic acid	4.234	22000	J
4.109-52-4	Pentanoic acid	4.940	28000	J
5.1000152-47-3	trans-Decalin, 2-methyl-	6.216	1200	J
6.	Unknown	7.137	2400	J
7.629-50-5	Tridecane	7.312	5800	J
8.	Unknown	7.364	1400	J
9.	Unknown	7.580	630	J
10.629-59-4	Tetradecane	7.866	1800	J
11.	Unknown	8.157	680	J
12.	Unknown	9.976	6400	J
13.	Unknown	10.308	9600	J
14.19406-51-0	p-Toluidine, 3,5-dinitro-	10.378	7200	J
15.57-10-3	n-Hexadecanoic acid	10.541	470	J
16.57-11-4	Octadecanoic acid	11.304	240	J
17.	Unknown	11.940	320	J
18.	Unknown	12.027	370	J
19.				
20.SVOCTIC	Total SVOC TICs		370000	J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046582
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5116 SDG#: KVM51-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	23	J	5	26	1
10727	Acetophenone	98-86-2	N.D.		26	52	1
10727	Anthracene	120-12-7	22	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		52	260	1
10727	Benzaldehyde	100-52-7	N.D.		100	260	1
10727	Benzo(a)anthracene	56-55-3	85		5	26	1
10727	Benzo(a)pyrene	50-32-8	69		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	110		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	51		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	48		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	52	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	52	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		52	260	1
10727	Carbazole	86-74-8	N.D.		26	52	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	52	1
10727	4-Chloroaniline	106-47-8	N.D.		52	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	52	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	52	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	51	1
10727	2-Chlorophenol	95-57-8	N.D.		26	52	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	52	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	52	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	96		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		5	26	1
10727	Dibenzofuran	132-64-9	N.D.		26	52	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	520	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	52	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	52	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	780	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		470	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	490		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		26	52	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	100	J	100	260	1
10727	Fluoranthene	206-44-0	140		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	52	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	780	1
10727	Hexachloroethane	67-72-1	N.D.		52	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	48		5	26	1
10727	Isophorone	78-59-1	N.D.		26	52	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046582
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5116 SDG#: KVM51-16

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	26	52	1
10727	4-Methylphenol	106-44-5	510	26	52	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.	26	52	1
10727	3-Nitroaniline	99-09-2	N.D.	100	260	1
10727	4-Nitroaniline	100-01-6	N.D.	100	260	1
10727	Nitrobenzene	98-95-3	N.D.	26	52	1
10727	2-Nitrophenol	88-75-5	N.D.	26	52	1
10727	4-Nitrophenol	100-02-7	N.D.	260	780	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	26	52	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	26	52	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	100	260	1
10727	Pentachlorophenol	87-86-5	N.D.	52	260	1
10727	Phenanthrene	85-01-8	70	5	26	1
10727	Phenol	108-95-2	220	26	52	1
10727	Pyrene	129-00-0	110	5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	26	52	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	26	52	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
2,4-Dimethylphenol
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,800	1,000	2,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,500	690	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	690	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	690	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	690	2,100	5
06918	HMX	2691-41-0	N.D.	1,700	5,100	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046582
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5116 SDG#: KVM51-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	Nitrobenzene	98-95-3	N.D.		690	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		690	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,700	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,400	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,700	5
06918	PETN	78-11-5	N.D.		14,000	41,000	5
06918	RDX	121-82-4	N.D.		890	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,700	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		690	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	14,000		690	2,100	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,600		11.6	30.3	1
06944	Antimony	7440-36-0	N.D.		0.622	3.03	1
06935	Arsenic	7440-38-2	1.44	J	0.880	3.03	1
06946	Barium	7440-39-3	43.9		0.102	0.758	1
06947	Beryllium	7440-41-7	0.551	J	0.102	0.758	1
06949	Cadmium	7440-43-9	N.D.		0.0652	0.758	1
01650	Calcium	7440-70-2	1,080		5.05	30.3	1
06951	Chromium	7440-47-3	20.3		0.149	2.28	1
06952	Cobalt	7440-48-4	9.67		0.123	0.758	1
06953	Copper	7440-50-8	35.3		0.425	1.52	1
01654	Iron	7439-89-6	38,000		5.05	30.3	1
06955	Lead	7439-92-1	175		0.485	2.28	1
01657	Magnesium	7439-95-4	1,120		2.53	15.2	1
06958	Manganese	7439-96-5	200		0.126	0.758	1
06961	Nickel	7440-02-0	20.2		0.349	1.52	1
01662	Potassium	7440-09-7	758		25.5	75.8	1
06936	Selenium	7782-49-2	7.42		1.26	3.03	1
06966	Silver	7440-22-4	1.13		0.182	0.758	1
01667	Sodium	7440-23-5	33.0	J	25.3	152	1
06925	Thallium	7440-28-0	1.91	J	1.14	4.55	1
06971	Vanadium	7440-62-2	38.3		0.228	0.758	1
06972	Zinc	7440-66-6	42.2		1.17	3.03	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0387	J	0.0151	0.151	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	27,700		872	880	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	36.0		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046582
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5116 SDG#: KVM51-16

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 18:37	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 03:14	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:26	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 08:26	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:26	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:26	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:26	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:51	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:28	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046582
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:20 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5116 SDG#: KVM51-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5116

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046582
Sample wt/vol: 30.14(g/mL) g Lab File ID: bi0968.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 36 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 20 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.751	140000	J
2.	Unknown	4.030	7500	JB
3.	Unknown	4.205	8600	J
4.109-52-4	Pentanoic acid	4.916	17000	J
5.1000152-47-3	trans-Decalin, 2-methyl-	6.216	960	J
6.112-40-3	Dodecane	6.706	1800	J
7.	Unknown	7.015	900	J
8.	Unknown	7.090	1200	J
9.	Unknown	7.137	2000	J
10.629-50-5	Tridecane	7.312	5100	J
11.	Unknown	7.364	1600	J
12.	Unknown	7.580	590	J
13.629-59-4	Tetradecane	7.866	1700	J
14.	Unknown	8.157	650	J
15.	Unknown	10.302	7800	J
16.19406-51-0	p-Toluidine, 3,5-dinitro-	10.378	7700	J
17.57-10-3	n-Hexadecanoic acid	10.541	76000	J
18.57-11-4	Octadecanoic acid	11.310	240	J
19.	Unknown	11.946	340	J
20.	Unknown	12.033	370	J
21.				
22.SVOCTIC	Total SVOC TICs		280000	J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046583
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5117 SDG#: KVM51-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	28	1
10727	Acenaphthylene	208-96-8	N.D.		6	28	1
10727	Acetophenone	98-86-2	N.D.		28	55	1
10727	Anthracene	120-12-7	20	J	6	28	1
10727	Atrazine	1912-24-9	N.D.		55	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	92		6	28	1
10727	Benzo(a)pyrene	50-32-8	73		6	28	1
10727	Benzo(b)fluoranthene	205-99-2	120		6	28	1
10727	Benzo(g,h,i)perylene	191-24-2	50		6	28	1
10727	Benzo(k)fluoranthene	207-08-9	48		6	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	55	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	55	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		55	280	1
10727	Carbazole	86-74-8	N.D.		28	55	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	55	1
10727	4-Chloroaniline	106-47-8	N.D.		55	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	55	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	55	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	55	1
10727	2-Chlorophenol	95-57-8	N.D.		28	55	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	55	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	55	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	100		6	28	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	6	28	1
10727	Dibenzofuran	132-64-9	N.D.		28	55	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	550	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	55	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	55	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	830	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	1,100		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	350		28	55	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	210	J	110	280	1
10727	Fluoranthene	206-44-0	140		6	28	1
10727	Fluorene	86-73-7	N.D.		6	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	55	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	830	1
10727	Hexachloroethane	67-72-1	N.D.		55	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	53		6	28	1
10727	Isophorone	78-59-1	N.D.		28	55	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046583
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5117 SDG#: KVM51-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		28	55	1
10727	4-Methylphenol	106-44-5	690		28	55	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		6	28	1
10727	2-Nitroaniline	88-74-4	N.D.		28	55	1
10727	3-Nitroaniline	99-09-2	200	J	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.		110	280	1
10727	Nitrobenzene	98-95-3	N.D.		28	55	1
10727	2-Nitrophenol	88-75-5	N.D.		28	55	1
10727	4-Nitrophenol	100-02-7	N.D.		280	830	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		28	55	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		28	55	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	280	1
10727	Pentachlorophenol	87-86-5	N.D.		55	280	1
10727	Phenanthrene	85-01-8	63		6	28	1
10727	Phenol	108-95-2	210		28	55	1
10727	Pyrene	129-00-0	130		6	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		28	55	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		28	55	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,200		1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,200		820	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		820	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		820	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		820	2,500	5
06918	HMX	2691-41-0	N.D.		2,100	6,200	5
06918	Nitrobenzene	98-95-3	N.D.		820	2,500	5
06918	Nitroglycerin	55-63-0	N.D.		16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		820	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,100	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,600	3,300	5
06918	PETN	78-11-5	N.D.		16,000	49,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046583
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5117 SDG#: KVM51-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,100	2,500	5
06918	Tetryl	479-45-8	N.D.		1,300	3,300	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		820	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	110,000		820	2,500	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,900		12.6	33.0	1
06944	Antimony	7440-36-0	N.D.		0.677	3.30	1
06935	Arsenic	7440-38-2	2.87	J	0.957	3.30	1
06946	Barium	7440-39-3	55.2		0.111	0.825	1
06947	Beryllium	7440-41-7	0.550	J	0.111	0.825	1
06949	Cadmium	7440-43-9	N.D.		0.0710	0.825	1
01650	Calcium	7440-70-2	1,280		5.50	33.0	1
06951	Chromium	7440-47-3	16.4		0.162	2.48	1
06952	Cobalt	7440-48-4	7.58		0.134	0.825	1
06953	Copper	7440-50-8	35.1		0.462	1.65	1
01654	Iron	7439-89-6	26,000		5.50	33.0	1
06955	Lead	7439-92-1	259		0.528	2.48	1
01657	Magnesium	7439-95-4	1,250		2.76	16.5	1
06958	Manganese	7439-96-5	210		0.137	0.825	1
06961	Nickel	7440-02-0	13.2		0.380	1.65	1
01662	Potassium	7440-09-7	908		27.7	82.5	1
06936	Selenium	7782-49-2	4.18		1.37	3.30	1
06966	Silver	7440-22-4	N.D.		0.198	0.825	1
01667	Sodium	7440-23-5	52.5	J	27.6	165	1
06925	Thallium	7440-28-0	1.30	J	1.24	4.95	1
06971	Vanadium	7440-62-2	32.0		0.248	0.825	1
06972	Zinc	7440-66-6	48.4		1.27	3.30	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0553	J	0.0155	0.155	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	28,300		1,070	1,080	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046583
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:30 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5117 SDG#: KVM51-17

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 18:59	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 03:57	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:32	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:32	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:32	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:32	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:54	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:30	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5117

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046583
Sample wt/vol: 30.16(g/mL) g Lab File ID: bi0969.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 40 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 21 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.791	200000	J
2.	Unknown	4.054	11000	JB
3.	Unknown	4.252	25000	J
4.107-92-6	Butanoic acid	4.362	16000	J
5.109-52-4	Pentanoic acid	4.980	29000	J
6.1000152-47-3	trans-Decalin, 2-methyl-	6.216	790	J
7.112-40-3	Dodecane	6.706	950	J
8.	Unknown	7.137	1300	J
9.629-50-5	Tridecane	7.312	3600	J
10.	Unknown	7.364	850	J
11.	Unknown	7.592	700	J
12.	Unknown	7.661	430	J
13.	Unknown	7.860	1800	J
14.	Unknown	9.404	38000	J
15.	Unknown	9.993	12000	J
16.	Unknown	10.313	10000	J
17.19406-51-0	p-Toluidine, 3,5-dinitro-	10.383	7300	J
18.57-10-3	n-Hexadecanoic acid	10.541	690	J
19.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.634	240	J
20.57-11-4	Octadecanoic acid	11.293	270	J
21.	Unknown	12.021	460	J
22.				
23.SVOCTIC	Total SVOC TICs		370000	J
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046584
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5118 SDG#: KVM51-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	64		6	29	1
10727	Acetophenone	98-86-2	N.D.		29	58	1
10727	Anthracene	120-12-7	120		6	29	1
10727	Atrazine	1912-24-9	N.D.		58	290	1
10727	Benzaldehyde	100-52-7	N.D.		120	290	1
10727	Benzo(a)anthracene	56-55-3	340		6	29	1
10727	Benzo(a)pyrene	50-32-8	300		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	410		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	210		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	160		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		29	58	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		29	58	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	290	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	290	1
10727	Caprolactam	105-60-2	N.D.		58	290	1
10727	Carbazole	86-74-8	N.D.		29	58	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		29	58	1
10727	4-Chloroaniline	106-47-8	N.D.		58	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		29	58	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		29	58	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	57	1
10727	2-Chlorophenol	95-57-8	N.D.		29	58	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		29	58	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		29	58	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	320		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	63		6	29	1
10727	Dibenzofuran	132-64-9	N.D.		29	58	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	580	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		29	58	1
10727	Diethylphthalate	84-66-2	N.D.		120	290	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		29	58	1
10727	Dimethylphthalate	131-11-3	N.D.		120	290	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		290	870	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		520	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	1,100		120	290	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		29	58	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	260	J	120	290	1
10727	Fluoranthene	206-44-0	780		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		29	58	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		290	870	1
10727	Hexachloroethane	67-72-1	N.D.		58	290	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	190		6	29	1
10727	Isophorone	78-59-1	N.D.		29	58	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046584
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5118 SDG#: KVM51-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		29	58	1
10727	4-Methylphenol	106-44-5	350		29	58	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	34		6	29	1
10727	2-Nitroaniline	88-74-4	N.D.		29	58	1
10727	3-Nitroaniline	99-09-2	140	J	120	290	1
10727	4-Nitroaniline	100-01-6	N.D.		120	290	1
10727	Nitrobenzene	98-95-3	N.D.		29	58	1
10727	2-Nitrophenol	88-75-5	N.D.		29	58	1
10727	4-Nitrophenol	100-02-7	N.D.		290	870	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		29	58	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		29	58	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		120	290	1
10727	Pentachlorophenol	87-86-5	N.D.		58	290	1
10727	Phenanthrene	85-01-8	540		6	29	1
10727	Phenol	108-95-2	150		29	58	1
10727	Pyrene	129-00-0	700		6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		29	58	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		29	58	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	19,000		1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	24,000		740	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		740	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		740	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		740	2,200	5
06918	HMX	2691-41-0	N.D.		1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.		740	2,200	5
06918	Nitroglycerin	55-63-0	N.D.		15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		740	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,500	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,800	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,500	2,900	5
06918	PETN	78-11-5	N.D.		15,000	44,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046584
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5118 SDG#: KVM51-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		960	2,200	5
06918	Tetryl	479-45-8	N.D.		1,200	2,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		740	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	50,000		740	2,200	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,900		13.1	34.1	1
06944	Antimony	7440-36-0	N.D.		0.700	3.41	1
06935	Arsenic	7440-38-2	2.87	J	0.990	3.41	1
06946	Barium	7440-39-3	50.3		0.114	0.853	1
06947	Beryllium	7440-41-7	0.572	J	0.114	0.853	1
06949	Cadmium	7440-43-9	N.D.		0.0734	0.853	1
01650	Calcium	7440-70-2	1,330		5.68	34.1	1
06951	Chromium	7440-47-3	19.6		0.167	2.56	1
06952	Cobalt	7440-48-4	8.25		0.138	0.853	1
06953	Copper	7440-50-8	35.1		0.478	1.71	1
01654	Iron	7439-89-6	32,700		5.68	34.1	1
06955	Lead	7439-92-1	227		0.546	2.56	1
01657	Magnesium	7439-95-4	1,350		2.85	17.1	1
06958	Manganese	7439-96-5	213		0.142	0.853	1
06961	Nickel	7440-02-0	16.8		0.392	1.71	1
01662	Potassium	7440-09-7	840		28.7	85.3	1
06936	Selenium	7782-49-2	5.62		1.42	3.41	1
06966	Silver	7440-22-4	N.D.		0.205	0.853	1
01667	Sodium	7440-23-5	53.7	J	28.5	171	1
06925	Thallium	7440-28-0	1.86	J	1.28	5.12	1
06971	Vanadium	7440-62-2	37.2		0.256	0.853	1
06972	Zinc	7440-66-6	48.1		1.31	3.41	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0460	J	0.0174	0.174	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	43,100		1,040	1,050	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	43.1		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046584
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:40 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5118 SDG#: KVM51-18

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 19:20	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 04:39	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:38	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 08:38	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:38	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:38	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:38	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 19:57	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:32	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5118

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046584
Sample wt/vol: 30.47(g/mL) g Lab File ID: bi0970.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 43.1 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 22 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.698	48000	J
2.	Unknown	3.780	2000	J
3.	Unknown	4.001	3700	JB
4.107-92-6	Butanoic acid	4.228	9800	J
5.109-52-4	Pentanoic acid	4.887	4600	J
6.2958-76-1	Naphthalene, decahydro-2-met	6.216	760	J
7.	Unknown	7.090	710	J
8.	Unknown	7.137	1200	J
9.629-50-5	Tridecane	7.306	3500	J
10.	Unknown	7.364	860	J
11.	Unknown	7.580	670	J
12.544-76-3	Hexadecane	7.860	1900	J
13.	Unknown	8.157	700	J
14.	Unknown	9.398	39000	J
15.	Unknown	9.987	16000	J
16.	Unknown	10.313	12000	J
17.19406-51-0	p-Toluidine, 3,5-dinitro-	10.389	13000	J
18.57-10-3	n-Hexadecanoic acid	10.523	51000	J
19.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.634	290	J
20.57-11-4	Octadecanoic acid	11.281	300	J
21.	Unknown	11.928	340	J
22.	Unknown	11.998	400	J
23.				
24.SVOCTIC	Total SVOC TICs		210000	J
25.				
26.				
27.				
28.				
29.				
30.				

Sample Description: TNT-PS-E-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046585
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5119 SDG#: KVM51-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		28	56	1
10727	Anthracene	120-12-7	39		6	29	1
10727	Atrazine	1912-24-9	N.D.		56	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	130		6	29	1
10727	Benzo(a)pyrene	50-32-8	88		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	150		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	64		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	55		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	56	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	56	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		56	280	1
10727	Carbazole	86-74-8	N.D.		28	56	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	56	1
10727	4-Chloroaniline	106-47-8	N.D.		56	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	56	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	56	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	55	1
10727	2-Chlorophenol	95-57-8	N.D.		28	56	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	56	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	56	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	130		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	23	J	6	29	1
10727	Dibenzofuran	132-64-9	N.D.		28	56	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	560	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	56	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	56	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	840	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	1,000		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		28	56	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	290		110	290	1
10727	Fluoranthene	206-44-0	210		6	29	1
10727	Fluorene	86-73-7	14	J	6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	56	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	840	1
10727	Hexachloroethane	67-72-1	N.D.		56	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	57		6	29	1
10727	Isophorone	78-59-1	N.D.		28	56	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046585
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5119 SDG#: KVM51-19

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	56	1
10727	4-Methylphenol	106-44-5	490	28	56	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	30	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.	28	56	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	56	1
10727	2-Nitrophenol	88-75-5	N.D.	28	56	1
10727	4-Nitrophenol	100-02-7	N.D.	280	840	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	56	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	56	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	56	290	1
10727	Phenanthrene	85-01-8	140	6	29	1
10727	Phenol	108-95-2	160	28	56	1
10727	Pyrene	129-00-0	170	6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	56	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	56	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: 2,4-Dimethylphenol bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000	1,200	3,300	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,400	820	2,500	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	820	2,500	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	820	2,500	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	820	2,500	5
06918	HMX	2691-41-0	N.D.	2,000	6,100	5
06918	Nitrobenzene	98-95-3	N.D.	820	2,500	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	49,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	820	2,500	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,300	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	4,100	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,300	5
06918	PETN	78-11-5	N.D.	16,000	49,000	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046585
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5119 SDG#: KVM51-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	RDX	121-82-4	N.D.		1,100	2,500	5
06918	Tetryl	479-45-8	N.D.		1,300	3,300	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		820	2,500	5
06918	2,4,6-Trinitrotoluene	118-96-7	27,000		820	2,500	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,100		12.9	33.8	1
06944	Antimony	7440-36-0	N.D.		0.693	3.38	1
06935	Arsenic	7440-38-2	1.05	J	0.980	3.38	1
06946	Barium	7440-39-3	45.9		0.113	0.845	1
06947	Beryllium	7440-41-7	0.488	J	0.113	0.845	1
06949	Cadmium	7440-43-9	N.D.		0.0726	0.845	1
01650	Calcium	7440-70-2	999		5.63	33.8	1
06951	Chromium	7440-47-3	20.0		0.166	2.53	1
06952	Cobalt	7440-48-4	9.81		0.137	0.845	1
06953	Copper	7440-50-8	34.9		0.473	1.69	1
01654	Iron	7439-89-6	36,200		5.63	33.8	1
06955	Lead	7439-92-1	217		0.541	2.53	1
01657	Magnesium	7439-95-4	1,070		2.82	16.9	1
06958	Manganese	7439-96-5	177		0.140	0.845	1
06961	Nickel	7440-02-0	20.7		0.389	1.69	1
01662	Potassium	7440-09-7	775		28.4	84.5	1
06936	Selenium	7782-49-2	7.17		1.40	3.38	1
06966	Silver	7440-22-4	0.529	J	0.203	0.845	1
01667	Sodium	7440-23-5	28.3	J	28.2	169	1
06925	Thallium	7440-28-0	1.64	J	1.27	5.07	1
06971	Vanadium	7440-62-2	33.6		0.253	0.845	1
06972	Zinc	7440-66-6	43.9		1.30	3.38	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0441	J	0.0159	0.159	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	34,800		1,080	1,090	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.8		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046585
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:45 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5119 SDG#: KVM51-19

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 19:41	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 05:22	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:44	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 08:44	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:44	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:44	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:44	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 20:01	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:34	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519416	10/13/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5119

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046585
Sample wt/vol: 30.17(g/mL) g Lab File ID: bi0971.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 40.8 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 20 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79-09-4	Propanoic acid	3.745	67000	J
2.	Unknown	4.024	5300	JB
3. 107-92-6	Butanoic acid	4.252	11000	J
4. 109-52-4	Pentanoic acid	4.934	7500	J
5. 61141-72-8	Dodecane, 4,6-dimethyl-	7.137	1000	J
6. 629-50-5	Tridecane	7.312	2900	J
7.	Unknown	7.592	620	J
8. 629-59-4	Tetradecane	7.866	1600	J
9.	Unknown	8.157	800	J
10.	Unknown	9.416	47000	J
11.	Unknown	9.999	14000	J
12.	Unknown	10.325	11000	J
13. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.389	9700	J
14. 57-10-3	n-Hexadecanoic acid	10.541	630	J
15. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.640	310	J
16. 57-11-4	Octadecanoic acid	11.299	360	J
17. 60-33-3	9,12-Octadecadienoic acid (Z	11.369	220	J
18.	Unknown	11.578	330	J
19.	Unknown	11.928	320	J
20.	Unknown	12.027	620	J
21.				
22. SVOCTIC	Total SVOC TICs		180000	J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046586
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5120 SDG#: KVM51-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	30	1
10727	Acenaphthylene	208-96-8	27	J	6	30	1
10727	Acetophenone	98-86-2	N.D.		30	59	1
10727	Anthracene	120-12-7	28	J	6	30	1
10727	Atrazine	1912-24-9	N.D.		59	300	1
10727	Benzaldehyde	100-52-7	N.D.		120	300	1
10727	Benzo(a)anthracene	56-55-3	150		6	30	1
10727	Benzo(a)pyrene	50-32-8	120		6	30	1
10727	Benzo(b)fluoranthene	205-99-2	180		6	30	1
10727	Benzo(g,h,i)perylene	191-24-2	73		6	30	1
10727	Benzo(k)fluoranthene	207-08-9	68		6	30	1
10727	1,1'-Biphenyl	92-52-4	N.D.		30	59	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		30	59	1
10727	Butylbenzylphthalate	85-68-7	N.D.		120	300	1
10727	Di-n-butylphthalate	84-74-2	N.D.		120	300	1
10727	Caprolactam	105-60-2	N.D.		59	300	1
10727	Carbazole	86-74-8	N.D.		30	59	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		30	59	1
10727	4-Chloroaniline	106-47-8	N.D.		59	120	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		30	59	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		30	59	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	59	1
10727	2-Chlorophenol	95-57-8	N.D.		30	59	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		30	59	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		30	59	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	160		6	30	1
10727	Dibenz(a,h)anthracene	53-70-3	32		6	30	1
10727	Dibenzofuran	132-64-9	N.D.		30	59	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		180	590	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		30	59	1
10727	Diethylphthalate	84-66-2	N.D.		120	300	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		30	59	1
10727	Dimethylphthalate	131-11-3	N.D.		120	300	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		300	890	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		530	1,800	1
10727	2,4-Dinitrotoluene	121-14-2	710		120	300	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		30	59	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	300	J	120	300	1
10727	Fluoranthene	206-44-0	220		6	30	1
10727	Fluorene	86-73-7	N.D.		6	30	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	30	1
10727	Hexachlorobutadiene	87-68-3	N.D.		30	59	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		300	890	1
10727	Hexachloroethane	67-72-1	N.D.		59	300	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	83		6	30	1
10727	Isophorone	78-59-1	N.D.		30	59	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	30	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046586
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5120 SDG#: KVM51-20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	30	59	1
10727	4-Methylphenol	106-44-5	700	30	59	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	30	1
10727	2-Nitroaniline	88-74-4	N.D.	30	59	1
10727	3-Nitroaniline	99-09-2	N.D.	120	300	1
10727	4-Nitroaniline	100-01-6	N.D.	120	300	1
10727	Nitrobenzene	98-95-3	N.D.	30	59	1
10727	2-Nitrophenol	88-75-5	N.D.	30	59	1
10727	4-Nitrophenol	100-02-7	N.D.	300	890	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	30	59	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	30	59	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	500	120	300	1
10727	Pentachlorophenol	87-86-5	N.D.	59	300	1
10727	Phenanthrene	85-01-8	79	6	30	1
10727	Phenol	108-95-2	210	30	59	1
10727	Pyrene	129-00-0	190	6	30	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	30	59	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	30	59	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
2,4-Dimethylphenol
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000	1,300	3,600	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,500	890	2,700	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	890	2,700	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	890	2,700	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	890	2,700	5
06918	HMX	2691-41-0	N.D.	2,200	6,700	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046586
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5120 SDG#: KVM51-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	Nitrobenzene	98-95-3	N.D.		890	2,700	5
06918	Nitroglycerin	55-63-0	N.D.		18,000	54,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		890	2,700	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,800	3,600	5
06918	3-Nitrotoluene	99-08-1	N.D.		2,200	4,500	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,800	3,600	5
06918	PETN	78-11-5	N.D.		18,000	54,000	5
06918	RDX	121-82-4	N.D.		1,200	2,700	5
06918	Tetryl	479-45-8	N.D.		1,400	3,600	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		890	2,700	5
06918	2,4,6-Trinitrotoluene	118-96-7	19,000		890	2,700	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,400		13.2	34.5	1
06944	Antimony	7440-36-0	N.D.		0.708	3.45	1
06935	Arsenic	7440-38-2	2.96	J	1.00	3.45	1
06946	Barium	7440-39-3	53.8		0.116	0.863	1
06947	Beryllium	7440-41-7	0.587	J	0.116	0.863	1
06949	Cadmium	7440-43-9	N.D.		0.0742	0.863	1
01650	Calcium	7440-70-2	1,130		5.75	34.5	1
06951	Chromium	7440-47-3	21.9		0.169	2.59	1
06952	Cobalt	7440-48-4	10.7		0.140	0.863	1
06953	Copper	7440-50-8	38.7		0.483	1.73	1
01654	Iron	7439-89-6	37,500		5.75	34.5	1
06955	Lead	7439-92-1	273		0.552	2.59	1
01657	Magnesium	7439-95-4	1,280		2.88	17.3	1
06958	Manganese	7439-96-5	200		0.143	0.863	1
06961	Nickel	7440-02-0	20.6		0.397	1.73	1
01662	Potassium	7440-09-7	919		29.0	86.3	1
06936	Selenium	7782-49-2	6.79		1.43	3.45	1
06966	Silver	7440-22-4	0.661	J	0.207	0.863	1
01667	Sodium	7440-23-5	40.6	J	28.8	173	1
06925	Thallium	7440-28-0	1.67	J	1.29	5.18	1
06971	Vanadium	7440-62-2	36.8		0.259	0.863	1
06972	Zinc	7440-66-6	48.6		1.33	3.45	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0354	J	0.0170	0.170	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	47,600		1,250	1,260	1

The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc.
This data entry is to enable EDD generation in the client required format.
The original laboratory data report is attached. All relevant certification information is provided in that report.

Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	44.3		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046586
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5120 SDG#: KVM51-20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLF026	09/21/2015 20:02	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLF026	09/18/2015 18:05	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680015A	10/03/2015 07:29	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680015A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152585708006	09/21/2015 08:56	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152585708006	09/21/2015 08:56	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152585708006	09/21/2015 08:56	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708006	09/21/2015 08:56	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152585708006	09/21/2015 08:56	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152585708006	09/18/2015 20:04	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152585711005	09/17/2015 10:36	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708006	09/16/2015 13:02	James L Mertz	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711005	09/16/2015 15:52	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046586
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:50 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5120 SDG#: KVM51-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15259820009B	09/16/2015 21:39	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5120

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046586
Sample wt/vol: 30.23(g/mL) g Lab File ID: bi0972.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 44.3 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 17 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.762	200000	J
2.	Unknown	4.036	12000	JB
3.	Unknown	4.263	25000	J
4.107-92-6	Butanoic acid	4.345	14000	J
5.109-52-4	Pentanoic acid	4.957	20000	J
6.112-40-3	Dodecane	6.706	2100	J
7.	Unknown	7.137	1600	J
8.629-50-5	Tridecane	7.312	4600	J
9.	Unknown	7.580	700	J
10.629-59-4	Tetradecane	7.865	1800	J
11.	Unknown	8.157	870	J
12.57-10-3	n-Hexadecanoic acid	10.529	60000	J
13.57-11-4	Octadecanoic acid	11.293	440	J
14.60-33-3	9,12-Octadecadienoic acid (Z	11.363	260	J
15.	Unknown	11.572	410	J
16.	Unknown	11.922	320	J
17.	Unknown	12.021	790	J
18.				
19.SVOCTIC	Total SVOC TICs		340000	J
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046587
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5121 SDG#: KVM51-21

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	28	1
10727	Acenaphthylene	208-96-8	12	J	5	28	1
10727	Acetophenone	98-86-2	N.D.		27	55	1
10727	Anthracene	120-12-7	15	J	5	28	1
10727	Atrazine	1912-24-9	N.D.		55	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	75		5	28	1
10727	Benzo(a)pyrene	50-32-8	63		5	28	1
10727	Benzo(b)fluoranthene	205-99-2	73		5	28	1
10727	Benzo(g,h,i)perylene	191-24-2	49		5	28	1
10727	Benzo(k)fluoranthene	207-08-9	48		5	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	55	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	55	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		55	270	1
10727	Carbazole	86-74-8	N.D.		27	55	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	55	1
10727	4-Chloroaniline	106-47-8	N.D.		55	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	55	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	55	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	54	1
10727	2-Chlorophenol	95-57-8	N.D.		27	55	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	55	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	55	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	84		5	28	1
10727	Dibenz(a,h)anthracene	53-70-3	21	J	5	28	1
10727	Dibenzofuran	132-64-9	N.D.		27	55	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	550	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	55	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	55	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	820	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		490	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	1,000		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		27	55	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	100		5	28	1
10727	Fluorene	86-73-7	N.D.		5	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	55	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	820	1
10727	Hexachloroethane	67-72-1	N.D.		55	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	48		5	28	1
10727	Isophorone	78-59-1	N.D.		27	55	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	28	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046587
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5121 SDG#: KVM51-21

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	27	55	1
10727	4-Methylphenol	106-44-5	N.D.	27	55	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	28	1
10727	2-Nitroaniline	88-74-4	N.D.	27	55	1
10727	3-Nitroaniline	99-09-2	N.D.	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.	110	270	1
10727	Nitrobenzene	98-95-3	N.D.	27	55	1
10727	2-Nitrophenol	88-75-5	N.D.	27	55	1
10727	4-Nitrophenol	100-02-7	N.D.	270	820	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	27	55	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	27	55	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	270	1
10727	Pentachlorophenol	87-86-5	N.D.	55	280	1
10727	Phenanthrene	85-01-8	48	5	28	1
10727	Phenol	108-95-2	N.D.	27	55	1
10727	Pyrene	129-00-0	73	5	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	27	55	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	27	55	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	22,000	1,200	3,100	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	15,000	780	2,300	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	780	2,300	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	780	2,300	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	780	2,300	5
06918	HMX	2691-41-0	N.D.	2,000	5,900	5
06918	Nitrobenzene	98-95-3	N.D.	780	2,300	5
06918	Nitroglycerin	55-63-0	N.D.	16,000	47,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	780	2,300	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,600	3,100	5
06918	3-Nitrotoluene	99-08-1	N.D.	2,000	3,900	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,600	3,100	5
06918	PETN	78-11-5	N.D.	16,000	47,000	5
06918	RDX	121-82-4	N.D.	1,900	2,300	5
06918	Tetryl	479-45-8	N.D.	1,200	3,100	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	780	2,300	5
06918	2,4,6-Trinitrotoluene	118-96-7	21,000	780	2,300	5
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046587
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5121 SDG#: KVM51-21

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	19,400		12.3	32.1	1
06944	Antimony	7440-36-0	11.4		0.659	3.21	1
06935	Arsenic	7440-38-2	2.80	J	0.932	3.21	1
06946	Barium	7440-39-3	58.9		0.108	0.804	1
06947	Beryllium	7440-41-7	0.707	J	0.108	0.804	1
06949	Cadmium	7440-43-9	1.29		0.0691	0.804	1
01650	Calcium	7440-70-2	1,220		5.35	32.1	1
06951	Chromium	7440-47-3	23.1		0.158	2.41	1
06952	Cobalt	7440-48-4	9.77		0.130	0.804	1
06953	Copper	7440-50-8	26.9		0.450	1.61	1
01654	Iron	7439-89-6	35,900		5.35	32.1	1
06955	Lead	7439-92-1	222		0.514	2.41	1
01657	Magnesium	7439-95-4	1,480		2.68	16.1	1
06958	Manganese	7439-96-5	208		0.133	0.804	1
06961	Nickel	7440-02-0	18.5		0.370	1.61	1
01662	Potassium	7440-09-7	1,020		27.0	80.4	1
06936	Selenium	7782-49-2	5.81		1.33	3.21	1
06966	Silver	7440-22-4	1.53		0.193	0.804	1
01667	Sodium	7440-23-5	77.8	J	26.8	161	1
06925	Thallium	7440-28-0	1.35	J	1.21	4.82	1
06971	Vanadium	7440-62-2	38.8		0.241	0.804	1
06972	Zinc	7440-66-6	48.2		1.24	3.21	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0598	J	0.0162	0.162	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	32,000		1,290	1,300	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.6		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-1-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046587
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 09:55 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5121 SDG#: KVM51-21

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLG026	09/20/2015 18:06	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLG026	09/18/2015 18:37	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680016A	10/06/2015 00:12	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680016A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06944	Antimony	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010B	1	152585708003	09/17/2015 17:27	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010B	1	152585708003	09/18/2015 08:51	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06953	Copper	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06958	Manganese	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06961	Nickel	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
01662	Potassium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06936	Selenium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06925	Thallium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
06972	Zinc	SW-846 6010B	1	152585708003	09/17/2015 12:24	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	152585711002	09/17/2015 07:06	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708003	09/16/2015 09:06	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711002	09/16/2015 11:18	Christopher M Klumpp	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15260820001A	09/17/2015 11:59	William C Schwebel	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5121

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046587
Sample wt/vol: 30.23(g/mL) g Lab File ID: oi0919.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 39.6 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/20/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 21 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.034	120000	J
2.	Unknown	3.563	26000	J
3.112-40-3	Dodecane	6.828	1200	J
4.66660-43-3	trans, cis-3-Ethylbicyclo[4.	7.051	750	J
5.	Unknown	7.151	840	J
6.	Unknown	7.186	1000	J
7.	Unknown	7.263	1400	J
8.629-50-5	Tridecane	7.439	3300	J
9.	Unknown	7.522	760	J
10.	Unknown	7.710	3000	J
11.629-59-4	Tetradecane	7.992	6500	J
12.	Unknown	8.504	4000	J
13.	Unknown	9.539	50000	J
14.	Unknown	10.098	13000	J
15.	Unknown	10.298	2600	J
16.	Unknown	10.404	12000	J
17.19406-51-0	p-Toluidine, 3,5-dinitro-	10.474	4800	J
18.57-10-3	n-Hexadecanoic acid	10.639	810	J
19.73033-09-7	cis-10-Nonadecenoic acid	11.327	420	J
20.57-11-4	Octadecanoic acid	11.386	230	J
21.	Unknown	12.033	670	J
22.				
23.SVOCTIC	Total SVOC TICs		250000	J
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046588
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5122 SDG#: KVM51-22

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		25	49	1
10727	Anthracene	120-12-7	15	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	250	1
10727	Benzaldehyde	100-52-7	N.D.		98	250	1
10727	Benzo(a)anthracene	56-55-3	54		5	25	1
10727	Benzo(a)pyrene	50-32-8	49		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	74		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	38		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	35		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		98	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		98	250	1
10727	Caprolactam	105-60-2	N.D.		49	250	1
10727	Carbazole	86-74-8	N.D.		25	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	98	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	49	1
10727	2-Chlorophenol	95-57-8	N.D.		25	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	63		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	21	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	190	J	150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	49	1
10727	Diethylphthalate	84-66-2	N.D.		98	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	49	1
10727	Dimethylphthalate	131-11-3	N.D.		98	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	740	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	510		98	250	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		25	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		98	250	1
10727	Fluoranthene	206-44-0	78		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	740	1
10727	Hexachloroethane	67-72-1	N.D.		49	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	41		5	25	1
10727	Isophorone	78-59-1	N.D.		25	49	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046588
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5122 SDG#: KVM51-22

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		25	49	1
10727	4-Methylphenol	106-44-5	N.D.		25	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		25	49	1
10727	3-Nitroaniline	99-09-2	N.D.		98	250	1
10727	4-Nitroaniline	100-01-6	N.D.		98	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	49	1
10727	2-Nitrophenol	88-75-5	N.D.		25	49	1
10727	4-Nitrophenol	100-02-7	N.D.		250	740	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		98	250	1
10727	Pentachlorophenol	87-86-5	N.D.		49	250	1
10727	Phenanthrene	85-01-8	44		5	25	1
10727	Phenol	108-95-2	42	J	25	49	1
10727	Pyrene	129-00-0	62		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	49	1
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000		940	2,500	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	18,000		630	1,900	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		630	1,900	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		630	1,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		630	1,900	5
06918	HMX	2691-41-0	N.D.		1,600	4,700	5
06918	Nitrobenzene	98-95-3	N.D.		630	1,900	5
06918	Nitroglycerin	55-63-0	N.D.		13,000	38,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		630	1,900	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,300	2,500	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,600	3,100	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	2,500	5
06918	PETN	78-11-5	N.D.		13,000	38,000	5
06918	RDX	121-82-4	N.D.		1,800	1,900	5
06918	Tetryl	479-45-8	N.D.		1,000	2,500	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		630	1,900	5
06918	2,4,6-Trinitrotoluene	118-96-7	22,000		630	1,900	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046588
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5122 SDG#: KVM51-22

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,600		11.3	29.6	1
06944	Antimony	7440-36-0	5.21		0.606	2.96	1
06935	Arsenic	7440-38-2	2.06	J	0.857	2.96	1
06946	Barium	7440-39-3	58.5		0.0990	0.739	1
06947	Beryllium	7440-41-7	0.770		0.0990	0.739	1
06949	Cadmium	7440-43-9	N.D.		0.0635	0.739	1
01650	Calcium	7440-70-2	1,010		4.92	29.6	1
06951	Chromium	7440-47-3	23.4		0.145	2.22	1
06952	Cobalt	7440-48-4	11.4		0.120	0.739	1
06953	Copper	7440-50-8	28.9		0.414	1.48	1
01654	Iron	7439-89-6	40,700		9.84	59.1	2
06955	Lead	7439-92-1	226		0.473	2.22	1
01657	Magnesium	7439-95-4	1,540		2.47	14.8	1
06958	Manganese	7439-96-5	210		0.123	0.739	1
06961	Nickel	7440-02-0	19.0		0.340	1.48	1
01662	Potassium	7440-09-7	985		24.8	73.9	1
06936	Selenium	7782-49-2	8.35		1.23	2.96	1
06966	Silver	7440-22-4	2.93		0.177	0.739	1
01667	Sodium	7440-23-5	63.7	J	24.7	148	1
06925	Thallium	7440-28-0	1.83	J	1.11	4.43	1
06971	Vanadium	7440-62-2	46.1		0.222	0.739	1
06972	Zinc	7440-66-6	50.5		1.14	2.96	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0445	J	0.0148	0.148	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	20,300		833	840	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	33.0		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046588
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:00 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5122 SDG#: KVM51-22

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLG026	09/20/2015 19:19	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLG026	09/18/2015 18:37	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680016A	10/06/2015 00:54	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680016A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06944	Antimony	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010B	1	152585708003	09/17/2015 17:36	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010B	1	152585708003	09/17/2015 17:36	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06953	Copper	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	152585708003	09/17/2015 17:39	Suzanne M Will	2
06955	Lead	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06958	Manganese	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06961	Nickel	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
01662	Potassium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06936	Selenium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06925	Thallium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
06972	Zinc	SW-846 6010B	1	152585708003	09/17/2015 12:33	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	152585711002	09/17/2015 07:08	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708003	09/16/2015 09:06	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711002	09/16/2015 11:18	Christopher M Klumpp	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15260820001A	09/17/2015 11:59	William C Schwebel	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5122

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046588
Sample wt/vol: 30.31(g/mL) g Lab File ID: oi0922.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 33 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/20/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 22 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	2.704	75000	J
2.	Unknown	3.510	6800	J
3.112-40-3	Dodecane	6.828	1100	J
4.58462-32-1	trans,trans-3-Ethylbicyclo[4	7.051	710	J
5.	Unknown	7.157	760	J
6.6117-97-1	Dodecane, 4-methyl-	7.186	710	J
7.	Unknown	7.222	780	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	7.263	1100	J
9.629-50-5	Tridecane	7.433	3100	J
10.	Unknown	7.522	690	J
11.	Unknown	7.710	2000	J
12.629-59-4	Tetradecane	7.986	5200	J
13.	Unknown	8.298	1900	J
14.	Unknown	8.504	3200	J
15.	Unknown	9.492	10000	J
16.	Unknown	10.086	6800	J
17.	Unknown	10.386	5400	J
18.19406-51-0	p-Toluidine, 3,5-dinitro-	10.468	5200	J
19.57-10-3	n-Hexadecanoic acid	10.621	750	J
20.693-71-0	trans-13-Octadecenoic acid	11.310	480	J
21.57-11-4	Octadecanoic acid	11.368	240	J
22.	Unknown	12.015	510	J
23.				
24.SVOCTIC	Total SVOC TICs		130000	J
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046589
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5123 SDG#: KVM51-23

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	29	1
10727	Acenaphthylene	208-96-8	N.D.		6	29	1
10727	Acetophenone	98-86-2	N.D.		29	57	1
10727	Anthracene	120-12-7	21	J	6	29	1
10727	Atrazine	1912-24-9	N.D.		57	290	1
10727	Benzaldehyde	100-52-7	N.D.		110	290	1
10727	Benzo(a)anthracene	56-55-3	89		6	29	1
10727	Benzo(a)pyrene	50-32-8	76		6	29	1
10727	Benzo(b)fluoranthene	205-99-2	130		6	29	1
10727	Benzo(g,h,i)perylene	191-24-2	61		6	29	1
10727	Benzo(k)fluoranthene	207-08-9	62		6	29	1
10727	1,1'-Biphenyl	92-52-4	N.D.		29	57	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		29	57	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	290	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	290	1
10727	Caprolactam	105-60-2	N.D.		57	290	1
10727	Carbazole	86-74-8	N.D.		29	57	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		29	57	1
10727	4-Chloroaniline	106-47-8	N.D.		57	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		29	57	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		29	57	1
10727	2-Chloronaphthalene	91-58-7	N.D.		12	57	1
10727	2-Chlorophenol	95-57-8	N.D.		29	57	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		29	57	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		29	57	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		6	29	1
10727	Dibenz(a,h)anthracene	53-70-3	44		6	29	1
10727	Dibenzofuran	132-64-9	N.D.		29	57	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	570	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		29	57	1
10727	Diethylphthalate	84-66-2	N.D.		110	290	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		29	57	1
10727	Dimethylphthalate	131-11-3	N.D.		110	290	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		290	860	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		520	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	1,300		110	290	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		29	57	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	170	J	110	290	1
10727	Fluoranthene	206-44-0	160		6	29	1
10727	Fluorene	86-73-7	N.D.		6	29	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	29	1
10727	Hexachlorobutadiene	87-68-3	N.D.		29	57	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		290	860	1
10727	Hexachloroethane	67-72-1	N.D.		57	290	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	63		6	29	1
10727	Isophorone	78-59-1	N.D.		29	57	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	29	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046589
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5123 SDG#: KVM51-23

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	29	57	1
10727	4-Methylphenol	106-44-5	N.D.	29	57	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	29	1
10727	2-Nitroaniline	88-74-4	N.D.	29	57	1
10727	3-Nitroaniline	99-09-2	N.D.	110	290	1
10727	4-Nitroaniline	100-01-6	N.D.	110	290	1
10727	Nitrobenzene	98-95-3	N.D.	29	57	1
10727	2-Nitrophenol	88-75-5	N.D.	29	57	1
10727	4-Nitrophenol	100-02-7	N.D.	290	860	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	29	57	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	29	57	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	290	1
10727	Pentachlorophenol	87-86-5	N.D.	57	290	1
10727	Phenanthrene	85-01-8	68	6	29	1
10727	Phenol	108-95-2	110	29	57	1
10727	Pyrene	129-00-0	110	6	29	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	29	57	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	29	57	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	36,000	1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	36,000	730	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	730	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	730	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	730	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.	730	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	730	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	2,900	5
06918	PETN	78-11-5	N.D.	15,000	44,000	5
06918	RDX	121-82-4	N.D.	1,900	2,200	5
06918	Tetryl	479-45-8	N.D.	1,200	2,900	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	730	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	860,000	36,000	110,000	250
	Reporting limits were raised due to interference from the sample matrix.					

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046589
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5123 SDG#: KVM51-23

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	23,000		13.2	34.5	1
06944	Antimony	7440-36-0	3.94		0.707	3.45	1
06935	Arsenic	7440-38-2	3.67		1.00	3.45	1
06946	Barium	7440-39-3	70.7		0.116	0.862	1
06947	Beryllium	7440-41-7	0.821	J	0.116	0.862	1
06949	Cadmium	7440-43-9	0.699	J	0.0742	0.862	1
01650	Calcium	7440-70-2	1,290		5.74	34.5	1
06951	Chromium	7440-47-3	21.2		0.169	2.59	1
06952	Cobalt	7440-48-4	8.16		0.140	0.862	1
06953	Copper	7440-50-8	28.0		0.483	1.72	1
01654	Iron	7439-89-6	31,200		5.74	34.5	1
06955	Lead	7439-92-1	266		0.552	2.59	1
01657	Magnesium	7439-95-4	1,620		2.88	17.2	1
06958	Manganese	7439-96-5	240		0.143	0.862	1
06961	Nickel	7440-02-0	13.9		0.397	1.72	1
01662	Potassium	7440-09-7	1,160		29.0	86.2	1
06936	Selenium	7782-49-2	4.82		1.43	3.45	1
06966	Silver	7440-22-4	0.486	J	0.207	0.862	1
01667	Sodium	7440-23-5	92.5	J	28.8	172	1
06925	Thallium	7440-28-0	N.D.		1.29	5.17	1
06971	Vanadium	7440-62-2	41.0		0.259	0.862	1
06972	Zinc	7440-66-6	50.4		1.33	3.45	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0513	J	0.0162	0.162	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	27,500		958	969	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.6		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046589
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:05 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5123 SDG#: KVM51-23

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLG026	09/20/2015 19:43	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLG026	09/18/2015 18:37	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680016A	10/06/2015 01:37	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680016A	10/06/2015 06:34	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680016A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06944	Antimony	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010B	1	152585708003	09/17/2015 17:42	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010B	1	152585708003	09/18/2015 09:00	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06953	Copper	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06958	Manganese	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06961	Nickel	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
01662	Potassium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06936	Selenium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06925	Thallium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
06972	Zinc	SW-846 6010B	1	152585708003	09/17/2015 12:36	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	152585711002	09/17/2015 07:10	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708003	09/16/2015 09:06	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711002	09/16/2015 11:18	Christopher M Klumpp	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15260820001A	09/17/2015 11:59	William C Schwebel	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5123

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046589
Sample wt/vol: 30.42(g/mL) g Lab File ID: oi0923.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 42.6 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/20/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.028	37000	J
2.107-92-6	Butanoic acid	3.840	5800	J
3.112-40-3	Dodecane	6.834	2400	J
4.4292-75-5	Cyclohexane, hexyl-	7.098	1600	J
5.	Unknown	7.157	1900	J
6.17301-27-8	Undecane, 2,10-dimethyl-	7.222	2400	J
7.	Unknown	7.269	2500	J
8.	Unknown	7.398	1900	J
9.629-50-5	Tridecane	7.445	6900	J
10.	Unknown	7.492	1700	J
11.	Unknown	7.528	1800	J
12.	Unknown	7.710	2300	J
13.629-59-4	Tetradecane	7.998	8700	J
14.6165-40-8	Pentadecane, 7-methyl-	8.304	3400	J
15.629-62-9	Pentadecane	8.510	4900	J
16.	Unknown	9.522	21000	J
17.	Unknown	10.104	13000	J
18.	Unknown	10.439	11000	J
19.19406-51-0	p-Toluidine, 3,5-dinitro-	10.498	10000	J
20.57-10-3	n-Hexadecanoic acid	10.663	830	J
21.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.739	310	J
22.112-80-1	Oleic Acid	11.345	400	J
23.57-11-4	Octadecanoic acid	11.404	240	J
24.	Unknown	12.051	690	J
25.				
26.SVOCTIC	Total SVOC TICs		140000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046590
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:10 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5124 SDG#: KVM51-24

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	N.D.		5	27	1
10727	Acetophenone	98-86-2	N.D.		26	52	1
10727	Anthracene	120-12-7	11	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		52	260	1
10727	Benzaldehyde	100-52-7	N.D.		100	260	1
10727	Benzo(a)anthracene	56-55-3	57		5	27	1
10727	Benzo(a)pyrene	50-32-8	47		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	90		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	24	J	5	27	1
10727	Benzo(k)fluoranthene	207-08-9	32		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	52	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	52	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		52	260	1
10727	Carbazole	86-74-8	N.D.		26	52	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	52	1
10727	4-Chloroaniline	106-47-8	N.D.		52	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	52	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	52	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	52	1
10727	2-Chlorophenol	95-57-8	N.D.		26	52	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	52	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	52	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	65		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		5	27	1
10727	Dibenzofuran	132-64-9	N.D.		26	52	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	520	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	52	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	52	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	780	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		470	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	1,000		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	260		26	52	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	270	1
10727	Fluoranthene	206-44-0	87		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	52	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	780	1
10727	Hexachloroethane	67-72-1	N.D.		52	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	29		5	27	1
10727	Isophorone	78-59-1	N.D.		26	52	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046590
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:10 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5124 SDG#: KVM51-24

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	26	52	1
10727	4-Methylphenol	106-44-5	N.D.	26	52	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.	26	52	1
10727	3-Nitroaniline	99-09-2	N.D.	100	260	1
10727	4-Nitroaniline	100-01-6	N.D.	100	260	1
10727	Nitrobenzene	98-95-3	N.D.	26	52	1
10727	2-Nitrophenol	88-75-5	N.D.	26	52	1
10727	4-Nitrophenol	100-02-7	N.D.	260	780	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	26	52	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	26	52	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	100	260	1
10727	Pentachlorophenol	87-86-5	N.D.	52	270	1
10727	Phenanthrene	85-01-8	43	5	27	1
10727	Phenol	108-95-2	N.D.	26	52	1
10727	Pyrene	129-00-0	70	5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	26	52	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	26	52	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	16,000	1,100	2,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	11,000	710	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	710	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	710	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	710	2,100	5
06918	HMX	2691-41-0	N.D.	1,800	5,300	5
06918	Nitrobenzene	98-95-3	N.D.	710	2,100	5
06918	Nitroglycerin	55-63-0	N.D.	14,000	43,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	710	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,400	2,800	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,400	2,800	5
06918	PETN	78-11-5	N.D.	14,000	43,000	5
06918	RDX	121-82-4	N.D.	1,800	2,100	5
06918	Tetryl	479-45-8	N.D.	1,100	2,800	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	710	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	19,000	710	2,100	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046590
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:10 by SL

Submitted: 09/14/2015 20:45
Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5124 SDG#: KVM51-24

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,300		11.9	31.0	1
06944	Antimony	7440-36-0	4.75		0.636	3.10	1
06935	Arsenic	7440-38-2	2.18	J	0.900	3.10	1
06946	Barium	7440-39-3	48.2		0.104	0.776	1
06947	Beryllium	7440-41-7	0.594	J	0.104	0.776	1
06949	Cadmium	7440-43-9	N.D.		0.0667	0.776	1
01650	Calcium	7440-70-2	1,050		5.17	31.0	1
06951	Chromium	7440-47-3	19.4		0.152	2.33	1
06952	Cobalt	7440-48-4	9.06		0.126	0.776	1
06953	Copper	7440-50-8	24.3		0.435	1.55	1
01654	Iron	7439-89-6	40,600		5.17	31.0	1
06955	Lead	7439-92-1	216		0.497	2.33	1
01657	Magnesium	7439-95-4	1,330		2.59	15.5	1
06958	Manganese	7439-96-5	231		0.129	0.776	1
06961	Nickel	7440-02-0	22.4		0.357	1.55	1
01662	Potassium	7440-09-7	850		26.1	77.6	1
06936	Selenium	7782-49-2	6.75		1.29	3.10	1
06966	Silver	7440-22-4	2.14		0.186	0.776	1
01667	Sodium	7440-23-5	66.8	J	25.9	155	1
06925	Thallium	7440-28-0	1.49	J	1.16	4.66	1
06971	Vanadium	7440-62-2	34.3		0.233	0.776	1
06972	Zinc	7440-66-6	43.2		1.19	3.10	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0445	J	0.0155	0.155	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	28,800		1,070	1,080	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.						
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	36.2		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-09142015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8046590
LL Group # 1592599
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/14/2015 10:10 by SL

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Reported: 10/21/2015 13:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5124 SDG#: KVM51-24

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15260SLG026	09/21/2015 12:37	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	15260SLG026	09/18/2015 18:37	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152680016A	10/06/2015 02:19	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152680016A	09/26/2015 07:30	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06944	Antimony	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010B	1	152585708003	09/17/2015 17:45	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010B	1	152585708003	09/17/2015 17:45	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06953	Copper	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06958	Manganese	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06961	Nickel	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
01662	Potassium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06936	Selenium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06925	Thallium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
06972	Zinc	SW-846 6010B	1	152585708003	09/17/2015 12:39	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	152585711002	09/17/2015 07:12	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152585708003	09/16/2015 09:06	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152585711002	09/16/2015 11:18	Christopher M Klumpp	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519500	10/14/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15260820001A	09/17/2015 11:59	William C Schwebel	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5124

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8046590
Sample wt/vol: 30.1 (g/mL) g Lab File ID: oi0949.d
Level: (low/med) LOW Date Received: 09/14/15
% Moisture: 36.2 Decanted: (Y/N) Date Extracted: 09/18/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/21/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	2.087	11000	J
2.	79-09-4	Propanoic acid	2.222	20000	J
3.	1120-21-4	Undecane	6.293	2400	J
4.	629-50-5	Tridecane	6.904	6000	J
5.		Unknown Alkane	7.251	5400	J
6.	629-59-4	Tetradecane	7.451	7600	J
7.	629-62-9	Pentadecane	7.963	3900	J
8.		Unknown	8.981	80000	J
9.		Unknown	9.528	21000	J
10.		Unknown	9.816	16000	J
11.	19406-51-0	p-Toluidine, 3,5-dinitro-	9.881	5600	J
12.	57-10-3	n-Hexadecanoic acid	10.092	93000	J
13.	60-33-3	9,12-Octadecadienoic acid (Z	10.751	120000	J
14.	13126-39-1	cis-13-Octadecenoic acid	10.775	35000	J
15.	57-11-4	Octadecanoic acid	10.833	23000	J
16.		Unknown	10.898	24000	J
17.		Unknown	11.069	10000	J
18.		Unknown	11.475	95000	J
19.		Unknown	11.527	26000	J
20.	629-94-7	Heneicosane	13.674	8300	J
21.		Unknown	13.774	8800	J
22.		Unknown	14.715	10000	J
23.		Unknown	14.774	8700	J
24.		Unknown	15.015	15000	J
25.		Unknown	15.510	8000	J
26.					
27.	SVOCTIC	Total SVOC TICs		660000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15260SLF026	Sample number(s): 8046567-8046586								
Acenaphthene	N.D.	3.	17	ug/kg	99		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	106		83-127		
Acetophenone	N.D.	17.	33	ug/kg	78		74-116		
Anthracene	N.D.	3.	17	ug/kg	105		82-118		
Atrazine	N.D.	33.	170	ug/kg	109		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	52		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	94		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	98		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	103		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	94		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	102		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	93		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	91		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	105		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	108		84-120		
Caprolactam	N.D.	33.	170	ug/kg	87		71-129		
Carbazole	N.D.	17.	33	ug/kg	103		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	87		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	41		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	76*		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	74*		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	86		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	99		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	97		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	116		63-126		
Chrysene	N.D.	3.	17	ug/kg	95		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	95		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	97		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	40		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	105		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	104		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	81*		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	103		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	76		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	56		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	104		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	107		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	107		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	106		81-117		
Fluorene	N.D.	3.	17	ug/kg	104		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	88		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	84		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	105		68-145		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachloroethane	N.D.	33.	170	ug/kg	80		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	94		81-118		
Isophorone	N.D.	17.	33	ug/kg	79		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	91		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	89		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	87		75-119		
Naphthalene	N.D.	3.	17	ug/kg	97		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	110		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	102		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	74		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	77		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	101		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	76		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	84		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	105		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	127		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	89		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	99		80-114		
Phenol	N.D.	17.	33	ug/kg	75		73-122		
Pyrene	N.D.	3.	17	ug/kg	96		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	105		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	106		81-123		
Batch number: 15260SLG026	Sample number(s): 8046587-8046590								
Acenaphthene	N.D.	3.	17	ug/kg	94		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	99		83-127		
Acetophenone	N.D.	17.	33	ug/kg	81		74-116		
Anthracene	N.D.	3.	17	ug/kg	101		82-118		
Atrazine	N.D.	33.	170	ug/kg	103		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	61		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	97		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	94		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	103		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	88		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	97		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	84		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	113		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	91		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	99		84-120		
Caprolactam	N.D.	33.	170	ug/kg	95		71-129		
Carbazole	N.D.	17.	33	ug/kg	105		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	102		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	78		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	93		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	89		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	108		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	94		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	104		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	104		63-126		
Chrysene	N.D.	3.	17	ug/kg	103		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	89		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	101		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	79		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	109		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	95		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	98		83-120		

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Dimethylphthalate	N.D.	67.	170	ug/kg	99		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	70		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	39		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	106		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	108		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	91		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	103		81-117		
Fluorene	N.D.	3.	17	ug/kg	103		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	102		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	110		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	97		68-145		
Hexachloroethane	N.D.	33.	170	ug/kg	82		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	87		81-118		
Isophorone	N.D.	17.	33	ug/kg	92		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	94		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	91		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	80		75-119		
Naphthalene	N.D.	3.	17	ug/kg	99		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	110		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	97		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	79		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	94		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	100		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	72		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	81		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	103		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	103		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	90		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	96		80-114		
Phenol	N.D.	17.	33	ug/kg	85		73-122		
Pyrene	N.D.	3.	17	ug/kg	92		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	109		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	111		81-123		
Batch number: 152680015A	Sample number(s): 8046567-8046586								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	113		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	110		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	98		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	117		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	96		83-122		
HMX	N.D.	250.	750	ug/kg	74		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	105		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	106		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	104		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	113		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	107		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	112		80-122		
PETN	N.D.	2,000.	6,000	ug/kg	100		64-121		
RDX	N.D.	130.	300	ug/kg	103		84-122		
Tetryl	N.D.	160.	400	ug/kg	106		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	94		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	112		82-133		
Batch number: 152680016A	Sample number(s): 8046587-8046590								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	105		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	104		79-120		

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,2-Dinitrobenzene	N.D.		100.	300	ug/kg	100		94-129		
1,3-Dinitrobenzene	N.D.		100.	300	ug/kg	113		94-124		
1,4-Dinitrobenzene	N.D.		100.	300	ug/kg	93		83-122		
HMX	N.D.		250.	750	ug/kg	70		65-121		
Nitrobenzene	N.D.		100.	300	ug/kg	102		81-116		
Nitroglycerin	N.D.		2,000.	6,000	ug/kg	101		70-118		
1-Nitronaphthalene	N.D.		100.	300	ug/kg	101		83-122		
2-Nitrotoluene	N.D.		200.	400	ug/kg	103		86-113		
3-Nitrotoluene	N.D.		250.	500	ug/kg	102		85-135		
4-Nitrotoluene	N.D.		200.	400	ug/kg	105		80-122		
PETN	N.D.		2,000.	6,000	ug/kg	96		64-121		
RDX	N.D.		130.	300	ug/kg	100		84-122		
Tetryl	N.D.		160.	400	ug/kg	103		67-152		
1,3,5-Trinitrobenzene	N.D.		100.	300	ug/kg	92		83-119		
2,4,6-Trinitrotoluene	N.D.		100.	300	ug/kg	104		82-133		
Batch number: 152585708003	Sample number(s): 8046587-8046590									
Aluminum	N.D.		7.66	20.0	mg/kg	107		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	108		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	104		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	100		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	106		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	106		80-120		
Calcium	17.9	J	3.33	20.0	mg/kg	107		80-120		
Chromium	N.D.		0.0980	1.50	mg/kg	103		80-120		
Cobalt	N.D.		0.0810	0.500	mg/kg	105		80-120		
Copper	N.D.		0.280	1.00	mg/kg	103		80-120		
Iron	N.D.		3.33	20.0	mg/kg	103		80-120		
Lead	N.D.		0.320	1.50	mg/kg	103		80-120		
Magnesium	N.D.		1.67	10.0	mg/kg	102		80-120		
Manganese	N.D.		0.0830	0.500	mg/kg	102		80-120		
Nickel	N.D.		0.230	1.00	mg/kg	104		80-120		
Potassium	N.D.		16.8	50.0	mg/kg	102		80-120		
Selenium	N.D.		0.830	2.00	mg/kg	103		80-120		
Silver	N.D.		0.120	0.500	mg/kg	95		80-120		
Sodium	N.D.		16.7	100	mg/kg	102		80-120		
Thallium	N.D.		0.750	3.00	mg/kg	107		80-120		
Vanadium	N.D.		0.150	0.500	mg/kg	103		80-120		
Zinc	N.D.		0.770	2.00	mg/kg	103		80-120		
Batch number: 152585708006	Sample number(s): 8046567-8046586									
Aluminum	31.0		7.66	20.0	mg/kg	107		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	103		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	100		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	104		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	105		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	104		80-120		
Calcium	N.D.		3.33	20.0	mg/kg	100		80-120		
Chromium	N.D.		0.0980	1.50	mg/kg	102		80-120		
Cobalt	N.D.		0.0810	0.500	mg/kg	104		80-120		
Copper	0.353	J	0.280	1.00	mg/kg	108		80-120		
Iron	N.D.		3.33	20.0	mg/kg	103		80-120		
Lead	N.D.		0.320	1.50	mg/kg	106		80-120		
Magnesium	N.D.		1.67	10.0	mg/kg	99		80-120		
Manganese	0.0910	J	0.0830	0.500	mg/kg	103		80-120		
Nickel	N.D.		0.230	1.00	mg/kg	106		80-120		

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Potassium	17.9	J	16.8	50.0	mg/kg	92		80-120		
Selenium	N.D.		0.830	2.00	mg/kg	103		80-120		
Silver	N.D.		0.120	0.500	mg/kg	89		80-120		
Sodium	N.D.		16.7	100	mg/kg	94		80-120		
Thallium	N.D.		0.750	3.00	mg/kg	98		80-120		
Vanadium	N.D.		0.150	0.500	mg/kg	100		80-120		
Zinc	N.D.		0.770	2.00	mg/kg	103		80-120		
Batch number: 152585711002	Sample number(s): 8046587-8046590									
Mercury	N.D.		0.0100	0.100	mg/kg	106		80-120		
Batch number: 152585711005	Sample number(s): 8046567-8046586									
Mercury	N.D.		0.0100	0.100	mg/kg	101		80-120		
Batch number: 1519279	Sample number(s): 8046567-8046571									
TOC Subcontracted - Spectrum	N.D.		99.0	100	mg/kg	106		75-125		
Batch number: 1519416	Sample number(s): 8046572-8046585									
TOC Subcontracted - Spectrum	N.D.		99.0	100	mg/kg	95		75-125		
Batch number: 1519500	Sample number(s): 8046586-8046590									
TOC Subcontracted - Spectrum	N.D.		99.0	100	mg/kg	106		75-125		
Batch number: 15259820009A	Sample number(s): 8046567-8046576									
Moisture						100		99-101		
Batch number: 15259820009B	Sample number(s): 8046577-8046586									
Moisture						100		99-101		
Batch number: 15260820001A	Sample number(s): 8046587-8046590									
Moisture						100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15260SLF026	Sample number(s): 8046567-8046586 UNSPK: 8046570								
Acenaphthene	93	94	83-116	0	30				
Acenaphthylene	90	91	83-127	0	30				
Acetophenone	95	98	74-116	2	30				
Anthracene	95	95	82-118	1	30				
Atrazine	81	85	63-148	5	30				
Benzaldehyde	24	24	10-69	4	30				
Benzo(a)anthracene	89	88	76-119	1	30				
Benzo(a)pyrene	90	90	85-117	0	30				
Benzo(b)fluoranthene	98	97	78-129	1	30				
Benzo(g,h,i)perylene	96	96	82-119	1	30				
Benzo(k)fluoranthene	94	97	79-120	3	30				
1,1'-Biphenyl	91	92	80-116	1	30				
4-Bromophenyl-phenylether	95	88	84-120	8	30				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Butylbenzylphthalate	101	101	80-118	1	30				
Di-n-butylphthalate	95	96	84-120	0	30				
Caprolactam	15*	15*	71-129	4	30				
Carbazole	92	92	78-117	1	30				
4-Chloro-3-methylphenol	101	107	79-127	5	30				
4-Chloroaniline	17	17	10-103	4	30				
bis(2-Chloroethoxy)methane	100	101	77-116	1	30				
bis(2-Chloroethyl)ether	100	102	77-115	1	30				
2-Chloronaphthalene	82	83	63-146	1	30				
2-Chlorophenol	97	101	85-123	3	30				
4-Chlorophenyl-phenylether	92	92	81-120	0	30				
2,2'-oxybis(1-Chloropropane)	103	106	63-126	2	30				
Chrysene	93	92	80-121	2	30				
Dibenz(a,h)anthracene	97	97	81-123	1	30				
Dibenzofuran	90	91	85-115	0	30				
3,3'-Dichlorobenzidine	54	54	10-104	1	30				
2,4-Dichlorophenol	98	100	81-123	1	30				
Diethylphthalate	92	93	81-118	1	30				
2,4-Dimethylphenol	97	99	83-120	1	30				
Dimethylphthalate	90	94	82-113	4	30				
4,6-Dinitro-2-methylphenol	76	94	59-131	21	30				
2,4-Dinitrophenol	44	61	27-140	32*	30				
2,4-Dinitrotoluene	83	93	81-122	7	30				
2,6-Dinitrotoluene	90	96	83-120	5	30				
bis(2-Ethylhexyl)phthalate	99	102	81-121	2	30				
Fluoranthene	87	87	81-117	1	30				
Fluorene	94	94	86-118	0	30				
Hexachlorobenzene	91	90	75-123	1	30				
Hexachlorobutadiene	93	92	72-120	1	30				
Hexachlorocyclopentadiene	0*	0*	68-145	0	30				
Hexachloroethane	90	92	78-114	1	30				
Indeno(1,2,3-cd)pyrene	94	94	81-118	0	30				
Isophorone	119	120	78-125	1	30				
2-Methylnaphthalene	89	90	83-109	0	30				
2-Methylphenol	100	103	82-125	2	30				
4-Methylphenol	128*	149*	75-119	11	30				
Naphthalene	98	98	83-112	1	30				
2-Nitroaniline	104	110	84-126	5	30				
3-Nitroaniline	93	99	66-119	5	30				
4-Nitroaniline	74	78	50-100	5	30				
Nitrobenzene	95	100	70-122	5	30				
2-Nitrophenol	90	105	83-120	15	30				
4-Nitrophenol	103	109	60-129	5	30				
N-Nitroso-di-n-propylamine	102	104	67-121	1	30				
N-Nitrosodiphenylamine	97	98	83-118	0	30				
Di-n-octylphthalate	111	114	74-146	2	30				
Pentachlorophenol	108	107	57-126	2	30				
Phenanthrene	93	91	80-114	2	30				
Phenol	102	106	73-122	3	30				
Pyrene	93	91	81-114	2	30				
2,4,5-Trichlorophenol	93	97	86-123	4	30				
2,4,6-Trichlorophenol	96	97	81-123	0	30				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15260SLG026	Sample number(s): 8046587-8046590 UNSPK: 8046587								
Acenaphthene	87	84	83-116	3	30				
Acenaphthylene	91	90	83-127	1	30				
Acetophenone	82	76	74-116	7	30				
Anthracene	97	94	82-118	2	30				
Atrazine	74	76	63-148	3	30				
Benzaldehyde	9*	7*	10-69	26	30				
Benzo(a)anthracene	104	105	76-119	2	30				
Benzo(a)pyrene	94	91	85-117	3	30				
Benzo(b)fluoranthene	111	103	78-129	6	30				
Benzo(g,h,i)perylene	94	89	82-119	5	30				
Benzo(k)fluoranthene	84	84	79-120	2	30				
1,1'-Biphenyl	81	79*	80-116	2	30				
4-Bromophenyl-phenylether	104	104	84-120	1	30				
Butylbenzylphthalate	99	98	80-118	0	30				
Di-n-butylphthalate	95	91	84-120	4	30				
Caprolactam	23*	20*	71-129	14	30				
Carbazole	95	94	78-117	1	30				
4-Chloro-3-methylphenol	104	99	79-127	4	30				
4-Chloroaniline	27	34	10-103	24	30				
bis(2-Chloroethoxy)methane	89	85	77-116	4	30				
bis(2-Chloroethyl)ether	88	80	77-115	10	30				
2-Chloronaphthalene	114	76	63-146	39*	30				
2-Chlorophenol	93	86	85-123	7	30				
4-Chlorophenyl-phenylether	95	91	81-120	4	30				
2,2'-oxybis(1-Chloropropane)	102	91	63-126	11	30				
Chrysene	103	102	80-121	1	30				
Dibenz(a,h)anthracene	98	91	81-123	7	30				
Dibenzofuran	94	93	85-115	0	30				
3,3'-Dichlorobenzidine	40	42	10-104	5	30				
2,4-Dichlorophenol	105	98	81-123	6	30				
Diethylphthalate	85	83	81-118	2	30				
2,4-Dimethylphenol	95	89	83-120	5	30				
Dimethylphthalate	89	89	82-113	0	30				
4,6-Dinitro-2-methylphenol	51*	57*	59-131	12	30				
2,4-Dinitrophenol	24*	32	27-140	31*	30				
2,4-Dinitrotoluene	95	71*	81-122	19	30				
2,6-Dinitrotoluene	98	90	83-120	8	30				
bis(2-Ethylhexyl)phthalate	103	97	81-121	5	30				
Fluoranthene	93	95	81-117	3	30				
Fluorene	93	93	86-118	1	30				
Hexachlorobenzene	87	98	75-123	13	30				
Hexachlorobutadiene	114	102	72-120	10	30				
Hexachlorocyclopentadiene	0*	0*	68-145	0	30				
Hexachloroethane	63*	64*	78-114	3	30				
Indeno(1,2,3-cd)pyrene	94	89	81-118	5	30				
Isophorone	91	85	78-125	6	30				
2-Methylnaphthalene	96	89	83-109	6	30				
2-Methylphenol	88	81*	82-125	8	30				
4-Methylphenol	80	73*	75-119	8	30				
Naphthalene	98	94	83-112	4	30				

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2-Nitroaniline	100	100	84-126	2	30				
3-Nitroaniline	78	80	66-119	4	30				
4-Nitroaniline	66	66	50-100	1	30				
Nitrobenzene	82	80	70-122	2	30				
2-Nitrophenol	76*	77*	83-120	3	30				
4-Nitrophenol	86	85	60-129	1	30				
N-Nitroso-di-n-propylamine	87	78	67-121	10	30				
N-Nitrosodiphenylamine	100	96	83-118	3	30				
Di-n-octylphthalate	100	93	74-146	6	30				
Pentachlorophenol	128*	117	57-126	8	30				
Phenanthrene	92	88	80-114	4	30				
Phenol	92	82	73-122	11	30				
Pyrene	86	88	81-114	3	30				
2,4,5-Trichlorophenol	105	103	86-123	1	30				
2,4,6-Trichlorophenol	107	108	81-123	2	30				
Batch number: 152680015A	Sample number(s): 8046567-8046586 UNSPK: 8046585								
4-Amino-2,6-Dinitrotoluene	70*	99	85-118	13	50				
2-Amino-4,6-Dinitrotoluene	76	107	69-113	15	50				
1,2-Dinitrobenzene	86	88	80-120	1	50				
1,3-Dinitrobenzene	108	110	89-119	0	50				
1,4-Dinitrobenzene	73*	77*	82-117	4	50				
HMX	78	82	72-107	4	50				
Nitrobenzene	97	96	86-108	2	50				
Nitroglycerin	106	82	73-116	27	50				
1-Nitronaphthalene	99	103	89-131	3	50				
2-Nitrotoluene	101	113*	79-112	10	50				
3-Nitrotoluene	101	99	72-119	3	50				
4-Nitrotoluene	96	101	90-118	4	50				
PETN	99	96	71-133	4	50				
RDX	105	104	75-108	2	50				
Tetryl	91	94	58-125	2	50				
1,3,5-Trinitrobenzene	76	80	58-135	4	50				
2,4,6-Trinitrotoluene	-80*	1407*	92-114	142*	50				
Batch number: 152680016A	Sample number(s): 8046587-8046590 UNSPK: 8046590								
4-Amino-2,6-Dinitrotoluene	90	90	85-118	1	50				
2-Amino-4,6-Dinitrotoluene	90	94	69-113	3	50				
1,2-Dinitrobenzene	102	104	80-120	6	50				
1,3-Dinitrobenzene	117	112	89-119	1	50				
1,4-Dinitrobenzene	89	85	82-117	1	50				
HMX	93	92	72-107	3	50				
Nitrobenzene	105	106	86-108	5	50				
Nitroglycerin	103	88	73-116	12	50				
1-Nitronaphthalene	113	109	89-131	1	50				
2-Nitrotoluene	91	98	79-112	11	50				
3-Nitrotoluene	96	97	72-119	5	50				
4-Nitrotoluene	93	96	90-118	7	50				
PETN	90	96	71-133	10	50				
RDX	118*	121*	75-108	6	50				
Tetryl	113	93	58-125	16	50				
1,3,5-Trinitrobenzene	89	87	58-135	2	50				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2,4,6-Trinitrotoluene	86*	107	92-114	7	50				
Batch number: 152585708003	Sample number(s): 8046587-8046590 UNSPK: P046347 BKG: P046347								
Aluminum	2969 (2)	4754 (2)	75-125	12	20	21,800	21,700	0	20
Antimony	63*	61*	75-125	2	20	4.05 J	3.52 J	14 (1)	20
Arsenic	78	77	75-125	0	20	8.82 J	4.43 J	66* (1)	20
Barium	103	112	75-125	4	20	161	150	7	20
Beryllium	113	109	75-125	3	20	1.37 J	1.41 J	3 (1)	20
Cadmium	99	113	75-125	13	20	0.466 J	0.558 J	18 (1)	20
Calcium	97	132*	75-125	8	20	1,230	1,290	5	20
Chromium	123	137*	75-125	5	20	25.4	28.5	11 (1)	20
Cobalt	91	96	75-125	4	20	18.6	15.0	21*	20
Copper	93	102	75-125	4	20	38.3	38.2	0	20
Iron	-4942 (2)	879 (2)	75-125	13	20	45,300	42,800	6	20
Lead	53*	66*	75-125	6	20	23.9	18.8	24* (1)	20
Magnesium	297 (2)	507 (2)	75-125	7	20	5,060	5,460	8	20
Manganese	-714 (2)	-299 (2)	75-125	34*	20	831	585	35*	20
Nickel	96	103	75-125	4	20	37.2	35.8	4	20
Potassium	217*	243*	75-125	5	20	2,460	2,550	3	20
Selenium	95	107	75-125	8	20	6.46 J	6.96 J	7 (1)	20
Silver	82	98	75-125	14	20	0.841 J	N.D.	200* (1)	20
Sodium	101	102	75-125	2	20	62.1 J	65.2 J	5 (1)	20
Thallium	106	104	75-125	2	20	N.D.	N.D.	0 (1)	20
Vanadium	114	115	75-125	1	20	28.8	29.7	3	20
Zinc	90	113	75-125	7	20	100	97.3	3	20
Batch number: 152585708006	Sample number(s): 8046567-8046586 UNSPK: 8046568 BKG: 8046568								
Aluminum	1317 (2)	1804 (2)	75-125	7	20	10,200	9,740	5	20
Antimony	70*	72*	75-125	1	20	N.D.	N.D.	0 (1)	20
Arsenic	102	98	75-125	7	20	1.17 J	1.63 J	33* (1)	20
Barium	101	103	75-125	1	20	33.0	31.4	5	20
Beryllium	103	104	75-125	2	20	0.363 J	0.344 J	5 (1)	20
Cadmium	91	93	75-125	0	20	N.D.	N.D.	0 (1)	20
Calcium	84	102	75-125	4	20	1,080	1,020	6	20
Chromium	104	101	75-125	3	20	13.8	11.3	20	20
Cobalt	98	95	75-125	5	20	6.02	5.53	8	20
Copper	108	104	75-125	4	20	22.6	21.6	4	20
Iron	3349 (2)	-1746 (2)	75-125	21*	20	23,100	19,800	15	20
Lead	66 (2)	34 (2)	75-125	3	20	154	144	6	20
Magnesium	149 (2)	151 (2)	75-125	0	20	820	777	5	20
Manganese	73*	106	75-125	9	20	127	118	8	20
Nickel	103	97	75-125	7	20	12.5	10.6	16	20
Potassium	134*	149*	75-125	6	20	547	497	10	20
Selenium	101	91	75-125	10	20	4.35	3.59	19 (1)	20
Silver	100	86	75-125	15	20	0.523	N.D.	200* (1)	20
Sodium	97	98	75-125	2	20	30.7 J	20.9 J	38* (1)	20
Thallium	97	95	75-125	5	20	1.03 J	1.00 J	3 (1)	20

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Vanadium	101	100	75-125	3	20	23.3	21.1	10	20
Zinc	102	99	75-125	4	20	28.0	26.8	4	20
Batch number: 152585711002	Sample number(s): 8046587-8046590 UNSPK: P046346 BKG: P046346								
Mercury	100	99	80-120	5	20	0.0287 J	0.0254 J	12 (1)	20
Batch number: 152585711005	Sample number(s): 8046567-8046586 UNSPK: 8046579 BKG: 8046579								
Mercury	99	92	80-120	5	20	0.0276 J	0.0497 J	57* (1)	20
Batch number: 1519279	Sample number(s): 8046567-8046571 BKG: 8046570								
TOC Subcontracted - Spectrum						21,300	19,900	7	20
Batch number: 1519416	Sample number(s): 8046572-8046585 BKG: 8046585								
TOC Subcontracted - Spectrum						20,600	22,200	7	20
Batch number: 15259820009A	Sample number(s): 8046567-8046576 BKG: 8046575								
Moisture						42.5	44.6	5	5
Batch number: 15259820009B	Sample number(s): 8046577-8046586 BKG: 8046583								
Moisture						40.0	40.9	2	5
Batch number: 15260820001A	Sample number(s): 8046587-8046590 BKG: P042144								
Moisture						16.8	17.2	2	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15260SLF026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8046567	76	76	76	74	103	91
8046568	76	74	80	70	103	93
8046569	79	77	72	71	100	96
8046570	72	77	76	67	99	89
8046571	74	74	72	60	102	93
8046572	72	72	71	57	97	90
8046573	86	85	80	42*	107	92
8046574	82	87	67	59	88	92
8046575	71	72	79	54	98	87
8046576	70	76	72	48*	96	89
8046577	75	73	72	64	108	95
8046578	81	74	78	57	110	97
8046579	75	72	68	53*	101	97
8046580	72	71	68	58	96	96
8046581	71	72	71	45*	102	92
8046582	77	78	77	42*	102	88
8046583	79	78	68	63	103	99

*- Outside of specification
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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Surrogate Quality Control

8046584	77	79	66	60	103	95
8046585	74	69	63	58	102	94
8046586	73	73	61	48*	102	91
Blank	75	76	88	77	100	90
LCS	79	79	88	74	97	88
MS	95	91	85	92	85	92
MSD	99	93	88	98	87	92
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: TCL 8270 (microwave)
Batch number: 15260SLG026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8046587	104	104	114	96	103	121
8046588	67	67	75	62	69	77
8046589	106	107	114	92	105	118
8046590	107	107	105	92	103	110
Blank	91	90	98	83	91	96
LCS	105	105	130	103	113	114
MS	105	104	114	90	104	117
MSD	95	96	112	86	100	114
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152680015A

	2-Nitro-m-xylene
8046567	69
8046568	109
8046569	132
8046570	130
8046571	73
8046572	108
8046573	105
8046574	89
8046575	79
8046576	121
8046577	100
8046578	78
8046579	83
8046580	75
8046581	69
8046582	71
8046583	81
8046584	95
8046585	104
8046586	112
Blank	116
LCS	106
MS	98
MSD	86
Limits:	68-138

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152680016A

	2-Nitro-m-xylene
8046587	82
8046588	77

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1592599
Reported: 10/21/2015 13:28

Surrogate Quality Control

8046589	91
8046590	105
Blank	90
LCS	108
MS	94
MSD	77
Limits:	68-138

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1592599 Sample # 8046567-90

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Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1592599 Sample # 8046567-90

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Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1592599 Sample # 8046567-90

| | | |

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1592599 Sample # 8046567-90

| | | |

eurofins | Spectrum Analytical

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Report Date:
14-Oct-15 16:23

Laboratory Report

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17605-2425
Attn: Kathy Binkley

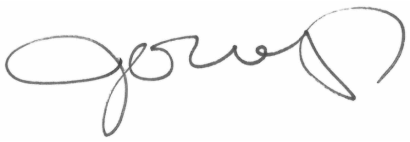
Project: See Chain of Custody
Project #: 1592599

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC13232-01	TNT-PS-I-1-09142015	Soil	14-Sep-15 11:35	06-Oct-15 11:48
SC13232-02	TNT-PS-I-2-09142015	Soil	14-Sep-15 11:38	06-Oct-15 11:48
SC13232-03	TNT-PS-I-3-09142015	Soil	14-Sep-15 11:40	06-Oct-15 11:48
SC13232-04	TNT-PS-I-4-09142015	Soil	14-Sep-15 11:43	06-Oct-15 11:48
SC13232-05	TNT-PS-H-1-09142015	Soil	14-Sep-15 11:18	06-Oct-15 11:48
SC13232-06	TNT-PS-H-2-09142015	Soil	14-Sep-15 11:21	06-Oct-15 11:48
SC13232-07	TNT-PS-H-3-09142015	Soil	14-Sep-15 11:25	06-Oct-15 11:48
SC13232-08	TNT-PS-H-4-09142015	Soil	14-Sep-15 11:28	06-Oct-15 11:48
SC13232-09	TNT-PS-G-1-09142015	Soil	14-Sep-15 11:05	06-Oct-15 11:48
SC13232-10	TNT-PS-G-2-09142015	Soil	14-Sep-15 11:08	06-Oct-15 11:48
SC13232-11	TNT-PS-G-3-09142015	Soil	14-Sep-15 11:12	06-Oct-15 11:48
SC13232-12	TNT-PS-G-4-09142015	Soil	14-Sep-15 11:15	06-Oct-15 11:48
SC13232-13	TNT-PS-D-1-09142015	Soil	14-Sep-15 09:05	06-Oct-15 11:48
SC13232-14	TNT-PS-D-2-09142015	Soil	14-Sep-15 09:10	06-Oct-15 11:48
SC13232-15	TNT-PS-D-3-09142015	Soil	14-Sep-15 09:15	06-Oct-15 11:48
SC13232-16	TNT-PS-D-4-09142015	Soil	14-Sep-15 09:20	06-Oct-15 11:48
SC13232-17	TNT-PS-E-1-09142015	Soil	14-Sep-15 09:30	06-Oct-15 11:48
SC13232-18	TNT-PS-E-2-09142015	Soil	14-Sep-15 09:40	06-Oct-15 11:48
SC13232-19	TNT-PS-E-3-09142015	Soil	14-Sep-15 09:45	06-Oct-15 11:48
SC13232-20	TNT-PS-E-4-09142015	Soil	14-Sep-15 09:50	06-Oct-15 11:48
SC13232-21	TNT-PS-F-1-09142015	Soil	14-Sep-15 09:55	06-Oct-15 11:48
SC13232-22	TNT-PS-F-2-09142015	Soil	14-Sep-15 10:00	06-Oct-15 11:48
SC13232-23	TNT-PS-F-3-09142015	Soil	14-Sep-15 10:05	06-Oct-15 11:48
SC13232-24	TNT-PS-F-4-09142015	Soil	14-Sep-15 10:10	06-Oct-15 11:48

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435

Authorized by:



June O'Connor
Laboratory Director

Eurofins Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 16 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.2 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

Lloyd Kahn

Samples:

SC13232-01 *TNT-PS-I-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-02 *TNT-PS-I-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-03 *TNT-PS-I-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-04 *TNT-PS-I-4-09142015*

This sample was analyzed in quadruplicate. The % RSD is 15.8.

Total Organic Carbon

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-05 *TNT-PS-H-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-06 *TNT-PS-H-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-07 *TNT-PS-H-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-08 *TNT-PS-H-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

Lloyd Kahn

Samples:

SC13232-09 *TNT-PS-G-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-10 *TNT-PS-G-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-11 *TNT-PS-G-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-12 *TNT-PS-G-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-13 *TNT-PS-D-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-14 *TNT-PS-D-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-15 *TNT-PS-D-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-16 *TNT-PS-D-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-17 *TNT-PS-E-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-18 *TNT-PS-E-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-19 *TNT-PS-E-3-09142015*

This sample was analyzed in quadruplicate. The % RSD is 16.5.

Total Organic Carbon

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-20 *TNT-PS-E-4-09142015*

Lloyd Kahn

Samples:

SC13232-20 *TNT-PS-E-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-21 *TNT-PS-F-1-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-22 *TNT-PS-F-2-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-23 *TNT-PS-F-3-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

SC13232-24 *TNT-PS-F-4-09142015*

This sample was analyzed outside the EPA recommended holding time per client request.

Total Organic Carbon

Sample Acceptance Check Form

Client:	Eurofins Lancaster Laboratories Environmental, LLC
Project:	See Chain of Custody / 1592599
Work Order:	SC13232
Sample(s) received on:	10/6/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☑	☐	☐
Were custody seals intact?	☑	☐	☐
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☐	☑	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☐	☑	☐

Summary of Hits

Lab ID: SC13232-01 **Client ID:** TNT-PS-I-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	14800	O09	270	mg/kg	Lloyd Kahn

Lab ID: SC13232-02 **Client ID:** TNT-PS-I-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	17000	O09	377	mg/kg	Lloyd Kahn

Lab ID: SC13232-03 **Client ID:** TNT-PS-I-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	18100	O09	331	mg/kg	Lloyd Kahn

Lab ID: SC13232-04 **Client ID:** TNT-PS-I-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	21300	O09, TG328		mg/kg	Lloyd Kahn

Lab ID: SC13232-05 **Client ID:** TNT-PS-H-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	17700	O09	315	mg/kg	Lloyd Kahn

Lab ID: SC13232-06 **Client ID:** TNT-PS-H-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	15800	O09	606	mg/kg	Lloyd Kahn

Lab ID: SC13232-07 **Client ID:** TNT-PS-H-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	26100	O09	597	mg/kg	Lloyd Kahn

Lab ID: SC13232-08 **Client ID:** TNT-PS-H-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	14900	O09	714	mg/kg	Lloyd Kahn

Lab ID: SC13232-09 **Client ID:** TNT-PS-G-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	19800	O09	580	mg/kg	Lloyd Kahn

Lab ID: SC13232-10 **Client ID:** TNT-PS-G-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	23100	O09	606	mg/kg	Lloyd Kahn

Lab ID: SC13232-11 **Client ID:** TNT-PS-G-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	22700	O09	571	mg/kg	Lloyd Kahn

Lab ID: SC13232-12 **Client ID:** TNT-PS-G-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	24300	O09	667	mg/kg	Lloyd Kahn

Lab ID: SC13232-13 **Client ID:** TNT-PS-D-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	23600	O09	702	mg/kg	Lloyd Kahn

Lab ID: SC13232-14 **Client ID:** TNT-PS-D-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	15100	O09	714	mg/kg	Lloyd Kahn

Lab ID: SC13232-15 **Client ID:** TNT-PS-D-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	18600	O09	702	mg/kg	Lloyd Kahn

Lab ID: SC13232-16 **Client ID:** TNT-PS-D-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	17700	O09	563	mg/kg	Lloyd Kahn

Lab ID: SC13232-17 **Client ID:** TNT-PS-E-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	17000	O09	645	mg/kg	Lloyd Kahn

Lab ID: SC13232-18 **Client ID:** TNT-PS-E-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	24500	O09	597	mg/kg	Lloyd Kahn

Lab ID: SC13232-19 **Client ID:** TNT-PS-E-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	20600	O09, T(	645	mg/kg	Lloyd Kahn

Lab ID: SC13232-20 **Client ID:** TNT-PS-E-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	26500	O09	702	mg/kg	Lloyd Kahn

Lab ID: SC13232-21 **Client ID:** TNT-PS-F-1-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	19300	O09	784	mg/kg	Lloyd Kahn

Lab ID: SC13232-22 **Client ID:** TNT-PS-F-2-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	13600	O09	563	mg/kg	Lloyd Kahn

Lab ID: SC13232-23 **Client ID:** TNT-PS-F-3-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	15800	O09	556	mg/kg	Lloyd Kahn

Lab ID: SC13232-24 **Client ID:** TNT-PS-F-4-09142015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	18400	O09	690	mg/kg	Lloyd Kahn

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification
TNT-PS-I-1-09142015
SC13232-01

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:35	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	14,800	O09	mg/kg	270	268	1	Lloyd Kahn	09-Oct-15	10-Oct-15	rlt	1519279	X

Sample Identification
TNT-PS-I-2-09142015
SC13232-02

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:38	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	17,000	O09	mg/kg	377	374	1	Lloyd Kahn	09-Oct-15	10-Oct-15	rlt	1519279	X

Sample Identification
TNT-PS-I-3-09142015
SC13232-03

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:40	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	18,100	O09	mg/kg	331	327	1	Lloyd Kahn	09-Oct-15	10-Oct-15	rlt	1519279	X

Sample Identification
TNT-PS-I-4-09142015
SC13232-04

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:43	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	21,300	O09, TOC 1	mg/kg	328	325	1	Lloyd Kahn	09-Oct-15	10-Oct-15	rlt	1519279	X

Sample Identification
TNT-PS-H-1-09142015
SC13232-05

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:18	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	17,700	O09	mg/kg	315	312	1	Lloyd Kahn	09-Oct-15	10-Oct-15	rlt	1519279	X

Sample Identification
TNT-PS-H-2-09142015
SC13232-06

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:21	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	15,800	O09	mg/kg	606	600	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-H-3-09142015
SC13232-07

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:25	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	26,100	O09	mg/kg	597	591	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-H-4-09142015
SC13232-08

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:28	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	14,900	O09	mg/kg	714	708	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-G-1-09142015
SC13232-09

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:05	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	19,800	O09	mg/kg	580	574	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-G-2-09142015
SC13232-10

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:08	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	23,100	O09	mg/kg	606	600	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-G-3-09142015
SC13232-11

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:12	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	22,700	O09	mg/kg	571	566	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-G-4-09142015
SC13232-12

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 11:15	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	24,300	O09	mg/kg	667	660	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-D-1-09142015
SC13232-13

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:05	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	23,600	O09	mg/kg	702	695	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-D-2-09142015
SC13232-14

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:10	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	15,100	O09	mg/kg	714	708	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-D-3-09142015
SC13232-15

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:15	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	18,600	O09	mg/kg	702	695	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-D-4-09142015
SC13232-16

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:20	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	17,700	O09	mg/kg	563	558	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-E-1-09142015
SC13232-17

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:30	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	17,000	O09	mg/kg	645	639	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-E-2-09142015
SC13232-18

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:40	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	24,500	O09	mg/kg	597	591	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-E-3-09142015
SC13232-19

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:45	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**20,600**	O09, TOC 1a	mg/kg	645	639	1	Lloyd Kahn	13-Oct-15	13-Oct-15	rlt	1519416	X

Sample Identification
TNT-PS-E-4-09142015
SC13232-20

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:50	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**26,500**	O09	mg/kg	702	695	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-F-1-09142015
SC13232-21

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 09:55	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**19,300**	O09	mg/kg	784	777	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-F-2-09142015
SC13232-22

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 10:00	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**13,600**	O09	mg/kg	563	558	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-F-3-09142015
SC13232-23

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 10:05	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**15,800**	O09	mg/kg	556	550	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

Sample Identification
TNT-PS-F-4-09142015
SC13232-24

Client Project #	Matrix	Collection Date/Time	Received
1592599	Soil	14-Sep-15 10:10	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	**18,400**	O09	mg/kg	690	683	1	Lloyd Kahn	14-Oct-15	14-Oct-15	rlt	1519500	X

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1519279 - General Preparation										
Blank (1519279-BLK1)					Prepared: 09-Oct-15 Analyzed: 10-Oct-15					
Total Organic Carbon	< 100		mg/kg	100						
LCS (1519279-BS1)					Prepared: 09-Oct-15 Analyzed: 10-Oct-15					
Total Organic Carbon	**8500**		mg/kg	100	8000		106	75-125		
Duplicate (1519279-DUP1)			**Source: SC13232-04**		Prepared: 09-Oct-15 Analyzed: 10-Oct-15					
Total Organic Carbon	**19900**		mg/kg	286		21300			6	20
Reference (1519279-SRM1)					Prepared: 09-Oct-15 Analyzed: 10-Oct-15					
Total Organic Carbon	**5700**		mg/kg	203	5430		105	49-151		
Batch 1519416 - General Preparation										
Blank (1519416-BLK1)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	< 100		mg/kg	100						
LCS (1519416-BS1)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**7560**		mg/kg	100	8000		94	75-125		
Calibration Blank (1519416-CCB1)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**0.408**		mg/kg							
Calibration Blank (1519416-CCB2)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**-3.83**		mg/kg							
Calibration Blank (1519416-CCB3)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**-3.98**		mg/kg							
Calibration Blank (1519416-CCB4)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**1.24**		mg/kg							
Calibration Check (1519416-CCV1)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**7860**		mg/kg	100	8000		98	85-115		
Calibration Check (1519416-CCV2)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**8550**		mg/kg	100	8000		107	85-115		
Calibration Check (1519416-CCV3)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**8530**		mg/kg	100	8000		107	85-115		
Calibration Check (1519416-CCV4)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**8240**		mg/kg	100	8000		103	85-115		
Duplicate (1519416-DUP1)			**Source: SC13232-19**		Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**22200**		mg/kg	702		20600			8	20
Reference (1519416-SRM1)					Prepared & Analyzed: 13-Oct-15					
Total Organic Carbon	**4210**		mg/kg	270	5430		78	49-151		
Batch 1519500 - General Preparation										
Blank (1519500-BLK1)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	< 100		mg/kg	100						
LCS (1519500-BS1)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	**8470**		mg/kg	100	8000		106	75-125		
Calibration Blank (1519500-CCB1)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	**0.392**		mg/kg							
Calibration Blank (1519500-CCB2)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	**-2.50**		mg/kg							
Calibration Blank (1519500-CCB3)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	**-6.54**		mg/kg							
Calibration Blank (1519500-CCB4)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	**-0.983**		mg/kg							
Calibration Check (1519500-CCV1)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	**7920**		mg/kg	100	8000		99	85-115		
Calibration Check (1519500-CCV2)					Prepared & Analyzed: 14-Oct-15					
Total Organic Carbon	**8430**		mg/kg	100	8000		105	85-115		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1519500 - General Preparation										
Calibration Check (1519500-CCV3)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**8210**		mg/kg	100	8000		103	85-115		
Calibration Check (1519500-CCV4)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**7850**		mg/kg	100	8000		98	85-115		
Reference (1519500-SRM1)						Prepared & Analyzed: 14-Oct-15				
Total Organic Carbon	**4880**		mg/kg	192	5430		90	49-151		

Notes and Definitions

O09	This sample was analyzed outside the EPA recommended holding time per client request.
TOC 1	This sample was analyzed in quadruplicate. The % RSD is 15.8.
TOC 1a	This sample was analyzed in quadruplicate. The % RSD is 16.5.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Rebecca Merz

Analysis Request / Environmental Services Subcontracting Form

eurofins | Lancaster Laboratories

For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1592599 Sample Nos.: 8046567-90

Date: 10/5/2015

SC13232

PAGE 1 OF 3

Subcontractor: **EUROFINS SPECTRUM ANALYTICAL, INC.**

LLI P.O.# : _____ Courier: FED EX

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Potable / NPDES: Water	Matrix: Other	Total # of Containers	Analyses Requested: TOC by Lloyd Kahn	Preservation Codes	Comments	Temperature of samples upon receipt (if requested)
TNT-PS-I-1-09142015 01	09/14/15	11:35		X	X			1	X		8046567	
TNT-PS-I-2-09142015 02	09/14/15	11:38		X	X			1	X		8046568	
TNT-PS-I-3-09142015 03	09/14/15	11:40		X	X			1	X		8046569	
TNT-PS-I-4-09142015 04	09/14/15	11:43		X	X			1	X		8046570	
TNT-PS-H-1-09142015 05	09/14/15	11:18		X	X			1	X		8046571	
TNT-PS-H-2-09142015 06	09/14/15	11:21		X	X			1	X		8046572	
TNT-PS-H-3-09142015 07	09/14/15	11:25		X	X			1	X		8046573	
TNT-PS-H-4-09142015 08	09/14/15	11:28		X	X			1	X		8046574	
TNT-PS-G-1-09142015 09	09/14/15	11:05		X	X			1	X		8046575	
TNT-PS-G-2-09142015 10	09/14/15	11:08		X	X			1	X		8046576	

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Comments:

Turnaround Time Requested (TAT): (Standard) Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

SDG Complete? Yes No

MA MCP
CT RCP

Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-5-15	1240	@KS 10-5-15		
Fedex				10/6/15	11:08
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Lancaster Laboratories, Inc. 2425 New Holland Pike Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766

Copies: White copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the samplers.

1.2/0/1.2/02

Analysis Request / Environmental Services Subcontracting Form

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For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1592599 Sample Nos.: 8046567-90

Date: 10/5/2015

SC13232 By

Subcontractor: EUROFINS SPECTRUM ANALYTICAL, INC.

LLI P.O.# : _____ Courier: FED EX

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Matrix: ☐ Potable ☐ NPDES

Analyses Requested / Preservation Codes

Preservation Codes: H=HCl T=Thiosulfate N=HNO_3 B=NaOH S=H_2SO_4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	TOC by Lloyd Kahn	Comments:	Temperature of samples upon receipt (if requested)
TNT-PS-G-3-09142015 -11	09/14/15	11:12		X	X			1	X	8046577	
TNT-PS-G-4-09142015 12	09/14/15	11:15		X	X			1	X	8046578	
TNT-PS-D-1-09142015 13	09/14/15	09:05		X	X			1	X	8046579	
TNT-PS-D-2-09142015 14	09/14/15	09:10		X	X			1	X	8046580	
TNT-PS-D-3-09142015 15	09/14/15	09:15		X	X			1	X	8046581	
TNT-PS-D-4-09142015 16	09/14/15	09:20		X	X			1	X	8046582	
TNT-PS-E-1-09142015 17	09/14/15	09:30		X	X			1	X	8046583	
TNT-PS-E-2-09142015 18	09/14/15	09:40		X	X			1	X	8046584	
TNT-PS-E-3-09142015 19	09/14/15	09:45		X	X			1	X	8046585	
TNT-PS-E-4-09142015 20	09/14/15	09:50		X	X			1	X	8046586	

Turnaround Time Requested (TAT): Standard Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-5-15	1440			
[signature]			[signature]	10/6/15	1148

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

SDG Complete? Yes No

MA MCP
CT RCP

Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Lancaster Laboratories, Inc. 2425 New Holland Pike Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766

Copies: White copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the samplers.

8

1.2/0/1.2/02 [initials]

Analysis Request / Environmental Services Subcontracting Form

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For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1592599 Sample Nos.: 8046567-90

Date: 10/5/2015

SC 13232 By

Subcontractor: **EUROFINS SPECTRUM ANALYTICAL, INC.**

LLI P.O.# : _____ Courier: FED EX

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: TOC by Lloyd Kahn											Comments
TNT-PS-F-1-09142015 21	09/14/15	09:55		X	X			1	X											8046587
TNT-PS-F-2-09142015 22	09/14/15	10:00		X	X			1	X											8046588
TNT-PS-F-3-09142015 23	09/14/15	10:05		X	X			1	X											8046589
TNT-PS-F-4-09142015 24	09/14/15	10;10		X	X			1	X											8046590

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Temperature of samples upon receipt (if requested)

Turnaround Time Requested (TAT): (Standard) Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

SDG Complete? Yes No

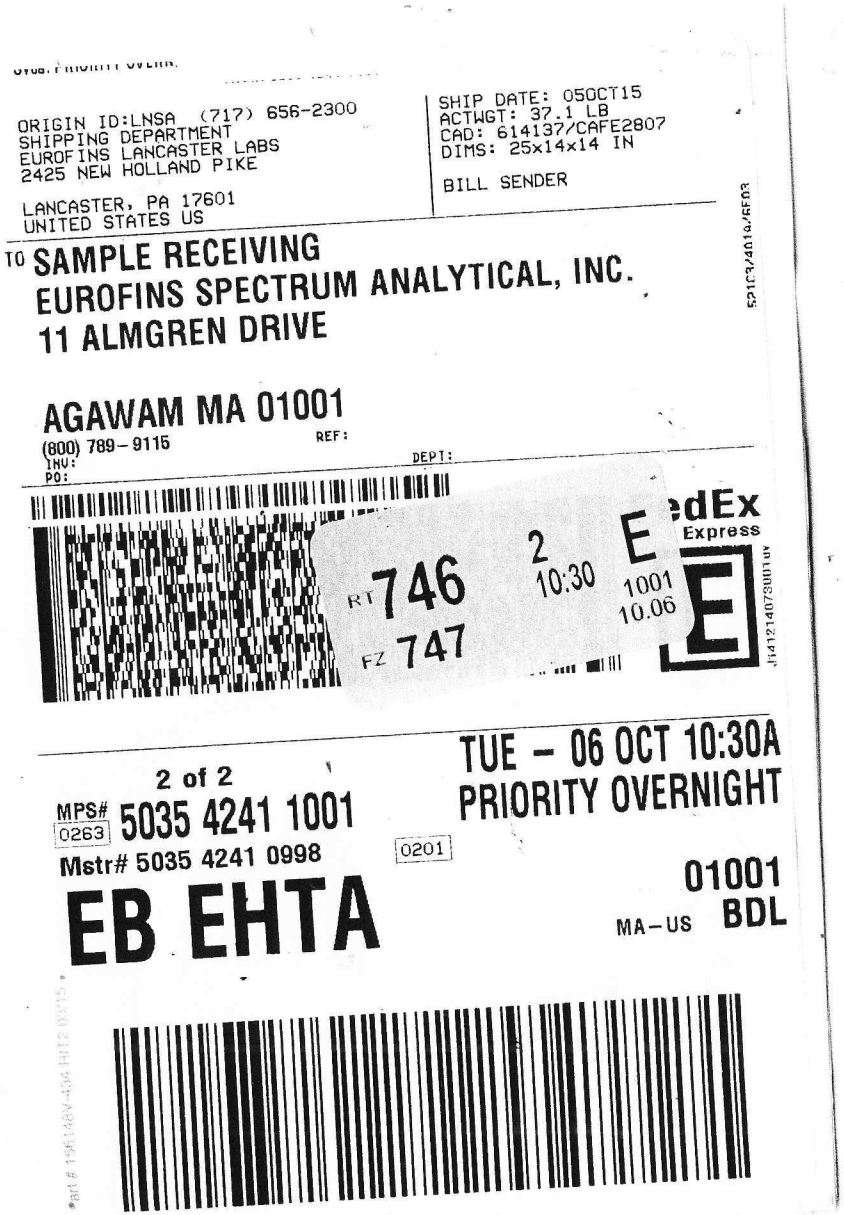
MA MCP
CT RCP

Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-5-15	1440			
Relinquished by: Fed Ex	Date	Time	Received by:	Date 10/6/15	Time 1148
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Copies: White copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the samplers.

1.2/0/1.2/02



ORIGIN ID:LNSA (717) 656-2300
SHIPPING DEPARTMENT
EUROFINS LANCASTER LABS
2425 NEW HOLLAND PIKE

LANCASTER, PA 17601
UNITED STATES US

SHIP DATE: 05OCT15
ACTWGT: 37.1 LB
CAD: 614137/CAFE2807
DIMS: 25x14x14 IN

BILL SENDER

TO SAMPLE RECEIVING
EUROFINS SPECTRUM ANALYTICAL, INC.
11 ALMGREN DRIVE

AGAWAM MA 01001
(800) 789-9115 REF:
INV:
PO: DEPT:

RT 746 2 10:30 E
FZ 747 1001 10.06

2 of 2
MPS# 0263 5035 4241 1001
Mstr# 5035 4241 0998
0201

TUE - 06 OCT 10:30A
PRIORITY OVERNIGHT

EB EHTA

01001
MA-US BDL

ORIGIN ID:LNSA (717) 656-2300
SHIPPING DEPARTMENT
EUROFINS LANCASTER LABS
2425 NEW HOLLAND PIKE

LANCASTER, PA 17601
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SHIP DATE: 05OCT15
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BILL SENDER

TO SAMPLE RECEIVING
EUROFINS SPECTRUM ANALYTICAL, INC.
11 ALMGREN DRIVE

AGAWAM MA 01001
(800) 789-9115 REF:
INV:
PO:

RT 746 2 10:30 E
FZ 747 0998 10.06

1 of 2
TRK# 0201 5035 4241 0998
MASTER

TUE - 06 OCT 10:30A
PRIORITY OVERNIGHT

EB EHTA

01001
MA-US BDL

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

November 10, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 09/29/2015
Group Number: 1596753
SDG: KVM52
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-09282015 Composite Soil Sample	8068246
TNT-PS-B-09282015 Composite Soil Sample	8068247
TNT-PS-C-09282015 Composite Soil Sample	8068248
TNT-PS-D-09282015 Composite Soil Sample	8068249
TNT-PS-E-09282015 Composite Soil Sample	8068250
TNT-PS-F-09282015 Composite Soil Sample	8068251
TNT-PS-G-09282015 Composite Soil Sample	8068252
TNT-PS-H-09282015 Composite Soil Sample	8068253
TNT-PS-I-09282015 Composite Soil Sample	8068254
TNT-PS-J-09282015 Composite Soil Sample	8068255
TNT-PS-K-09282015 Composite Soil Sample	8068256

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

REVISED

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

REVISED

Sample Description: TNT-PS-A-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068246
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 11:15 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTA SDG#: KVM52-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		25	50	1
10727	Anthracene	120-12-7	31		5	25	1
10727	Atrazine	1912-24-9	N.D.		50	250	1
10727	Benzaldehyde	100-52-7	110	J	100	250	1
10727	Benzo(a)anthracene	56-55-3	100		5	25	1
10727	Benzo(a)pyrene	50-32-8	90		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	140		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	76		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	63		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	50	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	50	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		50	250	1
10727	Carbazole	86-74-8	N.D.		25	50	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	50	1
10727	4-Chloroaniline	106-47-8	N.D.		50	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	50	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	50	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	49	1
10727	2-Chlorophenol	95-57-8	N.D.		25	50	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	50	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	50	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	28		5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	50	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	500	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	50	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	50	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	750	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		450	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	3,700		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	1,800		25	50	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	250	1
10727	Fluoranthene	206-44-0	170		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	50	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	750	1
10727	Hexachloroethane	67-72-1	N.D.		50	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	64		5	25	1
10727	Isophorone	78-59-1	N.D.		25	50	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-A-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068246
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 11:15 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTA SDG#: KVM52-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	25	50	1
10727	4-Methylphenol	106-44-5	N.D.	25	50	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.	25	50	1
10727	3-Nitroaniline	99-09-2	N.D.	100	250	1
10727	4-Nitroaniline	100-01-6	N.D.	100	250	1
10727	Nitrobenzene	98-95-3	N.D.	25	50	1
10727	2-Nitrophenol	88-75-5	N.D.	25	50	1
10727	4-Nitrophenol	100-02-7	N.D.	250	750	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	25	50	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	25	50	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	100	250	1
10727	Pentachlorophenol	87-86-5	N.D.	50	250	1
10727	Phenanthrene	85-01-8	89	5	25	1
10727	Phenol	108-95-2	N.D.	25	50	1
10727	Pyrene	129-00-0	140	5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	25	50	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	25	50	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	65,000	980	2,600	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	43,000	660	2,000	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	660	2,000	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	660	2,000	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	660	2,000	5
06918	HMX	2691-41-0	N.D.	1,600	4,900	5
06918	Nitrobenzene	98-95-3	N.D.	660	2,000	5
06918	Nitroglycerin	55-63-0	N.D.	13,000	39,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	660	2,000	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,300	2,600	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,600	3,300	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,300	2,600	5
06918	PETN	78-11-5	N.D.	13,000	39,000	5
06918	RDX	121-82-4	N.D.	850	2,000	5
06918	Tetryl	479-45-8	N.D.	1,100	2,600	5

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681• www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: TNT-PS-A-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068246
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 11:15 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTA SDG#: KVM52-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,500	660	2,000	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,000,000	33,000	98,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	18,300	331	334	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	33.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 04:54	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/08/2015 21:29	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 07:23	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTA

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068246
Sample wt/vol: 30.14 (g/mL) g Lab File ID: oj0225.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 33.5 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.239	1300	J
2.6044-71-9	Dodecane, 6-methyl-	7.316	570	J
3.	Unknown	7.416	540	J
4.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.486	650	J
5.	Unknown Cycloalkane	7.522	580	J
6.	Unknown Alkane	7.569	990	J
7.1560-97-0	Dodecane, 2-methyl-	7.633	790	J
8.66563-30-2	Bacchotricuneatin c	7.675	2100	J
9.	Unknown Amine	7.822	1000	J
10.629-50-5	Tridecane	7.851	3000	J
11.	Unknown Alkane	7.904	750	J
12.13287-21-3	Tridecane, 6-methyl-	7.939	540	J
13.92-51-3	1,1'-Bicyclohexyl	7.963	620	J
14.	Unknown Cycloalkane	8.128	910	J
15.26730-12-1	Tridecane, 4-methyl-	8.169	360	J
16.1560-96-9	Tridecane, 2-methyl-	8.204	550	J
17.	Unknown	8.245	510	J
18.629-59-4	Tetradecane	8.410	1600	J
19.	Unknown	8.563	420	J
20.	Unknown Cycloalkane	8.692	380	J
21.18435-22-8	Tetradecane, 3-methyl-	8.769	350	J
22.	Unknown Alkane	9.404	370	J
23.	Unknown	10.174	330000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.986	14000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.204	16000	J
26.				
27.SVOCTIC	Total SVOC TICs		380000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-B-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068247
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:43 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTB SDG#: KVM52-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	29		5	25	1
10727	Acetophenone	98-86-2	N.D.		24	49	1
10727	Anthracene	120-12-7	18	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	240	1
10727	Benzaldehyde	100-52-7	N.D.		98	240	1
10727	Benzo(a)anthracene	56-55-3	90		5	25	1
10727	Benzo(a)pyrene	50-32-8	74		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	140		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	66		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	54		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		24	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		24	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		98	240	1
10727	Di-n-butylphthalate	84-74-2	N.D.		98	240	1
10727	Caprolactam	105-60-2	N.D.		49	240	1
10727	Carbazole	86-74-8	N.D.		24	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		24	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	98	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		24	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		24	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	48	1
10727	2-Chlorophenol	95-57-8	N.D.		24	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		24	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		24	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	81		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	15	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		24	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		24	49	1
10727	Diethylphthalate	84-66-2	N.D.		98	240	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		24	49	1
10727	Dimethylphthalate	131-11-3	N.D.		98	240	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		240	730	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	5,000		98	240	1
10727	2,6-Dinitrotoluene	606-20-2	1,500		24	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		98	250	1
10727	Fluoranthene	206-44-0	150		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		24	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		240	730	1
10727	Hexachloroethane	67-72-1	N.D.		49	240	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	64		5	25	1
10727	Isophorone	78-59-1	N.D.		24	49	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-B-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068247
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:43 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTB SDG#: KVM52-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		24	49	1
10727	4-Methylphenol	106-44-5	N.D.		24	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		24	49	1
10727	3-Nitroaniline	99-09-2	N.D.		98	240	1
10727	4-Nitroaniline	100-01-6	N.D.		98	240	1
10727	Nitrobenzene	98-95-3	N.D.		24	49	1
10727	2-Nitrophenol	88-75-5	N.D.		24	49	1
10727	4-Nitrophenol	100-02-7	N.D.		240	730	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		24	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		24	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		98	240	1
10727	Pentachlorophenol	87-86-5	N.D.		49	250	1
10727	Phenanthrene	85-01-8	70		5	25	1
10727	Phenol	108-95-2	N.D.		24	49	1
10727	Pyrene	129-00-0	130		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		24	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		24	49	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	29,000		950	2,500	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	28,000		630	1,900	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		630	1,900	5
06918	1,3-Dinitrobenzene	99-65-0	1,400	J	630	1,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		630	1,900	5
06918	HMX	2691-41-0	N.D.		1,600	4,800	5
06918	Nitrobenzene	98-95-3	N.D.		630	1,900	5
06918	Nitroglycerin	55-63-0	N.D.		13,000	38,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		630	1,900	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,300	2,500	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,600	3,200	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	2,500	5
06918	PETN	78-11-5	N.D.		13,000	38,000	5
06918	RDX	121-82-4	N.D.		830	1,900	5
06918	Tetryl	479-45-8	N.D.		1,000	2,500	5
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		2,100	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,100,000		32,000	95,000	250
	Reporting limits were raised due to interference from the sample matrix.						

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-B-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068247
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:43 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTB SDG#: KVM52-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	211,000	3,560	3,590	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15282SLC026	10/10/2015 19:29	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	2	15282SLC026	10/09/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/08/2015 22:11	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 08:06	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTB

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068247
Sample wt/vol: 30.1 (g/mL) g Lab File ID: oj0486.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 32.1 Decanted: (Y/N) Date Extracted: 10/09/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/10/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1.112-40-3	Dodecane	7.481	720	J
2.	17301-23-4	Undecane, 2,6-dimethyl-	7.557	520	J
3.		Unknown	7.616	540	J
4.	66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.740	680	J
5.		Unknown Alkane	7.792	570	J
6.		Unknown Alkane	7.869	710	J
7.		Unknown Alkane	7.916	1500	J
8.	629-50-5	Tridecane	8.087	2600	J
9.	13287-21-3	Tridecane, 6-methyl-	8.175	1000	J
10.		Unknown	8.210	530	J
11.		Unknown	8.275	530	J
12.		Unknown	8.328	360	J
13.		Unknown Cycloalkane	8.375	630	J
14.		Unknown Alkane	8.440	470	J
15.		Unknown Alkane	8.481	340	J
16.	629-59-4	Tetradecane	8.645	1400	J
17.	66563-30-2	Bacchotricuneatin c	8.687	520	J
18.		Unknown Cycloalkane	8.822	330	J
19.		Unknown Alkane	8.892	660	J
20.	544-76-3	Hexadecane	9.651	320	J
21.		Unknown	10.328	120000	J
22.		Unknown	10.357	39000	J
23.		Unknown	10.410	61000	J
24.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.222	6100	J
25.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.445	14000	J
26.					
27.	SVOCTIC	Total SVOC TICs		250000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-C-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068248
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTC SDG#: KVM52-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		6	28	1
10727	Acenaphthylene	208-96-8	N.D.		6	28	1
10727	Acetophenone	98-86-2	N.D.		28	56	1
10727	Anthracene	120-12-7	13	J	6	28	1
10727	Atrazine	1912-24-9	N.D.		56	280	1
10727	Benzaldehyde	100-52-7	N.D.		110	280	1
10727	Benzo(a)anthracene	56-55-3	64		6	28	1
10727	Benzo(a)pyrene	50-32-8	58		6	28	1
10727	Benzo(b)fluoranthene	205-99-2	100		6	28	1
10727	Benzo(g,h,i)perylene	191-24-2	47		6	28	1
10727	Benzo(k)fluoranthene	207-08-9	51		6	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		28	56	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		28	56	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	280	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	280	1
10727	Caprolactam	105-60-2	N.D.		56	280	1
10727	Carbazole	86-74-8	N.D.		28	56	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		28	56	1
10727	4-Chloroaniline	106-47-8	N.D.		56	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		28	56	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		28	56	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	55	1
10727	2-Chlorophenol	95-57-8	N.D.		28	56	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		28	56	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		28	56	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	84		6	28	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	6	28	1
10727	Dibenzofuran	132-64-9	N.D.		28	56	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		170	560	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		28	56	1
10727	Diethylphthalate	84-66-2	N.D.		110	280	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		28	56	1
10727	Dimethylphthalate	131-11-3	N.D.		110	280	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		280	840	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		500	1,700	1
10727	2,4-Dinitrotoluene	121-14-2	4,500		110	280	1
10727	2,6-Dinitrotoluene	606-20-2	1,400		28	56	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	110		6	28	1
10727	Fluorene	86-73-7	N.D.		6	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		6	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		28	56	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		280	840	1
10727	Hexachloroethane	67-72-1	N.D.		56	280	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	46		6	28	1
10727	Isophorone	78-59-1	N.D.		28	56	1
10727	2-Methylnaphthalene	91-57-6	N.D.		6	28	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-C-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068248
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTC SDG#: KVM52-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	28	56	1
10727	4-Methylphenol	106-44-5	N.D.	28	56	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	6	28	1
10727	2-Nitroaniline	88-74-4	N.D.	28	56	1
10727	3-Nitroaniline	99-09-2	N.D.	110	280	1
10727	4-Nitroaniline	100-01-6	N.D.	110	280	1
10727	Nitrobenzene	98-95-3	N.D.	28	56	1
10727	2-Nitrophenol	88-75-5	N.D.	28	56	1
10727	4-Nitrophenol	100-02-7	N.D.	280	840	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	28	56	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	28	56	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	280	1
10727	Pentachlorophenol	87-86-5	N.D.	56	280	1
10727	Phenanthrene	85-01-8	62	6	28	1
10727	Phenol	108-95-2	N.D.	28	56	1
10727	Pyrene	129-00-0	100	6	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	28	56	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	28	56	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	30,000	1,100	3,000	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	30,000	740	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	740	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	740	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	740	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.	740	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	740	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	3,000	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	3,000	5
06918	PETN	78-11-5	N.D.	15,000	44,000	5
06918	RDX	121-82-4	N.D.	960	2,200	5
06918	Tetryl	479-45-8	N.D.	1,200	3,000	5

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681• www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: TNT-PS-C-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068248
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTC SDG#: KVM52-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,600	740	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	3,000,000	37,000	110,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	27,400	397	401	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	40.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 05:43	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/08/2015 22:54	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 08:48	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTC

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068248
Sample wt/vol: 30.21(g/mL) g Lab File ID: oj0227.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 40.6 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.112-40-3	Dodecane	7.239	1400	J
2.17301-23-4	Undecane, 2,6-dimethyl-	7.316	990	J
3.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.481	840	J
4.	Unknown Cycloalkane	7.516	630	J
5.	Unknown	7.569	660	J
6.17301-27-8	Undecane, 2,10-dimethyl-	7.628	860	J
7.61141-72-8	Dodecane, 4,6-dimethyl-	7.675	1700	J
8.	Unknown	7.816	1100	J
9.629-50-5	Tridecane	7.845	3000	J
10.	Unknown	7.904	690	J
11.92-51-3	1,1'-Bicyclohexyl	7.957	760	J
12.	Unknown PAH	8.075	350	J
13.	Unknown Alkane	8.122	690	J
14.	Unknown	8.169	330	J
15.	Unknown Alkane	8.204	510	J
16.	Unknown Alkane	8.239	440	J
17.	Unknown Cycloalkane	8.345	400	J
18.629-59-4	Tetradecane	8.404	1500	J
19.	Unknown Alkane	8.439	400	J
20.	Unknown Alkane	8.651	440	J
21.	Unknown Aromatic	8.692	370	J
22.18435-22-8	Tetradecane, 3-methyl-	8.769	350	J
23.	Unknown Aromatic	10.151	250000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.957	5600	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.180	9400	J
26.				
27.SVOCTIC	Total SVOC TICs		290000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-D-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068249
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:37 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTD SDG#: KVM52-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	23	1
10727	Acenaphthylene	208-96-8	N.D.		5	23	1
10727	Acetophenone	98-86-2	N.D.		23	46	1
10727	Anthracene	120-12-7	19	J	5	23	1
10727	Atrazine	1912-24-9	N.D.		46	230	1
10727	Benzaldehyde	100-52-7	N.D.		91	230	1
10727	Benzo(a)anthracene	56-55-3	71		5	23	1
10727	Benzo(a)pyrene	50-32-8	52		5	23	1
10727	Benzo(b)fluoranthene	205-99-2	95		5	23	1
10727	Benzo(g,h,i)perylene	191-24-2	42		5	23	1
10727	Benzo(k)fluoranthene	207-08-9	37		5	23	1
10727	1,1'-Biphenyl	92-52-4	N.D.		23	46	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		23	46	1
10727	Butylbenzylphthalate	85-68-7	N.D.		91	230	1
10727	Di-n-butylphthalate	84-74-2	N.D.		91	230	1
10727	Caprolactam	105-60-2	N.D.		46	230	1
10727	Carbazole	86-74-8	N.D.		23	46	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		23	46	1
10727	4-Chloroaniline	106-47-8	N.D.		46	91	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		23	46	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		23	46	1
10727	2-Chloronaphthalene	91-58-7	N.D.		9	45	1
10727	2-Chlorophenol	95-57-8	N.D.		23	46	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		23	46	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		23	46	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	80		5	23	1
10727	Dibenz(a,h)anthracene	53-70-3	20	J	5	23	1
10727	Dibenzofuran	132-64-9	N.D.		23	46	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		140	460	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		23	46	1
10727	Diethylphthalate	84-66-2	N.D.		91	230	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		23	46	1
10727	Dimethylphthalate	131-11-3	N.D.		91	230	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		230	680	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		410	1,400	1
10727	2,4-Dinitrotoluene	121-14-2	520		91	230	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		23	46	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		91	230	1
10727	Fluoranthene	206-44-0	110		5	23	1
10727	Fluorene	86-73-7	N.D.		5	23	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	23	1
10727	Hexachlorobutadiene	87-68-3	N.D.		23	46	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		230	680	1
10727	Hexachloroethane	67-72-1	N.D.		46	230	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	44		5	23	1
10727	Isophorone	78-59-1	N.D.		23	46	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	23	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-D-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068249
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:37 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTD SDG#: KVM52-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	23	46	1
10727	4-Methylphenol	106-44-5	1,200	23	46	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	23	1
10727	2-Nitroaniline	88-74-4	N.D.	23	46	1
10727	3-Nitroaniline	99-09-2	N.D.	91	230	1
10727	4-Nitroaniline	100-01-6	N.D.	91	230	1
10727	Nitrobenzene	98-95-3	N.D.	23	46	1
10727	2-Nitrophenol	88-75-5	N.D.	23	46	1
10727	4-Nitrophenol	100-02-7	N.D.	230	680	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	23	46	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	23	46	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	91	230	1
10727	Pentachlorophenol	87-86-5	N.D.	46	230	1
10727	Phenanthrene	85-01-8	50	5	23	1
10727	Phenol	108-95-2	190	23	46	1
10727	Pyrene	129-00-0	92	5	23	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	23	46	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	23	46	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,900	950	2,500	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,700	630	1,900	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	630	1,900	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	630	1,900	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	630	1,900	5
06918	HMX	2691-41-0	N.D.	1,600	4,800	5
06918	Nitrobenzene	98-95-3	N.D.	630	1,900	5
06918	Nitroglycerin	55-63-0	N.D.	13,000	38,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	630	1,900	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,300	2,500	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,600	3,200	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,300	2,500	5
06918	PETN	78-11-5	N.D.	13,000	38,000	5
06918	RDX	121-82-4	N.D.	820	1,900	5
06918	Tetryl	479-45-8	N.D.	1,000	2,500	5

*=This limit was used in the evaluation of the final result

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Analysis Report

REVISED

Sample Description: TNT-PS-D-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068249
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:37 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTD SDG#: KVM52-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	630	1,900	5
06918	2,4,6-Trinitrotoluene	118-96-7	12,000	630	1,900	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	18,400	405	409	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	27.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 06:07	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/08/2015 23:36	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

ATNTD

Lab Name: Lancaster Laboratories Contract:

Lab Code: LANCAS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 8068249

Sample wt/vol: 30.25(g/mL) g Lab File ID: oj0228.d

Level: (low/med) LOW Date Received: 09/29/15

% Moisture: 27.6 Decanted: (Y/N) Date Extracted: 10/01/15

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15

Injection Volume: 1 (uL) Dilution Factor: 1

GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Carboxylic Acid	3.775	5000	J
2.		Unknown Carboxylic Acid	3.863	13000	J
3.		Unknown Carboxylic Acid	3.987	26000	J
4.		Unknown Carboxylic Acid	4.040	16000	J
5.		Unknown Carboxylic Acid	4.069	7600	J
6.		Unknown Carboxylic Acid	4.087	5000	J
7.		Unknown Carboxylic Acid	4.751	7000	J
8.		Unknown Carboxylic Acid	4.787	6100	J
9.		Unknown Carboxylic Acid	5.357	4800	J
10.	112-40-3	Dodecane	7.240	1500	J
11.		Unknown Organic Acid	7.634	2000	J
12.	61141-72-8	Dodecane, 4,6-dimethyl-	7.675	2000	J
13.	629-50-5	Tridecane	7.851	4900	J
14.		Unknown Cycloalkane	8.122	650	J
15.	629-59-4	Tetradecane	8.404	1500	J
16.		Unknown Aromatic	9.922	18000	J
17.	57-10-3	n-Hexadecanoic acid	11.104	110000	J
18.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.133	4600	J
19.	60-33-3	9,12-Octadecadienoic acid (Z	11.798	170000	J
20.	112-79-8	9-Octadecenoic acid, (E)-	11.816	60000	J
21.	57-11-4	Octadecanoic acid	11.869	33000	J
22.		Unknown	12.080	15000	J
23.		Unknown	12.127	21000	J
24.		Unknown	12.516	160000	J
25.		Unknown	12.586	84000	J
26.					
27.	SVOCTIC	Total SVOC TICs		780000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-E-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068250
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:43 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTE SDG#: KVM52-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		25	49	1
10727	Anthracene	120-12-7	15	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	250	1
10727	Benzaldehyde	100-52-7	120	J	98	250	1
10727	Benzo(a)anthracene	56-55-3	97		5	25	1
10727	Benzo(a)pyrene	50-32-8	71		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	110		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	57		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	50		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		98	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		98	250	1
10727	Caprolactam	105-60-2	N.D.		49	250	1
10727	Carbazole	86-74-8	N.D.		25	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	98	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	49	1
10727	2-Chlorophenol	95-57-8	N.D.		25	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	22	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	49	1
10727	Diethylphthalate	84-66-2	N.D.		98	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	49	1
10727	Dimethylphthalate	131-11-3	N.D.		98	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	740	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	520		98	250	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		25	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	210	J	98	250	1
10727	Fluoranthene	206-44-0	140		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	740	1
10727	Hexachloroethane	67-72-1	N.D.		49	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	48		5	25	1
10727	Isophorone	78-59-1	N.D.		25	49	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-E-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068250
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:43 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTE SDG#: KVM52-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	25	49	1
10727	4-Methylphenol	106-44-5	1,400	25	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.	25	49	1
10727	3-Nitroaniline	99-09-2	N.D.	98	250	1
10727	4-Nitroaniline	100-01-6	N.D.	98	250	1
10727	Nitrobenzene	98-95-3	N.D.	25	49	1
10727	2-Nitrophenol	88-75-5	N.D.	25	49	1
10727	4-Nitrophenol	100-02-7	N.D.	250	740	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	25	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	25	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	250	98	250	1
10727	Pentachlorophenol	87-86-5	N.D.	49	250	1
10727	Phenanthrene	85-01-8	62	5	25	1
10727	Phenol	108-95-2	130	25	49	1
10727	Pyrene	129-00-0	120	5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	25	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	25	49	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,400	1,000	2,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,900	690	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	690	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	690	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	690	2,100	5
06918	HMX	2691-41-0	N.D.	1,700	5,200	5
06918	Nitrobenzene	98-95-3	N.D.	690	2,100	5
06918	Nitroglycerin	55-63-0	N.D.	14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	690	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,400	2,800	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,700	3,400	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,400	2,800	5
06918	PETN	78-11-5	N.D.	14,000	41,000	5
06918	RDX	121-82-4	N.D.	900	2,100	5
06918	Tetryl	479-45-8	N.D.	1,100	2,800	5

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-E-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068250
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 08:43 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTE SDG#: KVM52-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	690	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	15,000	690	2,100	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	40,800	369	372	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 06:32	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 00:19	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTE

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068250
Sample wt/vol: 30.35(g/mL) g Lab File ID: oj0229.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 32.8 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Carboxylic Acid	3.463	3100	J
2.		Unknown Carboxylic Acid	3.634	4600	J
3.		Unknown Carboxylic Acid	3.781	6400	J
4.		Unknown Carboxylic Acid	3.910	10000	J
5.		Unknown Carboxylic Acid	4.069	21000	J
6.		Unknown Carboxylic Acid	4.128	3400	J
7.		Unknown Carboxylic Acid	4.563	3100	J
8.		Unknown	4.663	3100	J
9.		Unknown Carboxylic Acid	4.775	8400	J
10.	112-40-3	Dodecane	7.239	1600	J
11.		Unknown Alkane	7.634	1900	J
12.	6975-98-0	Decane, 2-methyl-	7.675	2300	J
13.	629-50-5	Tridecane	7.851	3900	J
14.		Unknown Cycloalkane	8.128	740	J
15.	629-59-4	Tetradecane	8.404	1700	J
16.		Unknown Aromatic	9.933	25000	J
17.		Unknown	10.522	6500	J
18.	57-10-3	n-Hexadecanoic acid	11.110	110000	J
19.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.151	9100	J
20.	60-33-3	9,12-Octadecadienoic acid (Z	11.804	230000	J
21.	57-11-4	Octadecanoic acid	11.869	36000	J
22.		Unknown	12.086	19000	J
23.		Unknown	12.133	25000	J
24.		Unknown	12.516	130000	J
25.		Unknown	12.598	100000	J
26.					
27.	SVOCTIC	Total SVOC TICs		780000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-F-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068251
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTF SDG#: KVM52-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	24	1
10727	Acenaphthylene	208-96-8	N.D.		5	24	1
10727	Acetophenone	98-86-2	N.D.		23	47	1
10727	Anthracene	120-12-7	13	J	5	24	1
10727	Atrazine	1912-24-9	N.D.		47	230	1
10727	Benzaldehyde	100-52-7	N.D.		94	230	1
10727	Benzo(a)anthracene	56-55-3	65		5	24	1
10727	Benzo(a)pyrene	50-32-8	53		5	24	1
10727	Benzo(b)fluoranthene	205-99-2	96		5	24	1
10727	Benzo(g,h,i)perylene	191-24-2	43		5	24	1
10727	Benzo(k)fluoranthene	207-08-9	28		5	24	1
10727	1,1'-Biphenyl	92-52-4	N.D.		23	47	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		23	47	1
10727	Butylbenzylphthalate	85-68-7	N.D.		94	230	1
10727	Di-n-butylphthalate	84-74-2	N.D.		94	230	1
10727	Caprolactam	105-60-2	N.D.		47	230	1
10727	Carbazole	86-74-8	N.D.		23	47	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		23	47	1
10727	4-Chloroaniline	106-47-8	N.D.		47	94	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		23	47	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		23	47	1
10727	2-Chloronaphthalene	91-58-7	N.D.		9	47	1
10727	2-Chlorophenol	95-57-8	N.D.		23	47	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		23	47	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		23	47	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	69		5	24	1
10727	Dibenz(a,h)anthracene	53-70-3	25		5	24	1
10727	Dibenzofuran	132-64-9	N.D.		23	47	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		140	470	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		23	47	1
10727	Diethylphthalate	84-66-2	N.D.		94	230	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		23	47	1
10727	Dimethylphthalate	131-11-3	N.D.		94	230	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		230	700	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		420	1,400	1
10727	2,4-Dinitrotoluene	121-14-2	680		94	230	1
10727	2,6-Dinitrotoluene	606-20-2	220		23	47	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	140	J	94	240	1
10727	Fluoranthene	206-44-0	100		5	24	1
10727	Fluorene	86-73-7	N.D.		5	24	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	24	1
10727	Hexachlorobutadiene	87-68-3	N.D.		23	47	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		230	700	1
10727	Hexachloroethane	67-72-1	N.D.		47	230	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	42		5	24	1
10727	Isophorone	78-59-1	N.D.		23	47	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	24	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-F-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068251
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTF SDG#: KVM52-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	23	47	1
10727	4-Methylphenol	106-44-5	93	23	47	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	24	1
10727	2-Nitroaniline	88-74-4	N.D.	23	47	1
10727	3-Nitroaniline	99-09-2	N.D.	94	230	1
10727	4-Nitroaniline	100-01-6	N.D.	94	230	1
10727	Nitrobenzene	98-95-3	N.D.	23	47	1
10727	2-Nitrophenol	88-75-5	N.D.	23	47	1
10727	4-Nitrophenol	100-02-7	N.D.	230	700	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	23	47	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	23	47	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	94	230	1
10727	Pentachlorophenol	87-86-5	N.D.	47	240	1
10727	Phenanthrene	85-01-8	53	5	24	1
10727	Phenol	108-95-2	120	23	47	1
10727	Pyrene	129-00-0	80	5	24	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	23	47	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	23	47	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	13,000	900	2,400	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	11,000	600	1,800	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	600	1,800	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	600	1,800	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	600	1,800	5
06918	HMX	2691-41-0	N.D.	1,500	4,500	5
06918	Nitrobenzene	98-95-3	N.D.	600	1,800	5
06918	Nitroglycerin	55-63-0	N.D.	12,000	36,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	600	1,800	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,200	2,400	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,500	3,000	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,200	2,400	5
06918	PETN	78-11-5	N.D.	12,000	36,000	5
06918	RDX	121-82-4	N.D.	780	1,800	5
06918	Tetryl	479-45-8	N.D.	960	2,400	5

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-F-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068251
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTF SDG#: KVM52-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	600	1,800	5
06918	2,4,6-Trinitrotoluene	118-96-7	29,000	600	1,800	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	31,300	391	395	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	30.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 06:56	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 01:01	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTF

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068251
Sample wt/vol: 30.46(g/mL) g Lab File ID: oj0230.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 30.1 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 13 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.840	13000	J
2.112-40-3	Dodecane	7.239	1600	J
3.17453-93-9	Dodecane, 5-methyl-	7.569	1400	J
4.629-50-5	Tridecane	7.851	4500	J
5.5617-41-4	Heptylcyclohexane	8.128	840	J
6.629-59-4	Tetradecane	8.410	1500	J
7.6629-29-4	1,3-Benzenediamine, 4-methyl	10.839	6200	J
8.19406-51-0	p-Toluidine, 3,5-dinitro-	10.916	7200	J
9.57-10-3	n-Hexadecanoic acid	11.080	710	J
10.112-80-1	Oleic Acid	11.774	350	J
11.57-11-4	Octadecanoic acid	11.833	250	J
12.60-33-3	9,12-Octadecadienoic acid (Z	11.910	260	J
13.24207-15-6	2(1H)-Pyridinethione, 1-ethy	12.539	220	J
14.				
15.SVOCTIC	Total SVOC TICs		38000	J
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page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-G-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068252
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:15 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTG SDG#: KVM52-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	N.D.		5	27	1
10727	Acetophenone	98-86-2	N.D.		27	53	1
10727	Anthracene	120-12-7	13	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		53	270	1
10727	Benzaldehyde	100-52-7	110	J	110	270	1
10727	Benzo(a)anthracene	56-55-3	72		5	27	1
10727	Benzo(a)pyrene	50-32-8	56		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	100		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	47		5	27	1
10727	Benzo(k)fluoranthene	207-08-9	37		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	53	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	53	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		53	270	1
10727	Carbazole	86-74-8	N.D.		27	53	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	53	1
10727	4-Chloroaniline	106-47-8	N.D.		53	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	53	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	53	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	53	1
10727	2-Chlorophenol	95-57-8	N.D.		27	53	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	53	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	53	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	88		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	16	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		27	53	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	530	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	53	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	53	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	800	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		480	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	520		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	190		27	53	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	270	1
10727	Fluoranthene	206-44-0	120		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	53	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	800	1
10727	Hexachloroethane	67-72-1	N.D.		53	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	32		5	27	1
10727	Isophorone	78-59-1	N.D.		27	53	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-G-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068252
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:15 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTG SDG#: KVM52-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	27	53	1
10727	4-Methylphenol	106-44-5	4,700	27	53	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.	27	53	1
10727	3-Nitroaniline	99-09-2	N.D.	110	270	1
10727	4-Nitroaniline	100-01-6	N.D.	110	270	1
10727	Nitrobenzene	98-95-3	N.D.	27	53	1
10727	2-Nitrophenol	88-75-5	N.D.	27	53	1
10727	4-Nitrophenol	100-02-7	N.D.	270	800	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	27	53	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	27	53	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	270	1
10727	Pentachlorophenol	87-86-5	N.D.	53	270	1
10727	Phenanthrene	85-01-8	61	5	27	1
10727	Phenol	108-95-2	400	27	53	1
10727	Pyrene	129-00-0	92	5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	27	53	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	27	53	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,700	1,000	2,700	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,500	680	2,000	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	680	2,000	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	680	2,000	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	680	2,000	5
06918	HMX	2691-41-0	N.D.	1,700	5,100	5
06918	Nitrobenzene	98-95-3	N.D.	680	2,000	5
06918	Nitroglycerin	55-63-0	N.D.	14,000	41,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	680	2,000	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,400	2,700	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,700	3,400	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,400	2,700	5
06918	PETN	78-11-5	N.D.	14,000	41,000	5
06918	RDX	121-82-4	N.D.	880	2,000	5
06918	Tetryl	479-45-8	N.D.	1,100	2,700	5

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681• www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: TNT-PS-G-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068252
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:15 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTG SDG#: KVM52-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	680	2,000	5
06918	2,4,6-Trinitrotoluene	118-96-7	20,000	680	2,000	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	46,900	505	510	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	38.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 07:21	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 01:43	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTG

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068252
Sample wt/vol: 30.27(g/mL) g Lab File ID: oj0231.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 38.2 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 19 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Carboxylic Acid	4.686	3400	J
2.		Unknown Carboxylic Acid	4.775	5400	J
3.	107-92-6	Butanoic acid	4.828	4700	J
4.		Unknown Carboxylic Acid	5.004	2400	J
5.	112-40-3	Dodecane	7.239	1200	J
6.		Unknown Alkane	7.569	1000	J
7.		Unknown	7.633	1600	J
8.	1921-70-6	Pentadecane, 2,6,10,14-tetra	7.674	1600	J
9.	629-50-5	Tridecane	7.851	2500	J
10.		Unknown Alkene	8.080	730	J
11.		Unknown Cycloalkane	8.127	1300	J
12.	629-59-4	Tetradecane	8.404	2100	J
13.		Unknown Aromatic	9.916	6900	J
14.	544-63-8	Tetradecanoic acid	10.180	6100	J
15.		Unknown	10.833	4200	J
16.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.910	4200	J
17.	57-10-3	n-Hexadecanoic acid	11.151	1900	J
18.	57-11-4	Octadecanoic acid	11.857	390	J
19.		Unknown	12.557	490	J
20.					
21.	SVOCTIC	Total SVOC TICs		52000	J
22.					
23.					
24.					
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26.					
27.					
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29.					
30.					

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-H-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068253
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:20 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTH SDG#: KVM52-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		25	49	1
10727	Anthracene	120-12-7	13	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	250	1
10727	Benzaldehyde	100-52-7	110	J	98	250	1
10727	Benzo(a)anthracene	56-55-3	82		5	25	1
10727	Benzo(a)pyrene	50-32-8	59		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	110		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	39		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	43		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		98	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		98	250	1
10727	Caprolactam	105-60-2	N.D.		49	250	1
10727	Carbazole	86-74-8	N.D.		25	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	98	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	49	1
10727	2-Chlorophenol	95-57-8	N.D.		25	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	91		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	20	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	49	1
10727	Diethylphthalate	84-66-2	N.D.		98	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	49	1
10727	Dimethylphthalate	131-11-3	N.D.		98	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	740	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	600		98	250	1
10727	2,6-Dinitrotoluene	606-20-2	200		25	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	100	J	98	250	1
10727	Fluoranthene	206-44-0	120		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	740	1
10727	Hexachloroethane	67-72-1	N.D.		49	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	57		5	25	1
10727	Isophorone	78-59-1	N.D.		25	49	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-H-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068253
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:20 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTH SDG#: KVM52-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		25	49	1
10727	4-Methylphenol	106-44-5	3,300		25	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		25	49	1
10727	3-Nitroaniline	99-09-2	N.D.		98	250	1
10727	4-Nitroaniline	100-01-6	N.D.		98	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	49	1
10727	2-Nitrophenol	88-75-5	N.D.		25	49	1
10727	4-Nitrophenol	100-02-7	N.D.		250	740	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	110	J	98	250	1
10727	Pentachlorophenol	87-86-5	N.D.		49	250	1
10727	Phenanthrene	85-01-8	58		5	25	1
10727	Phenol	108-95-2	370		25	49	1
10727	Pyrene	129-00-0	98		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	49	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	10,000		1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,700		730	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		730	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.		730	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		730	2,200	5
06918	HMX	2691-41-0	N.D.		1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.		730	2,200	5
06918	Nitroglycerin	55-63-0	N.D.		15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		730	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,500	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,500	2,900	5
06918	PETN	78-11-5	N.D.		15,000	44,000	5
06918	RDX	121-82-4	N.D.		950	2,200	5
06918	Tetryl	479-45-8	N.D.		1,200	2,900	5

*=This limit was used in the evaluation of the final result

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Analysis Report

REVISED

Sample Description: TNT-PS-H-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068253
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:20 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTH SDG#: KVM52-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	730	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	140,000	730	2,200	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	29,300	513	517	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 07:45	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 02:26	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTH

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068253
Sample wt/vol: 30.3 (g/mL) g Lab File ID: oj0232.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 32.7 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 20 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 107-92-6	Butanoic acid	4.751	8300	J
2.	Unknown Carboxylic Acid	4.822	5500	J
3.	Unknown	4.857	3200	J
4.	Unknown Carboxylic Acid	4.892	3300	J
5. 109-52-4	Pentanoic acid	5.351	2000	J
6. 112-40-3	Dodecane	7.245	1200	J
7.	Unknown Alkane	7.557	910	J
8. 17301-27-8	Undecane, 2,10-dimethyl-	7.633	960	J
9.	Unknown	7.680	1300	J
10.	Unknown	7.822	970	J
11. 629-50-5	Tridecane	7.851	2600	J
12.	Unknown Ketone	8.128	1000	J
13. 1560-96-9	Tridecane, 2-methyl-	8.204	560	J
14. 629-59-4	Tetradecane	8.410	2100	J
15.	Unknown Aromatic	9.933	18000	J
16.	Unknown Amine	10.839	8100	J
17. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.916	7000	J
18. 57-10-3	n-Hexadecanoic acid	11.116	1200	J
19. 57-11-4	Octadecanoic acid	11.839	320	J
20.	Unknown	12.568	700	J
21.				
22. SVOCTIC	Total SVOC TICs		70000	J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-I-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068254
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTI SDG#: KVM52-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		25	50	1
10727	Anthracene	120-12-7	19	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		50	250	1
10727	Benzaldehyde	100-52-7	110	J	99	250	1
10727	Benzo(a)anthracene	56-55-3	78		5	25	1
10727	Benzo(a)pyrene	50-32-8	61		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	110		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	52		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	48		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	50	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	50	1
10727	Butylbenzylphthalate	85-68-7	N.D.		99	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		99	250	1
10727	Caprolactam	105-60-2	N.D.		50	250	1
10727	Carbazole	86-74-8	N.D.		25	50	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	50	1
10727	4-Chloroaniline	106-47-8	N.D.		50	99	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	50	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	50	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	49	1
10727	2-Chlorophenol	95-57-8	N.D.		25	50	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	50	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	50	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	86		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	21	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	50	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	500	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	50	1
10727	Diethylphthalate	84-66-2	N.D.		99	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	50	1
10727	Dimethylphthalate	131-11-3	N.D.		99	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	740	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		450	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	800		99	250	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		25	50	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	100	J	99	250	1
10727	Fluoranthene	206-44-0	140		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	50	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	740	1
10727	Hexachloroethane	67-72-1	N.D.		50	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	48		5	25	1
10727	Isophorone	78-59-1	N.D.		25	50	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-I-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068254
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTI SDG#: KVM52-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	25	50	1
10727	4-Methylphenol	106-44-5	1,800	25	50	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.	25	50	1
10727	3-Nitroaniline	99-09-2	N.D.	99	250	1
10727	4-Nitroaniline	100-01-6	N.D.	99	250	1
10727	Nitrobenzene	98-95-3	N.D.	25	50	1
10727	2-Nitrophenol	88-75-5	N.D.	25	50	1
10727	4-Nitrophenol	100-02-7	N.D.	250	740	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	25	50	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	25	50	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	99	250	1
10727	Pentachlorophenol	87-86-5	N.D.	50	250	1
10727	Phenanthrene	85-01-8	67	5	25	1
10727	Phenol	108-95-2	270	25	50	1
10727	Pyrene	129-00-0	110	5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	25	50	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	25	50	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	13,000	1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,800	730	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.	730	2,200	5
06918	1,3-Dinitrobenzene	99-65-0	N.D.	730	2,200	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.	730	2,200	5
06918	HMX	2691-41-0	N.D.	1,800	5,500	5
06918	Nitrobenzene	98-95-3	N.D.	730	2,200	5
06918	Nitroglycerin	55-63-0	N.D.	15,000	44,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.	730	2,200	5
06918	2-Nitrotoluene	88-72-2	N.D.	1,500	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.	1,800	3,700	5
06918	4-Nitrotoluene	99-99-0	N.D.	1,500	2,900	5
06918	PETN	78-11-5	N.D.	15,000	44,000	5
06918	RDX	121-82-4	N.D.	950	2,200	5
06918	Tetryl	479-45-8	N.D.	1,200	2,900	5

*=This limit was used in the evaluation of the final result

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Analysis Report

REVISED

Sample Description: TNT-PS-I-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068254
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:30 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTI SDG#: KVM52-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	730	2,200	5
06918	2,4,6-Trinitrotoluene	118-96-7	21,000	730	2,200	5
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	21,100	368	371	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	33.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 08:09	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 03:51	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTI

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068254
Sample wt/vol: 30.31(g/mL) g Lab File ID: oj0233.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 33.5 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Carboxylic Acid	4.516	5900	J
2.	107-92-6	Butanoic acid	4.722	7900	J
3.	112-40-3	Dodecane	7.245	1300	J
4.	1560-97-0	Dodecane, 2-methyl-	7.634	1200	J
5.		Unknown	7.681	1400	J
6.		Unknown Amine	7.828	1000	J
7.	629-50-5	Tridecane	7.857	3200	J
8.		Unknown Cycloalkane	7.963	700	J
9.		Unknown Alkane	8.128	870	J
10.	1560-96-9	Tridecane, 2-methyl-	8.210	500	J
11.	6418-41-3	Tridecane, 3-methyl-	8.245	430	J
12.	629-59-4	Tetradecane	8.410	1700	J
13.		Unknown Alkane	8.445	380	J
14.		Unknown Alkane	8.657	420	J
15.		Unknown Alkane	8.704	820	J
16.		Unknown Aromatic	9.951	38000	J
17.		Unknown	10.528	8000	J
18.		Unknown Amine	10.875	14000	J
19.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.939	19000	J
20.	57-10-3	n-Hexadecanoic acid	11.104	1100	J
21.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.175	240	J
22.	57-11-4	Octadecanoic acid	11.828	310	J
23.		Unknown	12.451	270	J
24.		Unknown	12.551	610	J
25.					
26.	SVOCTIC	Total SVOC TICs		110000	J
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-J-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068255
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:35 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTJ SDG#: KVM52-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		25	49	1
10727	Anthracene	120-12-7	10	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	250	1
10727	Benzaldehyde	100-52-7	N.D.		99	250	1
10727	Benzo(a)anthracene	56-55-3	66		5	25	1
10727	Benzo(a)pyrene	50-32-8	65		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	100		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	40		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	42		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		99	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		99	250	1
10727	Caprolactam	105-60-2	N.D.		49	250	1
10727	Carbazole	86-74-8	N.D.		25	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	99	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	49	1
10727	2-Chlorophenol	95-57-8	N.D.		25	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	85		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	16	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	49	1
10727	Diethylphthalate	84-66-2	N.D.		99	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	49	1
10727	Dimethylphthalate	131-11-3	N.D.		99	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	740	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	4,300		99	250	1
10727	2,6-Dinitrotoluene	606-20-2	1,400		25	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		99	250	1
10727	Fluoranthene	206-44-0	120		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	740	1
10727	Hexachloroethane	67-72-1	N.D.		49	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	47		5	25	1
10727	Isophorone	78-59-1	N.D.		25	49	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-J-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068255
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:35 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTJ SDG#: KVM52-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		25	49	1
10727	4-Methylphenol	106-44-5	N.D.		25	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		25	49	1
10727	3-Nitroaniline	99-09-2	N.D.		99	250	1
10727	4-Nitroaniline	100-01-6	N.D.		99	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	49	1
10727	2-Nitrophenol	88-75-5	N.D.		25	49	1
10727	4-Nitrophenol	100-02-7	N.D.		250	740	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		99	250	1
10727	Pentachlorophenol	87-86-5	N.D.		49	250	1
10727	Phenanthrene	85-01-8	75		5	25	1
10727	Phenol	108-95-2	N.D.		25	49	1
10727	Pyrene	129-00-0	100		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	49	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	42,000		1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	35,000		720	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		720	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	960	J	720	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		720	2,100	5
06918	HMX	2691-41-0	N.D.		1,800	5,400	5
06918	Nitrobenzene	98-95-3	N.D.		720	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	43,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		720	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,900	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,800	3,600	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,900	5
06918	PETN	78-11-5	N.D.		14,000	43,000	5
06918	RDX	121-82-4	N.D.		930	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,900	5

*=This limit was used in the evaluation of the final result

eurofins | Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681• www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: TNT-PS-J-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068255
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 09:35 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTJ SDG#: KVM52-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,600	720	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	1,900,000	36,000	110,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	30,800	426	430	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	33.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 03:41	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 04:33	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 14:28	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519224	10/09/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTJ

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068255
Sample wt/vol: 30.47(g/mL) g Lab File ID: oj0222.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 33.5 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.716	570	J
2.112-40-3	Dodecane	7.239	1300	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.316	520	J
4.	Unknown Alkane	7.481	650	J
5.	Unknown Cycloalkane	7.516	550	J
6.	Unknown	7.569	580	J
7.	Unknown Alkane	7.628	770	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	7.675	1800	J
9.	Unknown	7.816	920	J
10.629-50-5	Tridecane	7.851	3600	J
11.	Unknown Alkane	7.904	580	J
12.56292-65-0	Dodecane, 2,5-dimethyl-	7.939	520	J
13.	Unknown Alkane	7.957	570	J
14.	Unknown Alkane	8.122	690	J
15.1560-96-9	Tridecane, 2-methyl-	8.204	450	J
16.	Unknown Alkane	8.239	420	J
17.629-59-4	Tetradecane	8.404	1700	J
18.630-01-3	Hexacosane	8.445	290	J
19.	Unknown Cycloalkane	8.686	340	J
20.629-78-7	Heptadecane	9.404	270	J
21.	Unknown Aromatic	10.169	290000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	10.974	10000	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.192	23000	J
24.	Unknown Aromatic	11.310	3000	J
25.1000336-66-8	6-Octadecenoic acid	11.669	4500	J
26.				
27.SVOCTIC	Total SVOC TICs		350000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

REVISED

Sample Description: TNT-PS-K-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068256
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:35 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTK SDG#: KVM52-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		5	28	1
10727	Acenaphthylene	208-96-8	N.D.		5	28	1
10727	Acetophenone	98-86-2	N.D.		27	55	1
10727	Anthracene	120-12-7	18	J	5	28	1
10727	Atrazine	1912-24-9	N.D.		55	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	66		5	28	1
10727	Benzo(a)pyrene	50-32-8	58		5	28	1
10727	Benzo(b)fluoranthene	205-99-2	90		5	28	1
10727	Benzo(g,h,i)perylene	191-24-2	62		5	28	1
10727	Benzo(k)fluoranthene	207-08-9	43		5	28	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	55	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	55	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		55	270	1
10727	Carbazole	86-74-8	N.D.		27	55	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	55	1
10727	4-Chloroaniline	106-47-8	N.D.		55	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	55	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	55	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	54	1
10727	2-Chlorophenol	95-57-8	N.D.		27	55	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	55	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	55	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	70		5	28	1
10727	Dibenz(a,h)anthracene	53-70-3	15	J	5	28	1
10727	Dibenzofuran	132-64-9	N.D.		27	55	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	550	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	55	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	55	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	820	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		490	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	3,200		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	1,500		27	55	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	280	1
10727	Fluoranthene	206-44-0	120		5	28	1
10727	Fluorene	86-73-7	N.D.		5	28	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	28	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	55	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	820	1
10727	Hexachloroethane	67-72-1	N.D.		55	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	47		5	28	1
10727	Isophorone	78-59-1	N.D.		27	55	1
10727	2-Methylnaphthalene	91-57-6	N.D.		5	28	1

*=This limit was used in the evaluation of the final result

REVISED

Sample Description: TNT-PS-K-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068256
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:35 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTK SDG#: KVM52-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		27	55	1
10727	4-Methylphenol	106-44-5	N.D.		27	55	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	28	1
10727	2-Nitroaniline	88-74-4	N.D.		27	55	1
10727	3-Nitroaniline	99-09-2	N.D.		110	270	1
10727	4-Nitroaniline	100-01-6	N.D.		110	270	1
10727	Nitrobenzene	98-95-3	N.D.		27	55	1
10727	2-Nitrophenol	88-75-5	N.D.		27	55	1
10727	4-Nitrophenol	100-02-7	N.D.		270	820	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		27	55	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		27	55	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	270	1
10727	Pentachlorophenol	87-86-5	N.D.		55	280	1
10727	Phenanthrene	85-01-8	75		5	28	1
10727	Phenol	108-95-2	N.D.		27	55	1
10727	Pyrene	129-00-0	92		5	28	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		27	55	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		27	55	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: Dibenzofuran						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	86,000		1,000	2,800	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	55,000		690	2,100	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		690	2,100	5
06918	1,3-Dinitrobenzene	99-65-0	920	J	690	2,100	5
06918	1,4-Dinitrobenzene	100-25-4	N.D.		690	2,100	5
06918	HMX	2691-41-0	N.D.		1,700	5,200	5
06918	Nitrobenzene	98-95-3	N.D.		690	2,100	5
06918	Nitroglycerin	55-63-0	N.D.		14,000	42,000	5
06918	1-Nitronaphthalene	86-57-7	N.D.		690	2,100	5
06918	2-Nitrotoluene	88-72-2	N.D.		1,400	2,800	5
06918	3-Nitrotoluene	99-08-1	N.D.		1,700	3,500	5
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	2,800	5
06918	PETN	78-11-5	N.D.		14,000	42,000	5
06918	RDX	121-82-4	N.D.		900	2,100	5
06918	Tetryl	479-45-8	N.D.		1,100	2,800	5

*=This limit was used in the evaluation of the final result

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Analysis Report

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Sample Description: TNT-PS-K-09282015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8068256
LL Group # 1596753
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 09/28/2015 10:35 by SL

Submitted: 09/29/2015 18:45
Reported: 11/10/2015 11:25

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

ATNTK SDG#: KVM52-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	2,700	690	2,100	5
06918	2,4,6-Trinitrotoluene	118-96-7	2,200,000	35,000	100,000	250
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
13994	TOC Subcontracted - Spectrum	n.a.	24,000	491	496	1
	The TOC analysis was subcontracted to Eurofins Spectrum Analytical, Inc. This data entry is to enable EDD generation in the client required format. The original laboratory data report is attached. All relevant certification information is provided in that report.					
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	39.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15274SLB026	10/05/2015 08:34	William H Saadeh	1
10809	BNA Soil Microwave	SW-846 3546	1	15274SLB026	10/01/2015 17:10	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 05:16	James H Place	5
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152790005A	10/09/2015 15:11	James H Place	250
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152790005A	10/06/2015 14:15	Kelli M Barto	1
13994	TOC Subcontracted - Spectrum	Lloyd Kahn modified	1	1519279	10/10/2015 00:00	Subcontracted Spectrum Analytical Inc	1
00111	Moisture	SM 2540 G-1997	1	15273820006B	09/30/2015 19:42	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

REVISED

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ATNTK

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8068256
Sample wt/vol: 30.37(g/mL) g Lab File ID: oj0234.d
Level: (low/med) LOW Date Received: 09/29/15
% Moisture: 39.7 Decanted: (Y/N) Date Extracted: 10/01/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/05/15
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.716	1000	J
2.112-40-3	Dodecane	7.239	1900	J
3.17301-23-4	Undecane, 2,6-dimethyl-	7.316	840	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.486	920	J
5.	Unknown Cycloalkane	7.522	810	J
6.	Unknown	7.569	1400	J
7.	Unknown Alkane	7.633	1200	J
8.6975-98-0	Decane, 2-methyl-	7.675	2500	J
9.	Unknown	7.822	1300	J
10.629-50-5	Tridecane	7.851	4600	J
11.	Unknown Alkane	7.904	1000	J
12.13287-21-3	Tridecane, 6-methyl-	7.939	760	J
13.92-51-3	1,1'-Bicyclohexyl	7.963	790	J
14.	Unknown Cycloalkane	8.127	840	J
15.26730-12-1	Tridecane, 4-methyl-	8.169	310	J
16.1560-96-9	Tridecane, 2-methyl-	8.204	510	J
17.	Unknown	8.245	490	J
18.	Unknown Alkane	8.345	280	J
19.629-59-4	Tetradecane	8.410	1900	J
20.	Unknown	8.445	440	J
21.	Unknown	8.563	290	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	9.886	2700	J
23.	Unknown Aromatic	10.104	290000	J
24.	Unknown Aromatic	10.986	30000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.210	20000	J
26.				
27.SVOCTIC	Total SVOC TICs		370000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

REVISED

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1596753
Reported: 11/10/2015 11:25

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15274SLB026	Sample number(s): 8068246,8068248-8068256								
Acenaphthene	N.D.	3.	17	ug/kg	87	87	83-116	0	30
Acenaphthylene	N.D.	3.	17	ug/kg	88	89	83-127	2	30
Acetophenone	N.D.	17.	33	ug/kg	85	87	74-116	2	30
Anthracene	N.D.	3.	17	ug/kg	91	93	82-118	2	30
Atrazine	N.D.	33.	170	ug/kg	93	91	63-148	1	30
Benzaldehyde	N.D.	67.	170	ug/kg	29	33	10-69	13	30
Benzo(a)anthracene	N.D.	3.	17	ug/kg	86	81	76-119	7	30
Benzo(a)pyrene	N.D.	3.	17	ug/kg	85	85	85-117	0	30
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	97	95	78-129	3	30
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	87	86	82-119	1	30
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	88	86	79-120	2	30
1,1'-Biphenyl	N.D.	17.	33	ug/kg	85	88	80-116	3	30
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	86	89	84-120	3	30
Butylbenzylphthalate	N.D.	67.	170	ug/kg	88	87	80-118	0	30
Di-n-butylphthalate	N.D.	67.	170	ug/kg	88	90	84-120	1	30
Caprolactam	N.D.	33.	170	ug/kg	85	82	71-129	4	30
Carbazole	N.D.	17.	33	ug/kg	86	86	78-117	0	30
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	88	87	79-127	2	30
4-Chloroaniline	N.D.	33.	67	ug/kg	45	43	10-103	5	30
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	84	85	77-116	0	30
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	86	87	77-115	1	30
2-Chloronaphthalene	N.D.	7.	33	ug/kg	79	81	63-146	3	30
2-Chlorophenol	N.D.	17.	33	ug/kg	96	95	85-123	1	30
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	85	88	81-120	3	30
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	73	76	63-126	4	30
Chrysene	N.D.	3.	17	ug/kg	86	87	80-121	0	30
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	86	86	81-123	1	30
Dibenzofuran	N.D.	17.	33	ug/kg	83*	86	85-115	3	30
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	49	50	10-104	1	30
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	94	94	81-123	0	30
Diethylphthalate	N.D.	67.	170	ug/kg	85	87	81-118	2	30
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	86	87	83-120	1	30
Dimethylphthalate	N.D.	67.	170	ug/kg	83	86	82-113	3	30
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	75	60	59-131	23	30
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	49	35	27-140	34*	30
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	88	86	81-122	3	30
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	92	91	83-120	1	30
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	89	87	81-121	3	30
Fluoranthene	N.D.	3.	17	ug/kg	83	85	81-117	3	30
Fluorene	N.D.	3.	17	ug/kg	91	92	86-118	1	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1596753
Reported: 11/10/2015 11:25

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachlorobenzene	N.D.	3.	17	ug/kg	83	84	75-123	0	30
Hexachlorobutadiene	N.D.	17.	33	ug/kg	75	78	72-120	3	30
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	70	73	68-145	4	30
Hexachloroethane	N.D.	33.	170	ug/kg	83	89	78-114	7	30
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	85	84	81-118	1	30
Isophorone	N.D.	17.	33	ug/kg	79	82	78-125	3	30
2-Methylnaphthalene	N.D.	3.	17	ug/kg	83	87	83-109	5	30
2-Methylphenol	N.D.	17.	33	ug/kg	102	101	82-125	1	30
4-Methylphenol	N.D.	17.	33	ug/kg	94	96	75-119	2	30
Naphthalene	N.D.	3.	17	ug/kg	86	87	83-112	2	30
2-Nitroaniline	N.D.	17.	33	ug/kg	94	99	84-126	5	30
3-Nitroaniline	N.D.	67.	170	ug/kg	86	88	66-119	2	30
4-Nitroaniline	N.D.	67.	170	ug/kg	63	61	50-100	3	30
Nitrobenzene	N.D.	17.	33	ug/kg	81	81	70-122	0	30
2-Nitrophenol	N.D.	17.	33	ug/kg	95	95	83-120	0	30
4-Nitrophenol	N.D.	170.	500	ug/kg	69	72	60-129	4	30
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	80	82	67-121	2	30
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	91	94	83-118	3	30
Di-n-octylphthalate	N.D.	67.	170	ug/kg	102	99	74-146	3	30
Pentachlorophenol	N.D.	33.	170	ug/kg	79	78	57-126	1	30
Phenanthrene	N.D.	3.	17	ug/kg	86	86	80-114	0	30
Phenol	N.D.	17.	33	ug/kg	84	84	73-122	0	30
Pyrene	N.D.	3.	17	ug/kg	88	85	81-114	3	30
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	86	87	86-123	1	30
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	89	91	81-123	2	30
Batch number: 15282SLC026	Sample number(s): 8068247								
Acenaphthene	N.D.	3.	17	ug/kg	101	104	83-116	3	30
Acenaphthylene	N.D.	3.	17	ug/kg	102	105	83-127	2	30
Acetophenone	N.D.	17.	33	ug/kg	89	94	74-116	5	30
Anthracene	N.D.	3.	17	ug/kg	104	108	82-118	3	30
Atrazine	N.D.	33.	170	ug/kg	100	99	63-148	2	30
Benzaldehyde	N.D.	67.	170	ug/kg	62	64	10-69	4	30
Benzo(a)anthracene	N.D.	3.	17	ug/kg	101	100	76-119	0	30
Benzo(a)pyrene	N.D.	3.	17	ug/kg	95	97	85-117	2	30
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	100	103	78-129	3	30
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	98	100	82-119	2	30
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	97	99	79-120	3	30
1,1'-Biphenyl	N.D.	17.	33	ug/kg	88	91	80-116	4	30
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	102	103	84-120	0	30
Butylbenzylphthalate	N.D.	67.	170	ug/kg	107	106	80-118	1	30
Di-n-butylphthalate	N.D.	67.	170	ug/kg	108	110	84-120	1	30
Caprolactam	N.D.	33.	170	ug/kg	101	99	71-129	2	30
Carbazole	N.D.	17.	33	ug/kg	100	100	78-117	0	30
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	104	110	79-127	6	30
4-Chloroaniline	N.D.	33.	67	ug/kg	63	44	10-103	35*	30
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	97	98	77-116	1	30
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	93	92	77-115	1	30
2-Chloronaphthalene	N.D.	7.	33	ug/kg	87	86	63-146	1	30
2-Chlorophenol	N.D.	17.	33	ug/kg	98	104	85-123	5	30
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	97	99	81-120	3	30
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	88	90	63-126	2	30
Chrysene	N.D.	3.	17	ug/kg	94	95	80-121	2	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1596753
Reported: 11/10/2015 11:25

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	100	100	81-123	0	30
Dibenzofuran	N.D.	17.	33	ug/kg	98	100	85-115	2	30
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	57	47	10-104	19	30
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	100	101	81-123	1	30
Diethylphthalate	N.D.	67.	170	ug/kg	101	105	81-118	4	30
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	95	100	83-120	5	30
Dimethylphthalate	N.D.	67.	170	ug/kg	100	101	82-113	1	30
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	74	71	59-131	4	30
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	53	50	27-140	5	30
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	102	106	81-122	3	30
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	104	108	83-120	3	30
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	112	111	81-121	1	30
Fluoranthene	N.D.	3.	17	ug/kg	99	100	81-117	0	30
Fluorene	N.D.	3.	17	ug/kg	99	103	86-118	4	30
Hexachlorobenzene	N.D.	3.	17	ug/kg	95	96	75-123	1	30
Hexachlorobutadiene	N.D.	17.	33	ug/kg	95	95	72-120	0	30
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	88	87	68-145	0	30
Hexachloroethane	N.D.	33.	170	ug/kg	93	95	78-114	2	30
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	95	96	81-118	1	30
Isophorone	N.D.	17.	33	ug/kg	100	104	78-125	4	30
2-Methylnaphthalene	N.D.	3.	17	ug/kg	94	94	83-109	1	30
2-Methylphenol	N.D.	17.	33	ug/kg	107	112	82-125	5	30
4-Methylphenol	N.D.	17.	33	ug/kg	103	104	75-119	1	30
Naphthalene	N.D.	3.	17	ug/kg	96	99	83-112	3	30
2-Nitroaniline	N.D.	17.	33	ug/kg	107	112	84-126	4	30
3-Nitroaniline	N.D.	67.	170	ug/kg	108	104	66-119	3	30
4-Nitroaniline	N.D.	67.	170	ug/kg	75	69	50-100	9	30
Nitrobenzene	N.D.	17.	33	ug/kg	97	102	70-122	4	30
2-Nitrophenol	N.D.	17.	33	ug/kg	107	107	83-120	0	30
4-Nitrophenol	N.D.	170.	500	ug/kg	90	93	60-129	4	30
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	92	99	67-121	7	30
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	106	107	83-118	1	30
Di-n-octylphthalate	N.D.	67.	170	ug/kg	113	115	74-146	2	30
Pentachlorophenol	N.D.	33.	170	ug/kg	95	90	57-126	5	30
Phenanthrene	N.D.	3.	17	ug/kg	99	101	80-114	1	30
Phenol	N.D.	17.	33	ug/kg	95	95	73-122	1	30
Pyrene	N.D.	3.	17	ug/kg	101	98	81-114	3	30
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	99	104	86-123	4	30
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	101	107	81-123	6	30
Batch number: 152790005A	Sample number(s): 8068246-8068256								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	117		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	114		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	106		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	109		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	104		83-122		
HMX	N.D.	250.	750	ug/kg	81		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	113		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	104		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	114		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	113		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	113		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	119		80-122		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1596753
Reported: 11/10/2015 11:25

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
PETN	N.D.	2,000.	6,000	ug/kg	105		64-121		
RDX	N.D.	130.	300	ug/kg	110		84-122		
Tetryl	N.D.	160.	400	ug/kg	123		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	102		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	116		82-133		
Batch number: 1519224	Sample number(s): 8068246-8068255								
TOC Subcontracted - Spectrum	N.D.	99.0	100	mg/kg	106		75-125		
Batch number: 1519279	Sample number(s): 8068256								
TOC Subcontracted - Spectrum	N.D.	99.0	100	mg/kg	106		75-125		
Batch number: 15273820006B	Sample number(s): 8068246-8068256								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15274SLB026	Sample number(s): 8068246,8068248-8068256 UNSPK: 8068255								
Acenaphthene	88	89	83-116	0	30				
Acenaphthylene	86	87	83-127	0	30				
Acetophenone	86	84	74-116	3	30				
Anthracene	94	93	82-118	2	30				
Atrazine	85	80	63-148	6	30				
Benzaldehyde	40	45	10-69	11	30				
Benzo(a)anthracene	85	87	76-119	2	30				
Benzo(a)pyrene	84*	83*	85-117	2	30				
Benzo(b)fluoranthene	90	91	78-129	1	30				
Benzo(g,h,i)perylene	94	92	82-119	3	30				
Benzo(k)fluoranthene	92	91	79-120	1	30				
1,1'-Biphenyl	89	91	80-116	1	30				
4-Bromophenyl-phenylether	93	92	84-120	2	30				
Butylbenzylphthalate	91	91	80-118	0	30				
Di-n-butylphthalate	93	92	84-120	2	30				
Caprolactam	166*	163*	71-129	3	30				
Carbazole	85	85	78-117	0	30				
4-Chloro-3-methylphenol	81	85	79-127	4	30				
4-Chloroaniline	19	18	10-103	7	30				
bis(2-Chloroethoxy)methane	85	84	77-116	1	30				
bis(2-Chloroethyl)ether	84	82	77-115	3	30				
2-Chloronaphthalene	87	89	63-146	2	30				
2-Chlorophenol	95	92	85-123	4	30				
4-Chlorophenyl-phenylether	84	82	81-120	3	30				
2,2'-oxybis(1-Chloropropane)	73	73	63-126	0	30				
Chrysene	85	86	80-121	0	30				
Dibenz(a,h)anthracene	92	94	81-123	2	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1596753
Reported: 11/10/2015 11:25

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Dibenzofuran	83*	82*	85-115	1	30				
3,3'-Dichlorobenzidine	8*	9*	10-104	7	30				
2,4-Dichlorophenol	87	86	81-123	2	30				
Diethylphthalate	78*	77*	81-118	2	30				
2,4-Dimethylphenol	84	84	83-120	0	30				
Dimethylphthalate	80*	81*	82-113	0	30				
4,6-Dinitro-2-methylphenol	100	102	59-131	1	30				
2,4-Dinitrophenol	75	74	27-140	2	30				
2,4-Dinitrotoluene	84	96	81-122	4	30				
2,6-Dinitrotoluene	79*	82*	83-120	2	30				
bis(2-Ethylhexyl)phthalate	92	97	81-121	4	30				
Fluoranthene	82	81	81-117	1	30				
Fluorene	84*	85*	86-118	0	30				
Hexachlorobenzene	81	77	75-123	6	30				
Hexachlorobutadiene	82	83	72-120	1	30				
Hexachlorocyclopentadiene	32*	25*	68-145	24	30				
Hexachloroethane	84	80	78-114	5	30				
Indeno(1,2,3-cd)pyrene	91	89	81-118	3	30				
Isophorone	79	80	78-125	1	30				
2-Methylnaphthalene	85	86	83-109	1	30				
2-Methylphenol	95	95	82-125	0	30				
4-Methylphenol	88	86	75-119	3	30				
Naphthalene	99	100	83-112	0	30				
2-Nitroaniline	93	89	84-126	4	30				
3-Nitroaniline	56*	48*	66-119	15	30				
4-Nitroaniline	49*	46*	50-100	6	30				
Nitrobenzene	84	84	70-122	1	30				
2-Nitrophenol	99	105	83-120	5	30				
4-Nitrophenol	72	82	60-129	13	30				
N-Nitroso-di-n-propylamine	80	79	67-121	2	30				
N-Nitrosodiphenylamine	98	95	83-118	4	30				
Di-n-octylphthalate	105	102	74-146	3	30				
Pentachlorophenol	90	81	57-126	11	30				
Phenanthrene	91	89	80-114	3	30				
Phenol	82	83	73-122	1	30				
Pyrene	87	89	81-114	1	30				
2,4,5-Trichlorophenol	91	89	86-123	3	30				
2,4,6-Trichlorophenol	90	91	81-123	0	30				
Batch number: 152790005A	Sample number(s): 8068246-8068256 UNSPK: 8068256								
4-Amino-2,6-Dinitrotoluene	57 (2)	103 (2)	85-118	4	50				
2-Amino-4,6-Dinitrotoluene	59 (2)	100 (2)	69-113	6	50				
1,2-Dinitrobenzene	113	110	80-120	1	50				
1,3-Dinitrobenzene	95	95	89-119	3	50				
1,4-Dinitrobenzene	128*	124*	82-117	0	50				
HMX	0*	0*	72-107	0	50				
Nitrobenzene	113*	109*	86-108	1	50				
Nitroglycerin	102	103	73-116	4	50				
1-Nitronaphthalene	81*	79*	89-131	0	50				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1596753
Reported: 11/10/2015 11:25

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2-Nitrotoluene	72*	58*	79-112	17	50				
3-Nitrotoluene	105	98	72-119	4	50				
4-Nitrotoluene	122*	113	90-118	5	50				
PETN	124	103	71-133	16	50				
RDX	101	98	75-108	0	50				
Tetryl	129*	131*	58-125	4	50				
1,3,5-Trinitrobenzene	87	100	58-135	13	50				
2,4,6-Trinitrotoluene	-8325 (2)	-325 (2)	92-114	33	50				
Batch number: 1519224	Sample number(s): 8068246-8068255					BKG: P065247			
TOC Subcontracted - Spectrum						109,000	102,000	7	20
Batch number: 1519279	Sample number(s): 8068256					BKG: P046570			
TOC Subcontracted - Spectrum						21,300	19,900	7	20
Batch number: 15273820006B	Sample number(s): 8068246-8068256					BKG: P067795			
Moisture						38.3	39.2	2	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15274SLB026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8068246	84	88	68	74	82	85
8068248	74	78	65	67	79	80
8068249	81	85	71	61	85	90
8068250	87	91	71	58	85	93
8068251	84	87	67	69	80	91
8068252	91	95	71	68	86	94
8068253	89	92	67	68	83	88
8068254	88	92	65	71	85	91
8068255	86	90	76	78	91	91
8068256	87	91	64	76	87	89
Blank	82	84	82	73	82	81
LCS	94	92	80	76	83	87
LCSD	93	93	81	78	86	84
MS	89	91	73	78	88	88
MSD	86	90	73	80	90	90
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: TCL 8270 (microwave)
Batch number: 15282SLC026

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1596753
Reported: 11/10/2015 11:25

Surrogate Quality Control

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8068247	91	97	78	92	95	97
Blank	97	104	98	96	94	102
LCS	99	102	93	93	91	99
LCSD	102	104	94	94	93	97
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152790005A

	2-Nitro-m-xylene
8068246	104
8068247	78
8068248	135
8068249	105
8068250	110
8068251	106
8068252	108
8068253	128
8068254	96
8068255	122
8068256	93
Blank	119
LCS	117
MS	91
MSD	124
Limits:	68-138

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 For Eurofins Lancaster Laboratories Environmental use only Group # 596753 Sample # 506824 6-56
Instructions on reverse side correspond with circled numbers.

384024

1 Client Information

Client: Arcadis - US	Acct. #: 06716
Project Name/#: Ashland / Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NS007000.NJ78
Sampler: S. Lemoine	Quote #:

Name of state where samples were collected: NJ

4 Matrix

Sediment ☐ Soil ☒ | Ground ☐ Potable ☐ Water | Surface ☐ NPDES ☐ | Other: ____

5 Analysis Requested

Preservation Codes

For Lab Use Only

FSC: ____

SCR#: ____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

Note: TNT conc. between 500-1000 mg/kg

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	Amino DNTs + TNTs (8330)	DNTs (SW846, 8270)	TOC	% Moisture
TNT-PS-A-09282015	9/28/15	1115		X	1	X	X	X	X
TNT-PS-B-09282015		943		X		X	X	X	X
TNT-PS-C-09282015		930		X		X	X	X	X
TNT-PS-D-09282015		937		X		X	X	X	X
TNT-PS-E-09282015		943		X		X	X	X	X
TNT-PS-F-09282015		930		X		X	X	X	X
TNT-PS-G-09282015		1015		X		X	X	X	X
TNT-PS-H-09282015		1020		X		X	X	X	X
TNT-PS-I-09282015		1030		X		X	X	X	X
TNT-PS-J-09282015		935		X		X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)

Standard (Rush)

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 10/6/15

E-mail address: ____

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

	Date	Time		Date	Time
Relinquished by		1145	Received by	9/28/15	1145
Relinquished by	9/29/15	1845	Received by		
Relinquished by			Received by		
Relinquished by			Received by		
Relinquished by			Received by	9/29/15	1845

9

EDD Required? Yes No
If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.4 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 For Eurofins Lancaster Laboratories Environmental use only Group # 1596753 Sample # 8008246-56

Instructions on reverse side correspond with circled numbers.

384023

1 Client Information

Client: Arcadis - US	Acct. #: 06716
Project Name/#: Ashland/Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ0070000.NJ78
Sampler: S. Lemoine	Quote #:

Name of state where samples were collected: NJ

4 Matrix

Sediment ☐ Soil ☒ Water: Ground ☐ Potable ☐ Surface ☐ NPDES ☐ Other: ____

5 Analysis Requested

Preservation Codes

For Lab Use Only

FSC: ____

SCR#: ____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

Note: TNT Conc. between 500 - 1000 mg/kg

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	Amino DNTs + TNT (SW846, 8330)	DNTs (SW846, 8270)	TOC	% Moisture
TNT-PS-K-092820 15	9/28/15	1035		X	1	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)

Standard (Rush)

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: 10/6/15

E-mail address: ____

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	9/29/15	1145	[signature]	9/29/15	1145
[signature]	9/29/15	1845			
			[signature]	9/29/15	1845

9

EDD Required? Yes No

If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.4 °C

eurofins | Spectrum Analytical

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Report Date:
13-Oct-15 11:26

Laboratory Report

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17605-2425
Attn: Kathy Binkley

Project: See Chain of Custody
Project #: 1596753

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC13234-01	TNT-PS-A-09282015	Soil	28-Sep-15 11:15	06-Oct-15 11:59
SC13234-02	TNT-PS-B-09282015	Soil	28-Sep-15 09:43	06-Oct-15 11:59
SC13234-03	TNT-PS-C-09282015	Soil	28-Sep-15 08:30	06-Oct-15 11:59
SC13234-04	TNT-PS-D-09282015	Soil	28-Sep-15 08:37	06-Oct-15 11:59
SC13234-05	TNT-PS-E-09282015	Soil	28-Sep-15 08:43	06-Oct-15 11:59
SC13234-06	TNT-PS-F-09282015	Soil	28-Sep-15 09:30	06-Oct-15 11:59
SC13234-07	TNT-PS-G-09282015	Soil	28-Sep-15 10:15	06-Oct-15 11:59
SC13234-08	TNT-PS-H-09282015	Soil	28-Sep-15 10:20	06-Oct-15 11:59
SC13234-09	TNT-PS-I-09282015	Soil	28-Sep-15 10:30	06-Oct-15 11:59
SC13234-10	TNT-PS-J-09282015	Soil	28-Sep-15 09:35	06-Oct-15 11:59
SC13234-11	TNT-PS-K-09282015	Soil	28-Sep-15 10:35	06-Oct-15 11:59

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435

Authorized by:

June O'Connor
Laboratory Director

Eurofins Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 8 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.2 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Acceptance Check Form

Client:	Eurofins Lancaster Laboratories Environmental, LLC
Project:	See Chain of Custody / 1596753
Work Order:	SC13234
Sample(s) received on:	10/6/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☑	☐	☐
Were custody seals intact?	☑	☐	☐
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☐	☑	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: SC13234-01 **Client ID:** TNT-PS-A-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	12200		222	mg/kg	Lloyd Kahn

Lab ID: SC13234-02 **Client ID:** TNT-PS-B-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	143000		2440	mg/kg	Lloyd Kahn

Lab ID: SC13234-03 **Client ID:** TNT-PS-C-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	16300		238	mg/kg	Lloyd Kahn

Lab ID: SC13234-04 **Client ID:** TNT-PS-D-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	13300		296	mg/kg	Lloyd Kahn

Lab ID: SC13234-05 **Client ID:** TNT-PS-E-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	27400		250	mg/kg	Lloyd Kahn

Lab ID: SC13234-06 **Client ID:** TNT-PS-F-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	21900		276	mg/kg	Lloyd Kahn

Lab ID: SC13234-07 **Client ID:** TNT-PS-G-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	29000		315	mg/kg	Lloyd Kahn

Lab ID: SC13234-08 **Client ID:** TNT-PS-H-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	19700		348	mg/kg	Lloyd Kahn

Lab ID: SC13234-09 **Client ID:** TNT-PS-I-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	14000		247	mg/kg	Lloyd Kahn

Lab ID: SC13234-10 **Client ID:** TNT-PS-J-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	20500		286	mg/kg	Lloyd Kahn

Lab ID: SC13234-11 **Client ID:** TNT-PS-K-09282015

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Organic Carbon	14500		299	mg/kg	Lloyd Kahn

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification
TNT-PS-A-09282015
SC13234-01

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 11:15	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	12,200		mg/kg	222	220	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-B-09282015
SC13234-02

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 09:43	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	143,000		mg/kg	2440	2420	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-C-09282015
SC13234-03

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 08:30	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	16,300		mg/kg	238	236	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-D-09282015
SC13234-04

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 08:37	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	13,300		mg/kg	296	293	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-E-09282015
SC13234-05

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 08:43	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	27,400		mg/kg	250	248	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-F-09282015
SC13234-06

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 09:30	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	21,900		mg/kg	276	273	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-G-09282015
SC13234-07

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 10:15	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	29,000		mg/kg	315	312	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-H-09282015
SC13234-08

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 10:20	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	19,700		mg/kg	348	345	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-I-09282015
SC13234-09

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 10:30	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	14,000		mg/kg	247	245	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-J-09282015
SC13234-10

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 09:35	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	20,500		mg/kg	286	283	1	Lloyd Kahn	09-Oct-15	09-Oct-15	rlt	1519224	X

Sample Identification
TNT-PS-K-09282015
SC13234-11

Client Project #	Matrix	Collection Date/Time	Received
1596753	Soil	28-Sep-15 10:35	06-Oct-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	Total Organic Carbon	14,500		mg/kg	299	296	1	Lloyd Kahn	09-Oct-15	10-Oct-15	rlt	1519279	X

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1519224 - General Preparation										
Blank (1519224-BLK1)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	< 100		mg/kg	100						
LCS (1519224-BS1)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**8470**		mg/kg	100	8000		106	75-125		
Calibration Blank (1519224-CCB1)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**2.20**		mg/kg							
Calibration Blank (1519224-CCB2)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**-1.12**		mg/kg							
Calibration Blank (1519224-CCB3)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**0.207**		mg/kg							
Calibration Check (1519224-CCV1)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**8960**		mg/kg	100	8000		112	85-115		
Calibration Check (1519224-CCV2)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**8750**		mg/kg	100	8000		109	85-115		
Calibration Check (1519224-CCV3)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**8320**		mg/kg	100	8000		104	85-115		
Reference (1519224-SRM1)						Prepared & Analyzed: 09-Oct-15				
Total Organic Carbon	**4780**		mg/kg	331	5430		88	49-151		
Batch 1519279 - General Preparation										
Blank (1519279-BLK1)						Prepared: 09-Oct-15 Analyzed: 10-Oct-15				
Total Organic Carbon	< 100		mg/kg	100						
LCS (1519279-BS1)						Prepared: 09-Oct-15 Analyzed: 10-Oct-15				
Total Organic Carbon	**8500**		mg/kg	100	8000		106	75-125		
Reference (1519279-SRM1)						Prepared: 09-Oct-15 Analyzed: 10-Oct-15				
Total Organic Carbon	**5700**		mg/kg	203	5430		105	49-151		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Rebecca Merz

Analysis Request / Environmental Services Subcontracting Form

eurofins | Lancaster Laboratories

For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1596753 Sample Nos.: 8068246-56

Date: 10/5/2015

SC 13234 By

Subcontractor: **EUROFINS SPECTRUM ANALYTICAL, INC.**

LLI P.O.# : _____ Courier: FED EX

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: TOC by Lloyd Kahn											Temperature of samples upon receipt (if requested)
TNT-PS-A-09282015 01	09/28/15	11:15		X	X			1	X											8068246
TNT-PS-B-09282015 02	09/28/15	9:43		X	X			1	X											8068247
TNT-PS-C-09282015 03	09/28/15	8:30		X	X			1	X											8068248
TNT-PS-D-09282015 04	09/28/15	8:37		X	X			1	X											8068249
TNT-PS-E-09282015 05	09/28/15	8:43		X	X			1	X											8068250
TNT-PS-F-09282015 06	09/28/15	9:30		X	X			1	X											8068251
TNT-PS-G-09282015 07	09/28/15	10:15		X	X			1	X											8068252
TNT-PS-H-09282015 08	09/28/15	10:20		X	X			1	X											8068253
TNT-PS-I-09282015 09	09/28/15	10:30		X	X			1	X											8068254
TNT-PS-J-09282015 10	09/28/15	9:35		X	X			1	X											8068255

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Comments:

Turnaround Time Requested (TAT): (Standard) Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

SDG Complete? Yes No

MA MCP
CT RCP

Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-5-15	1442			
				10/6/15	
				10/6/15	1159

Copies: White copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the samplers.

9

1.2/1.2/02 DL

Analysis Request / Environmental Services Subcontracting Form

eurofins | Lancaster Laboratories

For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1596753 Sample Nos.: 8068246-56

Date: 10/5/2015

SC13234 By

Subcontractor: **EUROFINS SPECTRUM ANALYTICAL, INC.**

LLI P.O.# : _____ Courier: FED EX

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: TOC by Lloyd Kahn											Comments
TNT-PS-K-09282015 -11	09/28/15	10:35		X	X			1	X											8068256

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Temperature of samples upon receipt (if requested)

Turnaround Time Requested (TAT): (Standard) Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

SDG Complete? Yes No

MA MCP
CT RCP

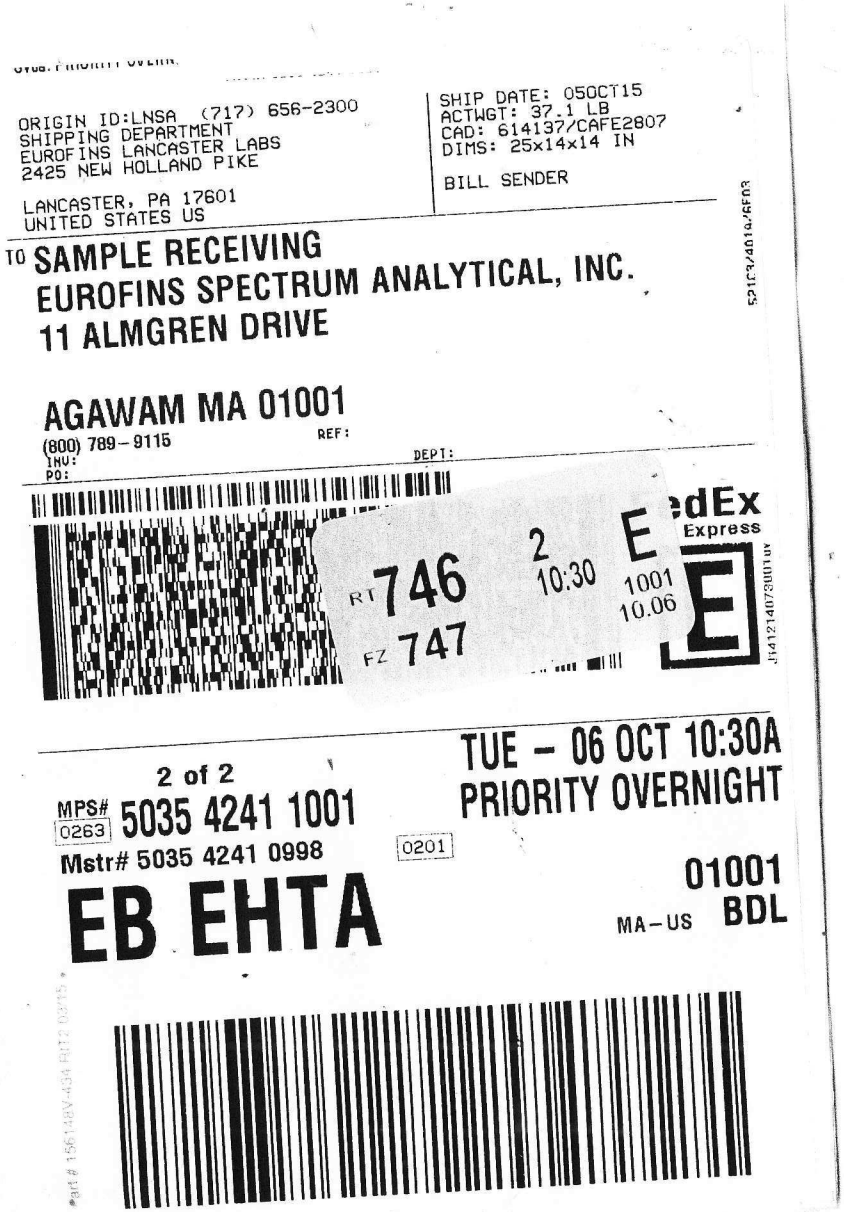
Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-5-15	1442			
				10/6/15	1159

Lancaster Laboratories, Inc. 2425 New Holland Pike Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766

Copies: White copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the samplers.

1.2/0/1.3/02 VIC



FedEx Express

ORIGIN ID:LNSA (717) 656-2300
SHIPPING DEPARTMENT
EUROFINS LANCASTER LABS
2425 NEW HOLLAND PIKE

LANCASTER, PA 17601
UNITED STATES US

SHIP DATE: 05OCT15
ACTWGT: 37.1 LB
CAD: 614137/CAFE2807
DIMS: 25x14x14 IN

BILL SENDER

TO SAMPLE RECEIVING
EUROFINS SPECTRUM ANALYTICAL, INC.
11 ALMGREN DRIVE

AGAWAM MA 01001
(800) 789-9115

INV:
PO:
REF:
DEPT:

RT 746
FZ 747
2
10:30
E
1001
10.06

2 of 2
MPS# 0263 5035 4241 1001
Mstr# 5035 4241 0998
0201

TUE - 06 OCT 10:30A
PRIORITY OVERNIGHT

EB EHTA

01001
MA-US BDL

FedEx Express

ORIGIN ID:LNSA (717) 656-2300
SHIPPING DEPARTMENT
EUROFINS LANCASTER LABS
2425 NEW HOLLAND PIKE

LANCASTER, PA 17601
UNITED STATES US

SHIP DATE: 05OCT15
ACTWGT: 37.1 LB
CAD: 614137/CAFE2807
DIMS: 25x14x14 IN

BILL SENDER

TO SAMPLE RECEIVING
EUROFINS SPECTRUM ANALYTICAL, INC.
11 ALMGREN DRIVE

AGAWAM MA 01001
(800) 789-9115

INV:
PO:
REF:

RT 746
FZ 747
2
10:30
E
0998
10.06

1 of 2
TRK# 0201 5035 4241 0998
MASTER

TUE - 06 OCT 10:30A
PRIORITY OVERNIGHT

EB EHTA

01001
MA-US BDL

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

November 11, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 10/13/2015
Group Number: 1600457
SDG: KVM53
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-1-10122015 Composite Soil Sample	8086946
TNT-PS-A-2-10122015 Composite Soil Sample	8086947
TNT-PS-A-3-10122015 Composite Soil Sample	8086948
TNT-PS-A-4-10122015 Composite Soil Sample	8086949
TNT-PS-B-1-10122015 Composite Soil Sample	8086950
TNT-PS-B-2-10122015 Composite Soil Sample	8086951
TNT-PS-B-3-10122015 Composite Soil Sample	8086952
TNT-PS-B-4-10122015 Composite Soil Sample	8086953
TNT-PS-C-1-10122015 Composite Soil Sample	8086954
TNT-PS-C-2-10122015 Composite Soil Sample	8086955
TNT-PS-C-3-10122015 Composite Soil Sample	8086956
TNT-PS-C-4-10122015 Composite Soil Sample	8086957
TNT-PS-D-1-10122015 Composite Soil Sample	8086958
TNT-PS-D-2-10122015 Composite Soil Sample	8086959
TNT-PS-D-3-10122015 Composite Soil Sample	8086960
TNT-PS-D-4-10122015 Composite Soil Sample	8086961
TNT-PS-E-1-10122015 Composite Soil Sample	8086962
TNT-PS-E-2-10122015 Composite Soil Sample	8086963
TNT-PS-E-3-10122015 Composite Soil Sample	8086964
TNT-PS-E-4-10122015 Composite Soil Sample	8086965

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-A-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086946
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:10 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5301 SDG#: KVM53-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		30	150	5
10727	Acenaphthylene	208-96-8	N.D.		30	150	5
10727	Acetophenone	98-86-2	N.D.		150	300	5
10727	Anthracene	120-12-7	N.D.		30	150	5
10727	Atrazine	1912-24-9	N.D.		300	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		600	1,500	5
10727	Benzo(a)anthracene	56-55-3	64	J	30	150	5
10727	Benzo(a)pyrene	50-32-8	57	J	30	150	5
10727	Benzo(b)fluoranthene	205-99-2	110	J	30	150	5
10727	Benzo(g,h,i)perylene	191-24-2	68	J	30	150	5
10727	Benzo(k)fluoranthene	207-08-9	43	J	30	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	300	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	300	5
10727	Butylbenzylphthalate	85-68-7	N.D.		600	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		600	1,500	5
10727	Caprolactam	105-60-2	N.D.		300	1,500	5
10727	Carbazole	86-74-8	N.D.		150	300	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	300	5
10727	4-Chloroaniline	106-47-8	N.D.		300	600	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	300	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	300	5
10727	2-Chloronaphthalene	91-58-7	N.D.		60	300	5
10727	2-Chlorophenol	95-57-8	N.D.		150	300	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	300	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	300	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	78	J	30	150	5
10727	Dibenz(a,h)anthracene	53-70-3	32	J	30	150	5
10727	Dibenzofuran	132-64-9	N.D.		150	300	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		890	3,000	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	300	5
10727	Diethylphthalate	84-66-2	N.D.		600	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	300	5
10727	Dimethylphthalate	131-11-3	N.D.		600	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,700	8,900	5
10727	2,4-Dinitrotoluene	121-14-2	4,100		600	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	1,300		150	300	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		600	1,500	5
10727	Fluoranthene	206-44-0	110	J	30	150	5
10727	Fluorene	86-73-7	N.D.		30	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		30	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	300	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,500	5
10727	Hexachloroethane	67-72-1	N.D.		300	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	50	J	30	150	5
10727	Isophorone	78-59-1	N.D.		150	300	5
10727	2-Methylnaphthalene	91-57-6	N.D.		30	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086946
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:10 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5301 SDG#: KVM53-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	300	5
10727	4-Methylphenol	106-44-5	N.D.		150	300	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		30	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	300	5
10727	3-Nitroaniline	99-09-2	N.D.		600	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		600	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	300	5
10727	2-Nitrophenol	88-75-5	N.D.		150	300	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	300	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	300	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	1,700		600	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		300	1,500	5
10727	Phenanthrene	85-01-8	64	J	30	150	5
10727	Phenol	108-95-2	N.D.		150	300	5
10727	Pyrene	129-00-0	110	J	30	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	300	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	300	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	81,000		2,300	6,200	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	53,000		1,500	4,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	460	1
06918	1,3-Dinitrobenzene	99-65-0	720		150	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	460	1
06918	HMX	2691-41-0	N.D.		390	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		150	460	1
06918	Nitroglycerin	55-63-0	N.D.		3,100	9,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	460	1
06918	2-Nitrotoluene	88-72-2	N.D.		310	620	1
06918	3-Nitrotoluene	99-08-1	N.D.		390	770	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,400	1,400	1
06918	PETN	78-11-5	N.D.		3,100	9,300	1
06918	RDX	121-82-4	N.D.		310	460	1
06918	Tetryl	479-45-8	N.D.		360	620	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,600		150	460	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,800,000		31,000	93,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086946
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:10 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5301 SDG#: KVM53-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	21,900		13.5	35.2	1
06944	Antimony	7440-36-0	N.D.		0.722	3.52	1
06935	Arsenic	7440-38-2	2.85	J	1.02	3.52	1
06946	Barium	7440-39-3	68.9		0.118	0.881	1
06947	Beryllium	7440-41-7	0.812	J	0.118	0.881	1
06949	Cadmium	7440-43-9	0.208	J	0.0758	0.881	1
01650	Calcium	7440-70-2	1,970		5.87	35.2	1
06951	Chromium	7440-47-3	19.9		0.173	2.64	1
06952	Cobalt	7440-48-4	5.53		0.143	0.881	1
06953	Copper	7440-50-8	30.7		0.493	1.76	1
01654	Iron	7439-89-6	24,600		5.87	35.2	1
06955	Lead	7439-92-1	272		0.564	2.64	1
01657	Magnesium	7439-95-4	1,760		2.94	17.6	1
06958	Manganese	7439-96-5	196		0.146	0.881	1
06961	Nickel	7440-02-0	10.5		0.405	1.76	1
01662	Potassium	7440-09-7	1,150		29.6	88.1	1
06936	Selenium	7782-49-2	3.87		1.46	3.52	1
06966	Silver	7440-22-4	0.951		0.211	0.881	1
01667	Sodium	7440-23-5	79.2	J	29.4	176	1
06925	Thallium	7440-28-0	N.D.		1.32	5.29	1
06971	Vanadium	7440-62-2	39.0		0.264	0.881	1
06972	Zinc	7440-66-6	42.8		1.36	3.52	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0419	J	0.0177	0.177	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	23,900		748	2,240	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	44.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 01:22	Catherine E Bachman	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086946
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:10 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5301 SDG#: KVM53-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 07:30	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/03/2015 20:44	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/03/2015 21:27	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 14:38	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 14:38	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 15:19	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:04	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15288049531A	10/16/2015 01:12	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5301

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086946
Sample wt/vol: 30.42(g/mL) g Lab File ID: oj1160.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 44.9 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	7.251	2800	J
2. 1606-08-2	Cyclopentylcyclohexane	7.363	1500	J
3. 1618-22-0	Naphthalene, decahydro-2,6-d	7.628	1800	J
4. 112-40-3	Dodecane	7.739	3800	J
5. 17301-28-9	Undecane, 3,6-dimethyl-	7.816	1700	J
6. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	8.016	2200	J
7.	Unknown Alkane	8.098	1500	J
8. 17301-27-8	Undecane, 2,10-dimethyl-	8.128	1900	J
9. 61141-72-8	Dodecane, 4,6-dimethyl-	8.175	4200	J
10. 629-50-5	Tridecane	8.345	12000	J
11.	Unknown	8.392	2100	J
12.	Unknown Alkane	8.433	2200	J
13.	Unknown Cycloalkane	8.639	2300	J
14. 54833-23-7	Eicosane, 10-methyl-	8.704	1900	J
15. 3891-98-3	Dodecane, 2,6,10-trimethyl-	8.769	2700	J
16. 629-59-4	Tetradecane	8.904	11000	J
17.	Unknown Alkane	9.422	5600	J
18. 544-76-3	Hexadecane	9.916	2800	J
19.	Unknown	10.510	600000	J
20.	Unknown	10.545	1900	J
21.	Unknown	11.039	1800	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.421	37000	J
23.	Unknown Cycloalkane	11.480	3000	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.645	20000	J
25.	Unknown Aromatic	11.786	3300	J
26.				
27. SVOCTIC	Total SVOC TICs		740000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086947
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:13 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5302 SDG#: KVM53-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		33	170	5
10727	Acenaphthylene	208-96-8	N.D.		33	170	5
10727	Acetophenone	98-86-2	N.D.		160	330	5
10727	Anthracene	120-12-7	N.D.		33	170	5
10727	Atrazine	1912-24-9	N.D.		330	1,600	5
10727	Benzaldehyde	100-52-7	N.D.		650	1,600	5
10727	Benzo(a)anthracene	56-55-3	54	J	33	170	5
10727	Benzo(a)pyrene	50-32-8	47	J	33	170	5
10727	Benzo(b)fluoranthene	205-99-2	58	J	33	170	5
10727	Benzo(g,h,i)perylene	191-24-2	53	J	33	170	5
10727	Benzo(k)fluoranthene	207-08-9	36	J	33	170	5
10727	1,1'-Biphenyl	92-52-4	N.D.		160	330	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		160	330	5
10727	Butylbenzylphthalate	85-68-7	N.D.		650	1,600	5
10727	Di-n-butylphthalate	84-74-2	N.D.		650	1,600	5
10727	Caprolactam	105-60-2	N.D.		330	1,600	5
10727	Carbazole	86-74-8	N.D.		160	330	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		160	330	5
10727	4-Chloroaniline	106-47-8	N.D.		330	650	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		160	330	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		160	330	5
10727	2-Chloronaphthalene	91-58-7	N.D.		65	320	5
10727	2-Chlorophenol	95-57-8	N.D.		160	330	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		160	330	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		160	330	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	54	J	33	170	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		33	170	5
10727	Dibenzofuran	132-64-9	N.D.		160	330	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		980	3,300	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		160	330	5
10727	Diethylphthalate	84-66-2	N.D.		650	1,600	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		160	330	5
10727	Dimethylphthalate	131-11-3	N.D.		650	1,600	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,600	4,900	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,900	9,800	5
10727	2,4-Dinitrotoluene	121-14-2	2,700		650	1,600	5
10727	2,6-Dinitrotoluene	606-20-2	1,000		160	330	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		650	1,700	5
10727	Fluoranthene	206-44-0	82	J	33	170	5
10727	Fluorene	86-73-7	N.D.		33	170	5
10727	Hexachlorobenzene	118-74-1	N.D.		33	170	5
10727	Hexachlorobutadiene	87-68-3	N.D.		160	330	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,600	4,900	5
10727	Hexachloroethane	67-72-1	N.D.		330	1,600	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	43	J	33	170	5
10727	Isophorone	78-59-1	N.D.		160	330	5
10727	2-Methylnaphthalene	91-57-6	N.D.		33	170	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086947
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:13 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5302 SDG#: KVM53-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		160	330	5
10727	4-Methylphenol	106-44-5	N.D.		160	330	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		33	170	5
10727	2-Nitroaniline	88-74-4	N.D.		160	330	5
10727	3-Nitroaniline	99-09-2	N.D.		650	1,600	5
10727	4-Nitroaniline	100-01-6	N.D.		650	1,600	5
10727	Nitrobenzene	98-95-3	N.D.		160	330	5
10727	2-Nitrophenol	88-75-5	N.D.		160	330	5
10727	4-Nitrophenol	100-02-7	N.D.		1,600	4,900	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		160	330	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		160	330	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		650	1,600	5
10727	Pentachlorophenol	87-86-5	N.D.		330	1,700	5
10727	Phenanthrene	85-01-8	45	J	33	170	5
10727	Phenol	108-95-2	N.D.		160	330	5
10727	Pyrene	129-00-0	75	J	33	170	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		160	330	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		160	330	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	81,000		2,500	6,700	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	50,000		1,700	5,000	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		170	500	1
06918	1,3-Dinitrobenzene	99-65-0	720		170	500	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		170	500	1
06918	HMX	2691-41-0	N.D.		420	1,300	1
06918	Nitrobenzene	98-95-3	N.D.		170	500	1
06918	Nitroglycerin	55-63-0	N.D.		3,400	10,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		170	500	1
06918	2-Nitrotoluene	88-72-2	N.D.		340	670	1
06918	3-Nitrotoluene	99-08-1	N.D.		420	840	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,100	1,100	1
06918	PETN	78-11-5	N.D.		3,400	10,000	1
06918	RDX	121-82-4	N.D.		220	500	1
06918	Tetryl	479-45-8	N.D.		270	670	1
06918	1,3,5-Trinitrobenzene	99-35-4	2,700		170	500	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,300,000		34,000	100,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086947
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:13 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5302 SDG#: KVM53-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	26,000		14.9	38.8	1
06944	Antimony	7440-36-0	N.D.		0.796	3.88	1
06935	Arsenic	7440-38-2	3.85	J	1.13	3.88	1
06946	Barium	7440-39-3	81.3		0.130	0.971	1
06947	Beryllium	7440-41-7	0.932	J	0.130	0.971	1
06949	Cadmium	7440-43-9	0.235	J	0.0835	0.971	1
01650	Calcium	7440-70-2	2,250		6.46	38.8	1
06951	Chromium	7440-47-3	22.0		0.190	2.91	1
06952	Cobalt	7440-48-4	6.81		0.157	0.971	1
06953	Copper	7440-50-8	35.1		0.544	1.94	1
01654	Iron	7439-89-6	28,800		6.46	38.8	1
06955	Lead	7439-92-1	304		0.621	2.91	1
01657	Magnesium	7439-95-4	1,790		3.24	19.4	1
06958	Manganese	7439-96-5	237		0.161	0.971	1
06961	Nickel	7440-02-0	12.8		0.447	1.94	1
01662	Potassium	7440-09-7	1,400		32.6	97.1	1
06936	Selenium	7782-49-2	4.21		1.61	3.88	1
06966	Silver	7440-22-4	1.24		0.233	0.971	1
01667	Sodium	7440-23-5	97.1	J	32.4	194	1
06925	Thallium	7440-28-0	N.D.		1.46	5.82	1
06971	Vanadium	7440-62-2	45.0		0.291	0.971	1
06972	Zinc	7440-66-6	51.3		1.49	3.88	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0481	J	0.0193	0.193	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,000		612	1,840	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	49.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 01:48	Catherine E Bachman	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086947
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:13 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5302 SDG#: KVM53-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 08:13	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/03/2015 22:09	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/03/2015 22:52	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 14:57	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 14:57	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 15:38	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 04:54	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15288049531A	10/16/2015 01:20	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5302

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086947
Sample wt/vol: 30.09(g/mL) g Lab File ID: oj1161.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 49 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	7.251	2100	J
2. 112-40-3	Dodecane	7.739	2800	J
3. 17301-23-4	Undecane, 2,6-dimethyl-	7.816	2500	J
4. 58462-32-1	trans,trans-3-Ethylbicyclo[4	8.010	3000	J
5.	Unknown Alkane	8.098	2200	J
6. 55045-08-4	Dodecane, 2-methyl-6-propyl-	8.128	2200	J
7. 61141-72-8	Dodecane, 4,6-dimethyl-	8.175	4600	J
8.	Unknown PAH	8.222	2100	J
9. 629-50-5	Tridecane	8.339	9200	J
10.	Unknown Alkane	8.398	2200	J
11.	Unknown Alkane	8.433	2900	J
12.	Unknown	8.486	2300	J
13.	Unknown	8.539	2500	J
14.	Unknown	8.598	2100	J
15. 5617-41-4	Heptylcyclohexane	8.639	2700	J
16. 1560-96-9	Tridecane, 2-methyl-	8.704	2700	J
17.	Unknown Alkane	8.739	2200	J
18. 74645-98-0	Dodecane, 2,7,10-trimethyl-	8.769	2800	J
19. 112-40-3	Dodecane	8.898	12000	J
20.	Unknown Alkane	9.274	2100	J
21. 629-62-9	Pentadecane	9.422	4300	J
22. 544-76-3	Hexadecane	9.916	3100	J
23.	Unknown	10.474	390000	J
24. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.410	28000	J
25. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.639	16000	J
26.				
27. SVOCTIC	Total SVOC TICs		510000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086948
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5303 SDG#: KVM53-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		29	150	5
10727	Acenaphthylene	208-96-8	N.D.		29	150	5
10727	Acetophenone	98-86-2	N.D.		140	290	5
10727	Anthracene	120-12-7	N.D.		29	150	5
10727	Atrazine	1912-24-9	N.D.		290	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		570	1,400	5
10727	Benzo(a)anthracene	56-55-3	71	J	29	150	5
10727	Benzo(a)pyrene	50-32-8	64	J	29	150	5
10727	Benzo(b)fluoranthene	205-99-2	88	J	29	150	5
10727	Benzo(g,h,i)perylene	191-24-2	63	J	29	150	5
10727	Benzo(k)fluoranthene	207-08-9	61	J	29	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	290	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	290	5
10727	Butylbenzylphthalate	85-68-7	N.D.		570	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		570	1,400	5
10727	Caprolactam	105-60-2	N.D.		290	1,400	5
10727	Carbazole	86-74-8	N.D.		140	290	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	290	5
10727	4-Chloroaniline	106-47-8	N.D.		290	570	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	290	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	290	5
10727	2-Chloronaphthalene	91-58-7	N.D.		58	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	290	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	290	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	290	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	91	J	29	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		29	150	5
10727	Dibenzofuran	132-64-9	N.D.		140	290	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		860	2,900	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	290	5
10727	Diethylphthalate	84-66-2	N.D.		570	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	290	5
10727	Dimethylphthalate	131-11-3	N.D.		570	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,300	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,600	5
10727	2,4-Dinitrotoluene	121-14-2	3,500		570	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	1,200		140	290	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		570	1,500	5
10727	Fluoranthene	206-44-0	140	J	29	150	5
10727	Fluorene	86-73-7	N.D.		29	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		29	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	290	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,300	5
10727	Hexachloroethane	67-72-1	N.D.		290	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	47	J	29	150	5
10727	Isophorone	78-59-1	N.D.		140	290	5
10727	2-Methylnaphthalene	91-57-6	N.D.		29	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086948
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5303 SDG#: KVM53-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	290	5
10727	4-Methylphenol	106-44-5	N.D.		140	290	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		29	150	5
10727	2-Nitroaniline	88-74-4	N.D.		140	290	5
10727	3-Nitroaniline	99-09-2	N.D.		570	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		570	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	290	5
10727	2-Nitrophenol	88-75-5	N.D.		140	290	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,300	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	290	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	290	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		570	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		290	1,500	5
10727	Phenanthrene	85-01-8	80	J	29	150	5
10727	Phenol	108-95-2	N.D.		140	290	5
10727	Pyrene	129-00-0	120	J	29	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	290	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	290	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	75,000		2,300	6,100	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	50,000		1,500	4,500	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	450	1
06918	1,3-Dinitrobenzene	99-65-0	640		150	450	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	450	1
06918	HMX	2691-41-0	N.D.		380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	450	1
06918	Nitroglycerin	55-63-0	N.D.		3,000	9,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	450	1
06918	2-Nitrotoluene	88-72-2	N.D.		300	610	1
06918	3-Nitrotoluene	99-08-1	N.D.		380	760	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,100	1,100	1
06918	PETN	78-11-5	N.D.		3,000	9,100	1
06918	RDX	121-82-4	N.D.		200	450	1
06918	Tetryl	479-45-8	N.D.		240	610	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,300		150	450	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,400,000		30,000	91,000	200
	Reporting limits were raised due to interference from the sample matrix.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086948
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5303 SDG#: KVM53-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,600		13.0	33.8	1
06944	Antimony	7440-36-0	N.D.		0.693	3.38	1
06935	Arsenic	7440-38-2	2.45	J	0.981	3.38	1
06946	Barium	7440-39-3	64.4		0.113	0.846	1
06947	Beryllium	7440-41-7	0.746	J	0.113	0.846	1
06949	Cadmium	7440-43-9	0.157	J	0.0727	0.846	1
01650	Calcium	7440-70-2	1,640		5.63	33.8	1
06951	Chromium	7440-47-3	18.0		0.166	2.54	1
06952	Cobalt	7440-48-4	5.27		0.137	0.846	1
06953	Copper	7440-50-8	28.1		0.474	1.69	1
01654	Iron	7439-89-6	23,900		5.63	33.8	1
06955	Lead	7439-92-1	269		0.541	2.54	1
01657	Magnesium	7439-95-4	1,560		2.82	16.9	1
06958	Manganese	7439-96-5	182		0.140	0.846	1
06961	Nickel	7440-02-0	9.51		0.389	1.69	1
01662	Potassium	7440-09-7	1,100		28.4	84.6	1
06936	Selenium	7782-49-2	3.54		1.40	3.38	1
06966	Silver	7440-22-4	0.893		0.203	0.846	1
01667	Sodium	7440-23-5	74.2	J	28.2	169	1
06925	Thallium	7440-28-0	N.D.		1.27	5.07	1
06971	Vanadium	7440-62-2	39.0		0.254	0.846	1
06972	Zinc	7440-66-6	37.6		1.30	3.38	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0429	J	0.0171	0.171	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	23,300		857	2,570	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 02:14	Catherine E Bachman	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086948
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5303 SDG#: KVM53-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 09:38	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/03/2015 23:34	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 00:16	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:01	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:01	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 15:41	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:06	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15288049531A	10/16/2015 01:29	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5303

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086948
Sample wt/vol: 30.31(g/mL) g Lab File ID: oj1162.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 42.6 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	7.251	1500	J
2.1606-08-2	Cyclopentylcyclohexane	7.363	1500	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	7.628	1700	J
4.13151-34-3	Decane, 3-methyl-	7.734	3500	J
5.17301-28-9	Undecane, 3,6-dimethyl-	7.816	1600	J
6.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	8.016	1800	J
7.	Unknown Alkane	8.051	1700	J
8.1560-97-0	Dodecane, 2-methyl-	8.128	1500	J
9.54105-67-8	Heptadecane, 2,6-dimethyl-	8.175	3800	J
10.629-59-4	Tetradecane	8.339	11000	J
11.	Unknown	8.392	1800	J
12.	Unknown	8.433	2000	J
13.	Unknown Cycloalkane	8.639	2000	J
14.54833-23-7	Eicosane, 10-methyl-	8.704	1800	J
15.	Unknown Alkane	8.769	2500	J
16.629-59-4	Tetradecane	8.898	10000	J
17.629-62-9	Pentadecane	9.422	5100	J
18.544-76-3	Hexadecane	9.916	3300	J
19.	Unknown	10.486	460000	J
20.	Unknown	11.033	1500	J
21.	Unknown	11.345	1500	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.416	37000	J
23.	Unknown Aromatic	11.480	3200	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.645	19000	J
25.	Unknown Aromatic	11.780	3000	J
26.				
27.SVOCTIC	Total SVOC TICs		580000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086949
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5304 SDG#: KVM53-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		29	150	5
10727	Acenaphthylene	208-96-8	N.D.		29	150	5
10727	Acetophenone	98-86-2	N.D.		150	290	5
10727	Anthracene	120-12-7	N.D.		29	150	5
10727	Atrazine	1912-24-9	N.D.		290	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		580	1,500	5
10727	Benzo(a)anthracene	56-55-3	60	J	29	150	5
10727	Benzo(a)pyrene	50-32-8	63	J	29	150	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	29	150	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		29	150	5
10727	Benzo(k)fluoranthene	207-08-9	57	J	29	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	290	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	290	5
10727	Butylbenzylphthalate	85-68-7	N.D.		580	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		580	1,500	5
10727	Caprolactam	105-60-2	N.D.		290	1,500	5
10727	Carbazole	86-74-8	N.D.		150	290	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	290	5
10727	4-Chloroaniline	106-47-8	N.D.		290	580	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	290	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	290	5
10727	2-Chloronaphthalene	91-58-7	N.D.		59	290	5
10727	2-Chlorophenol	95-57-8	N.D.		150	290	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	290	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	290	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	76	J	29	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		29	150	5
10727	Dibenzofuran	132-64-9	190	J	150	290	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		880	2,900	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	290	5
10727	Diethylphthalate	84-66-2	N.D.		580	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	290	5
10727	Dimethylphthalate	131-11-3	N.D.		580	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,400	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,800	5
10727	2,4-Dinitrotoluene	121-14-2	4,700		580	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	1,500		150	290	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		580	1,500	5
10727	Fluoranthene	206-44-0	120	J	29	150	5
10727	Fluorene	86-73-7	N.D.		29	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		29	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	290	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,400	5
10727	Hexachloroethane	67-72-1	N.D.		290	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	54	J	29	150	5
10727	Isophorone	78-59-1	N.D.		150	290	5
10727	2-Methylnaphthalene	91-57-6	N.D.		29	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086949
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5304 SDG#: KVM53-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	290	5
10727	4-Methylphenol	106-44-5	N.D.		150	290	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		29	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	290	5
10727	3-Nitroaniline	99-09-2	N.D.		580	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		580	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	290	5
10727	2-Nitrophenol	88-75-5	N.D.		150	290	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,400	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	290	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	290	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		580	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		290	1,500	5
10727	Phenanthrene	85-01-8	58	J	29	150	5
10727	Phenol	108-95-2	N.D.		150	290	5
10727	Pyrene	129-00-0	100	J	29	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	290	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	290	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	78,000		2,300	6,100	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	50,000		1,500	4,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	460	1
06918	1,3-Dinitrobenzene	99-65-0	730		150	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	460	1
06918	HMX	2691-41-0	N.D.		380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	460	1
06918	Nitroglycerin	55-63-0	N.D.		3,000	9,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	460	1
06918	2-Nitrotoluene	88-72-2	N.D.		300	610	1
06918	3-Nitrotoluene	99-08-1	N.D.		380	760	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,100	1,100	1
06918	PETN	78-11-5	N.D.		3,000	9,100	1
06918	RDX	121-82-4	N.D.		200	460	1
06918	Tetryl	479-45-8	N.D.		240	610	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,200		150	460	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,600,000		30,000	91,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086949
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:18 by SL

Submitted: 10/13/2015 17:35
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Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5304 SDG#: KVM53-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	21,200		12.8	33.5	1
06944	Antimony	7440-36-0	N.D.		0.687	3.35	1
06935	Arsenic	7440-38-2	3.57		0.973	3.35	1
06946	Barium	7440-39-3	64.4		0.112	0.838	1
06947	Beryllium	7440-41-7	0.793	J	0.112	0.838	1
06949	Cadmium	7440-43-9	0.111	J	0.0721	0.838	1
01650	Calcium	7440-70-2	1,780		5.58	33.5	1
06951	Chromium	7440-47-3	22.0		0.164	2.52	1
06952	Cobalt	7440-48-4	5.88		0.136	0.838	1
06953	Copper	7440-50-8	30.5		0.469	1.68	1
01654	Iron	7439-89-6	24,800		5.58	33.5	1
06955	Lead	7439-92-1	262		0.537	2.52	1
01657	Magnesium	7439-95-4	1,580		2.80	16.8	1
06958	Manganese	7439-96-5	195		0.139	0.838	1
06961	Nickel	7440-02-0	10.2		0.386	1.68	1
01662	Potassium	7440-09-7	1,160		28.2	83.8	1
06936	Selenium	7782-49-2	3.75		1.39	3.35	1
06966	Silver	7440-22-4	1.04		0.201	0.838	1
01667	Sodium	7440-23-5	86.5	J	28.0	168	1
06925	Thallium	7440-28-0	N.D.		1.26	5.03	1
06971	Vanadium	7440-62-2	40.9		0.252	0.838	1
06972	Zinc	7440-66-6	40.5		1.29	3.35	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0469	J	0.0171	0.171	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	19,800		849	2,550	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	43.2		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 02:40	Catherine E Bachman	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086949
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5304 SDG#: KVM53-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 10:20	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 00:59	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 02:24	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:10	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:10	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 15:51	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:08	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15288049531A	10/16/2015 01:38	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5304

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086949
Sample wt/vol: 30.1 (g/mL) g Lab File ID: oj1163.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 43.2 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.657	4500	JBA
2.1000152-47-3	trans-Decalin, 2-methyl-	7.251	3000	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	7.628	1900	J
4.112-40-3	Dodecane	7.739	4000	J
5.17301-23-4	Undecane, 2,6-dimethyl-	7.816	1700	J
6.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	8.016	2100	J
7.1560-97-0	Dodecane, 2-methyl-	8.128	1800	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	8.175	4200	J
9.629-50-5	Tridecane	8.345	12000	J
10.	Unknown	8.398	2000	J
11.	Unknown Alkane	8.439	2300	J
12.	Unknown Cycloalkane	8.639	2300	J
13.1560-96-9	Tridecane, 2-methyl-	8.704	1900	J
14.	Unknown Alkane	8.769	2600	J
15.629-59-4	Tetradecane	8.904	11000	J
16.	Unknown	9.204	4900	J
17.629-62-9	Pentadecane	9.422	5600	J
18.	Unknown	9.916	4200	J
19.	Unknown	10.498	530000	J
20.	Unknown Aromatic	11.351	1800	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	11.421	43000	J
22.	Unknown Aromatic	11.480	4100	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.651	23000	J
24.	Unknown Aromatic	11.786	3700	J
25.31208-76-1	5,7-Dinitro-1H-indazole	12.686	1600	J
26.				
27.SVOCTIC	Total SVOC TICs		680000	JBA
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086950
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:45 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5305 SDG#: KVM53-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	28	J	28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		560	1,400	5
10727	Benzo(a)anthracene	56-55-3	80	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	82	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	60	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	64	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		560	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		560	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	560	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	96	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	150	J	140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		840	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		560	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		560	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,400	5
10727	2,4-Dinitrotoluene	121-14-2	5,000		560	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	1,100		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		560	1,400	5
10727	Fluoranthene	206-44-0	130	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	55	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086950
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:45 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5305 SDG#: KVM53-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	N.D.		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		560	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		560	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		560	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	58	J	28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	120	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	25,000		240	630	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	24,000		160	480	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	480	1
06918	1,3-Dinitrobenzene	99-65-0	550		160	480	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	480	1
06918	HMX	2691-41-0	N.D.		400	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		160	480	1
06918	Nitroglycerin	55-63-0	N.D.		3,200	9,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		160	480	1
06918	2-Nitrotoluene	88-72-2	N.D.		320	630	1
06918	3-Nitrotoluene	99-08-1	N.D.		400	790	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,100	1,100	1
06918	PETN	78-11-5	N.D.		3,200	9,500	1
06918	RDX	121-82-4	N.D.		210	480	1
06918	Tetryl	479-45-8	N.D.		250	630	1
06918	1,3,5-Trinitrobenzene	99-35-4	2,500		160	480	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,100,000		32,000	95,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086950
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:45 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5305 SDG#: KVM53-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,600		13.0	33.9	1
06944	Antimony	7440-36-0	N.D.		0.695	3.39	1
06935	Arsenic	7440-38-2	2.24	J	0.983	3.39	1
06946	Barium	7440-39-3	55.9		0.114	0.847	1
06947	Beryllium	7440-41-7	0.675	J	0.114	0.847	1
06949	Cadmium	7440-43-9	0.124	J	0.0729	0.847	1
01650	Calcium	7440-70-2	1,120		5.64	33.9	1
06951	Chromium	7440-47-3	17.0		0.166	2.54	1
06952	Cobalt	7440-48-4	4.72		0.137	0.847	1
06953	Copper	7440-50-8	26.5		0.475	1.69	1
01654	Iron	7439-89-6	21,600		5.64	33.9	1
06955	Lead	7439-92-1	211		0.542	2.54	1
01657	Magnesium	7439-95-4	1,420		2.83	16.9	1
06958	Manganese	7439-96-5	177		0.141	0.847	1
06961	Nickel	7440-02-0	8.47		0.390	1.69	1
01662	Potassium	7440-09-7	982		28.5	84.7	1
06936	Selenium	7782-49-2	3.62		1.41	3.39	1
06966	Silver	7440-22-4	1.00		0.203	0.847	1
01667	Sodium	7440-23-5	101	J	28.3	169	1
06925	Thallium	7440-28-0	N.D.		1.27	5.08	1
06971	Vanadium	7440-62-2	34.5		0.254	0.847	1
06972	Zinc	7440-66-6	38.1		1.31	3.39	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0398	J	0.0163	0.163	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	14,700		893	2,680	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 03:06	Catherine E Bachman	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086950
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:45 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5305 SDG#: KVM53-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 11:03	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 08:46	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:13	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:13	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 15:54	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:15	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15288049531B	10/16/2015 03:22	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5305

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086950
Sample wt/vol: 30.25(g/mL) g Lab File ID: oj1164.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 41 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1000152-47-3	trans-Decalin, 2-methyl-	7.251	2100	J
2.544-76-3	Hexadecane	7.734	3300	J
3.17301-28-9	Undecane, 3,6-dimethyl-	7.816	1700	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	8.010	2100	J
5.	Unknown	8.051	1900	J
6.	Unknown	8.092	1400	J
7.1560-97-0	Dodecane, 2-methyl-	8.128	1600	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	8.175	3700	J
9.629-50-5	Tridecane	8.340	9400	J
10.	Unknown	8.392	2000	J
11.107770-99-0	3,5-Dimethyldodecane	8.434	1900	J
12.	Unknown Cycloalkane	8.639	1700	J
13.1560-96-9	Tridecane, 2-methyl-	8.704	1400	J
14.	Unknown Alkane	8.769	2100	J
15.629-59-4	Tetradecane	8.898	8000	J
16.	Unknown Alkane	9.422	4100	J
17.544-76-3	Hexadecane	9.916	2100	J
18.	Unknown	10.498	520000	J
19.	Unknown	10.539	2000	J
20.	Unknown	10.892	1800	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	11.410	16000	J
22.618-87-1	Benzenamine, 3,5-dinitro-	11.475	2600	J
23.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.639	12000	J
24.	Unknown Aromatic	11.780	3000	J
25.506-17-2	cis-Vaccenic acid	12.175	1400	J
26.				
27.SVOCTIC	Total SVOC TICs		610000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086951
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5306 SDG#: KVM53-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	61	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	62	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	52	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	42	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	65	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	34	J	28	140	5
10727	Dibenzofuran	132-64-9	190	J	140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		830	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,300	5
10727	2,4-Dinitrotoluene	121-14-2	6,400		550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	1,400		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	120	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	54	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086951
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5306 SDG#: KVM53-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	N.D.		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	65	J	28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	98	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000		230	610	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	22,000		150	460	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	460	1
06918	1,3-Dinitrobenzene	99-65-0	940		150	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	460	1
06918	HMX	2691-41-0	N.D.		380	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		150	460	1
06918	Nitroglycerin	55-63-0	N.D.		3,100	9,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	460	1
06918	2-Nitrotoluene	88-72-2	N.D.		310	610	1
06918	3-Nitrotoluene	99-08-1	N.D.		380	770	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,000	1,000	1
06918	PETN	78-11-5	N.D.		3,100	9,200	1
06918	RDX	121-82-4	N.D.		200	460	1
06918	Tetryl	479-45-8	N.D.		250	610	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,000		150	460	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,000,000		31,000	92,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086951
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5306 SDG#: KVM53-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,100		12.4	32.3	1
06944	Antimony	7440-36-0	N.D.		0.663	3.23	1
06935	Arsenic	7440-38-2	1.92	J	0.937	3.23	1
06946	Barium	7440-39-3	58.5		0.108	0.808	1
06947	Beryllium	7440-41-7	0.724	J	0.108	0.808	1
06949	Cadmium	7440-43-9	0.129	J	0.0695	0.808	1
01650	Calcium	7440-70-2	1,230		5.38	32.3	1
06951	Chromium	7440-47-3	15.7		0.158	2.42	1
06952	Cobalt	7440-48-4	5.23		0.131	0.808	1
06953	Copper	7440-50-8	27.1		0.452	1.62	1
01654	Iron	7439-89-6	23,400		5.38	32.3	1
06955	Lead	7439-92-1	211		0.517	2.42	1
01657	Magnesium	7439-95-4	1,710		2.70	16.2	1
06958	Manganese	7439-96-5	218		0.134	0.808	1
06961	Nickel	7440-02-0	8.24		0.372	1.62	1
01662	Potassium	7440-09-7	983		27.1	80.8	1
06936	Selenium	7782-49-2	4.21		1.34	3.23	1
06966	Silver	7440-22-4	0.960		0.194	0.808	1
01667	Sodium	7440-23-5	114	J	27.0	162	1
06925	Thallium	7440-28-0	N.D.		1.21	4.85	1
06971	Vanadium	7440-62-2	37.1		0.242	0.808	1
06972	Zinc	7440-66-6	43.9		1.24	3.23	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0336	J	0.0167	0.167	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,000		748	2,240	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 03:32	Catherine E Bachman	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086951
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5306 SDG#: KVM53-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 11:45	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 10:11	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:16	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:16	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 15:57	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:17	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15288049531B	10/16/2015 03:31	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5306

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086951
Sample wt/vol: 30.39(g/mL) g Lab File ID: oj1165.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40.5 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	4.657	3600	JBA
2. 1000152-47-3	trans-Decalin, 2-methyl-	7.251	2100	J
3.	Unknown PAH	7.628	1200	J
4. 112-40-3	Dodecane	7.739	2400	J
5. 1618-23-1	Naphthalene, 2-ethyldecahydr	8.010	1400	J
6.	Unknown Alkane	8.175	2800	J
7. 629-50-5	Tridecane	8.345	8600	J
8.	Unknown	8.398	1300	J
9.	Unknown Alkane	8.433	1500	J
10.	Unknown Cycloalkane	8.639	1500	J
11. 629-93-6	Octadecane, 1-iodo-	8.704	1400	J
12.	Unknown Alkane	8.769	1800	J
13. 629-59-4	Tetradecane	8.898	8300	J
14.	Unknown Alkane	9.422	4200	J
15. 544-76-3	Hexadecane	9.916	2400	J
16.	Unknown	10.516	650000	J
17.	Unknown	10.557	2300	J
18.	Unknown	10.798	1500	J
19.	Unknown	10.904	2200	J
20.	Unknown Aromatic	11.180	1600	J
21. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.416	17000	J
22.	Unknown Aromatic	11.480	2800	J
23. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.645	13000	J
24.	Unknown Aromatic	11.786	3300	J
25. 112-79-8	9-Octadecenoic acid, (E)-	12.174	1600	J
26.				
27. SVOCTIC	Total SVOC TICs		740000	JBA
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086952
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:50 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5307 SDG#: KVM53-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		140	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,400	5
10727	Benzo(a)anthracene	56-55-3	76	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	47	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	34	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	38	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,400	5
10727	Caprolactam	105-60-2	N.D.		270	1,400	5
10727	Carbazole	86-74-8	N.D.		140	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		54	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	73	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		820	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,200	5
10727	2,4-Dinitrotoluene	121-14-2	4,500		540	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	1,000		140	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	100	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	34	J	27	140	5
10727	Isophorone	78-59-1	N.D.		140	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086952
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:50 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5307 SDG#: KVM53-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	270	5
10727	4-Methylphenol	106-44-5	N.D.		140	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	270	5
10727	2-Nitrophenol	88-75-5	N.D.		140	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	49	J	27	140	5
10727	Phenol	108-95-2	N.D.		140	270	5
10727	Pyrene	129-00-0	99	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	27,000		230	620	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	27,000		160	470	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	470	1
06918	1,3-Dinitrobenzene	99-65-0	1,500		160	470	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	470	1
06918	HMX	2691-41-0	N.D.		390	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		160	470	1
06918	Nitroglycerin	55-63-0	N.D.		3,100	9,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.		160	470	1
06918	2-Nitrotoluene	88-72-2	N.D.		310	620	1
06918	3-Nitrotoluene	99-08-1	N.D.		390	780	1
06918	4-Nitrotoluene	99-99-0	N.D.		2,800	2,800	1
06918	PETN	78-11-5	N.D.		3,100	9,400	1
06918	RDX	121-82-4	N.D.		380	470	1
06918	Tetryl	479-45-8	N.D.		250	620	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,800		160	470	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,400,000		31,000	94,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086952
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:50 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5307 SDG#: KVM53-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,200		12.7	33.1	1
06944	Antimony	7440-36-0	N.D.		0.679	3.31	1
06935	Arsenic	7440-38-2	2.41	J	0.960	3.31	1
06946	Barium	7440-39-3	54.4		0.111	0.828	1
06947	Beryllium	7440-41-7	0.823	J	0.111	0.828	1
06949	Cadmium	7440-43-9	0.0745	J	0.0712	0.828	1
01650	Calcium	7440-70-2	2,120		5.51	33.1	1
06951	Chromium	7440-47-3	19.2		0.162	2.48	1
06952	Cobalt	7440-48-4	5.10		0.134	0.828	1
06953	Copper	7440-50-8	28.0		0.464	1.66	1
01654	Iron	7439-89-6	23,900		5.51	33.1	1
06955	Lead	7439-92-1	202		0.530	2.48	1
01657	Magnesium	7439-95-4	1,480		2.76	16.6	1
06958	Manganese	7439-96-5	198		0.137	0.828	1
06961	Nickel	7440-02-0	8.27		0.381	1.66	1
01662	Potassium	7440-09-7	913		27.8	82.8	1
06936	Selenium	7782-49-2	3.70		1.37	3.31	1
06966	Silver	7440-22-4	1.04		0.199	0.828	1
01667	Sodium	7440-23-5	74.0	J	27.6	166	1
06925	Thallium	7440-28-0	N.D.		1.24	4.97	1
06971	Vanadium	7440-62-2	36.5		0.248	0.828	1
06972	Zinc	7440-66-6	36.1		1.27	3.31	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0401	J	0.0160	0.160	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,600		773	2,320	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 20:04	William H Saadeh	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086952
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:50 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5307 SDG#: KVM53-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 12:28	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 10:54	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:19	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:19	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:00	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:19	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15289049531A	10/16/2015 11:59	Clinton M Wilson	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5307

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086952
Sample wt/vol: 30.41(g/mL) g Lab File ID: oj1184.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 39.6 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 24 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	Cyclotetrasiloxane, octameth	6.104	7000	J
2. 1000152-47-3	trans-Decalin, 2-methyl-	7.222	1700	J
3. 1618-22-0	Naphthalene, decahydro-2,6-d	7.598	1200	J
4. 112-40-3	Dodecane	7.710	2600	J
5. 17301-23-4	Undecane, 2,6-dimethyl-	7.792	1500	J
6.	Unknown	8.145	2400	J
7. 540-97-6	Cyclohexasiloxane, dodecamet	8.280	1200	J
8. 629-50-5	Tridecane	8.316	6900	J
9.	Unknown	8.363	1500	J
10.	Unknown	8.410	1400	J
11.	Unknown	8.610	1600	J
12. 1560-96-9	Tridecane, 2-methyl-	8.675	1300	J
13.	Unknown	8.716	1100	J
14. 3891-98-3	Dodecane, 2,6,10-trimethyl-	8.739	1800	J
15. 629-59-4	Tetradecane	8.875	6300	J
16.	Unknown	9.186	2900	J
17. 629-62-9	Pentadecane	9.398	3400	J
18. 544-76-3	Hexadecane	9.892	1600	J
19.	Unknown	10.486	580000	J
20.	Unknown	10.522	3300	J
21.	Unknown	10.869	2400	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.386	12000	J
23. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.610	9700	J
24.	Unknown	11.757	2500	J
25.				
26. SVOCTIC	Total SVOC TICs		660000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086953
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5308 SDG#: KVM53-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		29	150	5
10727	Acenaphthylene	208-96-8	N.D.		29	150	5
10727	Acetophenone	98-86-2	N.D.		150	290	5
10727	Anthracene	120-12-7	N.D.		29	150	5
10727	Atrazine	1912-24-9	N.D.		290	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		590	1,500	5
10727	Benzo(a)anthracene	56-55-3	51	J	29	150	5
10727	Benzo(a)pyrene	50-32-8	41	J	29	150	5
10727	Benzo(b)fluoranthene	205-99-2	70	J	29	150	5
10727	Benzo(g,h,i)perylene	191-24-2	33	J	29	150	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		29	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	290	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	290	5
10727	Butylbenzylphthalate	85-68-7	N.D.		590	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		590	1,500	5
10727	Caprolactam	105-60-2	N.D.		290	1,500	5
10727	Carbazole	86-74-8	N.D.		150	290	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	290	5
10727	4-Chloroaniline	106-47-8	N.D.		290	590	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	290	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	290	5
10727	2-Chloronaphthalene	91-58-7	N.D.		59	290	5
10727	2-Chlorophenol	95-57-8	N.D.		150	290	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	290	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	290	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	66	J	29	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		29	150	5
10727	Dibenzofuran	132-64-9	N.D.		150	290	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		880	2,900	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	290	5
10727	Diethylphthalate	84-66-2	N.D.		590	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	290	5
10727	Dimethylphthalate	131-11-3	N.D.		590	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,400	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,800	5
10727	2,4-Dinitrotoluene	121-14-2	4,200		590	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	970		150	290	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		590	1,500	5
10727	Fluoranthene	206-44-0	95	J	29	150	5
10727	Fluorene	86-73-7	N.D.		29	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		29	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	290	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,400	5
10727	Hexachloroethane	67-72-1	N.D.		290	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		29	150	5
10727	Isophorone	78-59-1	N.D.		150	290	5
10727	2-Methylnaphthalene	91-57-6	N.D.		29	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086953
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5308 SDG#: KVM53-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	290	5
10727	4-Methylphenol	106-44-5	N.D.		150	290	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		29	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	290	5
10727	3-Nitroaniline	99-09-2	N.D.		590	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		590	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	290	5
10727	2-Nitrophenol	88-75-5	N.D.		150	290	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,400	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	290	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	290	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		590	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		290	1,500	5
10727	Phenanthrene	85-01-8	45	J	29	150	5
10727	Phenol	108-95-2	N.D.		150	290	5
10727	Pyrene	129-00-0	78	J	29	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	290	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	290	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	24,000		230	610	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	22,000		150	460	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	460	1
06918	1,3-Dinitrobenzene	99-65-0	770		150	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	460	1
06918	HMX	2691-41-0	N.D.		380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	460	1
06918	Nitroglycerin	55-63-0	N.D.		3,100	9,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	460	1
06918	2-Nitrotoluene	88-72-2	N.D.		310	610	1
06918	3-Nitrotoluene	99-08-1	N.D.		380	770	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,000	1,000	1
06918	PETN	78-11-5	N.D.		3,100	9,200	1
06918	RDX	121-82-4	N.D.		390	460	1
06918	Tetryl	479-45-8	N.D.		240	610	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,000		150	460	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,100,000		31,000	92,000	200
	Reporting limits were raised due to interference from the sample matrix.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086953
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5308 SDG#: KVM53-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	22,300		13.3	34.6	1
06944	Antimony	7440-36-0	N.D.		0.710	3.46	1
06935	Arsenic	7440-38-2	2.53	J	1.00	3.46	1
06946	Barium	7440-39-3	68.3		0.116	0.865	1
06947	Beryllium	7440-41-7	0.832	J	0.116	0.865	1
06949	Cadmium	7440-43-9	0.213	J	0.0744	0.865	1
01650	Calcium	7440-70-2	1,050		5.76	34.6	1
06951	Chromium	7440-47-3	18.7		0.170	2.60	1
06952	Cobalt	7440-48-4	5.77		0.140	0.865	1
06953	Copper	7440-50-8	34.1		0.485	1.73	1
01654	Iron	7439-89-6	25,900		5.76	34.6	1
06955	Lead	7439-92-1	278		0.554	2.60	1
01657	Magnesium	7439-95-4	1,510		2.89	17.3	1
06958	Manganese	7439-96-5	220		0.144	0.865	1
06961	Nickel	7440-02-0	10.1		0.398	1.73	1
01662	Potassium	7440-09-7	1,100		29.1	86.5	1
06936	Selenium	7782-49-2	4.02		1.44	3.46	1
06966	Silver	7440-22-4	1.06		0.208	0.865	1
01667	Sodium	7440-23-5	71.4	J	28.9	173	1
06925	Thallium	7440-28-0	N.D.		1.30	5.19	1
06971	Vanadium	7440-62-2	39.9		0.260	0.865	1
06972	Zinc	7440-66-6	42.1		1.33	3.46	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0500	J	0.0169	0.169	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,400		763	2,290	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	43.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 20:30	William H Saadeh	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086953
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5308 SDG#: KVM53-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 13:10	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 11:37	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:23	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:23	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:03	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:21	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15289049531A	10/16/2015 12:25	Clinton M Wilson	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5308

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086953
Sample wt/vol: 30.33(g/mL) g Lab File ID: oj1185.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 43.9 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 2958-76-1	Naphthalene, decahydro-2-met	7.222	2100	J
2. 112-40-3	Dodecane	7.710	2800	J
3.	Unknown	7.751	1300	J
4.	Unknown	7.792	1600	J
5.	Unknown	8.098	1300	J
6. 61141-72-8	Dodecane, 4,6-dimethyl-	8.145	2700	J
7. 629-50-5	Tridecane	8.316	7700	J
8.	Unknown	8.369	1700	J
9.	Unknown	8.410	1600	J
10.	Unknown	8.610	1900	J
11.	Unknown	8.675	1400	J
12.	Unknown	8.710	1300	J
13. 3891-98-3	Dodecane, 2,6,10-trimethyl-	8.739	2200	J
14. 629-59-4	Tetradecane	8.875	7700	J
15.	Unknown	9.175	1500	J
16.	Unknown	9.192	1800	J
17. 629-62-9	Pentadecane	9.398	4100	J
18.	Unknown	9.886	1900	J
19.	Unknown	10.463	480000	J
20.	Unknown	10.510	2300	J
21.	Unknown	10.863	2000	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.380	13000	J
23.	Unknown	11.445	2100	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.604	12000	J
25.	Unknown	11.751	3200	J
26.				
27. SVOCTIC	Total SVOC TICs		560000	J
28.				
29.				
30.				

Sample Description: TNT-PS-C-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086954
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5309 SDG#: KVM53-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		29	150	5
10727	Acenaphthylene	208-96-8	N.D.		29	150	5
10727	Acetophenone	98-86-2	N.D.		140	290	5
10727	Anthracene	120-12-7	N.D.		29	150	5
10727	Atrazine	1912-24-9	N.D.		290	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		580	1,400	5
10727	Benzo(a)anthracene	56-55-3	46	J	29	150	5
10727	Benzo(a)pyrene	50-32-8	43	J	29	150	5
10727	Benzo(b)fluoranthene	205-99-2	58	J	29	150	5
10727	Benzo(g,h,i)perylene	191-24-2	36	J	29	150	5
10727	Benzo(k)fluoranthene	207-08-9	42	J	29	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	290	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	290	5
10727	Butylbenzylphthalate	85-68-7	N.D.		580	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		580	1,400	5
10727	Caprolactam	105-60-2	N.D.		290	1,400	5
10727	Carbazole	86-74-8	N.D.		140	290	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	290	5
10727	4-Chloroaniline	106-47-8	N.D.		290	580	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	290	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	290	5
10727	2-Chloronaphthalene	91-58-7	N.D.		58	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	290	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	290	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	290	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	51	J	29	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		29	150	5
10727	Dibenzofuran	132-64-9	N.D.		140	290	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		860	2,900	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	290	5
10727	Diethylphthalate	84-66-2	N.D.		580	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	290	5
10727	Dimethylphthalate	131-11-3	N.D.		580	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,300	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,600	5
10727	2,4-Dinitrotoluene	121-14-2	4,300		580	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	1,100		140	290	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		580	1,500	5
10727	Fluoranthene	206-44-0	80	J	29	150	5
10727	Fluorene	86-73-7	N.D.		29	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		29	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	290	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,300	5
10727	Hexachloroethane	67-72-1	N.D.		290	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		29	150	5
10727	Isophorone	78-59-1	N.D.		140	290	5
10727	2-Methylnaphthalene	91-57-6	N.D.		29	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086954
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5309 SDG#: KVM53-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	290	5
10727	4-Methylphenol	106-44-5	N.D.		140	290	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		29	150	5
10727	2-Nitroaniline	88-74-4	N.D.		140	290	5
10727	3-Nitroaniline	99-09-2	N.D.		580	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		580	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	290	5
10727	2-Nitrophenol	88-75-5	N.D.		140	290	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,300	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	290	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	290	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		580	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		290	1,500	5
10727	Phenanthrene	85-01-8	52	J	29	150	5
10727	Phenol	108-95-2	N.D.		140	290	5
10727	Pyrene	129-00-0	71	J	29	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	290	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	290	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	26,000		250	670	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	27,000		170	500	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		170	500	1
06918	1,3-Dinitrobenzene	99-65-0	500		170	500	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		170	500	1
06918	HMX	2691-41-0	N.D.		420	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		170	500	1
06918	Nitroglycerin	55-63-0	N.D.		3,300	10,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		170	500	1
06918	2-Nitrotoluene	88-72-2	N.D.		330	670	1
06918	3-Nitrotoluene	99-08-1	N.D.		420	830	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,100	1,100	1
06918	PETN	78-11-5	N.D.		3,300	10,000	1
06918	RDX	121-82-4	N.D.		220	500	1
06918	Tetryl	479-45-8	N.D.		270	670	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,200		170	500	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,800,000		33,000	100,000	200
	Reporting limits were raised due to interference from the sample matrix.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086954
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5309 SDG#: KVM53-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,700		13.3	34.6	1
06944	Antimony	7440-36-0	N.D.		0.709	3.46	1
06935	Arsenic	7440-38-2	3.04	J	1.00	3.46	1
06946	Barium	7440-39-3	54.1		0.116	0.865	1
06947	Beryllium	7440-41-7	0.720	J	0.116	0.865	1
06949	Cadmium	7440-43-9	0.182	J	0.0744	0.865	1
01650	Calcium	7440-70-2	965		5.76	34.6	1
06951	Chromium	7440-47-3	19.6		0.170	2.60	1
06952	Cobalt	7440-48-4	6.89		0.140	0.865	1
06953	Copper	7440-50-8	28.1		0.484	1.73	1
01654	Iron	7439-89-6	25,300		5.76	34.6	1
06955	Lead	7439-92-1	214		0.554	2.60	1
01657	Magnesium	7439-95-4	1,420		2.89	17.3	1
06958	Manganese	7439-96-5	205		0.144	0.865	1
06961	Nickel	7440-02-0	8.86		0.398	1.73	1
01662	Potassium	7440-09-7	891		29.1	86.5	1
06936	Selenium	7782-49-2	3.46		1.44	3.46	1
06966	Silver	7440-22-4	0.908		0.208	0.865	1
01667	Sodium	7440-23-5	77.1	J	28.9	173	1
06925	Thallium	7440-28-0	N.D.		1.30	5.19	1
06971	Vanadium	7440-62-2	37.5		0.260	0.865	1
06972	Zinc	7440-66-6	50.7		1.33	3.46	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0396	J	0.0171	0.171	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	25,800		673	2,020	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.2		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 20:55	William H Saadeh	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086954
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:15 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5309 SDG#: KVM53-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 13:52	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 13:02	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:26	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:26	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:06	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:23	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15289049531A	10/16/2015 12:33	Clinton M Wilson	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5309

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086954
Sample wt/vol: 30.07(g/mL) g Lab File ID: oj1186.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 42.2 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.556-67-2	Cyclotetrasiloxane, octameth	6.104	4200	J
2.1000152-47-3	trans-Decalin, 2-methyl-	7.222	1800	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	7.598	1200	J
4.3386-33-2	Octadecane, 1-chloro-	7.710	2700	J
5.	Unknown	7.792	1500	J
6.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	7.981	1700	J
7.	Unknown	8.069	1200	J
8.55045-08-4	Dodecane, 2-methyl-6-propyl-	8.104	1400	J
9.61141-72-8	Dodecane, 4,6-dimethyl-	8.145	2900	J
10.629-50-5	Tridecane	8.316	7500	J
11.	Unknown	8.363	1800	J
12.	Unknown	8.410	1700	J
13.	Unknown	8.610	1800	J
14.	Unknown	8.675	1400	J
15.	Unknown	8.739	2000	J
16.629-59-4	Tetradecane	8.875	7200	J
17.	Unknown	9.175	1500	J
18.	Unknown	9.192	1800	J
19.629-62-9	Pentadecane	9.398	3700	J
20.544-76-3	Hexadecane	9.886	1500	J
21.	Unknown	10.475	530000	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	11.386	16000	J
23.	Unknown	11.451	2800	J
24.	Unknown	11.610	13000	J
25.	Unknown	11.757	2900	J
26.				
27.SVOCTIC	Total SVOC TICs		610000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086955
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5310 SDG#: KVM53-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		130	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		510	1,300	5
10727	Benzo(a)anthracene	56-55-3	54	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	73	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	66	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	56	J	25	130	5
10727	Benzo(k)fluoranthene	207-08-9	55	J	25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		510	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		510	1,300	5
10727	Caprolactam	105-60-2	N.D.		250	1,300	5
10727	Carbazole	86-74-8	N.D.		130	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	510	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		51	250	5
10727	2-Chlorophenol	95-57-8	N.D.		130	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	81	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	27	J	25	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		760	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	250	5
10727	Diethylphthalate	84-66-2	N.D.		510	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	250	5
10727	Dimethylphthalate	131-11-3	N.D.		510	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	3,800	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,300	7,600	5
10727	2,4-Dinitrotoluene	121-14-2	4,900		510	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	1,200		130	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		510	1,300	5
10727	Fluoranthene	206-44-0	120	J	25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	3,800	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	55	J	25	130	5
10727	Isophorone	78-59-1	N.D.		130	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086955
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5310 SDG#: KVM53-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	250	5
10727	4-Methylphenol	106-44-5	N.D.		130	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	250	5
10727	3-Nitroaniline	99-09-2	N.D.		510	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		510	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	250	5
10727	2-Nitrophenol	88-75-5	N.D.		130	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	3,800	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		510	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	72	J	25	130	5
10727	Phenol	108-95-2	N.D.		130	250	5
10727	Pyrene	129-00-0	110	J	25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	250	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	31,000		2,000	5,400	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	34,000		1,300	4,000	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	400	1
06918	1,3-Dinitrobenzene	99-65-0	670		130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	400	1
06918	HMX	2691-41-0	N.D.		340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		130	400	1
06918	Nitroglycerin	55-63-0	N.D.		2,700	8,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	400	1
06918	2-Nitrotoluene	88-72-2	N.D.		270	540	1
06918	3-Nitrotoluene	99-08-1	N.D.		340	670	1
06918	4-Nitrotoluene	99-99-0	N.D.		1,300	1,300	1
06918	PETN	78-11-5	N.D.		2,700	8,100	1
06918	RDX	121-82-4	N.D.		260	400	1
06918	Tetryl	479-45-8	N.D.		210	540	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,200		130	400	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,600,000		27,000	81,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086955
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5310 SDG#: KVM53-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	22,800		11.8	30.8	1
06944	Antimony	7440-36-0	N.D.		0.631	3.08	1
06935	Arsenic	7440-38-2	2.80	J	0.892	3.08	1
06946	Barium	7440-39-3	67.7		0.103	0.769	1
06947	Beryllium	7440-41-7	0.843		0.103	0.769	1
06949	Cadmium	7440-43-9	0.178	J	0.0662	0.769	1
01650	Calcium	7440-70-2	998		5.12	30.8	1
06951	Chromium	7440-47-3	18.9		0.151	2.31	1
06952	Cobalt	7440-48-4	5.99		0.125	0.769	1
06953	Copper	7440-50-8	32.2		0.431	1.54	1
01654	Iron	7439-89-6	25,100		5.12	30.8	1
06955	Lead	7439-92-1	259		0.492	2.31	1
01657	Magnesium	7439-95-4	1,600		2.57	15.4	1
06958	Manganese	7439-96-5	212		0.128	0.769	1
06961	Nickel	7440-02-0	10.3		0.354	1.54	1
01662	Potassium	7440-09-7	1,070		25.8	76.9	1
06936	Selenium	7782-49-2	3.55		1.28	3.08	1
06966	Silver	7440-22-4	1.06		0.185	0.769	1
01667	Sodium	7440-23-5	66.5	J	25.7	154	1
06925	Thallium	7440-28-0	N.D.		1.15	4.62	1
06971	Vanadium	7440-62-2	40.3		0.231	0.769	1
06972	Zinc	7440-66-6	45.6		1.18	3.08	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0486	J	0.0144	0.144	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	13,600		672	2,020	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	35.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 00:04	Catherine E Bachman	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086955
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5310 SDG#: KVM53-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 14:35	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 03:07	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 03:49	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:29	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:29	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:10	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:25	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15289049531A	10/16/2015 12:42	Clinton M Wilson	1
00111	Moisture	SM 2540 G-1997	1	15292820001A	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5310

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086955
Sample wt/vol: 30.21(g/mL) g Lab File ID: oj1157.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 35 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown Alkane	7.739	3400	J
2. 17301-23-4	Undecane, 2,6-dimethyl-	7.816	2600	J
3. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	8.016	3100	J
4.	Unknown	8.098	2300	J
5. 1560-97-0	Dodecane, 2-methyl-	8.128	2300	J
6. 61141-72-8	Dodecane, 4,6-dimethyl-	8.175	4800	J
7.	Unknown PAH	8.222	2200	J
8. 629-50-5	Tridecane	8.345	9500	J
9.	Unknown	8.398	2200	J
10. 13287-21-3	Tridecane, 6-methyl-	8.439	3100	J
11. 92-51-3	1,1'-Bicyclohexyl	8.486	2400	J
12.	Unknown	8.539	2700	J
13.	Unknown Cycloalkane	8.639	2700	J
14. 1560-96-9	Tridecane, 2-methyl-	8.704	2900	J
15.	Unknown Alkane	8.769	2700	J
16. 629-59-4	Tetradecane	8.904	11000	J
17.	Unknown	9.092	2300	J
18. 17312-62-8	Decane, 5-propyl-	9.222	2800	J
19.	Unknown Alkane	9.275	2300	J
20. 638-36-8	Hexadecane, 2,6,10,14-tetram	9.422	4100	J
21.	Unknown	10.510	540000	J
22.	Unknown	10.551	3300	J
23. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.416	16000	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.639	14000	J
25.	Unknown Aromatic	11.786	3100	J
26.				
27. SVOCTIC	Total SVOC TICs		650000	J
28.				
29.				
30.				

Sample Description: TNT-PS-C-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086956
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:20 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5311 SDG#: KVM53-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		26	130	5
10727	Acenaphthylene	208-96-8	N.D.		26	130	5
10727	Acetophenone	98-86-2	N.D.		130	260	5
10727	Anthracene	120-12-7	29	J	26	130	5
10727	Atrazine	1912-24-9	N.D.		260	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	200		26	130	5
10727	Benzo(a)pyrene	50-32-8	170		26	130	5
10727	Benzo(b)fluoranthene	205-99-2	260		26	130	5
10727	Benzo(g,h,i)perylene	191-24-2	100	J	26	130	5
10727	Benzo(k)fluoranthene	207-08-9	120	J	26	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	260	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	260	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		260	1,300	5
10727	Carbazole	86-74-8	N.D.		130	260	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	260	5
10727	4-Chloroaniline	106-47-8	N.D.		260	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	260	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	260	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	260	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	260	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	260	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	200		26	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		26	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	260	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		790	2,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	260	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	260	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	7,900	5
10727	2,4-Dinitrotoluene	121-14-2	5,600		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	1,500		130	260	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,300	5
10727	Fluoranthene	206-44-0	300		26	130	5
10727	Fluorene	86-73-7	N.D.		26	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		26	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	260	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		260	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	100	J	26	130	5
10727	Isophorone	78-59-1	N.D.		130	260	5
10727	2-Methylnaphthalene	91-57-6	N.D.		26	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086956
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:20 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5311 SDG#: KVM53-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	260	5
10727	4-Methylphenol	106-44-5	N.D.		130	260	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		26	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	260	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	260	5
10727	2-Nitrophenol	88-75-5	N.D.		130	260	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	260	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	260	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		260	1,300	5
10727	Phenanthrene	85-01-8	110	J	26	130	5
10727	Phenol	108-95-2	N.D.		130	260	5
10727	Pyrene	129-00-0	280		26	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	260	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	260	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	30,000		2,200	5,800	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	33,000		1,500	4,400	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	440	1
06918	1,3-Dinitrobenzene	99-65-0	590		150	440	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	440	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	440	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	440	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	580	1
06918	3-Nitrotoluene	99-08-1	N.D.		360	730	1
06918	4-Nitrotoluene	99-99-0	470	J	290	580	1
06918	PETN	78-11-5	N.D.		2,900	8,800	1
06918	RDX	121-82-4	210	J	190	440	1
06918	Tetryl	479-45-8	N.D.		230	580	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,900		150	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,500,000		29,000	88,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086956
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:20 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5311 SDG#: KVM53-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	21,300		11.9	31.0	1
06944	Antimony	7440-36-0	N.D.		0.636	3.10	1
06935	Arsenic	7440-38-2	2.40	J	0.900	3.10	1
06946	Barium	7440-39-3	62.2		0.104	0.775	1
06947	Beryllium	7440-41-7	0.786		0.104	0.775	1
06949	Cadmium	7440-43-9	0.0837	J	0.0667	0.775	1
01650	Calcium	7440-70-2	990		5.16	31.0	1
06951	Chromium	7440-47-3	17.1		0.152	2.33	1
06952	Cobalt	7440-48-4	5.25		0.126	0.775	1
06953	Copper	7440-50-8	29.4		0.434	1.55	1
01654	Iron	7439-89-6	24,400		5.16	31.0	1
06955	Lead	7439-92-1	243		0.496	2.33	1
01657	Magnesium	7439-95-4	1,510		2.59	15.5	1
06958	Manganese	7439-96-5	197		0.129	0.775	1
06961	Nickel	7440-02-0	9.58		0.357	1.55	1
01662	Potassium	7440-09-7	1,010		26.1	77.5	1
06936	Selenium	7782-49-2	3.40		1.29	3.10	1
06966	Silver	7440-22-4	1.16		0.186	0.775	1
01667	Sodium	7440-23-5	65.5	J	25.9	155	1
06925	Thallium	7440-28-0	N.D.		1.16	4.65	1
06971	Vanadium	7440-62-2	37.3		0.233	0.775	1
06972	Zinc	7440-66-6	39.6		1.19	3.10	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0395	J	0.0152	0.152	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	19,700		623	1,870	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	37.4		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 21:21	William H Saadeh	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086956
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:20 by SL

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PO Box 2219
Columbus OH 43016-0381

K5311 SDG#: KVM53-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 17:25	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 05:57	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 06:39	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:32	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:32	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:13	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:27	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15289049531A	10/16/2015 12:50	Clinton M Wilson	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5311

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086956
Sample wt/vol: 30.27(g/mL) g Lab File ID: oj1187.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 37.4 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1000152-47-3	trans-Decalin, 2-methyl-	7.222	1900	J
2. 1606-08-2	Cyclopentylcyclohexane	7.334	1100	J
3. 1618-22-0	Naphthalene, decahydro-2,6-d	7.598	1300	J
4. 112-40-3	Dodecane	7.710	3200	J
5.	Unknown	7.792	1800	J
6.	Unknown	7.981	1200	J
7.	Unknown	8.069	1400	J
8. 17301-27-8	Undecane, 2,10-dimethyl-	8.104	1600	J
9. 61141-72-8	Dodecane, 4,6-dimethyl-	8.145	3200	J
10. 629-50-5	Tridecane	8.316	8500	J
11.	Unknown	8.363	1900	J
12.	Unknown	8.410	1900	J
13.	Unknown	8.610	2300	J
14. 1560-96-9	Tridecane, 2-methyl-	8.675	1800	J
15.	Unknown	8.716	1400	J
16. 629-59-4	Tetradecane	8.875	9100	J
17.	Unknown	9.192	3300	J
18. 629-62-9	Pentadecane	9.398	4600	J
19.	Unknown	9.886	2100	J
20.	Unknown	10.481	550000	J
21.	Unknown	10.516	2300	J
22. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.386	19000	J
23.	Unknown	11.451	3200	J
24. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.616	14000	J
25.	Unknown	11.757	3200	J
26.				
27. SVOCTIC	Total SVOC TICs		650000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086957
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5312 SDG#: KVM53-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	57	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	55	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	89	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	36	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	48	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	65	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		830	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,300	5
10727	2,4-Dinitrotoluene	121-14-2	5,200		550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	1,400		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	100	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	41	J	27	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086957
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5312 SDG#: KVM53-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	N.D.		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	66	J	27	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	95	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	33,000		2,200	5,800	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	34,000		1,500	4,400	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	440	1
06918	1,3-Dinitrobenzene	99-65-0	870		150	440	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	440	1
06918	HMX	2691-41-0	N.D.		370	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	440	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	440	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	580	1
06918	3-Nitrotoluene	99-08-1	N.D.		370	730	1
06918	4-Nitrotoluene	99-99-0	520	J	290	580	1
06918	PETN	78-11-5	N.D.		2,900	8,800	1
06918	RDX	121-82-4	N.D.		580	580	1
06918	Tetryl	479-45-8	N.D.		230	580	1
06918	1,3,5-Trinitrobenzene	99-35-4	6,000		150	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,100,000		29,000	88,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086957
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5312 SDG#: KVM53-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	22,700		12.6	33.0	1
06944	Antimony	7440-36-0	N.D.		0.677	3.30	1
06935	Arsenic	7440-38-2	2.81	J	0.957	3.30	1
06946	Barium	7440-39-3	68.0		0.111	0.825	1
06947	Beryllium	7440-41-7	0.835		0.111	0.825	1
06949	Cadmium	7440-43-9	0.172	J	0.0710	0.825	1
01650	Calcium	7440-70-2	1,000		5.50	33.0	1
06951	Chromium	7440-47-3	18.9		0.162	2.48	1
06952	Cobalt	7440-48-4	5.59		0.134	0.825	1
06953	Copper	7440-50-8	31.7		0.462	1.65	1
01654	Iron	7439-89-6	24,500		5.50	33.0	1
06955	Lead	7439-92-1	269		0.528	2.48	1
01657	Magnesium	7439-95-4	1,520		2.76	16.5	1
06958	Manganese	7439-96-5	203		0.137	0.825	1
06961	Nickel	7440-02-0	10.0		0.380	1.65	1
01662	Potassium	7440-09-7	1,020		27.7	82.5	1
06936	Selenium	7782-49-2	3.46		1.37	3.30	1
06966	Silver	7440-22-4	0.921		0.198	0.825	1
01667	Sodium	7440-23-5	69.9	J	27.6	165	1
06925	Thallium	7440-28-0	N.D.		1.24	4.95	1
06971	Vanadium	7440-62-2	39.5		0.248	0.825	1
06972	Zinc	7440-66-6	42.1		1.27	3.30	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0503	J	0.0161	0.161	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,800		718	2,160	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 21:47	William H Saadeh	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086957
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5312 SDG#: KVM53-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 18:07	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 07:22	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 08:04	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:35	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:35	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:16	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:29	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15289049531A	10/16/2015 13:15	Clinton M Wilson	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5312

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086957
Sample wt/vol: 30.3 (g/mL) g Lab File ID: oj1188.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	7.222	2000	J
2.	112-40-3	Dodecane	7.710	3000	J
3.	17301-23-4	Undecane, 2,6-dimethyl-	7.792	2000	J
4.		Unknown	8.069	1500	J
5.		Unknown	8.104	1700	J
6.	6975-98-0	Decane, 2-methyl-	8.145	3300	J
7.	629-50-5	Tridecane	8.316	8400	J
8.		Unknown	8.369	2100	J
9.		Unknown	8.410	2000	J
10.		Unknown	8.592	1500	J
11.		Unknown	8.610	1800	J
12.	54833-23-7	Eicosane, 10-methyl-	8.675	1800	J
13.		Unknown	8.716	1400	J
14.	3891-98-3	Dodecane, 2,6,10-trimethyl-	8.739	2300	J
15.	629-59-4	Tetradecane	8.875	8500	J
16.		Unknown	9.175	1700	J
17.		Unknown	9.192	2000	J
18.	629-62-9	Pentadecane	9.398	4000	J
19.	544-76-3	Hexadecane	9.886	2000	J
20.		Unknown	10.486	530000	J
21.		Unknown	10.522	3300	J
22.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.386	16000	J
23.		Unknown	11.451	3300	J
24.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.616	14000	J
25.		Unknown	11.757	3200	J
26.					
27.	SVOCTIC	Total SVOC TICs		620000	J
28.					
29.					
30.					

Sample Description: TNT-PS-D-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086958
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5313 SDG#: KVM53-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	78	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	59	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	93	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	54	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	51	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	120	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	31	J	27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,400	5
10727	Fluoranthene	206-44-0	110	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	43	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086958
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5313 SDG#: KVM53-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	1,600		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	75	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	100	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,200	230	600	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,100	150	450	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	150	450	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	150	450	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	150	450	1
06918	HMX	2691-41-0	N.D.	380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	150	450	1
06918	Nitroglycerin	55-63-0	N.D.	3,000	9,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	150	450	1
06918	2-Nitrotoluene	88-72-2	N.D.	300	600	1
06918	3-Nitrotoluene	99-08-1	N.D.	380	750	1
06918	4-Nitrotoluene	99-99-0	N.D.	300	600	1
06918	PETN	78-11-5	N.D.	3,000	9,000	1
06918	RDX	121-82-4	N.D.	200	450	1
06918	Tetryl	479-45-8	N.D.	240	600	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086958
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5313 SDG#: KVM53-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		150	450	1
06918	2,4,6-Trinitrotoluene	118-96-7	11,000		150	450	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	21,500		12.3	32.1	1
06944	Antimony	7440-36-0	N.D.		0.657	3.21	1
06935	Arsenic	7440-38-2	N.D.		0.929	3.21	1
06946	Barium	7440-39-3	63.8		0.107	0.801	1
06947	Beryllium	7440-41-7	0.861		0.107	0.801	1
06949	Cadmium	7440-43-9	0.163	J	0.0689	0.801	1
01650	Calcium	7440-70-2	1,400		5.34	32.1	1
06951	Chromium	7440-47-3	30.8		0.157	2.40	1
06952	Cobalt	7440-48-4	14.2		0.130	0.801	1
06953	Copper	7440-50-8	49.4		0.449	1.60	1
01654	Iron	7439-89-6	51,500		26.7	160	5
06955	Lead	7439-92-1	237		0.513	2.40	1
01657	Magnesium	7439-95-4	1,580		2.68	16.0	1
06958	Manganese	7439-96-5	223		0.133	0.801	1
06961	Nickel	7440-02-0	28.1		0.369	1.60	1
01662	Potassium	7440-09-7	1,370		26.9	80.1	1
06936	Selenium	7782-49-2	12.1		1.33	3.21	1
06966	Silver	7440-22-4	1.96		0.192	0.801	1
01667	Sodium	7440-23-5	84.9	J	26.8	160	1
06925	Thallium	7440-28-0	N.D.		1.20	4.81	1
06971	Vanadium	7440-62-2	49.1		0.240	0.801	1
06972	Zinc	7440-66-6	64.6		1.23	3.21	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0363	J	0.0158	0.158	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	22,500		748	2,250	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	37.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086958
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5313 SDG#: KVM53-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 22:13	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 18:50	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/30/2015 15:39	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:48	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:48	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:19	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:31	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 21:28	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5313

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086958
Sample wt/vol: 30.15(g/mL) g Lab File ID: oj1189.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 37.6 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.946	330000	J
2.	Unknown	4.657	120000	J
3.	Unknown	4.687	31000	J
4.107-92-6	Butanoic acid	4.781	59000	J
5.	Unknown	5.540	59000	J
6.142-62-1	Hexanoic acid	6.198	19000	J
7.103-82-2	Benzeneacetic acid	7.992	5300	J
8.629-50-5	Tridecane	8.316	7600	J
9.629-59-4	Tetradecane	8.875	10000	J
10.	Unknown	9.192	4200	J
11.629-62-9	Pentadecane	9.398	4500	J
12.	Unknown	10.357	7800	J
13.	Unknown	10.998	8200	J
14.	Unknown	11.304	16000	J
15.19406-51-0	p-Toluidine, 3,5-dinitro-	11.374	14000	J
16.57-10-3	n-Hexadecanoic acid	11.504	150000	J
17.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.610	1400	J
18.60-33-3	9,12-Octadecadienoic acid (Z	12.192	26000	J
19.2463-02-7	11,14-Eicosadienoic acid, me	12.339	2200	J
20.	Unknown	12.510	1700	J
21.	Unknown	12.551	2500	J
22.	Unknown	12.927	11000	J
23.	Unknown	12.992	6600	J
24.	Unknown	16.715	6900	J
25.				
26.SVOCTIC	Total SVOC TICs		900000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086959
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:33 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5314 SDG#: KVM53-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		26	130	5
10727	Acenaphthylene	208-96-8	N.D.		26	130	5
10727	Acetophenone	98-86-2	N.D.		130	260	5
10727	Anthracene	120-12-7	N.D.		26	130	5
10727	Atrazine	1912-24-9	N.D.		260	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		520	1,300	5
10727	Benzo(a)anthracene	56-55-3	66	J	26	130	5
10727	Benzo(a)pyrene	50-32-8	48	J	26	130	5
10727	Benzo(b)fluoranthene	205-99-2	80	J	26	130	5
10727	Benzo(g,h,i)perylene	191-24-2	45	J	26	130	5
10727	Benzo(k)fluoranthene	207-08-9	55	J	26	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	260	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	260	5
10727	Butylbenzylphthalate	85-68-7	N.D.		520	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		520	1,300	5
10727	Caprolactam	105-60-2	N.D.		260	1,300	5
10727	Carbazole	86-74-8	N.D.		130	260	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	260	5
10727	4-Chloroaniline	106-47-8	N.D.		260	520	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	260	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	260	5
10727	2-Chloronaphthalene	91-58-7	N.D.		52	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	260	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	260	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	260	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	77	J	26	130	5
10727	Dibenz(a,h)anthracene	53-70-3	29	J	26	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	260	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		780	2,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	260	5
10727	Diethylphthalate	84-66-2	N.D.		520	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	260	5
10727	Dimethylphthalate	131-11-3	N.D.		520	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	3,900	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,300	7,800	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		520	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	260	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		520	1,300	5
10727	Fluoranthene	206-44-0	120	J	26	130	5
10727	Fluorene	86-73-7	N.D.		26	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		26	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	260	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	3,900	5
10727	Hexachloroethane	67-72-1	N.D.		260	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	37	J	26	130	5
10727	Isophorone	78-59-1	N.D.		130	260	5
10727	2-Methylnaphthalene	91-57-6	N.D.		26	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086959
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:33 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5314 SDG#: KVM53-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	260	5
10727	4-Methylphenol	106-44-5	980		130	260	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		26	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	260	5
10727	3-Nitroaniline	99-09-2	700	J	520	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		520	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	260	5
10727	2-Nitrophenol	88-75-5	N.D.		130	260	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	3,900	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	260	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	260	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		520	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		260	1,300	5
10727	Phenanthrene	85-01-8	63	J	26	130	5
10727	Phenol	108-95-2	170	J	130	260	5
10727	Pyrene	129-00-0	78	J	26	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	260	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	260	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,800	230	600	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,500	150	450	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	150	450	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	150	450	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	150	450	1
06918	HMX	2691-41-0	18,000	380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	150	450	1
06918	Nitroglycerin	55-63-0	N.D.	3,000	9,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	150	450	1
06918	2-Nitrotoluene	88-72-2	N.D.	300	600	1
06918	3-Nitrotoluene	99-08-1	N.D.	590	750	1
06918	4-Nitrotoluene	99-99-0	N.D.	300	600	1
06918	PETN	78-11-5	N.D.	3,000	9,000	1
06918	RDX	121-82-4	N.D.	320	450	1
06918	Tetryl	479-45-8	N.D.	240	600	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086959
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:33 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5314 SDG#: KVM53-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	150	450	1
06918	2,4,6-Trinitrotoluene	118-96-7	9,500	150	450	1
	Reporting limits were raised due to interference from the sample matrix.					
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,600	12.0	31.4	1
06944	Antimony	7440-36-0	N.D.	0.643	3.14	1
06935	Arsenic	7440-38-2	N.D.	0.910	3.14	1
06946	Barium	7440-39-3	58.4	0.105	0.785	1
06947	Beryllium	7440-41-7	0.742 J	0.105	0.785	1
06949	Cadmium	7440-43-9	0.0690 J	0.0675	0.785	1
01650	Calcium	7440-70-2	1,460	5.23	31.4	1
06951	Chromium	7440-47-3	25.6	0.154	2.35	1
06952	Cobalt	7440-48-4	14.9	0.127	0.785	1
06953	Copper	7440-50-8	44.0	0.439	1.57	1
01654	Iron	7439-89-6	50,300	26.1	157	5
06955	Lead	7439-92-1	194	0.502	2.35	1
01657	Magnesium	7439-95-4	1,470	2.62	15.7	1
06958	Manganese	7439-96-5	230	0.130	0.785	1
06961	Nickel	7440-02-0	29.1	0.361	1.57	1
01662	Potassium	7440-09-7	1,400	26.4	78.5	1
06936	Selenium	7782-49-2	11.1	1.30	3.14	1
06966	Silver	7440-22-4	1.84	0.188	0.785	1
01667	Sodium	7440-23-5	91.7 J	26.2	157	1
06925	Thallium	7440-28-0	N.D.	1.18	4.71	1
06971	Vanadium	7440-62-2	45.3	0.235	0.785	1
06972	Zinc	7440-66-6	67.3	1.21	3.14	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0323 J	0.0158	0.158	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	35,600	775	2,320	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	36.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086959
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:33 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5314 SDG#: KVM53-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 22:39	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 19:32	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/30/2015 15:54	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:51	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:51	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:29	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:33	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 21:37	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5314

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086959
Sample wt/vol: 30.4 (g/mL) g Lab File ID: oj1190.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 36.9 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79-09-4	Propanoic acid	3.940	320000	J
2. 79-31-2	Propanoic acid, 2-methyl-	4.187	33000	J
3.	Unknown	4.646	98000	J
4.	Unknown	4.687	43000	J
5. 107-92-6	Butanoic acid	5.010	310000	J
6.	Unknown	5.487	22000	J
7.	Unknown	5.769	200000	J
8. 142-62-1	Hexanoic acid	6.298	49000	J
9.	Unknown	7.710	4500	J
10. 103-82-2	Benzeneacetic acid	8.004	10000	J
11. 629-50-5	Tridecane	8.316	10000	J
12. 629-59-4	Tetradecane	8.875	17000	J
13. 629-62-9	Pentadecane	9.398	8000	J
14. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.369	7800	J
15. 1002-84-2	Pentadecanoic acid	11.516	190000	J
16. 60-33-3	9,12-Octadecadienoic acid (Z	12.210	26000	J
17. 60-33-3	9,12-Octadecadienoic acid (Z	12.351	2400	J
18.	Unknown	12.516	1800	J
19.	Unknown	12.557	2600	J
20. 60-33-3	9,12-Octadecadienoic acid (Z	12.833	1400	J
21.	Unknown	12.933	9100	J
22.	Unknown	12.998	6100	J
23. 83-46-5	.beta.-Sitosterol	16.721	24000	J
24.				
25. SVOCTIC	Total SVOC TICs		1400000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086960
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5315 SDG#: KVM53-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	84	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	53	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	78	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	53	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	49	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	91	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,400	5
10727	Fluoranthene	206-44-0	120	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	44	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086960
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5315 SDG#: KVM53-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	440		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	72	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	110	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,300		210	550	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,700		140	410	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	410	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	410	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	410	1
06918	HMX	2691-41-0	16,000		340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		140	410	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	410	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	550	1
06918	3-Nitrotoluene	99-08-1	600	J	340	690	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	550	1
06918	PETN	78-11-5	N.D.		2,800	8,300	1
06918	RDX	121-82-4	N.D.		230	410	1
06918	Tetryl	479-45-8	N.D.		220	550	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086960
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5315 SDG#: KVM53-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	410	1
06918	2,4,6-Trinitrotoluene	118-96-7	11,000		140	410	1
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	21,200		12.0	31.3	1
06944	Antimony	7440-36-0	N.D.		0.642	3.13	1
06935	Arsenic	7440-38-2	N.D.		0.908	3.13	1
06946	Barium	7440-39-3	65.6		0.105	0.783	1
06947	Beryllium	7440-41-7	0.861		0.105	0.783	1
06949	Cadmium	7440-43-9	0.185	J	0.0673	0.783	1
01650	Calcium	7440-70-2	1,620		5.21	31.3	1
06951	Chromium	7440-47-3	32.8		0.153	2.35	1
06952	Cobalt	7440-48-4	20.5		0.127	0.783	1
06953	Copper	7440-50-8	57.3		0.438	1.57	1
01654	Iron	7439-89-6	61,200		26.1	157	5
06955	Lead	7439-92-1	237		0.501	2.35	1
01657	Magnesium	7439-95-4	1,590		2.62	15.7	1
06958	Manganese	7439-96-5	255		0.130	0.783	1
06961	Nickel	7440-02-0	41.0		0.360	1.57	1
01662	Potassium	7440-09-7	1,470		26.3	78.3	1
06936	Selenium	7782-49-2	18.8		1.30	3.13	1
06966	Silver	7440-22-4	2.19		0.188	0.783	1
01667	Sodium	7440-23-5	96.0	J	26.2	157	1
06925	Thallium	7440-28-0	1.20	J	1.17	4.70	1
06971	Vanadium	7440-62-2	54.1		0.235	0.783	1
06972	Zinc	7440-66-6	72.9		1.21	3.13	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0359	J	0.0156	0.156	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	20,300		937	2,810	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	38.0		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086960
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5315 SDG#: KVM53-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 23:05	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 20:15	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/30/2015 16:00	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 15:57	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 15:57	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:32	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:39	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 21:46	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5315

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086960
Sample wt/vol: 30.31(g/mL) g Lab File ID: oj1191.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 38 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.722	28000	J
2.		Unknown	3.769	24000	J
3.		Unknown	3.810	23000	J
4.		Unknown	3.875	41000	J
5.	79-09-4	Propanoic acid	3.916	30000	J
6.	107-92-6	Butanoic acid	4.410	20000	J
7.		Unknown Organic Acid	4.493	18000	J
8.		Unknown Organic Acid	4.634	54000	J
9.	123-42-2	2-Pentanone, 4-hydroxy-4-met	4.687	39000	JAB
10.		Unknown Organic Acid	4.804	76000	J
11.		Unknown Organic Acid	5.581	70000	J
12.		Unknown Organic Acid	7.998	6600	J
13.	629-50-5	Tridecane	8.316	9800	J
14.	629-59-4	Tetradecane	8.875	15000	J
15.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.369	10000	J
16.	57-10-3	n-Hexadecanoic acid	11.510	170000	J
17.	60-33-3	9,12-Octadecadienoic acid (Z	12.198	16000	J
18.	112-79-8	9-Octadecenoic acid, (E)-	12.216	11000	J
19.	1000336-36-2	Methyl 9,12-heptadecadienoat	12.345	2500	J
20.		Unknown	12.510	1800	J
21.		Unknown	12.551	2700	J
22.		Unknown	12.833	1300	J
23.		Unknown	12.927	11000	J
24.		Unknown	12.992	5800	J
25.					
26.	SVOCTIC	Total SVOC TICs		690000	JAB
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086961
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:37 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5316 SDG#: KVM53-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	110	J	27	140	5
10727	Acetophenone	98-86-2	N.D.		140	270	5
10727	Anthracene	120-12-7	320		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,400	5
10727	Benzo(a)anthracene	56-55-3	790		27	140	5
10727	Benzo(a)pyrene	50-32-8	430		27	140	5
10727	Benzo(b)fluoranthene	205-99-2	530		27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	240		27	140	5
10727	Benzo(k)fluoranthene	207-08-9	350		27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,400	5
10727	Caprolactam	105-60-2	N.D.		270	1,400	5
10727	Carbazole	86-74-8	N.D.		140	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		54	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	680		27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	67	J	27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		810	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,100	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		540	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	1,500		27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	220		27	140	5
10727	Isophorone	78-59-1	N.D.		140	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086961
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:37 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5316 SDG#: KVM53-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	270	5
10727	4-Methylphenol	106-44-5	1,600		140	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	28	J	27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	270	5
10727	2-Nitrophenol	88-75-5	N.D.		140	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	990		27	140	5
10727	Phenol	108-95-2	N.D.		140	270	5
10727	Pyrene	129-00-0	1,200		27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	270	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,600	210	560	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,500	140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	140	420	1
06918	1,4-Dinitrobenzene	100-25-4	560	140	420	1
06918	HMX	2691-41-0	N.D.	350	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	140	420	1
06918	Nitroglycerin	55-63-0	N.D.	2,800	8,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.	280	560	1
06918	3-Nitrotoluene	99-08-1	1,500	350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.	280	560	1
06918	PETN	78-11-5	N.D.	2,800	8,500	1
06918	RDX	121-82-4	N.D.	350	420	1
06918	Tetryl	479-45-8	N.D.	230	560	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086961
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:37 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5316 SDG#: KVM53-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	15,000		140	420	1
	Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	19,200		12.1	31.6	1
06944	Antimony	7440-36-0	N.D.		0.647	3.16	1
06935	Arsenic	7440-38-2	N.D.		0.916	3.16	1
06946	Barium	7440-39-3	59.2		0.106	0.789	1
06947	Beryllium	7440-41-7	0.769	J	0.106	0.789	1
06949	Cadmium	7440-43-9	0.144	J	0.0679	0.789	1
01650	Calcium	7440-70-2	1,500		5.26	31.6	1
06951	Chromium	7440-47-3	27.2		0.155	2.37	1
06952	Cobalt	7440-48-4	12.9		0.128	0.789	1
06953	Copper	7440-50-8	46.3		0.442	1.58	1
01654	Iron	7439-89-6	44,800		26.3	158	5
06955	Lead	7439-92-1	230		0.505	2.37	1
01657	Magnesium	7439-95-4	1,590		2.64	15.8	1
06958	Manganese	7439-96-5	232		0.131	0.789	1
06961	Nickel	7440-02-0	25.4		0.363	1.58	1
01662	Potassium	7440-09-7	1,290		26.5	78.9	1
06936	Selenium	7782-49-2	9.96		1.31	3.16	1
06966	Silver	7440-22-4	1.77		0.189	0.789	1
01667	Sodium	7440-23-5	109	J	26.4	158	1
06925	Thallium	7440-28-0	N.D.		1.18	4.74	1
06971	Vanadium	7440-62-2	43.7		0.237	0.789	1
06972	Zinc	7440-66-6	57.1		1.22	3.16	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0369	J	0.0156	0.156	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	28,200		998	3,000	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.1		0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086961
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:37 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5316 SDG#: KVM53-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 23:31	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 20:57	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/30/2015 16:06	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 16:03	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 16:03	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:35	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:41	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 21:55	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5316

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086961
Sample wt/vol: 30.34(g/mL) g Lab File ID: oj1192.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 39.1 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 22 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.552	25000	J
2.		Unknown	3.616	22000	J
3.		Unknown	3.816	57000	J
4.		Unknown	3.910	65000	J
5.	79-09-4	Propanoic acid	3.934	21000	J
6.		Unknown	4.487	19000	J
7.	123-42-2	2-Pentanone, 4-hydroxy-4-met	4.687	30000	JAB
8.		Unknown Organic Acid	4.751	36000	J
9.	107-92-6	Butanoic acid	4.787	35000	J
10.		Unknown Organic Acid	5.563	68000	J
11.	103-82-2	Benzeneacetic acid	7.998	9800	J
12.	629-59-4	Tetradecane	8.316	10000	J
13.	629-50-5	Tridecane	8.875	7500	J
14.	57-10-3	n-Hexadecanoic acid	11.504	120000	J
15.	60-33-3	9,12-Octadecadienoic acid (Z	12.192	14000	J
16.	112-80-1	Oleic Acid	12.210	10000	J
17.	74685-28-2	7-Hexadecyne	12.339	2900	J
18.		Unknown	12.510	2000	J
19.		Unknown	12.551	3000	J
20.	56219-04-6	cis-9-Hexadecenal	12.827	1200	J
21.		Unknown	12.922	9700	J
22.		Unknown	12.986	6400	J
23.					
24.	SVOCTIC	Total SVOC TICs		570000	JAB
25.					
26.					
27.					
28.					
29.					
30.					

Sample Description: TNT-PS-E-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086962
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:45 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5317 SDG#: KVM53-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		29	150	5
10727	Acenaphthylene	208-96-8	N.D.		29	150	5
10727	Acetophenone	98-86-2	N.D.		140	290	5
10727	Anthracene	120-12-7	N.D.		29	150	5
10727	Atrazine	1912-24-9	N.D.		290	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		580	1,400	5
10727	Benzo(a)anthracene	56-55-3	100	J	29	150	5
10727	Benzo(a)pyrene	50-32-8	63	J	29	150	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	29	150	5
10727	Benzo(g,h,i)perylene	191-24-2	42	J	29	150	5
10727	Benzo(k)fluoranthene	207-08-9	63	J	29	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	290	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	290	5
10727	Butylbenzylphthalate	85-68-7	N.D.		580	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		580	1,400	5
10727	Caprolactam	105-60-2	N.D.		290	1,400	5
10727	Carbazole	86-74-8	N.D.		140	290	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	290	5
10727	4-Chloroaniline	106-47-8	N.D.		290	580	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	290	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	290	5
10727	2-Chloronaphthalene	91-58-7	N.D.		58	290	5
10727	2-Chlorophenol	95-57-8	N.D.		140	290	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	290	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	290	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110	J	29	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		29	150	5
10727	Dibenzofuran	132-64-9	N.D.		140	290	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		870	2,900	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	290	5
10727	Diethylphthalate	84-66-2	N.D.		580	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	290	5
10727	Dimethylphthalate	131-11-3	N.D.		580	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,300	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,700	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		580	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	180	J	140	290	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		580	1,500	5
10727	Fluoranthene	206-44-0	170		29	150	5
10727	Fluorene	86-73-7	N.D.		29	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		29	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	290	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,300	5
10727	Hexachloroethane	67-72-1	N.D.		290	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	43	J	29	150	5
10727	Isophorone	78-59-1	N.D.		140	290	5
10727	2-Methylnaphthalene	91-57-6	N.D.		29	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086962
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:45 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5317 SDG#: KVM53-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	290	5
10727	4-Methylphenol	106-44-5	2,000		140	290	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		29	150	5
10727	2-Nitroaniline	88-74-4	N.D.		140	290	5
10727	3-Nitroaniline	99-09-2	N.D.		580	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		580	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	290	5
10727	2-Nitrophenol	88-75-5	N.D.		140	290	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,300	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	290	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	290	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		580	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		290	1,500	5
10727	Phenanthrene	85-01-8	77	J	29	150	5
10727	Phenol	108-95-2	250	J	140	290	5
10727	Pyrene	129-00-0	150	J	29	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	290	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	290	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,700		240	650	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,700		160	490	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	490	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		160	490	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	490	1
06918	HMX	2691-41-0	N.D.		410	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		160	490	1
06918	Nitroglycerin	55-63-0	N.D.		3,200	9,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.		160	490	1
06918	2-Nitrotoluene	88-72-2	N.D.		320	650	1
06918	3-Nitrotoluene	99-08-1	1,200		410	810	1
06918	4-Nitrotoluene	99-99-0	N.D.		320	650	1
06918	PETN	78-11-5	N.D.		3,200	9,700	1
06918	RDX	121-82-4	N.D.		210	490	1
06918	Tetryl	479-45-8	N.D.		260	650	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		160	490	1
06918	2,4,6-Trinitrotoluene	118-96-7	22,000		160	490	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086962
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:45 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5317 SDG#: KVM53-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,900		13.2	34.4	1
06944	Antimony	7440-36-0	N.D.		0.705	3.44	1
06935	Arsenic	7440-38-2	N.D.		0.997	3.44	1
06946	Barium	7440-39-3	59.2		0.115	0.859	1
06947	Beryllium	7440-41-7	0.708	J	0.115	0.859	1
06949	Cadmium	7440-43-9	0.138	J	0.0739	0.859	1
01650	Calcium	7440-70-2	1,320		5.72	34.4	1
06951	Chromium	7440-47-3	22.2		0.168	2.58	1
06952	Cobalt	7440-48-4	12.7		0.139	0.859	1
06953	Copper	7440-50-8	44.1		0.481	1.72	1
01654	Iron	7439-89-6	45,300		5.72	34.4	1
06955	Lead	7439-92-1	239		0.550	2.58	1
01657	Magnesium	7439-95-4	1,390		2.87	17.2	1
06958	Manganese	7439-96-5	210		0.143	0.859	1
06961	Nickel	7440-02-0	23.6		0.395	1.72	1
01662	Potassium	7440-09-7	1,330		28.9	85.9	1
06936	Selenium	7782-49-2	9.48		1.43	3.44	1
06966	Silver	7440-22-4	1.50		0.206	0.859	1
01667	Sodium	7440-23-5	102	J	28.7	172	1
06925	Thallium	7440-28-0	N.D.		1.29	5.16	1
06971	Vanadium	7440-62-2	39.8		0.258	0.859	1
06972	Zinc	7440-66-6	56.8		1.32	3.44	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0505	J	0.0164	0.164	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	27,500		665	1,990	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.4		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/24/2015 23:57	William H Saadeh	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086962
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:45 by SL

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Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5317 SDG#: KVM53-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 21:40	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 16:09	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 16:09	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:54	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:43	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 22:03	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5317

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086962
Sample wt/vol: 30.09(g/mL) g Lab File ID: oj1193.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 42.4 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/24/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.598	27000	J
2.		Unknown	3.804	42000	J
3.	79-09-4	Propanoic acid	3.875	38000	J
4.		Unknown	3.928	43000	J
5.		Unknown	3.998	43000	J
6.		Unknown	4.498	33000	J
7.		Unknown	4.692	47000	J
8.	107-92-6	Butanoic acid	4.769	49000	J
9.		Unknown Organic Acid	5.528	58000	J
10.	103-82-2	Benzeneacetic acid	8.004	6800	J
11.	629-50-5	Tridecane	8.316	6700	J
12.	629-59-4	Tetradecane	8.875	14000	J
13.		Unknown	10.369	18000	J
14.		Unknown	11.304	14000	J
15.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.374	14000	J
16.	57-10-3	n-Hexadecanoic acid	11.504	140000	J
17.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.610	1500	J
18.	60-33-3	9,12-Octadecadienoic acid (Z	12.186	14000	J
19.	112-79-8	9-Octadecenoic acid, (E)-	12.204	11000	J
20.	2463-02-7	11,14-Eicosadienoic acid, me	12.339	3500	J
21.		Unknown	12.510	2800	J
22.		Unknown	12.551	3900	J
23.		Unknown	12.827	1500	J
24.		Unknown	12.921	11000	J
25.		Unknown	12.992	8300	J
26.					
27.	SVOCTIC	Total SVOC TICs		650000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086963
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5318 SDG#: KVM53-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		560	1,400	5
10727	Benzo(a)anthracene	56-55-3	140	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	82	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	140		28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	64	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	72	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		560	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		560	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	560	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	140	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		840	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		560	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		560	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,400	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		560	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	220	J	140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		560	1,400	5
10727	Fluoranthene	206-44-0	230		28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	70	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086963
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5318 SDG#: KVM53-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	2,300		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		560	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		560	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		560	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	130	J	28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	190		28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,800	260	680	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,900	170	510	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	170	510	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	170	510	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	170	510	1
06918	HMX	2691-41-0	19,000	430	1,300	1
06918	Nitrobenzene	98-95-3	N.D.	170	510	1
06918	Nitroglycerin	55-63-0	N.D.	3,400	10,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.	170	510	1
06918	2-Nitrotoluene	88-72-2	N.D.	340	680	1
06918	3-Nitrotoluene	99-08-1	N.D.	430	850	1
06918	4-Nitrotoluene	99-99-0	N.D.	340	680	1
06918	PETN	78-11-5	N.D.	3,400	10,000	1
06918	RDX	121-82-4	N.D.	220	510	1
06918	Tetryl	479-45-8	N.D.	270	680	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086963
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5318 SDG#: KVM53-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		170	510	1
06918	2,4,6-Trinitrotoluene	118-96-7	17,000		170	510	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,000		12.9	33.8	1
06944	Antimony	7440-36-0	N.D.		0.693	3.38	1
06935	Arsenic	7440-38-2	N.D.		0.980	3.38	1
06946	Barium	7440-39-3	49.4		0.113	0.845	1
06947	Beryllium	7440-41-7	0.615	J	0.113	0.845	1
06949	Cadmium	7440-43-9	0.203	J	0.0727	0.845	1
01650	Calcium	7440-70-2	1,340		5.63	33.8	1
06951	Chromium	7440-47-3	22.3		0.166	2.53	1
06952	Cobalt	7440-48-4	12.7		0.137	0.845	1
06953	Copper	7440-50-8	40.8		0.473	1.69	1
01654	Iron	7439-89-6	44,300		5.63	33.8	1
06955	Lead	7439-92-1	209		0.541	2.53	1
01657	Magnesium	7439-95-4	1,280		2.82	16.9	1
06958	Manganese	7439-96-5	184		0.140	0.845	1
06961	Nickel	7440-02-0	25.6		0.389	1.69	1
01662	Potassium	7440-09-7	1,180		28.4	84.5	1
06936	Selenium	7782-49-2	8.95		1.40	3.38	1
06966	Silver	7440-22-4	1.56		0.203	0.845	1
01667	Sodium	7440-23-5	86.6	J	28.2	169	1
06925	Thallium	7440-28-0	N.D.		1.27	5.07	1
06971	Vanadium	7440-62-2	38.2		0.253	0.845	1
06972	Zinc	7440-66-6	55.3		1.30	3.38	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0313	J	0.0168	0.168	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	26,800		863	2,590	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.4		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086963
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:48 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5318 SDG#: KVM53-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/25/2015 00:23	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 22:22	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 16:12	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 16:12	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:41	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:45	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 22:12	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5318

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086963
Sample wt/vol: 30.37(g/mL) g Lab File ID: oj1194.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 41.4 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.487	24000	J
2.	Unknown	3.563	23000	J
3.	Unknown	3.634	25000	J
4.	Unknown	3.751	31000	J
5.	Unknown	3.840	52000	J
6.	Unknown	3.869	24000	J
7.	Unknown	3.951	60000	J
8.79-09-4	Propanoic acid	3.981	24000	J
9.107-92-6	Butanoic acid	4.498	24000	J
10.	Unknown Organic Acid	4.663	57000	J
11.123-42-2	2-Pentanone, 4-hydroxy-4-met	4.693	28000	JAB
12.	Unknown Organic Acid	4.769	45000	J
13.	Unknown Organic Acid	5.498	40000	J
14.103-82-2	Benzeneacetic acid	8.004	6600	J
15.629-59-4	Tetradecane	8.316	7600	J
16.629-50-5	Tridecane	8.875	8200	J
17.57-10-3	n-Hexadecanoic acid	11.510	160000	J
18.60-33-3	9,12-Octadecadienoic acid (Z	12.192	14000	J
19.112-80-1	Oleic Acid	12.210	10000	J
20.2463-02-7	11,14-Eicosadienoic acid, me	12.345	3000	J
21.	Unknown	12.510	2800	J
22.	Unknown	12.557	3700	J
23.1000352-33-3	(Z)-4-Decen-1-ol, heptafluor	12.833	1400	J
24.	Unknown	12.927	10000	J
25.	Unknown	12.998	8100	J
26.				
27.SVOCTIC	Total SVOC TICs		690000	JAB
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086964
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:51 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5319 SDG#: KVM53-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		560	1,400	5
10727	Benzo(a)anthracene	56-55-3	100	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	79	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	55	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	49	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		560	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		560	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	560	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	120	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		830	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		560	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		560	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,300	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		560	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		560	1,400	5
10727	Fluoranthene	206-44-0	130	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	49	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086964
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:51 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5319 SDG#: KVM53-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	820		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		560	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		560	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		560	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	66	J	28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	130	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,000	210	570	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,400	140	430	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	430	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	140	430	1
06918	1,4-Dinitrobenzene	100-25-4	900	140	430	1
06918	HMX	2691-41-0	N.D.	360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	140	430	1
06918	Nitroglycerin	55-63-0	N.D.	2,900	8,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	430	1
06918	2-Nitrotoluene	88-72-2	N.D.	290	570	1
06918	3-Nitrotoluene	99-08-1	N.D.	360	710	1
06918	4-Nitrotoluene	99-99-0	N.D.	290	570	1
06918	PETN	78-11-5	N.D.	2,900	8,600	1
06918	RDX	121-82-4	N.D.	190	430	1
06918	Tetryl	479-45-8	N.D.	230	570	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086964
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:51 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5319 SDG#: KVM53-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	430	1
06918	2,4,6-Trinitrotoluene	118-96-7	11,000		140	430	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,000		12.8	33.4	1
06944	Antimony	7440-36-0	N.D.		0.685	3.34	1
06935	Arsenic	7440-38-2	N.D.		0.968	3.34	1
06946	Barium	7440-39-3	52.5		0.112	0.835	1
06947	Beryllium	7440-41-7	0.665	J	0.112	0.835	1
06949	Cadmium	7440-43-9	0.122	J	0.0718	0.835	1
01650	Calcium	7440-70-2	1,600		5.56	33.4	1
06951	Chromium	7440-47-3	27.6		0.164	2.50	1
06952	Cobalt	7440-48-4	14.7		0.135	0.835	1
06953	Copper	7440-50-8	50.0		0.468	1.67	1
01654	Iron	7439-89-6	47,200		27.8	167	5
06955	Lead	7439-92-1	226		0.534	2.50	1
01657	Magnesium	7439-95-4	1,380		2.79	16.7	1
06958	Manganese	7439-96-5	216		0.139	0.835	1
06961	Nickel	7440-02-0	28.9		0.384	1.67	1
01662	Potassium	7440-09-7	1,420		28.1	83.5	1
06936	Selenium	7782-49-2	10.6		1.39	3.34	1
06966	Silver	7440-22-4	1.79		0.200	0.835	1
01667	Sodium	7440-23-5	104	J	27.9	167	1
06925	Thallium	7440-28-0	N.D.		1.25	5.01	1
06971	Vanadium	7440-62-2	41.3		0.250	0.835	1
06972	Zinc	7440-66-6	67.9		1.29	3.34	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0339	J	0.0164	0.164	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	29,100		1,080	3,230	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.7		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086964
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:51 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5319 SDG#: KVM53-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/25/2015 00:49	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 23:05	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/30/2015 16:15	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 16:25	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 16:25	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:44	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:47	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 22:21	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5319

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086964
Sample wt/vol: 30.31(g/mL) g Lab File ID: oj1195.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40.7 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.769	30000	J
2.		Unknown	3.822	30000	J
3.	79-09-4	Propanoic acid	4.069	180000	J
4.	123-42-2	2-Pentanone, 4-hydroxy-4-met	4.704	43000	JAB
5.		Unknown	4.793	58000	J
6.		Unknown	4.840	43000	J
7.	107-92-6	Butanoic acid	4.981	180000	J
8.		Unknown Organic Acid	5.610	86000	J
9.		Unknown Organic Acid	5.704	73000	J
10.		Unknown	8.004	6800	J
11.	629-50-5	Tridecane	8.316	7000	J
12.	629-59-4	Tetradecane	8.875	12000	J
13.		Unknown	11.304	15000	J
14.	1002-84-2	Pentadecanoic acid	11.516	190000	J
15.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.610	1400	J
16.	60-33-3	9,12-Octadecadienoic acid (Z	12.204	15000	J
17.	112-79-8	9-Octadecenoic acid, (E)-	12.222	9200	J
18.	74685-28-2	7-Hexadecyne	12.345	3200	J
19.		Unknown	12.516	2500	J
20.		Unknown	12.557	3500	J
21.	56196-06-6	Cyclopropaneoctanal, 2-octyl	12.833	1800	J
22.		Unknown	12.927	8300	J
23.		Unknown	12.998	7400	J
24.		Unknown	13.080	1400	J
25.					
26.	SVOCTIC	Total SVOC TICs		1000000	JAB
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086965
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5320 SDG#: KVM53-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		130	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		500	1,200	5
10727	Benzo(a)anthracene	56-55-3	120	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	71	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	110	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	42	J	25	130	5
10727	Benzo(k)fluoranthene	207-08-9	54	J	25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		500	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		500	1,200	5
10727	Caprolactam	105-60-2	N.D.		250	1,200	5
10727	Carbazole	86-74-8	N.D.		130	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	500	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		50	250	5
10727	2-Chlorophenol	95-57-8	N.D.		130	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		25	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		750	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	250	5
10727	Diethylphthalate	84-66-2	N.D.		500	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	250	5
10727	Dimethylphthalate	131-11-3	N.D.		500	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,700	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,200	7,500	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		500	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	260		130	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		500	1,300	5
10727	Fluoranthene	206-44-0	170		25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,700	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	44	J	25	130	5
10727	Isophorone	78-59-1	N.D.		130	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086965
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5320 SDG#: KVM53-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	250	5
10727	4-Methylphenol	106-44-5	360		130	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	250	5
10727	3-Nitroaniline	99-09-2	N.D.		500	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		500	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		130	250	5
10727	2-Nitrophenol	88-75-5	N.D.		130	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,700	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		500	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	63	J	25	130	5
10727	Phenol	108-95-2	N.D.		130	250	5
10727	Pyrene	129-00-0	130		25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	250	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

00886 SVOA TIC Interpretive(25)

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

Explosives	**SW-846 8330**	**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,500	200	540	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,900	140	410	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	410	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	140	410	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	140	410	1
06918	HMX	2691-41-0	N.D.	340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.	140	410	1
06918	Nitroglycerin	55-63-0	N.D.	2,700	8,200	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	410	1
06918	2-Nitrotoluene	88-72-2	N.D.	270	540	1
06918	3-Nitrotoluene	99-08-1	930	340	680	1
06918	4-Nitrotoluene	99-99-0	N.D.	270	540	1
06918	PETN	78-11-5	N.D.	2,700	8,200	1
06918	RDX	121-82-4	N.D.	230	410	1
06918	Tetryl	479-45-8	N.D.	220	540	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086965
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5320 SDG#: KVM53-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	410	1
06918	2,4,6-Trinitrotoluene	118-96-7	39,000		680	2,000	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,200		11.2	29.3	1
06944	Antimony	7440-36-0	N.D.		0.600	2.93	1
06935	Arsenic	7440-38-2	N.D.		0.849	2.93	1
06946	Barium	7440-39-3	50.0		0.0981	0.732	1
06947	Beryllium	7440-41-7	0.681	J	0.0981	0.732	1
06949	Cadmium	7440-43-9	0.168	J	0.0630	0.732	1
01650	Calcium	7440-70-2	1,290		4.88	29.3	1
06951	Chromium	7440-47-3	27.2		0.144	2.20	1
06952	Cobalt	7440-48-4	15.5		0.119	0.732	1
06953	Copper	7440-50-8	45.4		0.410	1.46	1
01654	Iron	7439-89-6	50,500		24.4	146	5
06955	Lead	7439-92-1	246		0.469	2.20	1
01657	Magnesium	7439-95-4	1,310		2.45	14.6	1
06958	Manganese	7439-96-5	176		0.122	0.732	1
06961	Nickel	7440-02-0	31.4		0.337	1.46	1
01662	Potassium	7440-09-7	1,160		24.6	73.2	1
06936	Selenium	7782-49-2	12.1		1.22	2.93	1
06966	Silver	7440-22-4	1.80		0.176	0.732	1
01667	Sodium	7440-23-5	75.5	J	24.5	146	1
06925	Thallium	7440-28-0	N.D.		1.10	4.39	1
06971	Vanadium	7440-62-2	43.4		0.220	0.732	1
06972	Zinc	7440-66-6	62.1		1.13	2.93	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0349	J	0.0141	0.141	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	23,200		997	2,990	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	33.7		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086965
LL Group # 1600457
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 08:53 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 08:54

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5320 SDG#: KVM53-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLC026	10/25/2015 01:15	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLC026	10/22/2015 17:30	Benjamin J Rosenberger	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	10/27/2015 23:47	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960012A	11/04/2015 13:44	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960012A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06944	Antimony	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06935	Arsenic	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06946	Barium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06947	Beryllium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06949	Cadmium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
01650	Calcium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06951	Chromium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06952	Cobalt	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06953	Copper	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
01654	Iron	SW-846 6010B	1	152945708003	10/30/2015 16:30	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
01657	Magnesium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06958	Manganese	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06961	Nickel	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
01662	Potassium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06936	Selenium	SW-846 6010B	1	152945708003	10/30/2015 16:28	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
01667	Sodium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06925	Thallium	SW-846 6010B	1	152945708003	10/30/2015 16:28	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
06972	Zinc	SW-846 6010B	1	152945708003	10/26/2015 16:47	Suzanne M Will	1
00159	Mercury	SW-846 7471A	1	152945711002	10/23/2015 05:49	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708003	10/22/2015 08:58	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711002	10/22/2015 11:03	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 22:32	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820001B	10/20/2015 00:19	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5320

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086965
Sample wt/vol: 30.17(g/mL) g Lab File ID: oj1196.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 33.7 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79-09-4	Propanoic acid	3.440	26000	J
2.	Unknown	3.546	21000	J
3.	Unknown	3.634	30000	J
4.	Unknown	3.740	22000	J
5.	Unknown	3.769	15000	J
6.	Unknown	3.840	38000	J
7.	Unknown	4.034	15000	J
8. 107-92-6	Butanoic acid	4.352	14000	J
9. 107-92-6	Butanoic acid	4.499	35000	J
10. 107-92-6	Butanoic acid	4.663	70000	J
11.	Unknown Organic Acid	5.481	42000	J
12. 103-82-2	Benzeneacetic acid	7.998	3800	J
13. 504-44-9	Hexadecane, 2,6,11,15-tetram	8.145	3500	J
14. 629-50-5	Tridecane	8.316	8200	J
15. 66563-30-2	Bacchotricuneatin c	8.875	7600	J
16. 1002-84-2	Pentadecanoic acid	11.510	130000	J
17. 60-33-3	9,12-Octadecadienoic acid (Z	12.186	13000	J
18. 112-79-8	9-Octadecenoic acid, (E)-	12.210	9000	J
19. 74685-28-2	7-Hexadecyne	12.345	2600	J
20.	Unknown	12.510	2300	J
21.	Unknown	12.557	3000	J
22.	Unknown	12.833	1100	J
23.	Unknown	12.927	9600	J
24.	Unknown	12.998	6700	J
25. 83-47-6	.gamma.-Sitosterol	16.727	11000	J
26.				
27. SVOCTIC	Total SVOC TICs		540000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600457
Reported: 11/11/2015 08:54

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15295SLC026	Sample number(s): 8086946-8086965								
Acenaphthene	N.D.	3.	17	ug/kg	93		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	100		83-127		
Acetophenone	N.D.	17.	33	ug/kg	84		74-116		
Anthracene	N.D.	3.	17	ug/kg	97		82-118		
Atrazine	N.D.	33.	170	ug/kg	101		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	78*		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	93		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	93		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	85		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	85		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	101		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	89		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	91		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	93		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	98		84-120		
Caprolactam	N.D.	33.	170	ug/kg	94		71-129		
Carbazole	N.D.	17.	33	ug/kg	92		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	102		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	41		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	87		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	86		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	80		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	96		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	95		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	91		63-126		
Chrysene	N.D.	3.	17	ug/kg	93		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	89		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	91		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	44		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	98		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	93		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	94		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	94		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	74		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	60		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	98		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	100		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	94		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	96		81-117		
Fluorene	N.D.	3.	17	ug/kg	98		86-118		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600457
Reported: 11/11/2015 08:54

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachlorobenzene	N.D.		3.	17	ug/kg	89		75-123		
Hexachlorobutadiene	N.D.		17.	33	ug/kg	88		72-120		
Hexachlorocyclopentadiene	N.D.		170.	500	ug/kg	92		68-145		
Hexachloroethane	N.D.		33.	170	ug/kg	85		78-114		
Indeno(1,2,3-cd)pyrene	N.D.		3.	17	ug/kg	86		81-118		
Isophorone	N.D.		17.	33	ug/kg	90		78-125		
2-Methylnaphthalene	N.D.		3.	17	ug/kg	89		83-109		
2-Methylphenol	N.D.		17.	33	ug/kg	99		82-125		
4-Methylphenol	N.D.		17.	33	ug/kg	94		75-119		
Naphthalene	N.D.		3.	17	ug/kg	89		83-112		
2-Nitroaniline	N.D.		17.	33	ug/kg	98		84-126		
3-Nitroaniline	N.D.		67.	170	ug/kg	94		66-119		
4-Nitroaniline	N.D.		67.	170	ug/kg	68		50-100		
Nitrobenzene	N.D.		17.	33	ug/kg	88		70-122		
2-Nitrophenol	N.D.		17.	33	ug/kg	85		83-120		
4-Nitrophenol	N.D.		170.	500	ug/kg	93		60-129		
N-Nitroso-di-n-propylamine	N.D.		17.	33	ug/kg	86		67-121		
N-Nitrosodiphenylamine	N.D.		17.	33	ug/kg	94		83-118		
Di-n-octylphthalate	N.D.		67.	170	ug/kg	90		74-146		
Pentachlorophenol	N.D.		33.	170	ug/kg	98		57-126		
Phenanthrene	N.D.		3.	17	ug/kg	90		80-114		
Phenol	N.D.		17.	33	ug/kg	93		73-122		
Pyrene	N.D.		3.	17	ug/kg	87		81-114		
2,4,5-Trichlorophenol	N.D.		17.	33	ug/kg	97		86-123		
2,4,6-Trichlorophenol	N.D.		17.	33	ug/kg	95		81-123		
Batch number: 152960012A	Sample number(s): 8086946-8086965									
4-Amino-2,6-Dinitrotoluene	N.D.		150.	400	ug/kg	107		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.		100.	300	ug/kg	104		79-120		
1,2-Dinitrobenzene	N.D.		100.	300	ug/kg	113		94-129		
1,3-Dinitrobenzene	N.D.		100.	300	ug/kg	109		94-124		
1,4-Dinitrobenzene	N.D.		100.	300	ug/kg	96		83-122		
HMX	N.D.		250.	750	ug/kg	78		65-121		
Nitrobenzene	N.D.		100.	300	ug/kg	108		81-116		
Nitroglycerin	N.D.		2,000.	6,000	ug/kg	90		70-118		
1-Nitronaphthalene	N.D.		100.	300	ug/kg	110		83-122		
2-Nitrotoluene	N.D.		200.	400	ug/kg	103		86-113		
3-Nitrotoluene	N.D.		250.	500	ug/kg	109		85-135		
4-Nitrotoluene	N.D.		200.	400	ug/kg	108		80-122		
PETN	N.D.		2,000.	6,000	ug/kg	94		64-121		
RDX	N.D.		130.	300	ug/kg	105		84-122		
Tetryl	N.D.		160.	400	ug/kg	112		67-152		
1,3,5-Trinitrobenzene	N.D.		100.	300	ug/kg	101		83-119		
2,4,6-Trinitrotoluene	N.D.		100.	300	ug/kg	108		82-133		
Batch number: 152945708003	Sample number(s): 8086946-8086965									
Aluminum	N.D.		7.66	20.0	mg/kg	107		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	97		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	104		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	102		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	104		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	104		80-120		
Calcium	6.44	J	3.33	20.0	mg/kg	107		80-120		

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600457
Reported: 11/11/2015 08:54

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chromium	N.D.	0.0980	1.50	mg/kg	99		80-120		
Cobalt	N.D.	0.0810	0.500	mg/kg	104		80-120		
Copper	N.D.	0.280	1.00	mg/kg	107		80-120		
Iron	N.D.	3.33	20.0	mg/kg	107		80-120		
Lead	N.D.	0.320	1.50	mg/kg	104		80-120		
Magnesium	N.D.	1.67	10.0	mg/kg	106		80-120		
Manganese	N.D.	0.0830	0.500	mg/kg	101		80-120		
Nickel	N.D.	0.230	1.00	mg/kg	105		80-120		
Potassium	N.D.	16.8	50.0	mg/kg	106		80-120		
Selenium	N.D.	0.830	2.00	mg/kg	107		80-120		
Silver	0.122 J	0.120	0.500	mg/kg	104		80-120		
Sodium	N.D.	16.7	100	mg/kg	107		80-120		
Thallium	N.D.	0.750	3.00	mg/kg	88		80-120		
Vanadium	N.D.	0.150	0.500	mg/kg	98		80-120		
Zinc	N.D.	0.770	2.00	mg/kg	103		80-120		
Batch number: 152945711002	Sample number(s): 8086946-8086965								
Mercury	N.D.	0.0100	0.100	mg/kg	91		80-120		
Batch number: 15288049531A	Sample number(s): 8086946-8086949								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	63		47-143		
Batch number: 15288049531B	Sample number(s): 8086950-8086951								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	63		47-143		
Batch number: 15289049531A	Sample number(s): 8086952-8086957								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	102		47-143		
Batch number: 15293049531A	Sample number(s): 8086958-8086965								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	109		47-143		
Batch number: 15292820001A	Sample number(s): 8086946-8086955								
Moisture					100		99-101		
Batch number: 15292820001B	Sample number(s): 8086956-8086965								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15295SLC026	Sample number(s): 8086946-8086965 UNSPK: 8086955								
Acenaphthene	83	89	83-116	7	30				
Acenaphthylene	91	92	83-127	1	30				
Acetophenone	81	79	74-116	3	30				
Anthracene	85	86	82-118	2	30				
Atrazine	85	84	63-148	1	30				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600457
Reported: 11/11/2015 08:54

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Benzaldehyde	94*	68	10-69	32*	30				
Benzo(a)anthracene	78	81	76-119	4	30				
Benzo(a)pyrene	84*	82*	85-117	2	30				
Benzo(b)fluoranthene	85	84	78-129	1	30				
Benzo(g,h,i)perylene	82	80*	82-119	3	30				
Benzo(k)fluoranthene	84	85	79-120	1	30				
1,1'-Biphenyl	82	83	80-116	2	30				
4-Bromophenyl-phenylether	44*	47*	84-120	7	30				
Butylbenzylphthalate	85	85	80-118	0	30				
Di-n-butylphthalate	85	86	84-120	1	30				
Caprolactam	87	96	71-129	10	30				
Carbazole	79	78	78-117	1	30				
4-Chloro-3-methylphenol	84	85	79-127	2	30				
4-Chloroaniline	63	60	10-103	5	30				
bis(2-Chloroethoxy)methane	75*	77	77-116	3	30				
bis(2-Chloroethyl)ether	80	80	77-115	0	30				
2-Chloronaphthalene	84	82	63-146	2	30				
2-Chlorophenol	85	82*	85-123	3	30				
4-Chlorophenyl-phenylether	71*	72*	81-120	1	30				
2,2'-oxybis(1-Chloropropane)	83	83	63-126	1	30				
Chrysene	80	84	80-121	5	30				
Dibenz(a,h)anthracene	82	83	81-123	2	30				
Dibenzofuran	81*	85	85-115	6	30				
3,3'-Dichlorobenzidine	0*	0*	10-104	0	30				
2,4-Dichlorophenol	83	79*	81-123	5	30				
Diethylphthalate	79*	79*	81-118	1	30				
2,4-Dimethylphenol	81*	82*	83-120	1	30				
Dimethylphthalate	82	81*	82-113	1	30				
4,6-Dinitro-2-methylphenol	95	99	59-131	5	30				
2,4-Dinitrophenol	82	82	27-140	0	30				
2,4-Dinitrotoluene	70*	91	81-122	8	30				
2,6-Dinitrotoluene	80*	82*	83-120	2	30				
bis(2-Ethylhexyl)phthalate	87	88	81-121	1	30				
Fluoranthene	77*	80*	81-117	4	30				
Fluorene	90	91	86-118	2	30				
Hexachlorobenzene	82	73*	75-123	11	30				
Hexachlorobutadiene	79	80	72-120	2	30				
Hexachlorocyclopentadiene	47*	60*	68-145	25	30				
Hexachloroethane	83	78	78-114	5	30				
Indeno(1,2,3-cd)pyrene	81	81	81-118	0	30				
Isophorone	90	94	78-125	4	30				
2-Methylnaphthalene	82*	86	83-109	5	30				
2-Methylphenol	89	84	82-125	5	30				
4-Methylphenol	85	84	75-119	1	30				
Naphthalene	90	91	83-112	1	30				
2-Nitroaniline	79*	86	84-126	9	30				
3-Nitroaniline	82	82	66-119	0	30				
4-Nitroaniline	65	66	50-100	1	30				
Nitrobenzene	77	82	70-122	7	30				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600457
Reported: 11/11/2015 08:54

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2-Nitrophenol	81*	85	83-120	4	30				
4-Nitrophenol	76	86	60-129	12	30				
N-Nitroso-di-n-propylamine	80	81	67-121	2	30				
N-Nitrosodiphenylamine	81*	82*	83-118	1	30				
Di-n-octylphthalate	107	110	74-146	2	30				
Pentachlorophenol	77	78	57-126	1	30				
Phenanthrene	79*	79*	80-114	0	30				
Phenol	85	84	73-122	1	30				
Pyrene	79*	81	81-114	2	30				
2,4,5-Trichlorophenol	78*	80*	86-123	3	30				
2,4,6-Trichlorophenol	75*	77*	81-123	3	30				
Batch number: 152960012A	Sample number(s): 8086946-8086965 UNSPK: 8086955								
4-Amino-2,6-Dinitrotoluene	126 (2)	154 (2)	81-133	7	50				
2-Amino-4,6-Dinitrotoluene	107 (2)	133 (2)	79-120	6	50				
1,2-Dinitrobenzene	123	116	94-129	0	50				
1,3-Dinitrobenzene	119	107	94-124	4	50				
1,4-Dinitrobenzene	102	96	83-122	0	50				
HMX	121	122*	65-121	7	50				
Nitrobenzene	115	102	81-116	6	50				
Nitroglycerin	111	107	70-118	3	50				
1-Nitronaphthalene	99	93	83-122	0	50				
2-Nitrotoluene	137*	131*	86-113	2	50				
3-Nitrotoluene	107	102	85-135	2	50				
4-Nitrotoluene	108	105	80-122	3	50				
PETN	111	111	64-121	6	50				
RDX	118	104	84-122	7	50				
Tetryl	115	106	67-152	3	50				
1,3,5-Trinitrobenzene	90	96	83-119	8	50				
2,4,6-Trinitrotoluene	-3968 (2)	-3316 (2)	82-133	1	50				
Batch number: 152945708003	Sample number(s): 8086946-8086965 UNSPK: 8086946 BKG: 8086946								
Aluminum	1857 (2)	2013 (2)	75-125	2	20	12,100	11,300	6	20
Antimony	64*	58*	75-125	10	20	N.D.	N.D.	0 (1)	20
Arsenic	102	99	75-125	3	20	1.57 J	1.83 J	15 (1)	20
Barium	104	106	75-125	1	20	38.0	35.3	7	20
Beryllium	107	105	75-125	3	20	0.448 J	0.435 J	3 (1)	20
Cadmium	99	96	75-125	4	20	0.115 J	0.0990 J	15 (1)	20
Calcium	89	92	75-125	1	20	1,080	956	12	20
Chromium	104	102	75-125	2	20	11.0	10.0	9	20
Cobalt	98	95	75-125	4	20	3.05	3.01	1	20
Copper	110	108	75-125	2	20	16.9	16.2	4	20
Iron	559 (2)	2 (2)	75-125	4	20	13,600	14,800	9	20
Lead	57 (2)	101 (2)	75-125	4	20	150	141	6	20
Magnesium	96 (2)	106 (2)	75-125	1	20	968	836	15	20
Manganese	106	103	75-125	1	20	108	107	1	20
Nickel	99	97	75-125	4	20	5.79	5.49	5	20

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600457
Reported: 11/11/2015 08:54

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Potassium	175*	168*	75-125	4	20	634	587	8	20
Selenium	103	101	75-125	2	20	2.13	2.68	23* (1)	20
Silver	105	102	75-125	4	20	0.524	0.593	12 (1)	20
Sodium	103	101	75-125	2	20	43.6 J	41.9 J	4 (1)	20
Thallium	105	105	75-125	1	20	N.D.	N.D.	0 (1)	20
Vanadium	106	104	75-125	2	20	21.5	22.1	3	20
Zinc	102	97	75-125	4	20	23.6	23.8	1	20
Batch number: 152945711002	Sample number(s): 8086946-8086965 UNSPK: 8086947 BKG: 8086947								
Mercury	100	93	80-120	4	20	0.0246 J	0.0272 J	10 (1)	20
Batch number: 15288049531A	Sample number(s): 8086946-8086949 UNSPK: P086777 BKG: P086777								
TOC by Lloyd Kahn	55		47-143			77,800	51,900	40*	7
Batch number: 15288049531B	Sample number(s): 8086950-8086951 UNSPK: 8086951 BKG: 8086951								
TOC by Lloyd Kahn	101		47-143			8,930	11,900	29*	7
Batch number: 15289049531A	Sample number(s): 8086952-8086957 UNSPK: 8086952 BKG: 8086952								
TOC by Lloyd Kahn	77		47-143			9,420	9,750	3	7
Batch number: 15293049531A	Sample number(s): 8086958-8086965 UNSPK: P086967 BKG: P086967								
TOC by Lloyd Kahn	104		47-143			13,600	12,200	11*	7
Batch number: 15292820001A	Sample number(s): 8086946-8086955 BKG: 8086955								
Moisture						35.0	36.1	3	5
Batch number: 15292820001B	Sample number(s): 8086956-8086965 BKG: 8086960								
Moisture						38.0	36.8	3	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15295SLC026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8086946	90	89	83	82	83	96
8086947	86	87	80	79	78	93
8086948	79	81	77	77	77	89
8086949	98	98	87	87	87	102
8086950	92	92	84	81	84	96
8086951	90	93	83	82	87	99
8086952	85	87	83	83	89	95
8086953	87	89	83	85	90	96
8086954	84	84	79	82	85	93

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600457
Reported: 11/11/2015 08:54

Surrogate Quality Control

8086955	83	84	69	72	79	91
8086956	81	82	76	80	84	91
8086957	83	85	83	84	90	96
8086958	82	83	74	36*	80	106
8086959	86	92	85	27*	89	108
8086960	90	91	85	41*	90	117
8086961	90	93	87	44*	95	119
8086962	87	90	90	57	93	114
8086963	90	91	89	45*	93	118
8086964	91	94	88	42*	94	118
8086965	86	86	80	40*	84	108
Blank	93	98	102	93	104	111
LCS	95	97	95	88	92	95
MS	85	85	80	77	82	91
MSD	84	86	83	80	83	94
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152960012A

	2-Nitro-m-xylene
8086946	88
8086947	114
8086948	111
8086949	105
8086950	112
8086951	117
8086952	121
8086953	104
8086954	112
8086955	103
8086956	88
8086957	96
8086958	78
8086959	96
8086960	89
8086961	80
8086962	85
8086963	92
8086964	81
8086965	84
Blank	131*
LCS	119
MS	94
MSD	91
Limits:	65-129

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Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1600457 Sample # 8086946-65

| | | |

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1600457 Sample # 5086946-65

| | | |

eurofins | Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

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November 11, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 10/13/2015
Group Number: 1600458
SDG: KVM54
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-F-1-10122015 Composite Soil Sample	8086966
TNT-PS-F-2-10122015 Composite Soil Sample	8086967
TNT-PS-F-3-10122015 Composite Soil Sample	8086968
TNT-PS-F-4-10122015 Composite Soil Sample	8086969
TNT-PS-G-1-10122015 Composite Soil Sample	8086970
TNT-PS-G-2-10122015 Composite Soil Sample	8086971
TNT-PS-G-3-10122015 Composite Soil Sample	8086972
TNT-PS-G-4-10122015 Composite Soil Sample	8086973
TNT-PS-H-1-10122015 Composite Soil Sample	8086974
TNT-PS-H-2-10122015 Composite Soil Sample	8086975
TNT-PS-H-3-10122015 Composite Soil Sample	8086976
TNT-PS-H-4-10122015 Composite Soil Sample	8086977
TNT-PS-I-1-10122015 Composite Soil Sample	8086978
TNT-PS-I-2-10122015 Composite Soil Sample	8086979
TNT-PS-I-3-10122015 Composite Soil Sample	8086980
TNT-PS-I-4-10122015 Composite Soil Sample	8086981
TNT-PS-J-1-10122015 Composite Soil Sample	8086982
TNT-PS-J-2-10122015 Composite Soil Sample	8086983
TNT-PS-J-3-10122015 Composite Soil Sample	8086984
TNT-PS-J-4-10122015 Composite Soil Sample	8086985

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Hercules	Attn: Scott Larew
ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-F-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086966
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:10 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5401 SDG#: KVM54-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		140	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	64	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	47	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	80	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	32	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	40	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		270	1,400	5
10727	Carbazole	86-74-8	N.D.		140	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	72	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	32	J	27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		820	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	270	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	270	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,200	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	230	J	140	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	120	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	35	J	27	140	5
10727	Isophorone	78-59-1	N.D.		140	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

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Kenvil Treatability Study

LL Sample # SW 8086966
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

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Columbus OH 43016-0381

K5401 SDG#: KVM54-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	270	5
10727	4-Methylphenol	106-44-5	N.D.		140	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	270	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	270	5
10727	2-Nitrophenol	88-75-5	N.D.		140	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	68	J	27	140	5
10727	Phenol	108-95-2	140	J	140	270	5
10727	Pyrene	129-00-0	89	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	18,000		240	630	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	14,000		160	470	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	470	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		160	470	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	470	1
06918	HMX	2691-41-0	N.D.		390	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		160	470	1
06918	Nitroglycerin	55-63-0	N.D.		3,100	9,400	1
06918	1-Nitronaphthalene	86-57-7	190	J	160	470	1
06918	2-Nitrotoluene	88-72-2	N.D.		310	630	1
06918	3-Nitrotoluene	99-08-1	1,300		390	780	1
06918	4-Nitrotoluene	99-99-0	640		310	630	1
06918	PETN	78-11-5	N.D.		3,100	9,400	1
06918	RDX	121-82-4	N.D.		200	470	1
06918	Tetryl	479-45-8	N.D.		250	630	1
06918	1,3,5-Trinitrobenzene	99-35-4	1,300		160	470	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,000,000		31,000	94,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

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K5401 SDG#: KVM54-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,600		12.6	32.8	1
06944	Antimony	7440-36-0	N.D.		0.672	3.28	1
06935	Arsenic	7440-38-2	N.D.		0.951	3.28	1
06946	Barium	7440-39-3	62.2		0.110	0.820	1
06947	Beryllium	7440-41-7	0.843		0.110	0.820	1
06949	Cadmium	7440-43-9	0.128	J	0.0705	0.820	1
01650	Calcium	7440-70-2	1,320		5.46	32.8	1
06951	Chromium	7440-47-3	26.8		0.161	2.46	1
06952	Cobalt	7440-48-4	10.2		0.133	0.820	1
06953	Copper	7440-50-8	41.0		0.459	1.64	1
01654	Iron	7439-89-6	40,600		5.46	32.8	1
06955	Lead	7439-92-1	253		0.525	2.46	1
01657	Magnesium	7439-95-4	1,590		2.74	16.4	1
06958	Manganese	7439-96-5	239		0.136	0.820	1
06961	Nickel	7440-02-0	20.4		0.377	1.64	1
01662	Potassium	7440-09-7	1,110		27.5	82.0	1
06936	Selenium	7782-49-2	5.76		1.36	3.28	1
06966	Silver	7440-22-4	1.69		0.197	0.820	1
01667	Sodium	7440-23-5	97.1	J	27.4	164	1
06925	Thallium	7440-28-0	N.D.		1.23	4.92	1
06971	Vanadium	7440-62-2	45.8		0.246	0.820	1
06972	Zinc	7440-66-6	54.1		1.26	3.28	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0477	J	0.0163	0.163	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	17,400		664	1,990	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 02:59	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-1-10122015 Composite Soil Sample
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LL Sample # SW 8086966
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K5401 SDG#: KVM54-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 02:37	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 22:48	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 15:28	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 15:28	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 10:39	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 05:55	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 22:59	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5401

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086966
Sample wt/vol: 30.13(g/mL) g Lab File ID: oj1200.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 39.6 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.457	18000	J
2.	Unknown Organic Acid	3.569	25000	J
3.	Unknown Organic Acid	3.640	25000	J
4.	Unknown	3.675	14000	J
5.	Unknown Organic Acid	3.746	31000	J
6.107-92-6	Butanoic acid	4.481	34000	J
7.	Unknown Organic Acid	4.499	12000	J
8.	Unknown Organic Acid	5.363	16000	J
9.112-40-3	Dodecane	7.710	3500	J
10.	Unknown	7.987	4400	J
11.504-44-9	Hexadecane, 2,6,11,15-tetram	8.145	4300	J
12.629-50-5	Tridecane	8.316	9900	J
13.	Unknown Alkane	8.598	2700	J
14.629-59-4	Tetradecane	8.875	7200	J
15.	Unknown	10.375	20000	J
16.	Unknown	11.304	9000	J
17.19406-51-0	p-Toluidine, 3,5-dinitro-	11.375	9600	J
18.57-10-3	n-Hexadecanoic acid	11.486	51000	J
19.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.604	3500	J
20.60-33-3	9,12-Octadecadienoic acid (Z	12.163	50000	J
21.57-11-4	Octadecanoic acid	12.251	9300	J
22.1000336-36-2	Methyl 9,12-heptadecadienoat	12.333	13000	J
23.	Unknown	12.533	4600	J
24.	Unknown	12.910	28000	J
25.	Unknown	12.969	6900	J
26.				
27.SVOCTIC	Total SVOC TICs		410000	J
28.				
29.				
30.				

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K5402 SDG#: KVM54-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		140	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	56	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	35	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	48	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	31	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	42	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		270	1,400	5
10727	Carbazole	86-74-8	N.D.		140	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	57	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		820	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	270	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	270	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,200	5
10727	2,4-Dinitrotoluene	121-14-2	630	J	550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	220	J	140	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	91	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	34	J	27	140	5
10727	Isophorone	78-59-1	N.D.		140	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086967
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:12 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5402 SDG#: KVM54-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	270	5
10727	4-Methylphenol	106-44-5	N.D.		140	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	270	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	270	5
10727	2-Nitrophenol	88-75-5	N.D.		140	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	48	J	27	140	5
10727	Phenol	108-95-2	N.D.		140	270	5
10727	Pyrene	129-00-0	70	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	270	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	12,000		210	560	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,600		140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,000	1
06918	Nitrobenzene	98-95-3	220	J	140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	560	1
06918	3-Nitrotoluene	99-08-1	740		350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	560	1
06918	PETN	78-11-5	N.D.		2,800	8,400	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	20,000		140	420	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086967
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:12 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5402 SDG#: KVM54-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,700		12.5	32.7	1
06944	Antimony	7440-36-0	N.D.		0.670	3.27	1
06935	Arsenic	7440-38-2	N.D.		0.948	3.27	1
06946	Barium	7440-39-3	48.0		0.109	0.817	1
06947	Beryllium	7440-41-7	0.716	J	0.109	0.817	1
06949	Cadmium	7440-43-9	0.217	J	0.0703	0.817	1
01650	Calcium	7440-70-2	1,120		5.44	32.7	1
06951	Chromium	7440-47-3	22.0		0.160	2.45	1
06952	Cobalt	7440-48-4	11.5		0.132	0.817	1
06953	Copper	7440-50-8	37.5		0.458	1.63	1
01654	Iron	7439-89-6	41,600		5.44	32.7	1
06955	Lead	7439-92-1	211		0.523	2.45	1
01657	Magnesium	7439-95-4	1,410		2.73	16.3	1
06958	Manganese	7439-96-5	199		0.136	0.817	1
06961	Nickel	7440-02-0	22.3		0.376	1.63	1
01662	Potassium	7440-09-7	1,000		27.5	81.7	1
06936	Selenium	7782-49-2	9.16		1.36	3.27	1
06966	Silver	7440-22-4	1.80		0.196	0.817	1
01667	Sodium	7440-23-5	70.0	J	27.3	163	1
06925	Thallium	7440-28-0	N.D.		1.23	4.90	1
06971	Vanadium	7440-62-2	41.4		0.245	0.817	1
06972	Zinc	7440-66-6	64.0		1.26	3.27	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0269	J	0.0163	0.163	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	22,700		887	2,660	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 03:25	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086967
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:12 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5402 SDG#: KVM54-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 03:19	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 15:46	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/27/2015 15:46	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 15:46	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 10:58	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:09	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531A	10/20/2015 23:08	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5402

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086967
Sample wt/vol: 30.42(g/mL) g Lab File ID: oj1201.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Organic Acid	3.504	38000	J
2.		Unknown Organic Acid	3.645	36000	J
3.		Unknown	3.681	15000	J
4.		Unknown	3.745	30000	J
5.	79-09-4	Propanoic acid	3.775	15000	J
6.		Unknown Organic Acid	4.340	21000	J
7.		Unknown	4.469	28000	J
8.		Unknown Organic Acid	4.534	15000	J
9.		Unknown Organic Acid	5.357	14000	J
10.		Unknown	7.986	4300	J
11.	61141-72-8	Dodecane, 4,6-dimethyl-	8.145	4100	J
12.	629-59-4	Tetradecane	8.316	9800	J
13.	629-62-9	Pentadecane	8.875	7100	J
14.		Unknown	10.380	33000	J
15.		Unknown	11.304	9800	J
16.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.374	10000	J
17.	57-10-3	n-Hexadecanoic acid	11.486	55000	J
18.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.610	3800	J
19.	60-33-3	9,12-Octadecadienoic acid (Z	12.168	25000	J
20.	112-80-1	Oleic Acid	12.186	24000	J
21.	57-11-4	Octadecanoic acid	12.251	7700	J
22.	2462-80-8	9,12-Hexadecadienoic acid, m	12.333	13000	J
23.		Unknown	12.533	5200	J
24.		Unknown	12.910	20000	J
25.		Unknown	12.963	8600	J
26.					
27.	SVOCTIC	Total SVOC TICs		450000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086968
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:14 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5403 SDG#: KVM54-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		24	120	5
10727	Acenaphthylene	208-96-8	N.D.		24	120	5
10727	Acetophenone	98-86-2	N.D.		120	240	5
10727	Anthracene	120-12-7	N.D.		24	120	5
10727	Atrazine	1912-24-9	N.D.		240	1,200	5
10727	Benzaldehyde	100-52-7	N.D.		480	1,200	5
10727	Benzo(a)anthracene	56-55-3	57	J	24	120	5
10727	Benzo(a)pyrene	50-32-8	45	J	24	120	5
10727	Benzo(b)fluoranthene	205-99-2	65	J	24	120	5
10727	Benzo(g,h,i)perylene	191-24-2	34	J	24	120	5
10727	Benzo(k)fluoranthene	207-08-9	30	J	24	120	5
10727	1,1'-Biphenyl	92-52-4	N.D.		120	240	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		120	240	5
10727	Butylbenzylphthalate	85-68-7	N.D.		480	1,200	5
10727	Di-n-butylphthalate	84-74-2	N.D.		480	1,200	5
10727	Caprolactam	105-60-2	N.D.		240	1,200	5
10727	Carbazole	86-74-8	N.D.		120	240	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		120	240	5
10727	4-Chloroaniline	106-47-8	N.D.		240	480	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		120	240	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		120	240	5
10727	2-Chloronaphthalene	91-58-7	N.D.		48	240	5
10727	2-Chlorophenol	95-57-8	N.D.		120	240	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		120	240	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		120	240	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	60	J	24	120	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		24	120	5
10727	Dibenzofuran	132-64-9	N.D.		120	240	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		730	2,400	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		120	240	5
10727	Diethylphthalate	84-66-2	N.D.		480	1,200	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		120	240	5
10727	Dimethylphthalate	131-11-3	N.D.		480	1,200	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,200	3,600	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,200	7,300	5
10727	2,4-Dinitrotoluene	121-14-2	500	J	480	1,200	5
10727	2,6-Dinitrotoluene	606-20-2	230	J	120	240	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		480	1,200	5
10727	Fluoranthene	206-44-0	78	J	24	120	5
10727	Fluorene	86-73-7	N.D.		24	120	5
10727	Hexachlorobenzene	118-74-1	N.D.		24	120	5
10727	Hexachlorobutadiene	87-68-3	N.D.		120	240	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,200	3,600	5
10727	Hexachloroethane	67-72-1	N.D.		240	1,200	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	31	J	24	120	5
10727	Isophorone	78-59-1	N.D.		120	240	5
10727	2-Methylnaphthalene	91-57-6	N.D.		24	120	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086968
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:14 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5403 SDG#: KVM54-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		120	240	5
10727	4-Methylphenol	106-44-5	N.D.		120	240	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		24	120	5
10727	2-Nitroaniline	88-74-4	N.D.		120	240	5
10727	3-Nitroaniline	99-09-2	N.D.		480	1,200	5
10727	4-Nitroaniline	100-01-6	N.D.		480	1,200	5
10727	Nitrobenzene	98-95-3	N.D.		120	240	5
10727	2-Nitrophenol	88-75-5	N.D.		120	240	5
10727	4-Nitrophenol	100-02-7	N.D.		1,200	3,600	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		120	240	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		120	240	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		480	1,200	5
10727	Pentachlorophenol	87-86-5	N.D.		240	1,200	5
10727	Phenanthrene	85-01-8	37	J	24	120	5
10727	Phenol	108-95-2	N.D.		120	240	5
10727	Pyrene	129-00-0	64	J	24	120	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		120	240	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		120	240	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000		200	530	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,900		130	400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	400	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	400	1
06918	HMX	2691-41-0	N.D.		330	990	1
06918	Nitrobenzene	98-95-3	N.D.		130	400	1
06918	Nitroglycerin	55-63-0	N.D.		2,600	7,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	400	1
06918	2-Nitrotoluene	88-72-2	N.D.		260	530	1
06918	3-Nitrotoluene	99-08-1	920		330	660	1
06918	4-Nitrotoluene	99-99-0	480	J	260	530	1
06918	PETN	78-11-5	N.D.		2,600	7,900	1
06918	RDX	121-82-4	N.D.		170	400	1
06918	Tetryl	479-45-8	N.D.		210	530	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		130	400	1
06918	2,4,6-Trinitrotoluene	118-96-7	38,000		660	2,000	5
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086968
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:14 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5403 SDG#: KVM54-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,600		10.8	28.3	1
06944	Antimony	7440-36-0	N.D.		0.579	2.83	1
06935	Arsenic	7440-38-2	1.45	J	0.820	2.83	1
06946	Barium	7440-39-3	55.1		0.0947	0.707	1
06947	Beryllium	7440-41-7	0.671	J	0.0947	0.707	1
06949	Cadmium	7440-43-9	0.206	J	0.0608	0.707	1
01650	Calcium	7440-70-2	1,100		4.71	28.3	1
06951	Chromium	7440-47-3	18.9		0.138	2.12	1
06952	Cobalt	7440-48-4	10.3		0.114	0.707	1
06953	Copper	7440-50-8	34.2		0.396	1.41	1
01654	Iron	7439-89-6	33,400		4.71	28.3	1
06955	Lead	7439-92-1	211		0.452	2.12	1
01657	Magnesium	7439-95-4	1,270		2.36	14.1	1
06958	Manganese	7439-96-5	214		0.117	0.707	1
06961	Nickel	7440-02-0	17.9		0.325	1.41	1
01662	Potassium	7440-09-7	957		23.7	70.7	1
06936	Selenium	7782-49-2	6.52		1.17	2.83	1
06966	Silver	7440-22-4	1.42		0.170	0.707	1
01667	Sodium	7440-23-5	66.0	J	23.6	141	1
06925	Thallium	7440-28-0	N.D.		1.06	4.24	1
06971	Vanadium	7440-62-2	36.3		0.212	0.707	1
06972	Zinc	7440-66-6	51.6		1.09	2.83	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0330	J	0.0142	0.142	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	26,200		1,140	3,420	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	31.3		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 03:51	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086968
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:14 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5403 SDG#: KVM54-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 04:02	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/04/2015 14:27	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 15:49	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/27/2015 15:49	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 15:49	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:01	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:11	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/20/2015 23:37	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5403

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086968
Sample wt/vol: 30.05(g/mL) g Lab File ID: oj1202.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 31.3 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	3.440	19000	J
2.	Unknown	3.487	9900	J
3.	Unknown Organic Acid	3.540	13000	J
4.	Unknown Organic Acid	3.640	21000	J
5.	Unknown Organic Acid	3.757	37000	J
6.107-92-6	Butanoic acid	4.469	23000	J
7.109-52-4	Pentanoic acid	5.369	14000	J
8.	Unknown	7.986	3800	J
9.61141-72-8	Dodecane, 4,6-dimethyl-	8.145	3600	J
10.629-50-5	Tridecane	8.316	8300	J
11.	Unknown Alkane	8.598	2400	J
12.629-59-4	Tetradecane	8.875	6000	J
13.	Unknown	10.380	28000	J
14.	Unknown	11.304	8600	J
15.19406-51-0	p-Toluidine, 3,5-dinitro-	11.380	8600	J
16.57-10-3	n-Hexadecanoic acid	11.486	52000	J
17.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.610	1600	J
18.60-33-3	9,12-Octadecadienoic acid (Z	12.168	8000	J
19.112-79-8	9-Octadecenoic acid, (E)-	12.186	8400	J
20.	Unknown	12.539	2500	J
21.1000357-25-3	6-Cyclohexylnonadecane	12.704	1300	J
22.	Unknown	12.827	1200	J
23.	Unknown	12.910	8000	J
24.	Unknown	12.968	3500	J
25.	Unknown	13.068	1400	J
26.				
27.SVOCTIC	Total SVOC TICs		290000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086969
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:17 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5404 SDG#: KVM54-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,300	5
10727	Benzo(a)anthracene	56-55-3	66	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	52	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	110	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	55	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	35	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		54	270	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	73	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		810	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,100	5
10727	2,4-Dinitrotoluene	121-14-2	760	J	540	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	370		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	120	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	53	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086969
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:17 by SL

Submitted: 10/13/2015 17:35
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Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5404 SDG#: KVM54-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	N.D.		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	59	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	95	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	12,000		210	570	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,700		140	430	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	430	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	430	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	430	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		140	430	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	430	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	570	1
06918	3-Nitrotoluene	99-08-1	1,000		360	720	1
06918	4-Nitrotoluene	99-99-0	480	J	290	570	1
06918	PETN	78-11-5	N.D.		2,900	8,600	1
06918	RDX	121-82-4	N.D.		190	430	1
06918	Tetryl	479-45-8	N.D.		230	570	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	430	1
06918	2,4,6-Trinitrotoluene	118-96-7	20,000		140	430	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086969
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:17 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5404 SDG#: KVM54-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	19,200		12.1	31.5	1
06944	Antimony	7440-36-0	N.D.		0.646	3.15	1
06935	Arsenic	7440-38-2	N.D.		0.914	3.15	1
06946	Barium	7440-39-3	56.4		0.106	0.788	1
06947	Beryllium	7440-41-7	0.782	J	0.106	0.788	1
06949	Cadmium	7440-43-9	0.309	J	0.0678	0.788	1
01650	Calcium	7440-70-2	1,190		5.25	31.5	1
06951	Chromium	7440-47-3	26.2		0.154	2.36	1
06952	Cobalt	7440-48-4	10.8		0.128	0.788	1
06953	Copper	7440-50-8	41.3		0.441	1.58	1
01654	Iron	7439-89-6	41,000		5.25	31.5	1
06955	Lead	7439-92-1	242		0.504	2.36	1
01657	Magnesium	7439-95-4	1,410		2.63	15.8	1
06958	Manganese	7439-96-5	216		0.131	0.788	1
06961	Nickel	7440-02-0	21.3		0.363	1.58	1
01662	Potassium	7440-09-7	1,010		26.5	78.8	1
06936	Selenium	7782-49-2	6.88		1.31	3.15	1
06966	Silver	7440-22-4	1.61		0.189	0.788	1
01667	Sodium	7440-23-5	74.3	J	26.3	158	1
06925	Thallium	7440-28-0	N.D.		1.18	4.73	1
06971	Vanadium	7440-62-2	44.7		0.236	0.788	1
06972	Zinc	7440-66-6	55.8		1.21	3.15	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0346	J	0.0156	0.156	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	22,100		652	1,960	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 01:41	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086969
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:17 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5404 SDG#: KVM54-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 04:44	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 15:58	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 15:58	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:11	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:13	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/20/2015 23:46	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5404

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086969
Sample wt/vol: 30.46(g/mL) g Lab File ID: oj1197.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 39 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown Organic Acid	3.393	17000	J
2.	Unknown Organic Acid	3.628	34000	J
3.	Unknown	3.651	8800	J
4. 79-09-4	Propanoic acid	3.757	44000	J
5.	Unknown Organic Acid	4.475	22000	J
6. 107-92-6	Butanoic acid	4.534	11000	J
7.	Unknown Organic Acid	5.357	13000	J
8. 112-40-3	Dodecane	7.710	3600	J
9.	Unknown	7.986	4500	J
10. 61141-72-8	Dodecane, 4,6-dimethyl-	8.145	4500	J
11. 629-50-5	Tridecane	8.316	10000	J
12.	Unknown Alkane	8.410	3000	J
13.	Unknown Alkane	8.598	2800	J
14. 629-59-4	Tetradecane	8.875	7600	J
15.	Unknown	10.375	30000	J
16.	Unknown	11.304	11000	J
17. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.380	12000	J
18. 57-10-3	n-Hexadecanoic acid	11.492	70000	J
19. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.610	1700	J
20. 60-33-3	9,12-Octadecadienoic acid (Z	12.169	14000	J
21. 112-80-1	Oleic Acid	12.192	10000	J
22. 1000336-36-2	Methyl 9,12-heptadecadienoat	12.339	4600	J
23.	Unknown	12.539	1300	J
24.	Unknown	12.916	11000	J
25.	Unknown	12.968	3400	J
26.				
27. SVOCTIC	Total SVOC TICs		360000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086970
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:00 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5405 SDG#: KVM54-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		560	1,400	5
10727	Benzo(a)anthracene	56-55-3	48	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	45	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	56	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	40	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	43	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		560	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		560	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	560	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	47	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		830	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		560	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		560	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,300	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		560	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		560	1,400	5
10727	Fluoranthene	206-44-0	64	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	33	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086970
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:00 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5405 SDG#: KVM54-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	2,500		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		560	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		560	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		560	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	35	J	28	140	5
10727	Phenol	108-95-2	280		140	280	5
10727	Pyrene	129-00-0	59	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,700		230	600	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,300		150	450	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	450	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		150	450	1
06918	1,4-Dinitrobenzene	100-25-4	610		150	450	1
06918	HMX	2691-41-0	N.D.		380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	450	1
06918	Nitroglycerin	55-63-0	N.D.		3,000	9,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	450	1
06918	2-Nitrotoluene	88-72-2	N.D.		300	600	1
06918	3-Nitrotoluene	99-08-1	1,500		380	760	1
06918	4-Nitrotoluene	99-99-0	N.D.		300	600	1
06918	PETN	78-11-5	N.D.		3,000	9,100	1
06918	RDX	121-82-4	N.D.		200	450	1
06918	Tetryl	479-45-8	N.D.		240	600	1
06918	1,3,5-Trinitrobenzene	99-35-4	490		150	450	1
06918	2,4,6-Trinitrotoluene	118-96-7	21,000		150	450	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086970
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:00 by SL

Submitted: 10/13/2015 17:35
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Hercules Incorporated
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PO Box 2219
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K5405 SDG#: KVM54-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,000		12.5	32.7	1
06944	Antimony	7440-36-0	N.D.		0.671	3.27	1
06935	Arsenic	7440-38-2	N.D.		0.949	3.27	1
06946	Barium	7440-39-3	55.3		0.110	0.818	1
06947	Beryllium	7440-41-7	0.697	J	0.110	0.818	1
06949	Cadmium	7440-43-9	0.232	J	0.0704	0.818	1
01650	Calcium	7440-70-2	1,570		5.45	32.7	1
06951	Chromium	7440-47-3	25.7		0.160	2.46	1
06952	Cobalt	7440-48-4	13.0		0.133	0.818	1
06953	Copper	7440-50-8	41.7		0.458	1.64	1
01654	Iron	7439-89-6	49,700		27.3	164	5
06955	Lead	7439-92-1	214		0.524	2.46	1
01657	Magnesium	7439-95-4	1,390		2.73	16.4	1
06958	Manganese	7439-96-5	191		0.136	0.818	1
06961	Nickel	7440-02-0	25.8		0.376	1.64	1
01662	Potassium	7440-09-7	1,170		27.5	81.8	1
06936	Selenium	7782-49-2	10.8		1.36	3.27	1
06966	Silver	7440-22-4	1.98		0.196	0.818	1
01667	Sodium	7440-23-5	82.7	J	27.3	164	1
06925	Thallium	7440-28-0	N.D.		1.23	4.91	1
06971	Vanadium	7440-62-2	42.6		0.246	0.818	1
06972	Zinc	7440-66-6	55.0		1.26	3.27	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0313	J	0.0167	0.167	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	20,900		940	2,820	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.1		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 04:17	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086970
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:00 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5405 SDG#: KVM54-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 06:52	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/27/2015 16:04	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:01	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/27/2015 16:01	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:01	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:14	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:15	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/20/2015 23:54	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5405

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086970
Sample wt/vol: 30.08(g/mL) g Lab File ID: oj1203.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40.1 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 513-85-9	2,3-Butanediol	3.910	10000	J
2.	Unknown	4.051	15000	J
3.	Unknown Organic Acid	4.316	14000	J
4.	Unknown	4.428	33000	J
5.	Unknown	4.493	11000	J
6.	Unknown	4.546	17000	J
7.	Unknown	4.598	20000	J
8.	Unknown	4.622	10000	J
9.	Unknown	4.651	21000	J
10.	Unknown	4.734	42000	J
11.	Unknown Organic Acid	4.846	86000	J
12.	Unknown Organic Acid	5.481	31000	J
13. 142-62-1	Hexanoic acid	6.257	32000	J
14. 103-82-2	Benzeneacetic acid	7.998	8000	J
15.	Unknown Alkane	8.316	6400	J
16. 501-52-0	Hydrocinnamic acid	8.516	5400	J
17. 629-59-4	Tetradecane	8.875	8000	J
18. 544-63-8	Tetradecanoic acid	10.610	6700	J
19. 57-10-3	n-Hexadecanoic acid	11.498	89000	J
20. 693-71-0	trans-13-Octadecenoic acid	12.169	11000	J
21. 112-79-8	9-Octadecenoic acid, (E)-	12.192	6800	J
22. 57-11-4	Octadecanoic acid	12.245	8000	J
23. 60212-34-2	5-Tetradecyne	12.322	2600	J
24.	Unknown	12.886	3100	J
25.	Unknown	12.963	6200	J
26.				
27. SVOCTIC	Total SVOC TICs		500000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086971
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:03 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5406 SDG#: KVM54-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		140	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,400	5
10727	Benzo(a)anthracene	56-55-3	40	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	33	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	38	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		27	140	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,400	5
10727	Caprolactam	105-60-2	N.D.		270	1,400	5
10727	Carbazole	86-74-8	N.D.		140	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		54	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	41	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		820	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,200	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		540	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	61	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		27	140	5
10727	Isophorone	78-59-1	N.D.		140	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086971
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:03 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5406 SDG#: KVM54-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	270	5
10727	4-Methylphenol	106-44-5	4,500		140	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	270	5
10727	2-Nitrophenol	88-75-5	N.D.		140	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	33	J	27	140	5
10727	Phenol	108-95-2	310		140	270	5
10727	Pyrene	129-00-0	57	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,000		210	560	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,700		140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	560	1
06918	3-Nitrotoluene	99-08-1	830		350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	560	1
06918	PETN	78-11-5	N.D.		2,800	8,400	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	8,900		140	420	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086971
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:03 by SL

Submitted: 10/13/2015 17:35
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Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5406 SDG#: KVM54-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,300		12.4	32.4	1
06944	Antimony	7440-36-0	N.D.		0.663	3.24	1
06935	Arsenic	7440-38-2	N.D.		0.938	3.24	1
06946	Barium	7440-39-3	38.7		0.108	0.809	1
06947	Beryllium	7440-41-7	0.548	J	0.108	0.809	1
06949	Cadmium	7440-43-9	0.0825	J	0.0696	0.809	1
01650	Calcium	7440-70-2	1,300		5.39	32.4	1
06951	Chromium	7440-47-3	19.8		0.159	2.43	1
06952	Cobalt	7440-48-4	10.6		0.131	0.809	1
06953	Copper	7440-50-8	33.0		0.453	1.62	1
01654	Iron	7439-89-6	39,900		5.39	32.4	1
06955	Lead	7439-92-1	186		0.518	2.43	1
01657	Magnesium	7439-95-4	1,180		2.70	16.2	1
06958	Manganese	7439-96-5	154		0.134	0.809	1
06961	Nickel	7440-02-0	21.0		0.372	1.62	1
01662	Potassium	7440-09-7	973		27.2	80.9	1
06936	Selenium	7782-49-2	8.65		1.34	3.24	1
06966	Silver	7440-22-4	1.87		0.194	0.809	1
01667	Sodium	7440-23-5	67.9	J	27.0	162	1
06925	Thallium	7440-28-0	N.D.		1.21	4.85	1
06971	Vanadium	7440-62-2	32.8		0.243	0.809	1
06972	Zinc	7440-66-6	48.1		1.25	3.24	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0269	J	0.0163	0.163	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	27,800		695	2,080	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.4		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 04:43	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086971
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:03 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5406 SDG#: KVM54-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 07:34	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:07	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
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01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:07	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:17	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:18	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/21/2015 00:03	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5406

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086971
Sample wt/vol: 30.36(g/mL) g Lab File ID: oj1204.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 39.4 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.234	8700	J
2.	24347-58-8	2,3-Butanediol, [R-(R*,R*)]-	3.910	10000	J
3.		Unknown	4.022	9200	J
4.		Unknown	4.046	12000	J
5.		Unknown	4.416	40000	J
6.		Unknown	4.481	10000	J
7.		Unknown	4.651	72000	J
8.		Unknown	4.746	45000	J
9.	107-92-6	Butanoic acid	4.798	36000	J
10.		Unknown Organic Acid	5.157	9900	J
11.		Unknown Organic Acid	5.504	38000	J
12.		Unknown Organic Acid	6.240	24000	J
13.	103-82-2	Benzeneacetic acid	8.004	6700	J
14.	629-50-5	Tridecane	8.316	5600	J
15.	501-52-0	Hydrocinnamic acid	8.516	4900	J
16.	629-59-4	Tetradecane	8.875	7800	J
17.	544-63-8	Tetradecanoic acid	10.610	4900	J
18.	57-10-3	n-Hexadecanoic acid	11.492	72000	J
19.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.598	1900	J
20.	112-79-8	9-Octadecenoic acid, (E)-	12.169	15000	J
21.	57-11-4	Octadecanoic acid	12.245	6600	J
22.		Unknown	12.321	3500	J
23.		Unknown	12.527	2400	J
24.		Unknown	12.886	2800	J
25.		Unknown	12.957	6400	J
26.					
27.	SVOCTIC	Total SVOC TICs		460000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086972
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5407 SDG#: KVM54-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		560	1,400	5
10727	Benzo(a)anthracene	56-55-3	51	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	35	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	63	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		28	140	5
10727	Benzo(k)fluoranthene	207-08-9	31	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		560	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		560	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	560	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	55	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		840	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		560	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		560	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,400	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		560	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		560	1,400	5
10727	Fluoranthene	206-44-0	81	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086972
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5407 SDG#: KVM54-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	2,000		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		560	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		560	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		560	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	40	J	28	140	5
10727	Phenol	108-95-2	290		140	280	5
10727	Pyrene	129-00-0	75	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	4,400		210	570	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,800		140	430	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	430	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	430	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	430	1
06918	HMX	2691-41-0	N.D.		350	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		140	430	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	430	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	570	1
06918	3-Nitrotoluene	99-08-1	N.D.		350	710	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	570	1
06918	PETN	78-11-5	N.D.		2,800	8,500	1
06918	RDX	121-82-4	N.D.		180	430	1
06918	Tetryl	479-45-8	N.D.		230	570	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	430	1
06918	2,4,6-Trinitrotoluene	118-96-7	15,000		140	430	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086972
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5407 SDG#: KVM54-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	27,200		12.6	33.0	1
06944	Antimony	7440-36-0	N.D.		0.676	3.30	1
06935	Arsenic	7440-38-2	3.70		0.956	3.30	1
06946	Barium	7440-39-3	96.7		0.110	0.824	1
06947	Beryllium	7440-41-7	0.962		0.110	0.824	1
06949	Cadmium	7440-43-9	0.157	J	0.0709	0.824	1
01650	Calcium	7440-70-2	1,550		5.49	33.0	1
06951	Chromium	7440-47-3	22.0		0.161	2.47	1
06952	Cobalt	7440-48-4	7.40		0.133	0.824	1
06953	Copper	7440-50-8	39.4		0.461	1.65	1
01654	Iron	7439-89-6	35,500		5.49	33.0	1
06955	Lead	7439-92-1	269		0.527	2.47	1
01657	Magnesium	7439-95-4	1,940		2.75	16.5	1
06958	Manganese	7439-96-5	218		0.137	0.824	1
06961	Nickel	7440-02-0	16.0		0.379	1.65	1
01662	Potassium	7440-09-7	1,600		27.7	82.4	1
06936	Selenium	7782-49-2	5.82		1.37	3.30	1
06966	Silver	7440-22-4	1.54		0.198	0.824	1
01667	Sodium	7440-23-5	102	J	27.5	165	1
06925	Thallium	7440-28-0	N.D.		1.24	4.94	1
06971	Vanadium	7440-62-2	45.9		0.247	0.824	1
06972	Zinc	7440-66-6	58.0		1.27	3.30	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0413	J	0.0157	0.157	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	21,000		929	2,790	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 05:08	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086972
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5407 SDG#: KVM54-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 08:59	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:10	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/27/2015 16:10	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:10	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:20	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:20	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/21/2015 00:12	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5407

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086972
Sample wt/vol: 30.13(g/mL) g Lab File ID: oj1205.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40.5 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.334	9700	J
2.		Unknown	4.410	9000	J
3.		Unknown	4.469	9200	J
4.		Unknown Organic Acid	4.534	13000	J
5.		Unknown Aldol Condensate	4.645	53000	JB
6.	107-92-6	Butanoic acid	4.710	22000	J
7.		Unknown Organic Acid	5.010	12000	J
8.	109-52-4	Pentanoic acid	5.481	26000	J
9.	142-62-1	Hexanoic acid	6.222	15000	J
10.	103-82-2	Benzeneacetic acid	7.998	4100	J
11.	61141-72-8	Dodecane, 4,6-dimethyl-	8.145	3600	J
12.	629-50-5	Tridecane	8.316	8900	J
13.	501-52-0	Hydrocinnamic acid	8.510	4000	J
14.	629-59-4	Tetradecane	8.875	9600	J
15.		Unknown	10.363	5600	J
16.	544-63-8	Tetradecanoic acid	10.616	6800	J
17.		Unknown	11.298	5600	J
18.	57-10-3	n-Hexadecanoic acid	11.504	100000	J
19.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.604	3000	J
20.	112-80-1	Oleic Acid	12.174	24000	J
21.	57-11-4	Octadecanoic acid	12.251	10000	J
22.	1000333-61-8	cis-11,14-Eicosadienoic acid	12.321	3000	J
23.		Unknown	12.533	2700	J
24.		Unknown	12.892	4900	J
25.		Unknown	12.963	9800	J
26.					
27.	SVOCTIC	Total SVOC TICs		380000	JB
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086973
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:08 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5408 SDG#: KVM54-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		29	150	5
10727	Acenaphthylene	208-96-8	N.D.		29	150	5
10727	Acetophenone	98-86-2	N.D.		150	290	5
10727	Anthracene	120-12-7	N.D.		29	150	5
10727	Atrazine	1912-24-9	N.D.		290	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		580	1,500	5
10727	Benzo(a)anthracene	56-55-3	35	J	29	150	5
10727	Benzo(a)pyrene	50-32-8	32	J	29	150	5
10727	Benzo(b)fluoranthene	205-99-2	43	J	29	150	5
10727	Benzo(g,h,i)perylene	191-24-2	33	J	29	150	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		29	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	290	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	290	5
10727	Butylbenzylphthalate	85-68-7	N.D.		580	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		580	1,500	5
10727	Caprolactam	105-60-2	N.D.		290	1,500	5
10727	Carbazole	86-74-8	N.D.		150	290	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	290	5
10727	4-Chloroaniline	106-47-8	N.D.		290	580	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	290	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	290	5
10727	2-Chloronaphthalene	91-58-7	N.D.		58	290	5
10727	2-Chlorophenol	95-57-8	N.D.		150	290	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	290	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	290	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	48	J	29	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		29	150	5
10727	Dibenzofuran	132-64-9	N.D.		150	290	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		870	2,900	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	290	5
10727	Diethylphthalate	84-66-2	N.D.		580	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	290	5
10727	Dimethylphthalate	131-11-3	N.D.		580	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,400	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,700	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		580	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	200	J	150	290	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		580	1,500	5
10727	Fluoranthene	206-44-0	47	J	29	150	5
10727	Fluorene	86-73-7	N.D.		29	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		29	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	290	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,400	5
10727	Hexachloroethane	67-72-1	N.D.		290	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	30	J	29	150	5
10727	Isophorone	78-59-1	N.D.		150	290	5
10727	2-Methylnaphthalene	91-57-6	N.D.		29	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086973
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:08 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5408 SDG#: KVM54-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	290	5
10727	4-Methylphenol	106-44-5	2,000		150	290	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		29	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	290	5
10727	3-Nitroaniline	99-09-2	N.D.		580	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		580	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	290	5
10727	2-Nitrophenol	88-75-5	N.D.		150	290	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,400	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	290	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	290	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		580	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		290	1,500	5
10727	Phenanthrene	85-01-8	N.D.		29	150	5
10727	Phenol	108-95-2	230	J	150	290	5
10727	Pyrene	129-00-0	43	J	29	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	290	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	290	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,300		240	640	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,500		160	480	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	480	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		160	480	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	480	1
06918	HMX	2691-41-0	N.D.		400	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		160	480	1
06918	Nitroglycerin	55-63-0	N.D.		3,200	9,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		160	480	1
06918	2-Nitrotoluene	88-72-2	N.D.		320	640	1
06918	3-Nitrotoluene	99-08-1	2,000		400	800	1
06918	4-Nitrotoluene	99-99-0	N.D.		320	640	1
06918	PETN	78-11-5	N.D.		3,200	9,600	1
06918	RDX	121-82-4	N.D.		210	480	1
06918	Tetryl	479-45-8	N.D.		250	640	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		160	480	1
06918	2,4,6-Trinitrotoluene	118-96-7	19,000		160	480	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086973
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:08 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5408 SDG#: KVM54-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	19,900		13.2	34.3	1
06944	Antimony	7440-36-0	N.D.		0.704	3.43	1
06935	Arsenic	7440-38-2	N.D.		0.996	3.43	1
06946	Barium	7440-39-3	57.7		0.115	0.858	1
06947	Beryllium	7440-41-7	0.764	J	0.115	0.858	1
06949	Cadmium	7440-43-9	0.213	J	0.0738	0.858	1
01650	Calcium	7440-70-2	1,780		5.72	34.3	1
06951	Chromium	7440-47-3	23.9		0.168	2.58	1
06952	Cobalt	7440-48-4	11.1		0.139	0.858	1
06953	Copper	7440-50-8	43.5		0.481	1.72	1
01654	Iron	7439-89-6	42,400		5.72	34.3	1
06955	Lead	7439-92-1	305		0.549	2.58	1
01657	Magnesium	7439-95-4	1,650		2.87	17.2	1
06958	Manganese	7439-96-5	220		0.143	0.858	1
06961	Nickel	7440-02-0	22.1		0.395	1.72	1
01662	Potassium	7440-09-7	1,350		28.8	85.8	1
06936	Selenium	7782-49-2	8.67		1.43	3.43	1
06966	Silver	7440-22-4	1.89		0.206	0.858	1
01667	Sodium	7440-23-5	121	J	28.7	172	1
06925	Thallium	7440-28-0	N.D.		1.29	5.15	1
06971	Vanadium	7440-62-2	43.1		0.258	0.858	1
06972	Zinc	7440-66-6	64.2		1.32	3.43	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0375	J	0.0162	0.162	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	27,100		1,150	3,440	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	42.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/25/2015 05:34	William H Saadeh	5
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086973
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:08 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5408 SDG#: KVM54-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 09:42	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:13	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:13	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:23	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:22	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/21/2015 00:20	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5408

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086973
Sample wt/vol: 30.17(g/mL) g Lab File ID: oj1206.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 42.9 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/25/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.122	5400	J
2.513-85-9	2,3-Butanediol	3.904	15000	J
3.79-31-2	Propanoic acid, 2-methyl-	3.963	6200	J
4.107-92-6	Butanoic acid	4.375	27000	J
5.	Unknown	4.410	18000	J
6.	Unknown	4.510	22000	J
7.	Unknown	4.551	15000	J
8.	Unknown	4.645	52000	J
9.	Unknown Organic Acid	4.728	47000	J
10.	Unknown Organic Acid	5.004	11000	J
11.	Unknown Organic Acid	5.445	27000	J
12.	Unknown Organic Acid	6.216	17000	J
13.103-82-2	Benzeneacetic acid	7.992	3000	J
14.629-50-5	Tridecane	8.316	6000	J
15.629-59-4	Tetradecane	8.875	6500	J
16.	Unknown	10.386	54000	J
17.544-63-8	Tetradecanoic acid	10.610	3600	J
18.	Unknown	11.298	3900	J
19.19406-51-0	p-Toluidine, 3,5-dinitro-	11.374	4000	J
20.57-10-3	n-Hexadecanoic acid	11.486	60000	J
21.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.604	4100	J
22.112-79-8	9-Octadecenoic acid, (E)-	12.163	8400	J
23.	Unknown	12.186	7000	J
24.57-11-4	Octadecanoic acid	12.239	6700	J
25.	Unknown	12.957	3500	J
26.				
27.SVOCTIC	Total SVOC TICs		430000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086974
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5409 SDG#: KVM54-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	N.D.		27	140	5
10727	Benzo(a)pyrene	50-32-8	N.D.		27	140	5
10727	Benzo(b)fluoranthene	205-99-2	28	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		27	140	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	N.D.		27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,400	5
10727	Fluoranthene	206-44-0	37	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086974
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5409 SDG#: KVM54-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	2,900		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	N.D.		27	140	5
10727	Phenol	108-95-2	260	J	130	270	5
10727	Pyrene	129-00-0	35	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	11,000		220	580	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	9,200		150	440	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	440	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		150	440	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	440	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	440	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	440	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	580	1
06918	3-Nitrotoluene	99-08-1	2,100		360	730	1
06918	4-Nitrotoluene	99-99-0	N.D.		290	580	1
06918	PETN	78-11-5	N.D.		2,900	8,700	1
06918	RDX	121-82-4	N.D.		530	530	1
06918	Tetryl	479-45-8	420	J	230	580	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		150	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	33,000		730	2,200	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086974
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5409 SDG#: KVM54-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,200		12.2	31.7	1
06944	Antimony	7440-36-0	N.D.		0.650	3.17	1
06935	Arsenic	7440-38-2	N.D.		0.920	3.17	1
06946	Barium	7440-39-3	46.2		0.106	0.793	1
06947	Beryllium	7440-41-7	0.609	J	0.106	0.793	1
06949	Cadmium	7440-43-9	0.276	J	0.0682	0.793	1
01650	Calcium	7440-70-2	1,510		5.28	31.7	1
06951	Chromium	7440-47-3	22.3		0.155	2.38	1
06952	Cobalt	7440-48-4	12.1		0.128	0.793	1
06953	Copper	7440-50-8	37.2		0.444	1.59	1
01654	Iron	7439-89-6	40,100		5.28	31.7	1
06955	Lead	7439-92-1	185		0.508	2.38	1
01657	Magnesium	7439-95-4	1,240		2.65	15.9	1
06958	Manganese	7439-96-5	169		0.132	0.793	1
06961	Nickel	7440-02-0	25.0		0.365	1.59	1
01662	Potassium	7440-09-7	969		26.7	79.3	1
06936	Selenium	7782-49-2	7.81		1.32	3.17	1
06966	Silver	7440-22-4	1.66		0.190	0.793	1
01667	Sodium	7440-23-5	83.9	J	26.5	159	1
06925	Thallium	7440-28-0	N.D.		1.19	4.76	1
06971	Vanadium	7440-62-2	39.9		0.238	0.793	1
06972	Zinc	7440-66-6	47.6		1.22	3.17	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0279	J	0.0154	0.154	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	23,000		995	2,990	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	38.2		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/26/2015 17:06	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086974
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:18 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5409 SDG#: KVM54-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 10:24	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/04/2015 15:52	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:16	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/27/2015 16:16	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:16	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:26	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:28	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/21/2015 00:47	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002A	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5409

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086974
Sample wt/vol: 30.37(g/mL) g Lab File ID: oj1252.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 38.2 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 15 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.710	9400	J
2.	Unknown	4.028	13000	J
3.	Unknown	4.104	12000	J
4.	Unknown	4.346	28000	J
5.	Unknown	4.416	14000	J
6.	Unknown Organic Acid	4.481	30000	J
7.107-92-6	Butanoic acid	4.551	46000	J
8.	Unknown Organic Acid	5.169	12000	J
9.556-67-2	Cyclotetrasiloxane, octameth	5.863	11000	J
10.142-62-1	Hexanoic acid	6.004	24000	J
11.103-82-2	Benzeneacetic acid	7.745	5700	J
12.629-50-5	Tridecane	8.063	4700	J
13.57-10-3	n-Hexadecanoic acid	11.222	28000	J
14.112-79-8	9-Octadecenoic acid, (E)-	11.898	5900	J
15.	Unknown	12.686	3400	J
16.				
17.SVOCTIC	Total SVOC TICs		250000	J
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086975
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:20 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5410 SDG#: KVM54-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	62	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	45	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	75	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	38	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	48	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	76	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		830	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,300	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	120	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	37	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086975
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:20 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5410 SDG#: KVM54-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	1,800		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	59	J	28	140	5
10727	Phenol	108-95-2	230	J	140	280	5
10727	Pyrene	129-00-0	100	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	7,300		230	620	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,300		150	460	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	460	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		150	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	460	1
06918	HMX	2691-41-0	N.D.		390	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		150	460	1
06918	Nitroglycerin	55-63-0	N.D.		3,100	9,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	460	1
06918	2-Nitrotoluene	88-72-2	N.D.		310	620	1
06918	3-Nitrotoluene	99-08-1	N.D.		390	770	1
06918	4-Nitrotoluene	99-99-0	N.D.		310	620	1
06918	PETN	78-11-5	N.D.		3,100	9,300	1
06918	RDX	121-82-4	N.D.		200	460	1
06918	Tetryl	479-45-8	N.D.		250	620	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		150	460	1
06918	2,4,6-Trinitrotoluene	118-96-7	18,000		150	460	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

eurofins | Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681• www.lancasterlabs.com

Analysis Report

Sample Description: TNT-PS-H-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086975
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:20 by SL

Submitted: 10/13/2015 17:35
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Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5410 SDG#: KVM54-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,700		12.6	32.8	1
06944	Antimony	7440-36-0	N.D.		0.672	3.28	1
06935	Arsenic	7440-38-2	N.D.		0.951	3.28	1
06946	Barium	7440-39-3	48.7		0.110	0.820	1
06947	Beryllium	7440-41-7	0.717	J	0.110	0.820	1
06949	Cadmium	7440-43-9	0.207	J	0.0705	0.820	1
01650	Calcium	7440-70-2	1,440		5.46	32.8	1
06951	Chromium	7440-47-3	25.6		0.161	2.46	1
06952	Cobalt	7440-48-4	14.5		0.133	0.820	1
06953	Copper	7440-50-8	44.7		0.459	1.64	1
01654	Iron	7439-89-6	50,200		27.3	164	5
06955	Lead	7439-92-1	230		0.525	2.46	1
01657	Magnesium	7439-95-4	1,270		2.74	16.4	1
06958	Manganese	7439-96-5	194		0.136	0.820	1
06961	Nickel	7440-02-0	29.2		0.377	1.64	1
01662	Potassium	7440-09-7	1,120		27.6	82.0	1
06936	Selenium	7782-49-2	9.18		1.36	3.28	1
06966	Silver	7440-22-4	2.20		0.197	0.820	1
01667	Sodium	7440-23-5	69.7	J	27.4	164	1
06925	Thallium	7440-28-0	N.D.		1.23	4.92	1
06971	Vanadium	7440-62-2	42.3		0.246	0.820	1
06972	Zinc	7440-66-6	59.1		1.26	3.28	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0334	J	0.0166	0.166	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	25,400		1,040	3,110	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.8		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/26/2015 17:32	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086975
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:20 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5410 SDG#: KVM54-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 11:07	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/27/2015 16:22	Eric L Eby	5
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:19	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:19	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:30	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:30	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15293049531B	10/21/2015 00:57	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5410

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086975
Sample wt/vol: 30.48(g/mL) g Lab File ID: oj1253.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40.8 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 15 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown Organic Acid	4.340	44000	J
2.	Unknown Organic Acid	4.704	12000	J
3.	Unknown Organic Acid	5.128	12000	J
4.142-62-1	Hexanoic acid	5.951	12000	J
5.629-50-5	Tridecane	8.063	6600	J
6.629-59-4	Tetradecane	8.622	4500	J
7.	Unknown	10.116	30000	J
8.544-63-8	Tetradecanoic acid	10.363	9800	J
9.19406-51-0	p-Toluidine, 3,5-dinitro-	11.104	5800	J
10.57-10-3	n-Hexadecanoic acid	11.251	120000	J
11.35572-78-2	Benzenamine, 2-methyl-3,5-di	11.327	1300	J
12.112-79-8	9-Octadecenoic acid, (E)-	11.904	2700	J
13.112-80-1	Oleic Acid	11.927	2200	J
14.	Unknown	12.616	1200	J
15.	Unknown	12.698	3300	J
16.				
17.SVOCTIC	Total SVOC TICs		260000	J
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086976
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5411 SDG#: KVM54-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		30	150	5
10727	Acenaphthylene	208-96-8	N.D.		30	150	5
10727	Acetophenone	98-86-2	N.D.		150	300	5
10727	Anthracene	120-12-7	N.D.		30	150	5
10727	Atrazine	1912-24-9	N.D.		300	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		590	1,500	5
10727	Benzo(a)anthracene	56-55-3	N.D.		30	150	5
10727	Benzo(a)pyrene	50-32-8	N.D.		30	150	5
10727	Benzo(b)fluoranthene	205-99-2	N.D.		30	150	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		30	150	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		30	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	300	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	300	5
10727	Butylbenzylphthalate	85-68-7	N.D.		590	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		590	1,500	5
10727	Caprolactam	105-60-2	N.D.		300	1,500	5
10727	Carbazole	86-74-8	N.D.		150	300	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	300	5
10727	4-Chloroaniline	106-47-8	N.D.		300	590	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	300	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	300	5
10727	2-Chloronaphthalene	91-58-7	N.D.		59	290	5
10727	2-Chlorophenol	95-57-8	N.D.		150	300	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	300	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	300	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	N.D.		30	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		30	150	5
10727	Dibenzofuran	132-64-9	N.D.		150	300	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		890	3,000	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	300	5
10727	Diethylphthalate	84-66-2	N.D.		590	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	300	5
10727	Dimethylphthalate	131-11-3	N.D.		590	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,400	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,700	8,900	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		590	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		150	300	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		590	1,500	5
10727	Fluoranthene	206-44-0	36	J	30	150	5
10727	Fluorene	86-73-7	N.D.		30	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		30	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	300	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,400	5
10727	Hexachloroethane	67-72-1	N.D.		300	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		30	150	5
10727	Isophorone	78-59-1	N.D.		150	300	5
10727	2-Methylnaphthalene	91-57-6	N.D.		30	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086976
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5411 SDG#: KVM54-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	300	5
10727	4-Methylphenol	106-44-5	2,500		150	300	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		30	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	300	5
10727	3-Nitroaniline	99-09-2	N.D.		590	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		590	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	300	5
10727	2-Nitrophenol	88-75-5	N.D.		150	300	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,400	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	300	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	300	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		590	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		300	1,500	5
10727	Phenanthrene	85-01-8	N.D.		30	150	5
10727	Phenol	108-95-2	260	J	150	300	5
10727	Pyrene	129-00-0	35	J	30	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	300	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	300	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,100		230	610	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,400		150	460	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	460	1
06918	1,3-Dinitrobenzene	99-65-0	500		150	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	460	1
06918	HMX	2691-41-0	N.D.		380	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	460	1
06918	Nitroglycerin	55-63-0	N.D.		3,000	9,100	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	460	1
06918	2-Nitrotoluene	88-72-2	N.D.		300	610	1
06918	3-Nitrotoluene	99-08-1	2,000		380	760	1
06918	4-Nitrotoluene	99-99-0	N.D.		300	610	1
06918	PETN	78-11-5	N.D.		3,000	9,100	1
06918	RDX	121-82-4	N.D.		200	460	1
06918	Tetryl	479-45-8	540	J	240	610	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		150	460	1
06918	2,4,6-Trinitrotoluene	118-96-7	15,000		150	460	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086976
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5411 SDG#: KVM54-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,600		13.8	36.0	1
06944	Antimony	7440-36-0	N.D.		0.739	3.60	1
06935	Arsenic	7440-38-2	1.21	J	1.05	3.60	1
06946	Barium	7440-39-3	54.9		0.121	0.901	1
06947	Beryllium	7440-41-7	0.775	J	0.121	0.901	1
06949	Cadmium	7440-43-9	0.175	J	0.0775	0.901	1
01650	Calcium	7440-70-2	1,740		6.00	36.0	1
06951	Chromium	7440-47-3	23.3		0.177	2.70	1
06952	Cobalt	7440-48-4	11.0		0.146	0.901	1
06953	Copper	7440-50-8	42.1		0.505	1.80	1
01654	Iron	7439-89-6	41,500		6.00	36.0	1
06955	Lead	7439-92-1	265		0.577	2.70	1
01657	Magnesium	7439-95-4	1,480		3.01	18.0	1
06958	Manganese	7439-96-5	208		0.150	0.901	1
06961	Nickel	7440-02-0	22.7		0.414	1.80	1
01662	Potassium	7440-09-7	1,270		30.3	90.1	1
06936	Selenium	7782-49-2	6.40		1.50	3.60	1
06966	Silver	7440-22-4	1.79		0.216	0.901	1
01667	Sodium	7440-23-5	101	J	30.1	180	1
06925	Thallium	7440-28-0	N.D.		1.35	5.41	1
06971	Vanadium	7440-62-2	41.1		0.270	0.901	1
06972	Zinc	7440-66-6	60.4		1.39	3.60	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0341	J	0.0173	0.173	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	26,900		957	2,870	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	44.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/26/2015 17:57	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086976
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:22 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5411 SDG#: KVM54-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 11:49	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:25	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:25	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:33	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:32	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15294049532A	10/22/2015 02:23	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5411

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086976
Sample wt/vol: 30.38(g/mL) g Lab File ID: oj1254.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 44.5 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 15 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.098	16000	J
2.		Unknown Organic Acid	4.251	25000	J
3.		Unknown	4.287	11000	J
4.		Unknown	4.340	23000	J
5.		Unknown	4.410	13000	J
6.		Unknown	4.481	37000	J
7.	107-92-6	Butanoic acid	4.504	16000	J
8.		Unknown Organic Acid	5.175	16000	J
9.		Unknown Organic Acid	6.022	36000	J
10.		Unknown	7.745	5600	J
11.	501-52-0	Hydrocinnamic acid	8.257	4500	J
12.		Unknown	10.104	10000	J
13.	57-10-3	n-Hexadecanoic acid	11.222	39000	J
14.	112-80-1	Oleic Acid	11.898	5100	J
15.		Unknown	12.686	3500	J
16.					
17.	SVOCTIC	Total SVOC TICs		260000	J
18.					
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page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086977
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:25 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5412 SDG#: KVM54-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		140	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	61	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	51	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	70	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	36	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	43	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		270	1,400	5
10727	Carbazole	86-74-8	N.D.		140	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	71	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		820	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	270	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	270	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,200	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	150	J	140	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	93	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	39	J	27	140	5
10727	Isophorone	78-59-1	N.D.		140	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086977
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:25 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5412 SDG#: KVM54-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	270	5
10727	4-Methylphenol	106-44-5	2,900		140	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	270	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	270	5
10727	2-Nitrophenol	88-75-5	N.D.		140	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	29	J	27	140	5
10727	Phenol	108-95-2	320		140	270	5
10727	Pyrene	129-00-0	83	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	270	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	6,200		210	570	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,200		140	430	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	430	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	430	1
06918	1,4-Dinitrobenzene	100-25-4	410	J	140	430	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		140	430	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	430	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	570	1
06918	3-Nitrotoluene	99-08-1	1,500		360	710	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	570	1
06918	PETN	78-11-5	N.D.		2,800	8,500	1
06918	RDX	121-82-4	N.D.		180	430	1
06918	Tetryl	479-45-8	250	J	230	570	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	430	1
06918	2,4,6-Trinitrotoluene	118-96-7	17,000		140	430	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

eurofins | Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681• www.lancasterlabs.com

Analysis Report

Sample Description: TNT-PS-H-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086977
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:25 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5412 SDG#: KVM54-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,800		12.5	32.6	1
06944	Antimony	7440-36-0	N.D.		0.669	3.26	1
06935	Arsenic	7440-38-2	N.D.		0.946	3.26	1
06946	Barium	7440-39-3	60.3		0.109	0.816	1
06947	Beryllium	7440-41-7	0.615	J	0.109	0.816	1
06949	Cadmium	7440-43-9	0.171	J	0.0701	0.816	1
01650	Calcium	7440-70-2	1,470		5.43	32.6	1
06951	Chromium	7440-47-3	22.5		0.160	2.45	1
06952	Cobalt	7440-48-4	11.2		0.132	0.816	1
06953	Copper	7440-50-8	37.6		0.457	1.63	1
01654	Iron	7439-89-6	43,300		5.43	32.6	1
06955	Lead	7439-92-1	263		0.522	2.45	1
01657	Magnesium	7439-95-4	1,220		2.72	16.3	1
06958	Manganese	7439-96-5	184		0.135	0.816	1
06961	Nickel	7440-02-0	22.7		0.375	1.63	1
01662	Potassium	7440-09-7	1,050		27.4	81.6	1
06936	Selenium	7782-49-2	7.08		1.35	3.26	1
06966	Silver	7440-22-4	1.80		0.196	0.816	1
01667	Sodium	7440-23-5	78.5	J	27.2	163	1
06925	Thallium	7440-28-0	N.D.		1.22	4.89	1
06971	Vanadium	7440-62-2	38.2		0.245	0.816	1
06972	Zinc	7440-66-6	55.0		1.26	3.26	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0323	J	0.0157	0.157	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,200		680	2,040	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.3		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/26/2015 18:22	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086977
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:25 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5412 SDG#: KVM54-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 12:31	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:34	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:34	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:36	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:34	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15294049532A	10/22/2015 02:32	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5412

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086977
Sample wt/vol: 30.04(g/mL) g Lab File ID: oj1255.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 39.3 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 15 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.116	16000	J
2.		Unknown Organic Acid	4.251	14000	J
3.		Unknown Aldol Condensate	4.345	31000	JB
4.	107-92-6	Butanoic acid	4.487	40000	J
5.		Unknown Organic Acid	4.616	71000	J
6.		Unknown Organic Acid	5.210	17000	J
7.	142-62-1	Hexanoic acid	6.028	27000	J
8.		Unknown	7.898	4300	J
9.	629-50-5	Tridecane	8.069	7300	J
10.	501-52-0	Hydrocinnamic acid	8.263	4900	J
11.	629-59-4	Tetradecane	8.622	4600	J
12.	1002-84-2	Pentadecanoic acid	11.245	82000	J
13.	112-79-8	9-Octadecenoic acid, (E)-	11.916	9400	J
14.		Unknown	12.621	2400	J
15.		Unknown	12.704	5800	J
16.					
17.	SVOCTIC	Total SVOC TICs		340000	JB
18.					
19.					
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30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086978
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5413 SDG#: KVM54-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,300	5
10727	Benzo(a)anthracene	56-55-3	28	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	N.D.		27	140	5
10727	Benzo(b)fluoranthene	205-99-2	31	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		27	140	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		54	270	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	40	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		540	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	49	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086978
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5413 SDG#: KVM54-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	1,000		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	N.D.		27	140	5
10727	Phenol	108-95-2	290		130	270	5
10727	Pyrene	129-00-0	47	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	13,000		210	550	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	6,900		140	410	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	410	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	410	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	410	1
06918	HMX	2691-41-0	N.D.		340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		140	410	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	410	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	550	1
06918	3-Nitrotoluene	99-08-1	1,200		340	690	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	550	1
06918	PETN	78-11-5	N.D.		2,800	8,300	1
06918	RDX	121-82-4	N.D.		1,500	1,500	1
06918	Tetryl	479-45-8	N.D.		220	550	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	410	1
06918	2,4,6-Trinitrotoluene	118-96-7	20,000		140	410	1

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086978
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5413 SDG#: KVM54-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	20,000		11.9	31.1	1
06944	Antimony	7440-36-0	N.D.		0.638	3.11	1
06935	Arsenic	7440-38-2	1.98	J	0.903	3.11	1
06946	Barium	7440-39-3	59.6		0.104	0.778	1
06947	Beryllium	7440-41-7	0.731	J	0.104	0.778	1
06949	Cadmium	7440-43-9	0.149	J	0.0669	0.778	1
01650	Calcium	7440-70-2	1,740		5.18	31.1	1
06951	Chromium	7440-47-3	18.6		0.153	2.33	1
06952	Cobalt	7440-48-4	6.69		0.126	0.778	1
06953	Copper	7440-50-8	34.7		0.436	1.56	1
01654	Iron	7439-89-6	29,300		5.18	31.1	1
06955	Lead	7439-92-1	308		0.498	2.33	1
01657	Magnesium	7439-95-4	1,460		2.60	15.6	1
06958	Manganese	7439-96-5	207		0.129	0.778	1
06961	Nickel	7440-02-0	12.9		0.358	1.56	1
01662	Potassium	7440-09-7	1,190		26.1	77.8	1
06936	Selenium	7782-49-2	3.23		1.29	3.11	1
06966	Silver	7440-22-4	1.32		0.187	0.778	1
01667	Sodium	7440-23-5	78.8	J	26.0	156	1
06925	Thallium	7440-28-0	N.D.		1.17	4.67	1
06971	Vanadium	7440-62-2	36.8		0.233	0.778	1
06972	Zinc	7440-66-6	50.1		1.20	3.11	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0299	J	0.0158	0.158	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	31,700		995	2,990	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	38.8		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 10:45	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086978
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:35 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5413 SDG#: KVM54-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 13:14	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:37	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:37	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:39	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:36	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15294049532A	10/22/2015 02:41	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5413

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086978
Sample wt/vol: 30.46(g/mL) g Lab File ID: oj1284.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 38.8 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 15 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Aldol Condensate	4.240	24000	J
2.		Unknown	4.322	20000	J
3.	107-92-6	Butanoic acid	4.404	36000	J
4.		Unknown Organic Acid	4.434	11000	J
5.		Unknown Organic Acid	4.469	17000	J
6.	109-52-4	Pentanoic acid	5.122	17000	J
7.	142-62-1	Hexanoic acid	5.928	23000	J
8.	629-59-4	Tetradecane	7.980	6300	J
9.	501-52-0	Hydrocinnamic acid	8.169	4300	J
10.	629-50-5	Tridecane	8.539	4100	J
11.		Unknown	10.939	11000	J
12.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.016	6400	J
13.	57-10-3	n-Hexadecanoic acid	11.133	22000	J
14.	112-79-8	9-Octadecenoic acid, (E)-	11.821	8900	J
15.		Unknown	12.610	4600	J
16.					
17.	SVOCTIC	Total SVOC TICs		220000	J
18.					
19.					
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27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086979
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:38 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5414 SDG#: KVM54-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		140	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	240		27	140	5
10727	Benzo(a)pyrene	50-32-8	140		27	140	5
10727	Benzo(b)fluoranthene	205-99-2	190		27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	73	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	120	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		270	1,400	5
10727	Carbazole	86-74-8	N.D.		140	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	220		27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		820	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	270	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	270	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,100	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,200	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	250		27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,100	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	67	J	27	140	5
10727	Isophorone	78-59-1	N.D.		140	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086979
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:38 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5414 SDG#: KVM54-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	270	5
10727	4-Methylphenol	106-44-5	200	J	140	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	270	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	270	5
10727	2-Nitrophenol	88-75-5	N.D.		140	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,100	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	46	J	27	140	5
10727	Phenol	108-95-2	N.D.		140	270	5
10727	Pyrene	129-00-0	200		27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	17,000		220	580	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	10,000		150	440	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	440	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		150	440	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	440	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	440	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	440	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	580	1
06918	3-Nitrotoluene	99-08-1	N.D.		1,600	1,600	1
06918	4-Nitrotoluene	99-99-0	N.D.		290	580	1
06918	PETN	78-11-5	N.D.		2,900	8,800	1
06918	RDX	121-82-4	N.D.		190	440	1
06918	Tetryl	479-45-8	N.D.		230	580	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		150	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	64,000		730	2,200	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681• www.lancasterlabs.com

Analysis Report

Sample Description: TNT-PS-I-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086979
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:38 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5414 SDG#: KVM54-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,400		12.3	32.0	1
06944	Antimony	7440-36-0	N.D.		0.656	3.20	1
06935	Arsenic	7440-38-2	1.32	J	0.928	3.20	1
06946	Barium	7440-39-3	50.7		0.107	0.800	1
06947	Beryllium	7440-41-7	0.611	J	0.107	0.800	1
06949	Cadmium	7440-43-9	0.178	J	0.0688	0.800	1
01650	Calcium	7440-70-2	1,710		5.33	32.0	1
06951	Chromium	7440-47-3	20.7		0.157	2.40	1
06952	Cobalt	7440-48-4	8.64		0.130	0.800	1
06953	Copper	7440-50-8	35.3		0.448	1.60	1
01654	Iron	7439-89-6	32,600		5.33	32.0	1
06955	Lead	7439-92-1	224		0.512	2.40	1
01657	Magnesium	7439-95-4	1,240		2.67	16.0	1
06958	Manganese	7439-96-5	196		0.133	0.800	1
06961	Nickel	7440-02-0	16.9		0.368	1.60	1
01662	Potassium	7440-09-7	941		26.9	80.0	1
06936	Selenium	7782-49-2	5.32		1.33	3.20	1
06966	Silver	7440-22-4	1.48		0.192	0.800	1
01667	Sodium	7440-23-5	79.0	J	26.7	160	1
06925	Thallium	7440-28-0	N.D.		1.20	4.80	1
06971	Vanadium	7440-62-2	33.5		0.240	0.800	1
06972	Zinc	7440-66-6	42.2		1.23	3.20	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0277	J	0.0162	0.162	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	29,800		913	2,740	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	39.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 11:11	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086979
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:38 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5414 SDG#: KVM54-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 13:56	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/04/2015 16:34	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:40	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:40	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:48	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:38	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15294049532A	10/22/2015 02:50	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5414

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086979
Sample wt/vol: 30.35(g/mL) g Lab File ID: oj1285.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 39.9 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 15 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.063	16000	J
2.	556-67-2	Cyclotetrasiloxane, octameth	5.781	16000	J
3.	142-62-1	Hexanoic acid	5.881	14000	J
4.	66563-30-2	Bacchotricuneatin c	7.816	5100	J
5.	629-50-5	Tridecane	7.981	7100	J
6.	629-59-4	Tetradecane	8.539	5100	J
7.		Unknown	10.022	14000	J
8.		Unknown	10.939	13000	J
9.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.022	12000	J
10.	57-10-3	n-Hexadecanoic acid	11.145	46000	J
11.	60-33-3	9,12-Octadecadienoic acid (Z	11.798	2400	J
12.	112-79-8	9-Octadecenoic acid, (E)-	11.822	9100	J
13.		Unknown	11.974	2000	J
14.		Unknown	12.539	3500	J
15.		Unknown	12.610	3100	J
16.					
17.	SVOCTIC	Total SVOC TICs		170000	J
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086980
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:40 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5415 SDG#: KVM54-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		550	1,400	5
10727	Benzo(a)anthracene	56-55-3	97	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	63	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	110	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	43	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	48	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		550	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		550	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	550	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		55	270	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	90	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		830	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		550	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		550	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,300	5
10727	2,4-Dinitrotoluene	121-14-2	860	J	550	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	380		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		550	1,400	5
10727	Fluoranthene	206-44-0	140	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	39	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086980
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:40 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5415 SDG#: KVM54-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	310		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		550	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		550	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		550	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	64	J	28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	95	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	34,000		1,100	2,900	5
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	24,000		730	2,200	5
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	440	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		150	440	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	440	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	440	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	440	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	580	1
06918	3-Nitrotoluene	99-08-1	1,400		360	730	1
06918	4-Nitrotoluene	99-99-0	N.D.		290	580	1
06918	PETN	78-11-5	N.D.		2,900	8,700	1
06918	RDX	121-82-4	N.D.		1,200	1,200	1
06918	Tetryl	479-45-8	N.D.		230	580	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		150	440	1
06918	2,4,6-Trinitrotoluene	118-96-7	28,000		730	2,200	5

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086980
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:40 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5415 SDG#: KVM54-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,400		12.5	32.5	1
06944	Antimony	7440-36-0	N.D.		0.667	3.25	1
06935	Arsenic	7440-38-2	1.56	J	0.943	3.25	1
06946	Barium	7440-39-3	50.3		0.109	0.813	1
06947	Beryllium	7440-41-7	0.637	J	0.109	0.813	1
06949	Cadmium	7440-43-9	0.194	J	0.0699	0.813	1
01650	Calcium	7440-70-2	1,490		5.42	32.5	1
06951	Chromium	7440-47-3	19.8		0.159	2.44	1
06952	Cobalt	7440-48-4	7.39		0.132	0.813	1
06953	Copper	7440-50-8	31.8		0.455	1.63	1
01654	Iron	7439-89-6	32,400		5.42	32.5	1
06955	Lead	7439-92-1	228		0.520	2.44	1
01657	Magnesium	7439-95-4	1,310		2.72	16.3	1
06958	Manganese	7439-96-5	170		0.135	0.813	1
06961	Nickel	7440-02-0	14.5		0.374	1.63	1
01662	Potassium	7440-09-7	1,070		27.3	81.3	1
06936	Selenium	7782-49-2	5.09		1.35	3.25	1
06966	Silver	7440-22-4	1.42		0.195	0.813	1
01667	Sodium	7440-23-5	79.2	J	27.2	163	1
06925	Thallium	7440-28-0	N.D.		1.22	4.88	1
06971	Vanadium	7440-62-2	36.3		0.244	0.813	1
06972	Zinc	7440-66-6	40.6		1.25	3.25	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0248	J	0.0160	0.160	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	22,600		1,040	3,110	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.3		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 11:38	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086980
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:40 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5415 SDG#: KVM54-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 14:39	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 15:02	James H Place	5
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:43	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:43	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:52	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:40	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15294049532A	10/22/2015 02:58	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5415

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086980
Sample wt/vol: 30.23(g/mL) g Lab File ID: oj1286.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40.3 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 15 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Aldol Condensate	4.234	24000	JB
2.	61141-72-8	Dodecane, 4,6-dimethyl-	7.816	6700	J
3.	629-50-5	Tridecane	7.986	11000	J
4.		Unknown Cycloalkane	8.275	3600	J
5.	629-59-4	Tetradecane	8.545	6000	J
6.		Unknown	10.033	41000	J
7.		Unknown	10.945	15000	J
8.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.027	22000	J
9.	57-10-3	n-Hexadecanoic acid	11.157	68000	J
10.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.251	2700	J
11.	60-33-3	9,12-Octadecadienoic acid (Z	11.810	4500	J
12.	112-79-8	9-Octadecenoic acid, (E)-	11.833	9800	J
13.		Unknown	11.980	2900	J
14.		Unknown	12.545	4700	J
15.		Unknown	12.621	6300	J
16.					
17.	SVOCTIC	Total SVOC TICs		230000	JB
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086981
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:43 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5416 SDG#: KVM54-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		570	1,400	5
10727	Benzo(a)anthracene	56-55-3	N.D.		28	140	5
10727	Benzo(a)pyrene	50-32-8	N.D.		28	140	5
10727	Benzo(b)fluoranthene	205-99-2	33	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		28	140	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		570	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		570	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	570	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		57	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	30	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		850	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		570	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		570	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,300	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,600	8,500	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		570	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		570	1,400	5
10727	Fluoranthene	206-44-0	41	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,300	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086981
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:43 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5416 SDG#: KVM54-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	1,500		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		570	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		570	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,300	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		570	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	N.D.		28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	35	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	16,000		220	580	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	12,000		140	430	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	430	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	430	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	430	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		140	430	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,700	1
06918	1-Nitronaphthalene	86-57-7	190	J	140	430	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	580	1
06918	3-Nitrotoluene	99-08-1	1,600		360	720	1
06918	4-Nitrotoluene	99-99-0	N.D.		290	580	1
06918	PETN	78-11-5	N.D.		2,900	8,700	1
06918	RDX	121-82-4	N.D.		1,100	1,100	1
06918	Tetryl	479-45-8	N.D.		230	580	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	430	1
06918	2,4,6-Trinitrotoluene	118-96-7	280,000		2,900	8,700	20
	Reporting limits were raised due to interference from the sample matrix.						

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086981
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:43 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5416 SDG#: KVM54-16

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,700		13.1	34.3	1
06944	Antimony	7440-36-0	N.D.		0.703	3.43	1
06935	Arsenic	7440-38-2	1.82	J	0.995	3.43	1
06946	Barium	7440-39-3	51.8		0.115	0.858	1
06947	Beryllium	7440-41-7	0.686	J	0.115	0.858	1
06949	Cadmium	7440-43-9	0.168	J	0.0738	0.858	1
01650	Calcium	7440-70-2	1,430		5.71	34.3	1
06951	Chromium	7440-47-3	23.7		0.168	2.57	1
06952	Cobalt	7440-48-4	9.23		0.139	0.858	1
06953	Copper	7440-50-8	33.2		0.480	1.72	1
01654	Iron	7439-89-6	34,900		5.71	34.3	1
06955	Lead	7439-92-1	233		0.549	2.57	1
01657	Magnesium	7439-95-4	1,340		2.86	17.2	1
06958	Manganese	7439-96-5	184		0.142	0.858	1
06961	Nickel	7440-02-0	16.9		0.395	1.72	1
01662	Potassium	7440-09-7	1,010		28.8	85.8	1
06936	Selenium	7782-49-2	7.00		1.42	3.43	1
06966	Silver	7440-22-4	1.49		0.206	0.858	1
01667	Sodium	7440-23-5	69.4	J	28.6	172	1
06925	Thallium	7440-28-0	N.D.		1.29	5.15	1
06971	Vanadium	7440-62-2	38.1		0.257	0.858	1
06972	Zinc	7440-66-6	42.6		1.32	3.43	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0250	J	0.0163	0.163	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	17,300		717	2,150	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.7		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 12:04	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086981
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:43 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5416 SDG#: KVM54-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/28/2015 15:22	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 15:44	James H Place	20
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:46	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:46	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:55	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:42	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/22/2015 23:51	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5416

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086981
Sample wt/vol: 30.22(g/mL) g Lab File ID: oj1287.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 41.7 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 15 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.087	13000	J
2.		Unknown	4.163	16000	J
3.		Unknown	4.204	10000	J
4.		Unknown	4.240	17000	J
5.		Unknown	4.345	14000	J
6.	107-92-6	Butanoic acid	4.404	32000	J
7.		Unknown Carboxylic Acid	5.092	16000	J
8.	556-67-2	Cyclotetrasiloxane, octameth	5.781	17000	J
9.	142-62-1	Hexanoic acid	5.939	28000	J
10.	629-50-5	Tridecane	7.981	4500	J
11.		Unknown	10.027	29000	J
12.		Unknown	10.933	5400	J
13.	57-10-3	n-Hexadecanoic acid	11.133	27000	J
14.	112-80-1	Oleic Acid	11.816	6600	J
15.		Unknown	12.604	3300	J
16.					
17.	SVOCTIC	Total SVOC TICs		240000	J
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086982
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:27 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5417 SDG#: KVM54-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		130	680	5
10727	Acenaphthylene	208-96-8	N.D.		130	680	5
10727	Acetophenone	98-86-2	N.D.		660	1,300	5
10727	Anthracene	120-12-7	N.D.		130	680	5
10727	Atrazine	1912-24-9	N.D.		1,300	6,600	5
10727	Benzaldehyde	100-52-7	N.D.		2,700	6,600	5
10727	Benzo(a)anthracene	56-55-3	N.D.		130	680	5
10727	Benzo(a)pyrene	50-32-8	N.D.		130	680	5
10727	Benzo(b)fluoranthene	205-99-2	N.D.		130	680	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		130	680	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		130	680	5
10727	1,1'-Biphenyl	92-52-4	N.D.		660	1,300	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		660	1,300	5
10727	Butylbenzylphthalate	85-68-7	N.D.		2,700	6,600	5
10727	Di-n-butylphthalate	84-74-2	N.D.		2,700	6,600	5
10727	Caprolactam	105-60-2	N.D.		1,300	6,600	5
10727	Carbazole	86-74-8	N.D.		660	1,300	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		660	1,300	5
10727	4-Chloroaniline	106-47-8	N.D.		1,300	2,700	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		660	1,300	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		660	1,300	5
10727	2-Chloronaphthalene	91-58-7	N.D.		270	1,300	5
10727	2-Chlorophenol	95-57-8	N.D.		660	1,300	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		660	1,300	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		660	1,300	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	N.D.		130	680	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		130	680	5
10727	Dibenzofuran	132-64-9	N.D.		660	1,300	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		4,000	13,000	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		660	1,300	5
10727	Diethylphthalate	84-66-2	N.D.		2,700	6,600	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		660	1,300	5
10727	Dimethylphthalate	131-11-3	N.D.		2,700	6,600	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		6,600	20,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		12,000	40,000	5
10727	2,4-Dinitrotoluene	121-14-2	3,200	J	2,700	6,600	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		660	1,300	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2,700	6,800	5
10727	Fluoranthene	206-44-0	N.D.		130	680	5
10727	Fluorene	86-73-7	N.D.		130	680	5
10727	Hexachlorobenzene	118-74-1	N.D.		130	680	5
10727	Hexachlorobutadiene	87-68-3	N.D.		660	1,300	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		6,600	20,000	5
10727	Hexachloroethane	67-72-1	N.D.		1,300	6,600	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		130	680	5
10727	Isophorone	78-59-1	N.D.		660	1,300	5
10727	2-Methylnaphthalene	91-57-6	N.D.		130	680	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086982
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:27 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5417 SDG#: KVM54-17

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.	660	1,300	5
10727	4-Methylphenol	106-44-5	N.D.	660	1,300	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	130	680	5
10727	2-Nitroaniline	88-74-4	N.D.	660	1,300	5
10727	3-Nitroaniline	99-09-2	N.D.	2,700	6,600	5
10727	4-Nitroaniline	100-01-6	N.D.	2,700	6,600	5
10727	Nitrobenzene	98-95-3	N.D.	660	1,300	5
10727	2-Nitrophenol	88-75-5	N.D.	660	1,300	5
10727	4-Nitrophenol	100-02-7	N.D.	6,600	20,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	660	1,300	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	660	1,300	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	2,700	6,600	5
10727	Pentachlorophenol	87-86-5	N.D.	1,300	6,800	5
10727	Phenanthrene	85-01-8	N.D.	130	680	5
10727	Phenol	108-95-2	N.D.	660	1,300	5
10727	Pyrene	129-00-0	N.D.	130	680	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	660	1,300	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	660	1,300	5
	Reporting limits were raised due to interference from the sample matrix.					
00886 SVOA TIC Interpretive(25)						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	53,000	2,100	5,600	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	58,000	1,400	4,200	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	420	1
06918	1,3-Dinitrobenzene	99-65-0	470	140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	140	420	1
06918	HMX	2691-41-0	N.D.	350	1,000	1
06918	Nitrobenzene	98-95-3	N.D.	140	420	1
06918	Nitroglycerin	55-63-0	N.D.	2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.	280	560	1
06918	3-Nitrotoluene	99-08-1	N.D.	350	690	1
06918	4-Nitrotoluene	99-99-0	N.D.	280	560	1
06918	PETN	78-11-5	N.D.	2,800	8,300	1
06918	RDX	121-82-4	N.D.	180	420	1
06918	Tetryl	479-45-8	N.D.	220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	2,800	140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,000,000	28,000	83,000	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086982
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:27 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5417 SDG#: KVM54-17

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,500		12.2	31.9	1
06944	Antimony	7440-36-0	N.D.		0.655	3.19	1
06935	Arsenic	7440-38-2	2.37	J	0.927	3.19	1
06946	Barium	7440-39-3	50.6		0.107	0.799	1
06947	Beryllium	7440-41-7	0.669	J	0.107	0.799	1
06949	Cadmium	7440-43-9	0.109	J	0.0687	0.799	1
01650	Calcium	7440-70-2	1,090		5.32	31.9	1
06951	Chromium	7440-47-3	14.7		0.157	2.40	1
06952	Cobalt	7440-48-4	4.69		0.129	0.799	1
06953	Copper	7440-50-8	25.7		0.447	1.60	1
01654	Iron	7439-89-6	23,900		5.32	31.9	1
06955	Lead	7439-92-1	194		0.511	2.40	1
01657	Magnesium	7439-95-4	1,240		2.67	16.0	1
06958	Manganese	7439-96-5	190		0.133	0.799	1
06961	Nickel	7440-02-0	7.92		0.367	1.60	1
01662	Potassium	7440-09-7	816		26.8	79.9	1
06936	Selenium	7782-49-2	2.19	J	1.33	3.19	1
06966	Silver	7440-22-4	1.11		0.192	0.799	1
01667	Sodium	7440-23-5	60.9	J	26.7	160	1
06925	Thallium	7440-28-0	N.D.		1.20	4.79	1
06971	Vanadium	7440-62-2	35.1		0.240	0.799	1
06972	Zinc	7440-66-6	33.5		1.23	3.19	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0257	J	0.0155	0.155	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	39,000		939	2,820	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	37.4		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 12:31	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086982
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:27 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5417 SDG#: KVM54-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/29/2015 07:38	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 16:27	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 17:09	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:49	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:49	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 11:58	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:44	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 00:16	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5417

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086982
Sample wt/vol: 30.09(g/mL) g Lab File ID: oj1288.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 37.4 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 5 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	Cyclotetrasiloxane, octameth	5.781	64000	J
2.	541-02-6	Cyclopentasiloxane, decameth	6.922	8000	J
3.		Unknown	10.075	550000	J
4.	19406-51-0	p-Toluidine, 3,5-dinitro-	11.016	26000	J
5.	35572-78-2	Benzenamine, 2-methyl-3,5-di	11.239	24000	J
6.					
7.	SVOCTIC	Total SVOC TICs		680000	J
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page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086983
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5418 SDG#: KVM54-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		560	1,400	5
10727	Benzo(a)anthracene	56-55-3	52	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	55	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	77	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	29	J	28	140	5
10727	Benzo(k)fluoranthene	207-08-9	29	J	28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		560	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		560	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	560	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	60	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		840	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		560	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		560	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,400	5
10727	2,4-Dinitrotoluene	121-14-2	2,000		560	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	450		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		560	1,400	5
10727	Fluoranthene	206-44-0	66	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	33	J	28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086983
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5418 SDG#: KVM54-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	N.D.		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		560	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		560	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		560	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	34	J	28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	82	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	58,000		2,100	5,700	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	52,000		1,400	4,300	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	430	1
06918	1,3-Dinitrobenzene	99-65-0	470		140	430	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	430	1
06918	HMX	2691-41-0	N.D.		360	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		140	430	1
06918	Nitroglycerin	55-63-0	N.D.		2,900	8,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	430	1
06918	2-Nitrotoluene	88-72-2	N.D.		290	570	1
06918	3-Nitrotoluene	99-08-1	N.D.		360	720	1
06918	4-Nitrotoluene	99-99-0	N.D.		290	570	1
06918	PETN	78-11-5	N.D.		2,900	8,600	1
06918	RDX	121-82-4	N.D.		190	430	1
06918	Tetryl	479-45-8	N.D.		230	570	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,400		140	430	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,300,000		29,000	86,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086983
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5418 SDG#: KVM54-18

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	22,800		12.7	33.1	1
06944	Antimony	7440-36-0	2.72	J	0.679	3.31	1
06935	Arsenic	7440-38-2	3.35		0.961	3.31	1
06946	Barium	7440-39-3	68.2		0.111	0.828	1
06947	Beryllium	7440-41-7	0.876		0.111	0.828	1
06949	Cadmium	7440-43-9	0.676	J	0.0712	0.828	1
01650	Calcium	7440-70-2	1,110		5.51	33.1	1
06951	Chromium	7440-47-3	19.6		0.162	2.48	1
06952	Cobalt	7440-48-4	6.85		0.134	0.828	1
06953	Copper	7440-50-8	24.9		0.464	1.66	1
01654	Iron	7439-89-6	27,300		5.51	33.1	1
06955	Lead	7439-92-1	255		0.530	2.48	1
01657	Magnesium	7439-95-4	1,640		2.77	16.6	1
06958	Manganese	7439-96-5	235		0.137	0.828	1
06961	Nickel	7440-02-0	10.6		0.381	1.66	1
01662	Potassium	7440-09-7	985		27.8	82.8	1
06936	Selenium	7782-49-2	4.81		1.37	3.31	1
06966	Silver	7440-22-4	N.D.		0.199	0.828	1
01667	Sodium	7440-23-5	74.9	J	27.7	166	1
06925	Thallium	7440-28-0	N.D.		1.24	4.97	1
06971	Vanadium	7440-62-2	43.0		0.248	0.828	1
06972	Zinc	7440-66-6	46.8		1.28	3.31	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0296	J	0.0161	0.161	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	12,200		559	1,680	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	40.8		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 12:57	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086983
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:30 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5418 SDG#: KVM54-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/29/2015 08:21	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 17:51	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 18:34	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 12:01	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152945708004	10/27/2015 16:52	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:46	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 00:25	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5418

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086983
Sample wt/vol: 30.17(g/mL) g Lab File ID: oj1289.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 40.8 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 12 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	Cyclotetrasiloxane, octameth	5.781	16000	J
2. 541-02-6	Cyclopentasiloxane, decameth	6.922	1900	J
3. 112-40-3	Dodecane	7.381	1100	J
4. 75163-97-2	Octadecane, 2,6-dimethyl-	7.816	1700	J
5. 540-97-6	Cyclohexasiloxane, dodecamet	7.957	1700	J
6. 629-50-5	Tridecane	7.981	3400	J
7. 629-59-4	Tetradecane	8.539	2400	J
8.	Unknown	10.110	290000	J
9. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.027	10000	J
10.	Unknown	11.092	1500	J
11. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.251	9700	J
12.	Unknown	11.392	1200	J
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14. SVOCTIC	Total SVOC TICs		340000	J
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FORM I SV-1

Sample Description: TNT-PS-J-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086984
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:32 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5419 SDG#: KVM54-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		130	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		510	1,300	5
10727	Benzo(a)anthracene	56-55-3	28	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	28	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	39	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		25	130	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		510	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		510	1,300	5
10727	Caprolactam	105-60-2	N.D.		250	1,300	5
10727	Carbazole	86-74-8	N.D.		130	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	510	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		51	250	5
10727	2-Chlorophenol	95-57-8	N.D.		130	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	43	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		25	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		760	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	250	5
10727	Diethylphthalate	84-66-2	N.D.		510	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	250	5
10727	Dimethylphthalate	131-11-3	N.D.		510	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	3,800	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,300	7,600	5
10727	2,4-Dinitrotoluene	121-14-2	2,100		510	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	450		130	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		510	1,300	5
10727	Fluoranthene	206-44-0	53	J	25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	3,800	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		25	130	5
10727	Isophorone	78-59-1	N.D.		130	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086984
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:32 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5419 SDG#: KVM54-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	250	5
10727	4-Methylphenol	106-44-5	N.D.		130	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	250	5
10727	3-Nitroaniline	99-09-2	N.D.		510	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		510	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	250	5
10727	2-Nitrophenol	88-75-5	N.D.		130	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	3,800	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		510	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	31	J	25	130	5
10727	Phenol	108-95-2	N.D.		130	250	5
10727	Pyrene	129-00-0	51	J	25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	250	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	42,000		2,000	5,300	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	40,000		1,300	4,000	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	400	1
06918	1,3-Dinitrobenzene	99-65-0	850		130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	400	1
06918	HMX	2691-41-0	N.D.		330	990	1
06918	Nitrobenzene	98-95-3	N.D.		130	400	1
06918	Nitroglycerin	55-63-0	N.D.		2,600	7,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	400	1
06918	2-Nitrotoluene	88-72-2	N.D.		260	530	1
06918	3-Nitrotoluene	99-08-1	N.D.		330	660	1
06918	4-Nitrotoluene	99-99-0	N.D.		260	530	1
06918	PETN	78-11-5	N.D.		2,600	7,900	1
06918	RDX	121-82-4	N.D.		170	400	1
06918	Tetryl	479-45-8	N.D.		210	530	1
06918	1,3,5-Trinitrobenzene	99-35-4	5,500		130	400	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,100,000		26,000	79,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086984
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:32 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5419 SDG#: KVM54-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,000		11.2	29.1	1
06944	Antimony	7440-36-0	N.D.		0.597	2.91	1
06935	Arsenic	7440-38-2	1.58	J	0.845	2.91	1
06946	Barium	7440-39-3	46.3		0.0976	0.728	1
06947	Beryllium	7440-41-7	0.619	J	0.0976	0.728	1
06949	Cadmium	7440-43-9	0.160	J	0.0626	0.728	1
01650	Calcium	7440-70-2	800		4.85	29.1	1
06951	Chromium	7440-47-3	13.8		0.143	2.18	1
06952	Cobalt	7440-48-4	4.07		0.118	0.728	1
06953	Copper	7440-50-8	22.2		0.408	1.46	1
01654	Iron	7439-89-6	23,000		4.85	29.1	1
06955	Lead	7439-92-1	177		0.466	2.18	1
01657	Magnesium	7439-95-4	1,200		2.43	14.6	1
06958	Manganese	7439-96-5	159		0.121	0.728	1
06961	Nickel	7440-02-0	6.88		0.335	1.46	1
01662	Potassium	7440-09-7	745		24.5	72.8	1
06936	Selenium	7782-49-2	4.51		1.21	2.91	1
06966	Silver	7440-22-4	1.03		0.175	0.728	1
01667	Sodium	7440-23-5	50.7	J	24.3	146	1
06925	Thallium	7440-28-0	N.D.		1.09	4.37	1
06971	Vanadium	7440-62-2	31.6		0.218	0.728	1
06972	Zinc	7440-66-6	27.7		1.12	2.91	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0249	J	0.0144	0.144	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	19,200		667	2,000	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	34.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 13:24	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086984
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:32 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5419 SDG#: KVM54-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/29/2015 09:04	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 19:16	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 19:59	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 16:58	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 16:58	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 12:04	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:52	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 00:34	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5419

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086984
Sample wt/vol: 30.18(g/mL) g Lab File ID: oj1290.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 34.6 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 14 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	Cyclotetrasiloxane, octameth	5.781	13000	J
2. 541-02-6	Cyclopentasiloxane, decameth	6.922	1400	J
3. 112-40-3	Dodecane	7.381	1100	J
4.	Unknown Alkane	7.816	1800	J
5. 540-97-6	Cyclohexasiloxane, dodecamet	7.957	1600	J
6. 629-50-5	Tridecane	7.981	3000	J
7.	Unknown Cycloalkane	8.269	1100	J
8. 629-59-4	Tetradecane	8.539	2400	J
9.	Unknown	10.139	340000	J
10.	Unknown	10.169	1600	J
11. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.027	9000	J
12.	Unknown	11.092	1300	J
13. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.251	9200	J
14.	Unknown	11.392	1100	J
15.				
16. SVOCTIC	Total SVOC TICs		390000	J
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086985
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:34 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5420 SDG#: KVM54-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		25	130	5
10727	Acenaphthylene	208-96-8	N.D.		25	130	5
10727	Acetophenone	98-86-2	N.D.		130	250	5
10727	Anthracene	120-12-7	N.D.		25	130	5
10727	Atrazine	1912-24-9	N.D.		250	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		500	1,300	5
10727	Benzo(a)anthracene	56-55-3	78	J	25	130	5
10727	Benzo(a)pyrene	50-32-8	74	J	25	130	5
10727	Benzo(b)fluoranthene	205-99-2	91	J	25	130	5
10727	Benzo(g,h,i)perylene	191-24-2	39	J	25	130	5
10727	Benzo(k)fluoranthene	207-08-9	51	J	25	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	250	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	250	5
10727	Butylbenzylphthalate	85-68-7	N.D.		500	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		500	1,300	5
10727	Caprolactam	105-60-2	N.D.		250	1,300	5
10727	Carbazole	86-74-8	N.D.		130	250	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	250	5
10727	4-Chloroaniline	106-47-8	N.D.		250	500	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	250	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	250	5
10727	2-Chloronaphthalene	91-58-7	N.D.		50	250	5
10727	2-Chlorophenol	95-57-8	N.D.		130	250	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	250	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	250	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	76	J	25	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		25	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	250	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		760	2,500	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	250	5
10727	Diethylphthalate	84-66-2	N.D.		500	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	250	5
10727	Dimethylphthalate	131-11-3	N.D.		500	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	3,800	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,300	7,600	5
10727	2,4-Dinitrotoluene	121-14-2	2,600		500	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	690		130	250	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		500	1,300	5
10727	Fluoranthene	206-44-0	100	J	25	130	5
10727	Fluorene	86-73-7	N.D.		25	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		25	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	250	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	3,800	5
10727	Hexachloroethane	67-72-1	N.D.		250	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	42	J	25	130	5
10727	Isophorone	78-59-1	N.D.		130	250	5
10727	2-Methylnaphthalene	91-57-6	N.D.		25	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086985
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:34 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5420 SDG#: KVM54-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	250	5
10727	4-Methylphenol	106-44-5	N.D.		130	250	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		25	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	250	5
10727	3-Nitroaniline	99-09-2	N.D.		500	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		500	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	250	5
10727	2-Nitrophenol	88-75-5	N.D.		130	250	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	3,800	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	250	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	250	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		500	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		250	1,300	5
10727	Phenanthrene	85-01-8	39	J	25	130	5
10727	Phenol	108-95-2	N.D.		130	250	5
10727	Pyrene	129-00-0	95	J	25	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	250	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	250	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	56,000		2,100	5,600	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	51,000		1,400	4,200	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	490		140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	560	1
06918	3-Nitrotoluene	99-08-1	N.D.		350	690	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	560	1
06918	PETN	78-11-5	N.D.		2,800	8,300	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,100		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,800,000		28,000	83,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086985
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:34 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5420 SDG#: KVM54-20

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,200		11.5	29.9	1
06944	Antimony	7440-36-0	N.D.		0.614	2.99	1
06935	Arsenic	7440-38-2	3.27		0.868	2.99	1
06946	Barium	7440-39-3	53.0		0.100	0.748	1
06947	Beryllium	7440-41-7	0.596	J	0.100	0.748	1
06949	Cadmium	7440-43-9	0.184	J	0.0644	0.748	1
01650	Calcium	7440-70-2	858		4.98	29.9	1
06951	Chromium	7440-47-3	13.2		0.147	2.25	1
06952	Cobalt	7440-48-4	5.05		0.121	0.748	1
06953	Copper	7440-50-8	23.4		0.419	1.50	1
01654	Iron	7439-89-6	18,600		4.98	29.9	1
06955	Lead	7439-92-1	257		0.479	2.25	1
01657	Magnesium	7439-95-4	1,140		2.50	15.0	1
06958	Manganese	7439-96-5	170		0.124	0.748	1
06961	Nickel	7440-02-0	7.53		0.344	1.50	1
01662	Potassium	7440-09-7	742		25.1	74.8	1
06936	Selenium	7782-49-2	2.20	J	1.24	2.99	1
06966	Silver	7440-22-4	0.885		0.180	0.748	1
01667	Sodium	7440-23-5	53.1	J	25.0	150	1
06925	Thallium	7440-28-0	N.D.		1.12	4.49	1
06971	Vanadium	7440-62-2	28.6		0.225	0.748	1
06972	Zinc	7440-66-6	34.5		1.15	2.99	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0257	J	0.0145	0.145	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,300		789	2,370	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	34.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLD026	10/27/2015 13:51	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086985
LL Group # 1600458
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 09:34 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 11:41

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5420 SDG#: KVM54-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLD026	10/22/2015 17:25	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	10/29/2015 09:46	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 20:41	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960013A	11/05/2015 21:24	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960013A	10/24/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06944	Antimony	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
01650	Calcium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06952	Cobalt	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
01654	Iron	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	152945708004	10/27/2015 17:01	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06958	Manganese	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
01662	Potassium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
01667	Sodium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	152945708004	10/27/2015 17:01	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	152945708004	10/26/2015 12:07	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	152945711003	10/23/2015 06:54	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708004	10/22/2015 09:45	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711003	10/22/2015 12:45	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 00:43	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15292820002B	10/19/2015 23:44	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5420

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086985
Sample wt/vol: 30.3 (g/mL) g Lab File ID: oj1291.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 34.5 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 15 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	Cyclotetrasiloxane, octameth	5.781	22000	J
2. 541-02-6	Cyclopentasiloxane, decameth	6.922	3400	J
3. 112-40-3	Dodecane	7.381	1900	J
4. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	7.634	1800	J
5.	Unknown	7.816	3600	J
6. 540-97-6	Cyclohexasiloxane, dodecamet	7.957	4100	J
7. 629-50-5	Tridecane	7.981	5500	J
8.	Unknown Cycloalkane	8.269	2100	J
9.	Unknown Alkane	8.339	1600	J
10. 629-59-4	Tetradecane	8.539	4300	J
11.	Unknown Alkane	8.586	1300	J
12. 1795-15-9	Cyclohexane, octyl-	8.839	1300	J
13.	Unknown	10.133	290000	J
14. 19406-51-0	p-Toluidine, 3,5-dinitro-	11.033	13000	J
15. 35572-78-2	Benzenamine, 2-methyl-3,5-di	11.257	13000	J
16.				
17. SVOCTIC	Total SVOC TICs		370000	J
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600458
Reported: 11/11/2015 11:41

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15295SLD026	Sample number(s): 8086966-8086985								
Acenaphthene	N.D.	3.	17	ug/kg	95		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	101		83-127		
Acetophenone	N.D.	17.	33	ug/kg	88		74-116		
Anthracene	N.D.	3.	17	ug/kg	100		82-118		
Atrazine	N.D.	33.	170	ug/kg	103		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	76*		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	95		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	98		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	98		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	93		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	97		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	93		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	97		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	97		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	98		84-120		
Caprolactam	N.D.	33.	170	ug/kg	85		71-129		
Carbazole	N.D.	17.	33	ug/kg	92		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	95		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	41		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	89		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	94		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	93		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	101		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	91		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	98		63-126		
Chrysene	N.D.	3.	17	ug/kg	94		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	98		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	91		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	56		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	98		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	87		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	94		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	91		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	88		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	83		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	89		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	94		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	96		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	94		81-117		
Fluorene	N.D.	3.	17	ug/kg	96		86-118		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600458
Reported: 11/11/2015 11:41

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachlorobenzene	N.D.	3.	17	ug/kg	95		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	94		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	102		68-145		
Hexachloroethane	N.D.	33.	170	ug/kg	91		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	94		81-118		
Isophorone	N.D.	17.	33	ug/kg	94		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	89		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	102		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	96		75-119		
Naphthalene	N.D.	3.	17	ug/kg	92		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	96		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	89		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	65		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	91		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	92		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	82		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	92		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	98		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	97		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	101		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	92		80-114		
Phenol	N.D.	17.	33	ug/kg	96		73-122		
Pyrene	N.D.	3.	17	ug/kg	92		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	98		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	95		81-123		
Batch number: 152960013A	Sample number(s): 8086966-8086985								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	111		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	106		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	111		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	107		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	94		83-122		
HMX	N.D.	250.	750	ug/kg	72		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	107		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	94		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	108		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	108		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	110		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	111		80-122		
PETN	N.D.	2,000.	6,000	ug/kg	95		64-121		
RDX	N.D.	130.	300	ug/kg	104		84-122		
Tetryl	N.D.	160.	400	ug/kg	105		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	99		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	110		82-133		
Batch number: 152945708004	Sample number(s): 8086966-8086985								
Aluminum	N.D.	7.66	20.0	mg/kg	105		80-120		
Antimony	N.D.	0.410	2.00	mg/kg	99		80-120		
Arsenic	N.D.	0.580	2.00	mg/kg	105		80-120		
Barium	N.D.	0.0670	0.500	mg/kg	106		80-120		
Beryllium	N.D.	0.0670	0.500	mg/kg	109		80-120		
Cadmium	N.D.	0.0430	0.500	mg/kg	106		80-120		
Calcium	6.32 J	3.33	20.0	mg/kg	109		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600458
Reported: 11/11/2015 11:41

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chromium	N.D.	0.0980	1.50	mg/kg	105		80-120		
Cobalt	N.D.	0.0810	0.500	mg/kg	105		80-120		
Copper	N.D.	0.280	1.00	mg/kg	113		80-120		
Iron	N.D.	3.33	20.0	mg/kg	108		80-120		
Lead	N.D.	0.320	1.50	mg/kg	113		80-120		
Magnesium	N.D.	1.67	10.0	mg/kg	107		80-120		
Manganese	N.D.	0.0830	0.500	mg/kg	107		80-120		
Nickel	N.D.	0.230	1.00	mg/kg	108		80-120		
Potassium	N.D.	16.8	50.0	mg/kg	107		80-120		
Selenium	N.D.	0.830	2.00	mg/kg	98		80-120		
Silver	N.D.	0.120	0.500	mg/kg	110		80-120		
Sodium	N.D.	16.7	100	mg/kg	108		80-120		
Thallium	N.D.	0.750	3.00	mg/kg	92		80-120		
Vanadium	N.D.	0.150	0.500	mg/kg	103		80-120		
Zinc	N.D.	0.770	2.00	mg/kg	106		80-120		
Batch number: 152945711003	Sample number(s): 8086966-8086985								
Mercury	N.D.	0.0100	0.100	mg/kg	106		80-120		
Batch number: 15293049531A	Sample number(s): 8086966-8086967								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	109		47-143		
Batch number: 15293049531B	Sample number(s): 8086968-8086975								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	109		47-143		
Batch number: 15294049532A	Sample number(s): 8086976-8086980								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	93		47-143		
Batch number: 15295049531A	Sample number(s): 8086981-8086985								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	88		47-143		
Batch number: 15292820002A	Sample number(s): 8086966-8086974								
Moisture					100		99-101		
Batch number: 15292820002B	Sample number(s): 8086975-8086985								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15295SLD026	Sample number(s): 8086966-8086985 UNSPK: 8086969								
Acenaphthene	89	95	83-116	7	30				
Acenaphthylene	91	102	83-127	12	30				
Acetophenone	78	84	74-116	7	30				
Anthracene	92	98	82-118	6	30				
Atrazine	94	100	63-148	6	30				

*- Outside of specification
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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600458
Reported: 11/11/2015 11:41

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Benzaldehyde	40	40	10-69	1	30				
Benzo(a)anthracene	91	97	76-119	7	30				
Benzo(a)pyrene	86	93	85-117	8	30				
Benzo(b)fluoranthene	82	98	78-129	18	30				
Benzo(g,h,i)perylene	90	94	82-119	5	30				
Benzo(k)fluoranthene	86	84	79-120	2	30				
1,1'-Biphenyl	86	97	80-116	12	30				
4-Bromophenyl-phenylether	92	95	84-120	3	30				
Butylbenzylphthalate	100	106	80-118	6	30				
Di-n-butylphthalate	83*	87	84-120	6	30				
Caprolactam	159*	128	71-129	22	30				
Carbazole	83	87	78-117	4	30				
4-Chloro-3-methylphenol	91	97	79-127	7	30				
4-Chloroaniline	53	57	10-103	8	30				
bis(2-Chloroethoxy)methane	79	84	77-116	6	30				
bis(2-Chloroethyl)ether	80	88	77-115	9	30				
2-Chloronaphthalene	76	81	63-146	7	30				
2-Chlorophenol	88	93	85-123	6	30				
4-Chlorophenyl-phenylether	77*	82	81-120	8	30				
2,2'-oxybis(1-Chloropropane)	85	92	63-126	8	30				
Chrysene	83	92	80-121	10	30				
Dibenz(a,h)anthracene	93	101	81-123	8	30				
Dibenzofuran	86	93	85-115	8	30				
3,3'-Dichlorobenzidine	36	44	10-104	20	30				
2,4-Dichlorophenol	88	97	81-123	10	30				
Diethylphthalate	83	92	81-118	10	30				
2,4-Dimethylphenol	85	93	83-120	10	30				
Dimethylphthalate	81*	91	82-113	11	30				
4,6-Dinitro-2-methylphenol	57*	64	59-131	11	30				
2,4-Dinitrophenol	0*	0*	27-140	0	30				
2,4-Dinitrotoluene	69*	75*	81-122	7	30				
2,6-Dinitrotoluene	78*	77*	83-120	1	30				
bis(2-Ethylhexyl)phthalate	103	109	81-121	6	30				
Fluoranthene	85	91	81-117	7	30				
Fluorene	92	102	86-118	11	30				
Hexachlorobenzene	85	95	75-123	11	30				
Hexachlorobutadiene	87	93	72-120	7	30				
Hexachlorocyclopentadiene	0*	0*	68-145	0	30				
Hexachloroethane	71*	76*	78-114	8	30				
Indeno(1,2,3-cd)pyrene	88	95	81-118	7	30				
Isophorone	105	110	78-125	5	30				
2-Methylnaphthalene	82*	90	83-109	10	30				
2-Methylphenol	87	96	82-125	10	30				
4-Methylphenol	85	94	75-119	10	30				
Naphthalene	82*	90	83-112	10	30				
2-Nitroaniline	96	104	84-126	8	30				
3-Nitroaniline	92	101	66-119	10	30				
4-Nitroaniline	75	82	50-100	9	30				
Nitrobenzene	77	81	70-122	6	30				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600458
Reported: 11/11/2015 11:41

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2-Nitrophenol	76*	81*	83-120	7	30				
4-Nitrophenol	76	86	60-129	12	30				
N-Nitroso-di-n-propylamine	86	95	67-121	11	30				
N-Nitrosodiphenylamine	87	95	83-118	9	30				
Di-n-octylphthalate	114	117	74-146	3	30				
Pentachlorophenol	72	76	57-126	6	30				
Phenanthrene	82	88	80-114	7	30				
Phenol	89	96	73-122	9	30				
Pyrene	82	90	81-114	9	30				
2,4,5-Trichlorophenol	95	99	86-123	5	30				
2,4,6-Trichlorophenol	87	93	81-123	7	30				
Batch number: 152960013A	Sample number(s): 8086966-8086985 UNSPK: 8086969								
4-Amino-2,6-Dinitrotoluene	97	95	81-133	3	50				
2-Amino-4,6-Dinitrotoluene	93	94	79-120	2	50				
1,2-Dinitrobenzene	100	100	94-129	5	50				
1,3-Dinitrobenzene	103	104	94-124	3	50				
1,4-Dinitrobenzene	84	83	83-122	6	50				
HMX	94	97	65-121	2	50				
Nitrobenzene	100	99	81-116	5	50				
Nitroglycerin	93	93	70-118	5	50				
1-Nitronaphthalene	111	98	83-122	17	50				
2-Nitrotoluene	102	104	86-113	3	50				
3-Nitrotoluene	106	101	85-135	9	50				
4-Nitrotoluene	100	98	80-122	6	50				
PETN	106	112	64-121	0	50				
RDX	114	117	84-122	3	50				
Tetryl	93	85	67-152	13	50				
1,3,5-Trinitrobenzene	90	93	83-119	2	50				
2,4,6-Trinitrotoluene	89	54*	82-133	12	50				
Batch number: 152945708004	Sample number(s): 8086966-8086985 UNSPK: 8086966 BKG: 8086966								
Aluminum	1951 (2)	1139 (2)	75-125	10	20	12,500	10,600	16	20
Antimony	61*	67*	75-125	12	20	N.D.	N.D.	0 (1)	20
Arsenic	108	111	75-125	5	20	N.D.	0.631 J	200* (1)	20
Barium	107	104	75-125	1	20	37.6	33.1	13	20
Beryllium	108	108	75-125	2	20	0.509	0.421 J	19 (1)	20
Cadmium	101	103	75-125	4	20	0.0772 J	0.116 J	40* (1)	20
Calcium	123	108	75-125	4	20	796	764	4	20
Chromium	91	99	75-125	6	20	16.2	13.0	22*	20
Cobalt	95	99	75-125	6	20	6.15	6.34	3	20
Copper	107	104	75-125	1	20	24.8	21.0	16	20
Iron	-4471 (2)	-2273 (2)	75-125	10	20	24,500	22,800	7	20
Lead	116 (2)	69 (2)	75-125	4	20	153	127	18	20
Magnesium	149 (2)	111 (2)	75-125	6	20	963	812	17	20
Manganese	124	78	75-125	11	20	144	137	5	20
Nickel	94	101	75-125	7	20	12.3	12.0	3	20

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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600458
Reported: 11/11/2015 11:41

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Potassium	165*	162*	75-125	0	20	672	582	14	20
Selenium	98	103	75-125	5	20	3.48	4.02	14 (1)	20
Silver	102	105	75-125	4	20	1.02	0.875	16 (1)	20
Sodium	103	105	75-125	4	20	58.6 J	49.9 J	16 (1)	20
Thallium	103	106	75-125	5	20	N.D.	N.D.	0 (1)	20
Vanadium	97	102	75-125	5	20	27.7	23.7	16	20
Zinc	100	99	75-125	1	20	32.7	27.6	17	20
Batch number: 152945711003	Sample number(s): 8086966-8086985 UNSPK: 8086966 BKG: 8086966								
Mercury	94	92	80-120	3	20	0.0288 J	0.0264 J	9 (1)	20
Batch number: 15293049531A	Sample number(s): 8086966-8086967 UNSPK: 8086967 BKG: 8086967								
TOC by Lloyd Kahn	104		47-143			13,600	12,200	11*	7
Batch number: 15293049531B	Sample number(s): 8086968-8086975 UNSPK: 8086975 BKG: 8086975								
TOC by Lloyd Kahn	101		47-143			15,000	17,100	13*	7
Batch number: 15294049532A	Sample number(s): 8086976-8086980 UNSPK: 8086980 BKG: 8086980								
TOC by Lloyd Kahn	109		47-143			13,500	12,500	8*	7
Batch number: 15295049531A	Sample number(s): 8086981-8086985 UNSPK: 8086981 BKG: 8086981								
TOC by Lloyd Kahn	104		47-143			10,100	12,200	19*	7
Batch number: 15292820002A	Sample number(s): 8086966-8086974 BKG: 8086968								
Moisture						31.3	32.8	5	5
Batch number: 15292820002B	Sample number(s): 8086975-8086985 BKG: 8086979								
Moisture						39.9	35.7	11*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15295SLD026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8086966	97	99	97	83	99	111
8086967	96	96	99	81	99	108
8086968	91	93	91	79	94	103
8086969	92	92	93	78	93	104
8086970	86	88	88	77	88	99
8086971	91	93	90	83	92	103
8086972	91	93	90	79	92	99
8086973	85	88	84	77	88	98
8086974	79	82	82	72	85	93

*- Outside of specification
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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600458
Reported: 11/11/2015 11:41

Surrogate Quality Control

8086975	84	88	93	80	91	105
8086976	85	89	88	80	85	95
8086977	89	92	96	81	95	105
8086978	89	93	91	86	89	102
8086979	92	96	99	92	98	111
8086980	86	89	96	85	94	105
8086981	85	90	89	86	87	101
8086982	149*	157*	105	139*	117	140*
8086983	85	89	83	86	87	98
8086984	83	87	78	84	85	94
8086985	84	88	82	85	91	98
Blank	92	97	88	92	97	99
LCS	95	100	85	91	95	96
MS	85	85	86	78	87	97
MSD	92	92	92	81	95	105
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152960013A

	2-Nitro-m-xylene
8086966	74
8086967	71
8086968	65
8086969	66
8086970	74
8086971	79
8086972	78
8086973	70
8086974	107
8086975	73
8086976	80
8086977	69
8086978	110
8086979	89
8086980	90
8086981	107
8086982	95
8086983	97
8086984	91
8086985	95
Blank	108
LCS	100
MS	118
MSD	114
Limits:	65-129

*- Outside of specification
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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1600458 Sample # 80869666-85

| | | |

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1600458 Sample # 8086966-85

| | | |

eurofins | Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

November 11, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 10/13/2015
Group Number: 1600462
SDG: KVM55
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-K-1-10122015 Composite Soil Sample	8086995
TNT-PS-K-2-10122015 Composite Soil Sample	8086996
TNT-PS-K-3-10122015 Composite Soil Sample	8086997
TNT-PS-K-4-10122015 Composite Soil Sample	8086998

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

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ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: TNT-PS-K-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086995
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:57 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5501 SDG#: KVM55-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		28	140	5
10727	Acenaphthylene	208-96-8	N.D.		28	140	5
10727	Acetophenone	98-86-2	N.D.		140	280	5
10727	Anthracene	120-12-7	N.D.		28	140	5
10727	Atrazine	1912-24-9	N.D.		280	1,400	5
10727	Benzaldehyde	100-52-7	N.D.		560	1,400	5
10727	Benzo(a)anthracene	56-55-3	48	J	28	140	5
10727	Benzo(a)pyrene	50-32-8	32	J	28	140	5
10727	Benzo(b)fluoranthene	205-99-2	58	J	28	140	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		28	140	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		28	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		140	280	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		140	280	5
10727	Butylbenzylphthalate	85-68-7	N.D.		560	1,400	5
10727	Di-n-butylphthalate	84-74-2	N.D.		560	1,400	5
10727	Caprolactam	105-60-2	N.D.		280	1,400	5
10727	Carbazole	86-74-8	N.D.		140	280	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		140	280	5
10727	4-Chloroaniline	106-47-8	N.D.		280	560	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		140	280	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		140	280	5
10727	2-Chloronaphthalene	91-58-7	N.D.		56	280	5
10727	2-Chlorophenol	95-57-8	N.D.		140	280	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		140	280	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		140	280	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	47	J	28	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		28	140	5
10727	Dibenzofuran	132-64-9	N.D.		140	280	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		840	2,800	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		140	280	5
10727	Diethylphthalate	84-66-2	N.D.		560	1,400	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		140	280	5
10727	Dimethylphthalate	131-11-3	N.D.		560	1,400	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,400	4,200	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,500	8,400	5
10727	2,4-Dinitrotoluene	121-14-2	2,800		560	1,400	5
10727	2,6-Dinitrotoluene	606-20-2	830		140	280	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		560	1,400	5
10727	Fluoranthene	206-44-0	82	J	28	140	5
10727	Fluorene	86-73-7	N.D.		28	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		28	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		140	280	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,400	4,200	5
10727	Hexachloroethane	67-72-1	N.D.		280	1,400	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		28	140	5
10727	Isophorone	78-59-1	N.D.		140	280	5
10727	2-Methylnaphthalene	91-57-6	N.D.		28	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086995
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:57 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5501 SDG#: KVM55-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		140	280	5
10727	4-Methylphenol	106-44-5	N.D.		140	280	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		28	140	5
10727	2-Nitroaniline	88-74-4	N.D.		140	280	5
10727	3-Nitroaniline	99-09-2	N.D.		560	1,400	5
10727	4-Nitroaniline	100-01-6	N.D.		560	1,400	5
10727	Nitrobenzene	98-95-3	N.D.		140	280	5
10727	2-Nitrophenol	88-75-5	N.D.		140	280	5
10727	4-Nitrophenol	100-02-7	N.D.		1,400	4,200	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		140	280	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		140	280	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		560	1,400	5
10727	Pentachlorophenol	87-86-5	N.D.		280	1,400	5
10727	Phenanthrene	85-01-8	54	J	28	140	5
10727	Phenol	108-95-2	N.D.		140	280	5
10727	Pyrene	129-00-0	75	J	28	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		140	280	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		140	280	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	110,000		2,200	5,900	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	66,000		1,500	4,500	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	450	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		150	450	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	450	1
06918	HMX	2691-41-0	N.D.		370	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		150	450	1
06918	Nitroglycerin	55-63-0	N.D.		3,000	8,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	450	1
06918	2-Nitrotoluene	88-72-2	N.D.		300	590	1
06918	3-Nitrotoluene	99-08-1	N.D.		370	740	1
06918	4-Nitrotoluene	99-99-0	N.D.		300	590	1
06918	PETN	78-11-5	N.D.		3,000	8,900	1
06918	RDX	121-82-4	N.D.		190	450	1
06918	Tetryl	479-45-8	N.D.		240	590	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,000		150	450	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,800,000		30,000	89,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086995
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:57 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5501 SDG#: KVM55-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,500		13.0	33.8	1
06944	Antimony	7440-36-0	3.34	J	0.694	3.38	1
06935	Arsenic	7440-38-2	3.42		0.982	3.38	1
06946	Barium	7440-39-3	55.8		0.113	0.846	1
06947	Beryllium	7440-41-7	0.682	J	0.113	0.846	1
06949	Cadmium	7440-43-9	0.553	J	0.0728	0.846	1
01650	Calcium	7440-70-2	1,680		5.64	33.8	1
06951	Chromium	7440-47-3	15.5		0.166	2.54	1
06952	Cobalt	7440-48-4	5.32		0.137	0.846	1
06953	Copper	7440-50-8	20.6		0.474	1.69	1
01654	Iron	7439-89-6	26,100		5.64	33.8	1
06955	Lead	7439-92-1	243		0.542	2.54	1
01657	Magnesium	7439-95-4	1,420		2.83	16.9	1
06958	Manganese	7439-96-5	195		0.140	0.846	1
06961	Nickel	7440-02-0	8.52		0.389	1.69	1
01662	Potassium	7440-09-7	855		28.4	84.6	1
06936	Selenium	7782-49-2	3.74		1.40	3.38	1
06966	Silver	7440-22-4	N.D.		0.203	0.846	1
01667	Sodium	7440-23-5	83.1	J	28.3	169	1
06925	Thallium	7440-28-0	N.D.		1.27	5.08	1
06971	Vanadium	7440-62-2	35.0		0.254	0.846	1
06972	Zinc	7440-66-6	48.0		1.30	3.38	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0322	J	0.0166	0.166	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	22,200		829	2,490	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	41.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLG026	10/23/2015 09:00	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-1-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086995
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 10:57 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5501 SDG#: KVM55-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLG026	10/22/2015 19:25	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	10/29/2015 11:53	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/05/2015 23:31	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/06/2015 00:13	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960014A	10/25/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152945708006	10/23/2015 15:32	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:33	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708006	10/22/2015 22:53	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 00:54	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15289820006A	10/16/2015 23:02	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5501

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086995
Sample wt/vol: 30.42(g/mL) g Lab File ID: bj1155.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 41.5 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 20 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.914	1500	J
2.2958-75-0	1-Methyldecahydronaphthalene	6.025	1100	J
3.112-40-3	Dodecane	6.416	2300	J
4.	Unknown Alkane	6.847	2500	J
5.	Unknown	6.987	1300	J
6.629-50-5	Tridecane	7.010	6400	J
7.	Unknown Cycloalkane	7.290	2300	J
8.1560-96-9	Tridecane, 2-methyl-	7.366	1600	J
9.	Unknown Alkane	7.406	1300	J
10.629-59-4	Tetradecane	7.564	6600	J
11.	Unknown Alkane	7.640	1200	J
12.	Unknown Alkane	7.814	1200	J
13.	Unknown Cycloalkane	7.849	1600	J
14.629-62-9	Pentadecane	8.083	3700	J
15.	Unknown	8.549	2000	J
16.	Unknown	9.120	390000	J
17.	Unknown	9.656	2100	J
18.19406-51-0	p-Toluidine, 3,5-dinitro-	10.041	33000	J
19.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.257	20000	J
20.	Unknown	10.397	1900	J
21.				
22.SVOCTIC	Total SVOC TICs		490000	J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086996
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:00 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5502 SDG#: KVM55-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		31	160	5
10727	Acenaphthylene	208-96-8	N.D.		31	160	5
10727	Acetophenone	98-86-2	N.D.		160	320	5
10727	Anthracene	120-12-7	N.D.		31	160	5
10727	Atrazine	1912-24-9	N.D.		320	1,600	5
10727	Benzaldehyde	100-52-7	N.D.		630	1,600	5
10727	Benzo(a)anthracene	56-55-3	72	J	31	160	5
10727	Benzo(a)pyrene	50-32-8	51	J	31	160	5
10727	Benzo(b)fluoranthene	205-99-2	78	J	31	160	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		31	160	5
10727	Benzo(k)fluoranthene	207-08-9	33	J	31	160	5
10727	1,1'-Biphenyl	92-52-4	N.D.		160	320	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		160	320	5
10727	Butylbenzylphthalate	85-68-7	N.D.		630	1,600	5
10727	Di-n-butylphthalate	84-74-2	N.D.		630	1,600	5
10727	Caprolactam	105-60-2	N.D.		320	1,600	5
10727	Carbazole	86-74-8	N.D.		160	320	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		160	320	5
10727	4-Chloroaniline	106-47-8	N.D.		320	630	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		160	320	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		160	320	5
10727	2-Chloronaphthalene	91-58-7	N.D.		63	310	5
10727	2-Chlorophenol	95-57-8	N.D.		160	320	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		160	320	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		160	320	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	74	J	31	160	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		31	160	5
10727	Dibenzofuran	132-64-9	N.D.		160	320	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		950	3,200	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		160	320	5
10727	Diethylphthalate	84-66-2	N.D.		630	1,600	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		160	320	5
10727	Dimethylphthalate	131-11-3	N.D.		630	1,600	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,600	4,700	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,800	9,500	5
10727	2,4-Dinitrotoluene	121-14-2	3,000		630	1,600	5
10727	2,6-Dinitrotoluene	606-20-2	1,100		160	320	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		630	1,600	5
10727	Fluoranthene	206-44-0	130	J	31	160	5
10727	Fluorene	86-73-7	N.D.		31	160	5
10727	Hexachlorobenzene	118-74-1	N.D.		31	160	5
10727	Hexachlorobutadiene	87-68-3	N.D.		160	320	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,600	4,700	5
10727	Hexachloroethane	67-72-1	N.D.		320	1,600	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	36	J	31	160	5
10727	Isophorone	78-59-1	N.D.		160	320	5
10727	2-Methylnaphthalene	91-57-6	N.D.		31	160	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086996
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:00 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5502 SDG#: KVM55-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		160	320	5
10727	4-Methylphenol	106-44-5	N.D.		160	320	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		31	160	5
10727	2-Nitroaniline	88-74-4	N.D.		160	320	5
10727	3-Nitroaniline	99-09-2	N.D.		630	1,600	5
10727	4-Nitroaniline	100-01-6	N.D.		630	1,600	5
10727	Nitrobenzene	98-95-3	N.D.		160	320	5
10727	2-Nitrophenol	88-75-5	N.D.		160	320	5
10727	4-Nitrophenol	100-02-7	N.D.		1,600	4,700	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		160	320	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		160	320	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		630	1,600	5
10727	Pentachlorophenol	87-86-5	N.D.		320	1,600	5
10727	Phenanthrene	85-01-8	67	J	31	160	5
10727	Phenol	108-95-2	N.D.		160	320	5
10727	Pyrene	129-00-0	100	J	31	160	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		160	320	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		160	320	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	140,000		2,600	7,000	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	87,000		1,700	5,200	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		170	520	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		170	520	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		170	520	1
06918	HMX	2691-41-0	N.D.		440	1,300	1
06918	Nitrobenzene	98-95-3	N.D.		170	520	1
06918	Nitroglycerin	55-63-0	N.D.		3,500	10,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		170	520	1
06918	2-Nitrotoluene	88-72-2	N.D.		350	700	1
06918	3-Nitrotoluene	99-08-1	N.D.		440	870	1
06918	4-Nitrotoluene	99-99-0	N.D.		350	700	1
06918	PETN	78-11-5	N.D.		3,500	10,000	1
06918	RDX	121-82-4	N.D.		230	520	1
06918	Tetryl	479-45-8	N.D.		280	700	1
06918	1,3,5-Trinitrobenzene	99-35-4	4,000		170	520	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,600,000		35,000	100,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086996
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:00 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5502 SDG#: KVM55-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,800		14.3	37.2	1
06944	Antimony	7440-36-0	3.79		0.763	3.72	1
06935	Arsenic	7440-38-2	2.93	J	1.08	3.72	1
06946	Barium	7440-39-3	61.4		0.125	0.930	1
06947	Beryllium	7440-41-7	0.662	J	0.125	0.930	1
06949	Cadmium	7440-43-9	0.618	J	0.0800	0.930	1
01650	Calcium	7440-70-2	1,750		6.19	37.2	1
06951	Chromium	7440-47-3	15.8		0.182	2.79	1
06952	Cobalt	7440-48-4	7.61		0.151	0.930	1
06953	Copper	7440-50-8	24.2		0.521	1.86	1
01654	Iron	7439-89-6	29,700		6.19	37.2	1
06955	Lead	7439-92-1	240		0.595	2.79	1
01657	Magnesium	7439-95-4	1,230		3.11	18.6	1
06958	Manganese	7439-96-5	187		0.154	0.930	1
06961	Nickel	7440-02-0	8.90		0.428	1.86	1
01662	Potassium	7440-09-7	784		31.3	93.0	1
06936	Selenium	7782-49-2	4.69		1.54	3.72	1
06966	Silver	7440-22-4	N.D.		0.223	0.930	1
01667	Sodium	7440-23-5	79.4	J	31.1	186	1
06925	Thallium	7440-28-0	N.D.		1.40	5.58	1
06971	Vanadium	7440-62-2	38.7		0.279	0.930	1
06972	Zinc	7440-66-6	35.1		1.43	3.72	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0377	J	0.0181	0.181	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	21,500		1,150	3,460	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	47.3		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLG026	10/23/2015 10:05	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-2-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086996
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:00 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5502 SDG#: KVM55-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLG026	10/22/2015 19:25	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	10/29/2015 12:36	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/06/2015 00:56	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/06/2015 01:38	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960014A	10/25/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152945708006	10/23/2015 15:35	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:35	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708006	10/22/2015 22:53	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 01:20	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15289820006A	10/16/2015 23:02	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5502

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086996
Sample wt/vol: 30.1 (g/mL) g Lab File ID: bj1158.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 47.3 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.914	1800	J
2.2958-75-0	1-Methyldecahydronaphthalene	6.025	1400	J
3.112-40-3	Dodecane	6.416	3600	J
4.6044-71-9	Dodecane, 6-methyl-	6.497	2400	J
5.	Unknown	6.544	1300	J
6.66660-43-3	trans, cis-3-Ethylbicyclo[4.	6.661	1700	J
7.	Unknown Cycloalkane	6.695	1500	J
8.	Unknown	6.742	1600	J
9.	Unknown Alkane	6.800	2100	J
10.17312-82-2	Undecane, 4,6-dimethyl-	6.847	5000	J
11.	Unknown	6.987	1900	J
12.629-50-5	Tridecane	7.010	7500	J
13.	Unknown	7.074	1500	J
14.	Unknown	7.127	1500	J
15.	Unknown Alkane	7.290	3700	J
16.1560-96-9	Tridecane, 2-methyl-	7.366	2500	J
17.	Unknown Alkane	7.407	2500	J
18.629-59-4	Tetradecane	7.564	9000	J
19.	Unknown Cycloalkane	7.850	1800	J
20.629-62-9	Pentadecane	8.083	4600	J
21.	Unknown	8.549	2500	J
22.	Unknown	9.114	420000	J
23.	Unknown	9.656	1500	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.041	36000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.257	22000	J
26.				
27.SVOCTIC	Total SVOC TICs		540000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086997
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:02 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5503 SDG#: KVM55-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		30	150	5
10727	Acenaphthylene	208-96-8	N.D.		30	150	5
10727	Acetophenone	98-86-2	N.D.		150	300	5
10727	Anthracene	120-12-7	N.D.		30	150	5
10727	Atrazine	1912-24-9	N.D.		300	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		610	1,500	5
10727	Benzo(a)anthracene	56-55-3	33	J	30	150	5
10727	Benzo(a)pyrene	50-32-8	N.D.		30	150	5
10727	Benzo(b)fluoranthene	205-99-2	45	J	30	150	5
10727	Benzo(g,h,i)perylene	191-24-2	N.D.		30	150	5
10727	Benzo(k)fluoranthene	207-08-9	N.D.		30	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	300	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	300	5
10727	Butylbenzylphthalate	85-68-7	N.D.		610	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		610	1,500	5
10727	Caprolactam	105-60-2	N.D.		300	1,500	5
10727	Carbazole	86-74-8	N.D.		150	300	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	300	5
10727	4-Chloroaniline	106-47-8	N.D.		300	610	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	300	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	300	5
10727	2-Chloronaphthalene	91-58-7	N.D.		61	300	5
10727	2-Chlorophenol	95-57-8	N.D.		150	300	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	300	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	300	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	38	J	30	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		30	150	5
10727	Dibenzofuran	132-64-9	N.D.		150	300	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		910	3,000	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	300	5
10727	Diethylphthalate	84-66-2	N.D.		610	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	300	5
10727	Dimethylphthalate	131-11-3	N.D.		610	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,600	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,700	9,100	5
10727	2,4-Dinitrotoluene	121-14-2	2,400		610	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	700		150	300	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		610	1,500	5
10727	Fluoranthene	206-44-0	53	J	30	150	5
10727	Fluorene	86-73-7	N.D.		30	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		30	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	300	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,600	5
10727	Hexachloroethane	67-72-1	N.D.		300	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		30	150	5
10727	Isophorone	78-59-1	N.D.		150	300	5
10727	2-Methylnaphthalene	91-57-6	N.D.		30	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086997
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:02 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5503 SDG#: KVM55-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	300	5
10727	4-Methylphenol	106-44-5	N.D.		150	300	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		30	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	300	5
10727	3-Nitroaniline	99-09-2	N.D.		610	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		610	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	300	5
10727	2-Nitrophenol	88-75-5	N.D.		150	300	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,600	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	300	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	300	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		610	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		300	1,500	5
10727	Phenanthrene	85-01-8	37	J	30	150	5
10727	Phenol	108-95-2	N.D.		150	300	5
10727	Pyrene	129-00-0	54	J	30	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	300	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	300	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	130,000		2,300	6,200	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	77,000		1,500	4,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		150	460	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		150	460	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		150	460	1
06918	HMX	2691-41-0	N.D.		390	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		390	460	1
06918	Nitroglycerin	55-63-0	N.D.		3,100	9,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		150	460	1
06918	2-Nitrotoluene	88-72-2	N.D.		310	620	1
06918	3-Nitrotoluene	99-08-1	N.D.		390	770	1
06918	4-Nitrotoluene	99-99-0	N.D.		310	620	1
06918	PETN	78-11-5	N.D.		3,100	9,300	1
06918	RDX	121-82-4	N.D.		200	460	1
06918	Tetryl	479-45-8	N.D.		250	620	1
06918	1,3,5-Trinitrobenzene	99-35-4	2,800		150	460	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,500,000		31,000	93,000	200

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086997
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:02 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5503 SDG#: KVM55-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,300		13.8	36.0	1
06944	Antimony	7440-36-0	3.74		0.738	3.60	1
06935	Arsenic	7440-38-2	3.46	J	1.04	3.60	1
06946	Barium	7440-39-3	54.5		0.121	0.899	1
06947	Beryllium	7440-41-7	0.653	J	0.121	0.899	1
06949	Cadmium	7440-43-9	0.577	J	0.0774	0.899	1
01650	Calcium	7440-70-2	1,970		5.99	36.0	1
06951	Chromium	7440-47-3	16.1		0.176	2.70	1
06952	Cobalt	7440-48-4	7.13		0.146	0.899	1
06953	Copper	7440-50-8	20.2		0.504	1.80	1
01654	Iron	7439-89-6	28,200		5.99	36.0	1
06955	Lead	7439-92-1	375		0.576	2.70	1
01657	Magnesium	7439-95-4	1,370		3.00	18.0	1
06958	Manganese	7439-96-5	188		0.149	0.899	1
06961	Nickel	7440-02-0	8.46		0.414	1.80	1
01662	Potassium	7440-09-7	883		30.2	89.9	1
06936	Selenium	7782-49-2	4.38		1.49	3.60	1
06966	Silver	7440-22-4	N.D.		0.216	0.899	1
01667	Sodium	7440-23-5	72.2	J	30.0	180	1
06925	Thallium	7440-28-0	N.D.		1.35	5.40	1
06971	Vanadium	7440-62-2	36.0		0.270	0.899	1
06972	Zinc	7440-66-6	40.6		1.39	3.60	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0400	J	0.0175	0.175	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	24,300		1,230	3,700	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	45.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLG026	10/23/2015 10:27	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-3-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086997
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:02 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5503 SDG#: KVM55-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLG026	10/22/2015 19:25	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	10/29/2015 15:26	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/06/2015 03:46	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/06/2015 04:28	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960014A	10/25/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152945708006	10/23/2015 15:38	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:41	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708006	10/22/2015 22:53	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 01:32	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15289820006A	10/16/2015 23:02	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K5503

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086997
Sample wt/vol: 30.2 (g/mL) g Lab File ID: bj1159.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 45.5 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 23 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 112-40-3	Dodecane	6.416	2500	J
2.	Unknown Alkane	6.497	1700	J
3. 66660-41-1	cis,trans-3-Ethylbicyclo[4.4	6.661	1300	J
4.	Unknown Alkane	6.742	2000	J
5. 17301-27-8	Undecane, 2,10-dimethyl-	6.800	1600	J
6.	Unknown Alkane	6.847	3900	J
7.	Unknown	6.987	2100	J
8. 629-50-5	Tridecane	7.010	5000	J
9.	Unknown	7.074	1200	J
10. 92-51-3	1,1'-Bicyclohexyl	7.127	1400	J
11.	Unknown Cycloalkane	7.290	2700	J
12. 1560-96-9	Tridecane, 2-methyl-	7.366	1800	J
13. 62238-11-3	Decane, 2,3,5-trimethyl-	7.564	5400	J
14.	Unknown Alkane	7.611	2000	J
15.	Unknown	7.727	1600	J
16.	Unknown Alkane	7.815	1300	J
17.	Unknown	7.850	1500	J
18. 629-50-5	Tridecane	8.083	3500	J
19.	Unknown	8.549	2000	J
20.	Unknown	9.109	370000	J
21. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.035	28000	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.257	17000	J
23.	Unknown	10.391	1600	J
24.				
25. SVOCTIC	Total SVOC TICs		460000	J
26.				
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086998
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5504 SDG#: KVM55-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		30	150	5
10727	Acenaphthylene	208-96-8	N.D.		30	150	5
10727	Acetophenone	98-86-2	N.D.		150	300	5
10727	Anthracene	120-12-7	N.D.		30	150	5
10727	Atrazine	1912-24-9	N.D.		300	1,500	5
10727	Benzaldehyde	100-52-7	N.D.		600	1,500	5
10727	Benzo(a)anthracene	56-55-3	60	J	30	150	5
10727	Benzo(a)pyrene	50-32-8	50	J	30	150	5
10727	Benzo(b)fluoranthene	205-99-2	76	J	30	150	5
10727	Benzo(g,h,i)perylene	191-24-2	39	J	30	150	5
10727	Benzo(k)fluoranthene	207-08-9	34	J	30	150	5
10727	1,1'-Biphenyl	92-52-4	N.D.		150	300	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		150	300	5
10727	Butylbenzylphthalate	85-68-7	N.D.		600	1,500	5
10727	Di-n-butylphthalate	84-74-2	N.D.		600	1,500	5
10727	Caprolactam	105-60-2	N.D.		300	1,500	5
10727	Carbazole	86-74-8	N.D.		150	300	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		150	300	5
10727	4-Chloroaniline	106-47-8	N.D.		300	600	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		150	300	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		150	300	5
10727	2-Chloronaphthalene	91-58-7	N.D.		60	300	5
10727	2-Chlorophenol	95-57-8	N.D.		150	300	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		150	300	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		150	300	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	65	J	30	150	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		30	150	5
10727	Dibenzofuran	132-64-9	N.D.		150	300	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		910	3,000	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		150	300	5
10727	Diethylphthalate	84-66-2	N.D.		600	1,500	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		150	300	5
10727	Dimethylphthalate	131-11-3	N.D.		600	1,500	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,500	4,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,700	9,100	5
10727	2,4-Dinitrotoluene	121-14-2	3,200		600	1,500	5
10727	2,6-Dinitrotoluene	606-20-2	1,000		150	300	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		600	1,500	5
10727	Fluoranthene	206-44-0	120	J	30	150	5
10727	Fluorene	86-73-7	N.D.		30	150	5
10727	Hexachlorobenzene	118-74-1	N.D.		30	150	5
10727	Hexachlorobutadiene	87-68-3	N.D.		150	300	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,500	4,500	5
10727	Hexachloroethane	67-72-1	N.D.		300	1,500	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38	J	30	150	5
10727	Isophorone	78-59-1	N.D.		150	300	5
10727	2-Methylnaphthalene	91-57-6	N.D.		30	150	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086998
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5504 SDG#: KVM55-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		150	300	5
10727	4-Methylphenol	106-44-5	N.D.		150	300	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		30	150	5
10727	2-Nitroaniline	88-74-4	N.D.		150	300	5
10727	3-Nitroaniline	99-09-2	N.D.		600	1,500	5
10727	4-Nitroaniline	100-01-6	N.D.		600	1,500	5
10727	Nitrobenzene	98-95-3	N.D.		150	300	5
10727	2-Nitrophenol	88-75-5	N.D.		150	300	5
10727	4-Nitrophenol	100-02-7	N.D.		1,500	4,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		150	300	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		150	300	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		600	1,500	5
10727	Pentachlorophenol	87-86-5	N.D.		300	1,500	5
10727	Phenanthrene	85-01-8	57	J	30	150	5
10727	Phenol	108-95-2	N.D.		150	300	5
10727	Pyrene	129-00-0	82	J	30	150	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		150	300	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		150	300	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	170,000		2,400	6,400	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	100,000		1,600	4,800	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	480	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		160	480	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	480	1
06918	HMX	2691-41-0	N.D.		400	1,200	1
06918	Nitrobenzene	98-95-3	N.D.		160	480	1
06918	Nitroglycerin	55-63-0	N.D.		3,200	9,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		160	480	1
06918	2-Nitrotoluene	88-72-2	N.D.		320	640	1
06918	3-Nitrotoluene	99-08-1	450	J	400	800	1
06918	4-Nitrotoluene	99-99-0	N.D.		320	640	1
06918	PETN	78-11-5	N.D.		3,200	9,600	1
06918	RDX	121-82-4	N.D.		210	480	1
06918	Tetryl	479-45-8	N.D.		250	640	1
06918	1,3,5-Trinitrobenzene	99-35-4	3,000		160	480	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,200,000		32,000	96,000	200
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086998
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5504 SDG#: KVM55-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,100		13.9	36.3	1
06944	Antimony	7440-36-0	3.13	J	0.743	3.63	1
06935	Arsenic	7440-38-2	3.55	J	1.05	3.63	1
06946	Barium	7440-39-3	62.2		0.121	0.907	1
06947	Beryllium	7440-41-7	0.689	J	0.121	0.907	1
06949	Cadmium	7440-43-9	0.591	J	0.0780	0.907	1
01650	Calcium	7440-70-2	1,770		6.04	36.3	1
06951	Chromium	7440-47-3	17.3		0.178	2.72	1
06952	Cobalt	7440-48-4	5.48		0.147	0.907	1
06953	Copper	7440-50-8	20.4		0.508	1.81	1
01654	Iron	7439-89-6	25,700		6.04	36.3	1
06955	Lead	7439-92-1	239		0.580	2.72	1
01657	Magnesium	7439-95-4	1,380		3.03	18.1	1
06958	Manganese	7439-96-5	200		0.151	0.907	1
06961	Nickel	7440-02-0	8.80		0.417	1.81	1
01662	Potassium	7440-09-7	984		30.5	90.7	1
06936	Selenium	7782-49-2	3.22	J	1.51	3.63	1
06966	Silver	7440-22-4	N.D.		0.218	0.907	1
01667	Sodium	7440-23-5	75.9	J	30.3	181	1
06925	Thallium	7440-28-0	N.D.		1.36	5.44	1
06971	Vanadium	7440-62-2	38.0		0.272	0.907	1
06972	Zinc	7440-66-6	37.6		1.40	3.63	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0520	J	0.0173	0.173	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	18,700		881	2,640	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	45.4		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15295SLG026	10/23/2015 10:49	Linda M Hartenstine	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-4-10122015 Composite Soil Sample
Kenvil Treatability Study

LL Sample # SW 8086998
LL Group # 1600462
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/12/2015 11:05 by SL

Submitted: 10/13/2015 17:35
Reported: 11/11/2015 09:33

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K5504 SDG#: KVM55-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10809	BNA Soil Microwave	SW-846 3546	1	15295SLG026	10/22/2015 19:25	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	10/29/2015 16:09	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/06/2015 05:10	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	152960014A	11/06/2015 06:35	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	152960014A	10/25/2015 09:45	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06946	Barium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06951	Chromium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06953	Copper	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
01654	Iron	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06955	Lead	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
01657	Magnesium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06966	Silver	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	152945708006	10/23/2015 15:41	Eric L Eby	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:43	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152945708006	10/22/2015 22:53	Annamaria Kuhns	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15295049531A	10/23/2015 01:42	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15289820006A	10/16/2015 23:02	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K5504

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8086998
Sample wt/vol: 30.3 (g/mL) g Lab File ID: bj1160.d
Level: (low/med) LOW Date Received: 10/13/15
% Moisture: 45.4 Decanted: (Y/N) Date Extracted: 10/22/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.915	1500	J
2.112-40-3	Dodecane	6.416	3400	J
3.6044-71-9	Dodecane, 6-methyl-	6.497	1400	J
4.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	6.661	1500	J
5.	Unknown	6.696	1300	J
6.	Unknown Alkane	6.742	2200	J
7.	Unknown Alkane	6.800	1900	J
8.17312-82-2	Undecane, 4,6-dimethyl-	6.847	4500	J
9.	Unknown	6.987	1800	J
10.629-50-5	Tridecane	7.010	7100	J
11.	Unknown	7.074	1300	J
12.92-51-3	1,1'-Bicyclohexyl	7.127	1400	J
13.	Unknown	7.290	3400	J
14.1560-96-9	Tridecane, 2-methyl-	7.366	2400	J
15.	Unknown	7.407	1800	J
16.544-76-3	Hexadecane	7.564	8800	J
17.	Unknown Cycloalkane	7.850	1800	J
18.629-62-9	Pentadecane	8.083	4700	J
19.	Unknown	8.555	3100	J
20.	Unknown	9.114	460000	J
21.	Unknown	9.657	1700	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	10.047	46000	J
23.	Unknown	10.099	1600	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.263	25000	J
25.	Unknown	10.397	2500	J
26.				
27.SVOCTIC	Total SVOC TICs		590000	J
28.				
29.				
30.				

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600462
Reported: 11/11/2015 09:33

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15295SLG026	Sample number(s): 8086995-8086998								
Acenaphthene	N.D.	3.	17	ug/kg	100		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	102		83-127		
Acetophenone	N.D.	17.	33	ug/kg	90		74-116		
Anthracene	N.D.	3.	17	ug/kg	103		82-118		
Atrazine	N.D.	33.	170	ug/kg	103		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	68		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	102		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	98		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	110		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	97		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	98		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	88		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	105		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	106		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	108		84-120		
Caprolactam	N.D.	33.	170	ug/kg	107		71-129		
Carbazole	N.D.	17.	33	ug/kg	100		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	110		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	20		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	97		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	94		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	97		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	104		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	102		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	95		63-126		
Chrysene	N.D.	3.	17	ug/kg	103		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	99		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	97		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	37		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	111		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	106		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	103		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	102		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	93		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	85		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	108		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	109		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	108		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	102		81-117		
Fluorene	N.D.	3.	17	ug/kg	105		86-118		

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600462
Reported: 11/11/2015 09:33

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachlorobenzene	N.D.		3.	17	ug/kg	100		75-123		
Hexachlorobutadiene	N.D.		17.	33	ug/kg	99		72-120		
Hexachlorocyclopentadiene	N.D.		170.	500	ug/kg	95		68-145		
Hexachloroethane	N.D.		33.	170	ug/kg	100		78-114		
Indeno(1,2,3-cd)pyrene	N.D.		3.	17	ug/kg	96		81-118		
Isophorone	N.D.		17.	33	ug/kg	98		78-125		
2-Methylnaphthalene	N.D.		3.	17	ug/kg	100		83-109		
2-Methylphenol	N.D.		17.	33	ug/kg	111		82-125		
4-Methylphenol	N.D.		17.	33	ug/kg	109		75-119		
Naphthalene	N.D.		3.	17	ug/kg	98		83-112		
2-Nitroaniline	N.D.		17.	33	ug/kg	105		84-126		
3-Nitroaniline	N.D.		67.	170	ug/kg	90		66-119		
4-Nitroaniline	N.D.		67.	170	ug/kg	72		50-100		
Nitrobenzene	N.D.		17.	33	ug/kg	97		70-122		
2-Nitrophenol	N.D.		17.	33	ug/kg	103		83-120		
4-Nitrophenol	N.D.		170.	500	ug/kg	100		60-129		
N-Nitroso-di-n-propylamine	N.D.		17.	33	ug/kg	97		67-121		
N-Nitrosodiphenylamine	N.D.		17.	33	ug/kg	100		83-118		
Di-n-octylphthalate	N.D.		67.	170	ug/kg	117		74-146		
Pentachlorophenol	N.D.		33.	170	ug/kg	96		57-126		
Phenanthrene	N.D.		3.	17	ug/kg	98		80-114		
Phenol	N.D.		17.	33	ug/kg	96		73-122		
Pyrene	N.D.		3.	17	ug/kg	97		81-114		
2,4,5-Trichlorophenol	N.D.		17.	33	ug/kg	103		86-123		
2,4,6-Trichlorophenol	N.D.		17.	33	ug/kg	103		81-123		
Batch number: 152960014A	Sample number(s): 8086995-8086998									
4-Amino-2,6-Dinitrotoluene	N.D.		150.	400	ug/kg	113		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.		100.	300	ug/kg	107		79-120		
1,2-Dinitrobenzene	N.D.		100.	300	ug/kg	114		94-129		
1,3-Dinitrobenzene	N.D.		100.	300	ug/kg	110		94-124		
1,4-Dinitrobenzene	N.D.		100.	300	ug/kg	97		83-122		
HMX	N.D.		250.	750	ug/kg	79		65-121		
Nitrobenzene	N.D.		100.	300	ug/kg	109		81-116		
Nitroglycerin	N.D.		2,000.	6,000	ug/kg	88		70-118		
1-Nitronaphthalene	N.D.		100.	300	ug/kg	111		83-122		
2-Nitrotoluene	N.D.		200.	400	ug/kg	106		86-113		
3-Nitrotoluene	N.D.		250.	500	ug/kg	111		85-135		
4-Nitrotoluene	N.D.		200.	400	ug/kg	112		80-122		
PETN	N.D.		2,000.	6,000	ug/kg	98		64-121		
RDX	N.D.		130.	300	ug/kg	106		84-122		
Tetryl	N.D.		160.	400	ug/kg	107		67-152		
1,3,5-Trinitrobenzene	N.D.		100.	300	ug/kg	101		83-119		
2,4,6-Trinitrotoluene	N.D.		100.	300	ug/kg	112		82-133		
Batch number: 152945708006	Sample number(s): 8086995-8086998									
Aluminum	N.D.		7.66	20.0	mg/kg	105		80-120		
Antimony	N.D.		0.410	2.00	mg/kg	106		80-120		
Arsenic	N.D.		0.580	2.00	mg/kg	103		80-120		
Barium	N.D.		0.0670	0.500	mg/kg	103		80-120		
Beryllium	N.D.		0.0670	0.500	mg/kg	109		80-120		
Cadmium	N.D.		0.0430	0.500	mg/kg	104		80-120		
Calcium	7.25	J	3.33	20.0	mg/kg	105		80-120		

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600462
Reported: 11/11/2015 09:33

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chromium	N.D.		0.0980	1.50	mg/kg	104		80-120		
Cobalt	N.D.		0.0810	0.500	mg/kg	105		80-120		
Copper	N.D.		0.280	1.00	mg/kg	109		80-120		
Iron	N.D.		3.33	20.0	mg/kg	113		80-120		
Lead	N.D.		0.320	1.50	mg/kg	106		80-120		
Magnesium	N.D.		1.67	10.0	mg/kg	104		80-120		
Manganese	N.D.		0.0830	0.500	mg/kg	107		80-120		
Nickel	N.D.		0.230	1.00	mg/kg	105		80-120		
Potassium	N.D.		16.8	50.0	mg/kg	103		80-120		
Selenium	N.D.		0.830	2.00	mg/kg	102		80-120		
Silver	N.D.		0.120	0.500	mg/kg	101		80-120		
Sodium	19.4	J	16.7	100	mg/kg	102		80-120		
Thallium	N.D.		0.750	3.00	mg/kg	106		80-120		
Vanadium	N.D.		0.150	0.500	mg/kg	109		80-120		
Zinc	N.D.		0.770	2.00	mg/kg	102		80-120		
Batch number: 152945711004	Sample number(s): 8086995-8086998									
Mercury	N.D.		0.0100	0.100	mg/kg	96		80-120		
Batch number: 15295049531A	Sample number(s): 8086995-8086998									
TOC by Lloyd Kahn	N.D.		100.	300	mg/kg	88		47-143		
Batch number: 15289820006A	Sample number(s): 8086995-8086998									
Moisture						100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15295SLG026	Sample number(s): 8086995-8086998 UNSPK: 8086995								
Acenaphthene	92	99	83-116	9	30				
Acenaphthylene	93	99	83-127	7	30				
Acetophenone	82	85	74-116	5	30				
Anthracene	92	101	82-118	11	30				
Atrazine	81	96	63-148	19	30				
Benzaldehyde	71*	64	10-69	8	30				
Benzo(a)anthracene	89	99	76-119	12	30				
Benzo(a)pyrene	84*	96	85-117	14	30				
Benzo(b)fluoranthene	91	102	78-129	13	30				
Benzo(g,h,i)perylene	85	99	82-119	17	30				
Benzo(k)fluoranthene	94	99	79-120	7	30				
1,1'-Biphenyl	81	84	80-116	5	30				
4-Bromophenyl-phenylether	84	98	84-120	16	30				
Butylbenzylphthalate	92	102	80-118	11	30				
Di-n-butylphthalate	93	104	84-120	12	30				
Caprolactam	109	100	71-129	7	30				
Carbazole	86	97	78-117	14	30				

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600462
Reported: 11/11/2015 09:33

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
4-Chloro-3-methylphenol	89	98	79-127	11	30				
4-Chloroaniline	64	64	10-103	1	30				
bis(2-Chloroethoxy)methane	89	90	77-116	3	30				
bis(2-Chloroethyl)ether	82	90	77-115	11	30				
2-Chloronaphthalene	80	87	63-146	10	30				
2-Chlorophenol	91	97	85-123	8	30				
4-Chlorophenyl-phenylether	86	98	81-120	14	30				
2,2'-oxybis(1-Chloropropane)	85	89	63-126	5	30				
Chrysene	92	102	80-121	11	30				
Dibenz(a,h)anthracene	87	97	81-123	12	30				
Dibenzofuran	88	98	85-115	12	30				
3,3'-Dichlorobenzidine	0*	36	10-104	200*	30				
2,4-Dichlorophenol	89	93	81-123	5	30				
Diethylphthalate	93	100	81-118	8	30				
2,4-Dimethylphenol	88	92	83-120	6	30				
Dimethylphthalate	92	92	82-113	2	30				
4,6-Dinitro-2-methylphenol	77	92	59-131	20	30				
2,4-Dinitrophenol	61	75	27-140	23	30				
2,4-Dinitrotoluene	107	138*	81-122	15	30				
2,6-Dinitrotoluene	99	102	83-120	3	30				
bis(2-Ethylhexyl)phthalate	97	107	81-121	11	30				
Fluoranthene	90	97	81-117	9	30				
Fluorene	94	104	86-118	11	30				
Hexachlorobenzene	78	85	75-123	9	30				
Hexachlorobutadiene	87	82	72-120	5	30				
Hexachlorocyclopentadiene	38*	34*	68-145	11	30				
Hexachloroethane	84	98	78-114	17	30				
Indeno(1,2,3-cd)pyrene	84	95	81-118	14	30				
Isophorone	92	93	78-125	2	30				
2-Methylnaphthalene	87	96	83-109	10	30				
2-Methylphenol	98	101	82-125	4	30				
4-Methylphenol	97	103	75-119	7	30				
Naphthalene	94	100	83-112	7	30				
2-Nitroaniline	93	94	84-126	2	30				
3-Nitroaniline	87	98	66-119	13	30				
4-Nitroaniline	74	72	50-100	1	30				
Nitrobenzene	87	89	70-122	4	30				
2-Nitrophenol	97	95	83-120	1	30				
4-Nitrophenol	106	101	60-129	4	30				
N-Nitroso-di-n-propylamine	93	91	67-121	1	30				
N-Nitrosodiphenylamine	86	99	83-118	15	30				
Di-n-octylphthalate	103	114	74-146	11	30				
Pentachlorophenol	72	80	57-126	11	30				
Phenanthrene	88	97	80-114	11	30				
Phenol	91	95	73-122	6	30				
Pyrene	90	97	81-114	8	30				
2,4,5-Trichlorophenol	88	85*	86-123	2	30				
2,4,6-Trichlorophenol	88	87	81-123	1	30				

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600462
Reported: 11/11/2015 09:33

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 152960014A	Sample number(s): 8086995-8086998 UNSPK: 8086996								
4-Amino-2,6-Dinitrotoluene	-176 (2)	70 (2)	81-133	16	50				
2-Amino-4,6-Dinitrotoluene	-94 (2)	79 (2)	79-120	17	50				
1,2-Dinitrobenzene	137*	159*	94-129	10	50				
1,3-Dinitrobenzene	108	115	94-124	1	50				
1,4-Dinitrobenzene	99	100	83-122	4	50				
HMX	119	132*	65-121	5	50				
Nitrobenzene	100	109	81-116	4	50				
Nitroglycerin	103	103	70-118	5	50				
1-Nitronaphthalene	85	87	83-122	3	50				
2-Nitrotoluene	105	113	86-113	2	50				
3-Nitrotoluene	98	102	85-135	1	50				
4-Nitrotoluene	113	126*	80-122	6	50				
PETN	101	112	64-121	6	50				
RDX	85	88	84-122	2	50				
Tetryl	97	102	67-152	0	50				
1,3,5-Trinitrobenzene	68*	90	83-119	15	50				
2,4,6-Trinitrotoluene	-27192 (2)	-22640 (2)	82-133	34	50				
Batch number: 152945708006	Sample number(s): 8086995-8086998 UNSPK: P088185 BKG: P088185								
Aluminum	770 (2)	1360 (2)	75-125	14	20	6,040	5,900	2	20
Antimony	113	116	75-125	2	20	16.2	22.5	33*	20
Arsenic	340 (2)	89 (2)	75-125	39*	20	65.1	66.3	2	20
Barium	101	105	75-125	3	20	45.4	42.9	6	20
Beryllium	108	111	75-125	3	20	0.539	0.504	7 (1)	20
Cadmium	105	105	75-125	0	20	1.54	1.74	12 (1)	20
Calcium	-473 (2)	-338 (2)	75-125	34*	20	3,160	810	118*	20
Chromium	119	114	75-125	3	20	10.7	10.2	4	20
Cobalt	100	101	75-125	1	20	4.58	4.13	10	20
Copper	6891 (2)	8676 (2)	75-125	8	20	3,420	4,810	34*	20
Iron	5167 (2)	1834 (2)	75-125	19	20	14,000	18,500	28*	20
Lead	14198 (2)	8725 (2)	75-125	18	20	2,780	3,600	26*	20
Magnesium	155 (2)	198 (2)	75-125	4	20	1,830	1,700	8	20
Manganese	152*	108	75-125	14	20	94.5	98.9	4	20
Nickel	103	102	75-125	1	20	14.7	12.8	14	20
Potassium	117	132*	75-125	9	20	475	411	14	20
Selenium	102	97	75-125	4	20	2.95	4.12	33* (1)	20
Silver	146*	150*	75-125	2	20	3.54	5.33	40*	20
Sodium	100	106	75-125	5	20	100	84.3 J	18 (1)	20
Thallium	101	102	75-125	1	20	N.D.	N.D.	0 (1)	20
Vanadium	124	114	75-125	7	20	17.6	17.4	1	20
Zinc	290 (2)	358 (2)	75-125	4	20	679	825	19	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1600462
Reported: 11/11/2015 09:33

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 152945711004	Sample number(s): 8086995-8086998 UNSPK: P093379 BKG: P093379								
Mercury	103	95	80-120	4	20	0.0392 J	0.0451 J	14 (1)	20
Batch number: 15295049531A	Sample number(s): 8086995-8086998 UNSPK: P086981 BKG: P086981								
TOC by Lloyd Kahn	104		47-143			10,100	12,200	19*	7
Batch number: 15289820006A	Sample number(s): 8086995-8086998 BKG: P089782								
Moisture						21.0	20.9	0	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15295SLG026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8086995	91	88	98	82	85	79
8086996	92	88	85	85	81	77
8086997	84	90	92	82	76	74
8086998	100	99	97	92	93	88
Blank	92	92	109	90	91	80
LCS	102	104	115	97	94	83
MS	91	89	91	89	86	77
MSD	96	94	105	88	87	85
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 152960014A

	2-Nitro-m-xylene
8086995	92
8086996	76
8086997	81
8086998	117
Blank	105
LCS	94
MS	65
MSD	83
Limits:	65-129

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 06716 Group # 1600462 Sample # 8086995-98

| | | |

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

December 03, 2015

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 11/11/2015
Group Number: 1608680
SDG: KVM60
PO Number: 4502668827
Release Number: KENVIL
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-11102015 Composite Soil Sample	8130610
TNT-PS-B-11102015 Composite Soil Sample	8130611
TNT-PS-C-11102015 Composite Soil Sample	8130612
TNT-PS-D-11102015 Composite Soil Sample	8130613
TNT-PS-E-11102015 Composite Soil Sample	8130614
TNT-PS-F-11102015 Composite Soil Sample	8130615
TNT-PS-G-11102015 Composite Soil Sample	8130616
TNT-PS-H-11102015 Composite Soil Sample	8130617
TNT-PS-I-11102015 Composite Soil Sample	8130618
TNT-PS-J-11102015 Composite Soil Sample	8130619
TNT-PS-K-11102015 Composite Soil Sample	8130620

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

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ELECTRONIC COPY TO	Arcadis	Attn: Mitch Wacksman
ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: James McLaughlin
ELECTRONIC COPY TO	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Natalie R. Luciano
Senior Specialist

(717) 556-7258

Sample Description: TNT-PS-A-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130610
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:20 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPA SDG#: KVM60-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		16	84	5
10727	Acenaphthylene	208-96-8	N.D.		16	84	5
10727	Acetophenone	98-86-2	N.D.		83	160	5
10727	Anthracene	120-12-7	N.D.		16	84	5
10727	Atrazine	1912-24-9	N.D.		160	820	5
10727	Benzaldehyde	100-52-7	N.D.		330	820	5
10727	Benzo(a)anthracene	56-55-3	39	J	16	84	5
10727	Benzo(a)pyrene	50-32-8	34	J	16	84	5
10727	Benzo(b)fluoranthene	205-99-2	61	J	16	84	5
10727	Benzo(g,h,i)perylene	191-24-2	26	J	16	84	5
10727	Benzo(k)fluoranthene	207-08-9	23	J	16	84	5
10727	1,1'-Biphenyl	92-52-4	N.D.		83	160	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		83	160	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	820	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	820	5
10727	Caprolactam	105-60-2	N.D.		160	820	5
10727	Carbazole	86-74-8	N.D.		83	160	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		83	160	5
10727	4-Chloroaniline	106-47-8	N.D.		160	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		83	160	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		83	160	5
10727	2-Chloronaphthalene	91-58-7	N.D.		33	160	5
10727	2-Chlorophenol	95-57-8	N.D.		83	160	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		83	160	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		83	160	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	47	J	16	84	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		16	84	5
10727	Dibenzofuran	132-64-9	N.D.		83	160	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		490	1,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		83	160	5
10727	Diethylphthalate	84-66-2	N.D.		330	820	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		83	160	5
10727	Dimethylphthalate	131-11-3	N.D.		330	820	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		820	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	4,900	5
10727	2,4-Dinitrotoluene	121-14-2	2,300		330	820	5
10727	2,6-Dinitrotoluene	606-20-2	670		83	160	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	840	5
10727	Fluoranthene	206-44-0	69	J	16	84	5
10727	Fluorene	86-73-7	N.D.		16	84	5
10727	Hexachlorobenzene	118-74-1	N.D.		16	84	5
10727	Hexachlorobutadiene	87-68-3	N.D.		83	160	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		820	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		160	820	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	24	J	16	84	5
10727	Isophorone	78-59-1	N.D.		83	160	5
10727	2-Methylnaphthalene	91-57-6	N.D.		16	84	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130610
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:20 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPA SDG#: KVM60-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		83	160	5
10727	4-Methylphenol	106-44-5	N.D.		83	160	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		16	84	5
10727	2-Nitroaniline	88-74-4	N.D.		83	160	5
10727	3-Nitroaniline	99-09-2	N.D.		330	820	5
10727	4-Nitroaniline	100-01-6	N.D.		330	820	5
10727	Nitrobenzene	98-95-3	N.D.		83	160	5
10727	2-Nitrophenol	88-75-5	N.D.		83	160	5
10727	4-Nitrophenol	100-02-7	N.D.		820	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		83	160	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		83	160	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	820	5
10727	Pentachlorophenol	87-86-5	N.D.		160	840	5
10727	Phenanthrene	85-01-8	31	J	16	84	5
10727	Phenol	108-95-2	N.D.		83	160	5
10727	Pyrene	129-00-0	58	J	16	84	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		83	160	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		83	160	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	40,000		1,300	3,600	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	26,000		890	2,700	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		890	2,700	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		890	2,700	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		890	2,700	10
06918	HMX	2691-41-0	N.D.		2,200	6,700	10
06918	Nitrobenzene	98-95-3	N.D.		890	2,700	10
06918	Nitroglycerin	55-63-0	N.D.		18,000	54,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		890	2,700	10
06918	2-Nitrotoluene	88-72-2	N.D.		1,800	3,600	10
06918	3-Nitrotoluene	99-08-1	N.D.		2,200	4,500	10
06918	4-Nitrotoluene	99-99-0	N.D.		1,800	3,600	10
06918	PETN	78-11-5	N.D.		18,000	54,000	10
06918	RDX	121-82-4	N.D.		1,200	2,700	10
06918	Tetryl	479-45-8	N.D.		1,400	3,600	10
06918	1,3,5-Trinitrobenzene	99-35-4	2,400	J	890	2,700	10
06918	2,4,6-Trinitrotoluene	118-96-7	1,500,000		18,000	54,000	200
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130610
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:20 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPA SDG#: KVM60-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,060	608	1,820	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 01:18	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/25/2015 19:25	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/25/2015 20:08	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 21:38	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPA

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130610
Sample wt/vol: 30.31(g/mL) g Lab File ID: bk1319.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.249	770	J
2.	Unknown	6.622	760	J
3.	Unknown	6.767	880	J
4.17301-23-4	Undecane, 2,6-dimethyl-	6.814	780	J
5.58462-32-1	trans,trans-3-Ethylbicyclo[4	6.995	1100	J
6.	Unknown	7.047	900	J
7.6117-97-1	Dodecane, 4-methyl-	7.088	790	J
8.	Unknown Alkane	7.123	1100	J
9.61141-72-8	Dodecane, 4,6-dimethyl-	7.164	2400	J
10.629-50-5	Tridecane	7.333	4000	J
11.	Unknown	7.408	800	J
12.	Unknown Alkane	7.426	760	J
13.	Unknown	7.461	780	J
14.	Unknown Alkane	7.525	780	J
15.	Unknown	7.572	1000	J
16.	Unknown Cycloalkane	7.624	1200	J
17.1560-96-9	Tridecane, 2-methyl-	7.688	1400	J
18.629-59-4	Tetradecane	7.886	4300	J
19.629-62-9	Pentadecane	7.927	1400	J
20.	Unknown	8.067	940	J
21.	Unknown Alkane	8.137	1100	J
22.544-76-3	Hexadecane	8.889	880	J
23.	Unknown	9.466	330000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.381	20000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.603	12000	J
26.				
27.SVOCTIC	Total SVOC TICs		400000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130611
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:30 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPB SDG#: KVM60-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		16	84	5
10727	Acenaphthylene	208-96-8	N.D.		16	84	5
10727	Acetophenone	98-86-2	N.D.		82	160	5
10727	Anthracene	120-12-7	N.D.		16	84	5
10727	Atrazine	1912-24-9	N.D.		160	820	5
10727	Benzaldehyde	100-52-7	N.D.		330	820	5
10727	Benzo(a)anthracene	56-55-3	43	J	16	84	5
10727	Benzo(a)pyrene	50-32-8	36	J	16	84	5
10727	Benzo(b)fluoranthene	205-99-2	56	J	16	84	5
10727	Benzo(g,h,i)perylene	191-24-2	26	J	16	84	5
10727	Benzo(k)fluoranthene	207-08-9	22	J	16	84	5
10727	1,1'-Biphenyl	92-52-4	N.D.		82	160	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		82	160	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	820	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	820	5
10727	Caprolactam	105-60-2	N.D.		160	820	5
10727	Carbazole	86-74-8	N.D.		82	160	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		82	160	5
10727	4-Chloroaniline	106-47-8	N.D.		160	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		82	160	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		82	160	5
10727	2-Chloronaphthalene	91-58-7	N.D.		33	160	5
10727	2-Chlorophenol	95-57-8	N.D.		82	160	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		82	160	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		82	160	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	44	J	16	84	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		16	84	5
10727	Dibenzofuran	132-64-9	N.D.		82	160	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		490	1,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		82	160	5
10727	Diethylphthalate	84-66-2	N.D.		330	820	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		82	160	5
10727	Dimethylphthalate	131-11-3	N.D.		330	820	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		820	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	4,900	5
10727	2,4-Dinitrotoluene	121-14-2	3,200		330	820	5
10727	2,6-Dinitrotoluene	606-20-2	800		82	160	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	840	5
10727	Fluoranthene	206-44-0	72	J	16	84	5
10727	Fluorene	86-73-7	N.D.		16	84	5
10727	Hexachlorobenzene	118-74-1	N.D.		16	84	5
10727	Hexachlorobutadiene	87-68-3	N.D.		82	160	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		820	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		160	820	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	24	J	16	84	5
10727	Isophorone	78-59-1	N.D.		82	160	5
10727	2-Methylnaphthalene	91-57-6	N.D.		16	84	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130611
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:30 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPB SDG#: KVM60-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		82	160	5
10727	4-Methylphenol	106-44-5	N.D.		82	160	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		16	84	5
10727	2-Nitroaniline	88-74-4	N.D.		82	160	5
10727	3-Nitroaniline	99-09-2	N.D.		330	820	5
10727	4-Nitroaniline	100-01-6	N.D.		330	820	5
10727	Nitrobenzene	98-95-3	N.D.		82	160	5
10727	2-Nitrophenol	88-75-5	N.D.		82	160	5
10727	4-Nitrophenol	100-02-7	N.D.		820	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		82	160	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		82	160	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	820	5
10727	Pentachlorophenol	87-86-5	N.D.		160	840	5
10727	Phenanthrene	85-01-8	33	J	16	84	5
10727	Phenol	108-95-2	N.D.		82	160	5
10727	Pyrene	129-00-0	61	J	16	84	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		82	160	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		82	160	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	14,000		1,500	3,900	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	15,000		980	2,900	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		980	2,900	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		980	2,900	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		980	2,900	10
06918	HMX	2691-41-0	N.D.		2,400	7,300	10
06918	Nitrobenzene	98-95-3	N.D.		980	2,900	10
06918	Nitroglycerin	55-63-0	N.D.		20,000	59,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		980	2,900	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,000	3,900	10
06918	3-Nitrotoluene	99-08-1	N.D.		2,400	4,900	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,000	3,900	10
06918	PETN	78-11-5	N.D.		20,000	59,000	10
06918	RDX	121-82-4	N.D.		1,300	2,900	10
06918	Tetryl	479-45-8	N.D.		1,600	3,900	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		980	2,900	10
06918	2,4,6-Trinitrotoluene	118-96-7	1,700,000		20,000	59,000	200
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130611
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:30 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPB SDG#: KVM60-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		mg/kg	mg/kg	mg/kg	
00383	TOC by Lloyd Kahn	n.a.	6,160	829	2,490	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 01:40	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/25/2015 20:50	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/25/2015 21:33	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 22:39	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPB

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130611
Sample wt/vol: 30.38(g/mL) g Lab File ID: bk1320.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.248	800	J
2.	Unknown	6.767	870	J
3.	Unknown Alkane	6.814	870	J
4.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	6.994	1100	J
5.	Unknown Alkane	7.053	940	J
6.6117-97-1	Dodecane, 4-methyl-	7.088	830	J
7.	Unknown Alkane	7.123	1100	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	7.163	2500	J
9.629-50-5	Tridecane	7.333	4100	J
10.	Unknown	7.408	830	J
11.	Unknown Alkane	7.426	800	J
12.	Unknown	7.461	840	J
13.	Unknown Alkane	7.525	840	J
14.	Unknown	7.571	1100	J
15.	Unknown Cycloalkane	7.624	1200	J
16.1560-96-9	Tridecane, 2-methyl-	7.688	1500	J
17.629-59-4	Tetradecane	7.886	4100	J
18.	Unknown Alkane	7.927	1600	J
19.	Unknown	7.991	1300	J
20.	Unknown	8.067	1000	J
21.	Unknown	8.137	1400	J
22.	Unknown	8.218	960	J
23.	Unknown	9.477	340000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.369	7700	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.597	7400	J
26.				
27.SVOCTIC	Total SVOC TICs		380000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130612
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 14:45 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPC SDG#: KVM60-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		17	85	5
10727	Acenaphthylene	208-96-8	N.D.		17	85	5
10727	Acetophenone	98-86-2	N.D.		83	170	5
10727	Anthracene	120-12-7	N.D.		17	85	5
10727	Atrazine	1912-24-9	N.D.		170	830	5
10727	Benzaldehyde	100-52-7	N.D.		330	830	5
10727	Benzo(a)anthracene	56-55-3	38	J	17	85	5
10727	Benzo(a)pyrene	50-32-8	32	J	17	85	5
10727	Benzo(b)fluoranthene	205-99-2	61	J	17	85	5
10727	Benzo(g,h,i)perylene	191-24-2	24	J	17	85	5
10727	Benzo(k)fluoranthene	207-08-9	25	J	17	85	5
10727	1,1'-Biphenyl	92-52-4	N.D.		83	170	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		83	170	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	830	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	830	5
10727	Caprolactam	105-60-2	N.D.		170	830	5
10727	Carbazole	86-74-8	N.D.		83	170	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		83	170	5
10727	4-Chloroaniline	106-47-8	N.D.		170	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		83	170	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		83	170	5
10727	2-Chloronaphthalene	91-58-7	N.D.		33	160	5
10727	2-Chlorophenol	95-57-8	N.D.		83	170	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		83	170	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		83	170	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	52	J	17	85	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		17	85	5
10727	Dibenzofuran	132-64-9	N.D.		83	170	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		500	1,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		83	170	5
10727	Diethylphthalate	84-66-2	N.D.		330	830	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		83	170	5
10727	Dimethylphthalate	131-11-3	N.D.		330	830	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		830	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	5,000	5
10727	2,4-Dinitrotoluene	121-14-2	3,700		330	830	5
10727	2,6-Dinitrotoluene	606-20-2	820		83	170	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	850	5
10727	Fluoranthene	206-44-0	76	J	17	85	5
10727	Fluorene	86-73-7	N.D.		17	85	5
10727	Hexachlorobenzene	118-74-1	N.D.		17	85	5
10727	Hexachlorobutadiene	87-68-3	N.D.		83	170	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		830	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		170	830	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	25	J	17	85	5
10727	Isophorone	78-59-1	N.D.		83	170	5
10727	2-Methylnaphthalene	91-57-6	N.D.		17	85	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130612
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 14:45 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPC SDG#: KVM60-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		83	170	5
10727	4-Methylphenol	106-44-5	N.D.		83	170	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		17	85	5
10727	2-Nitroaniline	88-74-4	N.D.		83	170	5
10727	3-Nitroaniline	99-09-2	N.D.		330	830	5
10727	4-Nitroaniline	100-01-6	N.D.		330	830	5
10727	Nitrobenzene	98-95-3	N.D.		83	170	5
10727	2-Nitrophenol	88-75-5	N.D.		83	170	5
10727	4-Nitrophenol	100-02-7	N.D.		830	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		83	170	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		83	170	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	830	5
10727	Pentachlorophenol	87-86-5	N.D.		170	850	5
10727	Phenanthrene	85-01-8	45	J	17	85	5
10727	Phenol	108-95-2	N.D.		83	170	5
10727	Pyrene	129-00-0	61	J	17	85	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		83	170	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		83	170	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	18,000		1,400	3,800	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	19,000		940	2,800	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		940	2,800	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		940	2,800	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		940	2,800	10
06918	HMX	2691-41-0	N.D.		2,400	7,100	10
06918	Nitrobenzene	98-95-3	N.D.		940	2,800	10
06918	Nitroglycerin	55-63-0	N.D.		19,000	57,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		940	2,800	10
06918	2-Nitrotoluene	88-72-2	N.D.		1,900	3,800	10
06918	3-Nitrotoluene	99-08-1	N.D.		2,400	4,700	10
06918	4-Nitrotoluene	99-99-0	N.D.		1,900	3,800	10
06918	PETN	78-11-5	N.D.		19,000	57,000	10
06918	RDX	121-82-4	N.D.		1,200	2,800	10
06918	Tetryl	479-45-8	N.D.		1,500	3,800	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		940	2,800	10
06918	2,4,6-Trinitrotoluene	118-96-7	1,900,000		19,000	57,000	200
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130612
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 14:45 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPC SDG#: KVM60-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,400	616	1,850	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 02:02	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/25/2015 22:15	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/25/2015 22:57	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 22:46	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPC

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130612
Sample wt/vol: 30.17(g/mL) g Lab File ID: bk1321.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	6.249	1100	J
2.	Unknown	6.732	1700	J
3.6044-71-9	Dodecane, 6-methyl-	6.814	1500	J
4.	Unknown Alkane	6.907	1400	J
5.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	6.995	1300	J
6.	Unknown Alkane	7.088	1200	J
7.	Unknown Alkane	7.117	1500	J
8.31295-56-4	Dodecane, 2,6,11-trimethyl-	7.164	3300	J
9.629-50-5	Tridecane	7.333	5400	J
10.	Unknown	7.374	1500	J
11.	Unknown Alkane	7.426	1800	J
12.	Unknown	7.461	1700	J
13.	Unknown Alkane	7.525	1200	J
14.	Unknown Cycloalkane	7.624	950	J
15.	Unknown Alkane	7.688	1100	J
16.629-59-4	Tetradecane	7.886	3400	J
17.	Unknown Alkane	7.927	1200	J
18.	Unknown	7.991	990	J
19.	Unknown	8.067	820	J
20.	Unknown Alkane	8.137	970	J
21.	Unknown Alkane	8.184	870	J
22.544-76-3	Hexadecane	8.889	850	J
23.	Unknown	9.478	400000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.375	10000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.597	9500	J
26.				
27.SVOCTIC	Total SVOC TICs		460000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130613
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 14:50 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPD SDG#: KVM60-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	73	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	52	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	86	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	47	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	46	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	86	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,400	5
10727	Fluoranthene	206-44-0	130	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130613
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 14:50 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPD SDG#: KVM60-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	3,600		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	76	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	100	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,200	J	2,300	6,200	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,500	J	1,500	4,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,500	4,600	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,500	4,600	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,500	4,600	10
06918	HMX	2691-41-0	N.D.		3,900	12,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,500	4,600	10
06918	Nitroglycerin	55-63-0	N.D.		31,000	92,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,500	4,600	10
06918	2-Nitrotoluene	88-72-2	N.D.		3,100	6,200	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,900	7,700	10
06918	4-Nitrotoluene	99-99-0	N.D.		3,100	6,200	10
06918	PETN	78-11-5	N.D.		31,000	92,000	10
06918	RDX	121-82-4	N.D.		2,000	4,600	10
06918	Tetryl	479-45-8	N.D.		2,500	6,200	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,500	4,600	10
06918	2,4,6-Trinitrotoluene	118-96-7	10,000		1,500	4,600	10

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130613
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 14:50 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPD SDG#: KVM60-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	24,000	1,180	3,530	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	37.9	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 02:24	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/25/2015 23:40	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 22:53	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15336820007A	12/02/2015 19:13	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPD

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130613
Sample wt/vol: 30.23(g/mL) g Lab File ID: bk1322.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 37.9 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79-09-4	Propanoic acid	2.920	49000	J
2.	Unknown	2.973	18000	J
3.	Unknown	3.025	24000	J
4.	Unknown	3.264	140000	J
5.	Unknown	3.323	54000	J
6.	Unknown	3.369	47000	J
7.	Unknown	3.503	21000	J
8. 107-92-6	Butanoic acid	3.666	14000	J
9.	Unknown	3.725	13000	J
10.	Unknown	3.911	92000	J
11.	Unknown	3.970	32000	J
12.	Unknown	4.063	79000	J
13.	Unknown	4.698	69000	J
14. 109-52-4	Pentanoic acid	4.739	23000	J
15. 103-82-2	Benzeneacetic acid	7.018	6700	J
16.	Unknown Alkane	7.164	4900	J
17. 629-50-5	Tridecane	7.333	11000	J
18. 629-59-4	Tetradecane	7.886	6800	J
19. 57-10-3	n-Hexadecanoic acid	10.498	120000	J
20. 60-33-3	9,12-Octadecadienoic acid (Z	11.174	36000	J
21. 61886-62-2	3-Hexadecyne	11.325	1400	J
22.	Unknown	11.494	1500	J
23.	Unknown	11.535	2200	J
24.	Unknown	11.908	13000	J
25.	Unknown	11.972	5800	J
26.				
27. SVOCTIC	Total SVOC TICs		890000	J
28.				
29.				
30.				

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FORM I SV-1

Sample Description: TNT-PS-E-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130614
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:05 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPE SDG#: KVM60-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,300	5
10727	Benzo(a)anthracene	56-55-3	75	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	61	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	95	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	36	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	52	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		54	270	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	96	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		540	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	190	J	130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	140		27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	34	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130614
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:05 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPE SDG#: KVM60-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	2,800		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	71	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	98	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,800	J	2,300	6,200	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	3,700	J	1,500	4,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,500	4,600	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,500	4,600	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,500	4,600	10
06918	HMX	2691-41-0	N.D.		3,800	12,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,500	4,600	10
06918	Nitroglycerin	55-63-0	N.D.		31,000	92,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,500	4,600	10
06918	2-Nitrotoluene	88-72-2	N.D.		3,100	6,200	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,800	7,700	10
06918	4-Nitrotoluene	99-99-0	N.D.		3,100	6,200	10
06918	PETN	78-11-5	N.D.		31,000	92,000	10
06918	RDX	121-82-4	N.D.		2,000	4,600	10
06918	Tetryl	479-45-8	N.D.		2,500	6,200	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,500	4,600	10
06918	2,4,6-Trinitrotoluene	118-96-7	260,000		1,500	4,600	10

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130614
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:05 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPE SDG#: KVM60-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	23,500	966	2,900	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	38.7	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 02:46	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 01:47	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 23:06	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15336820007A	12/02/2015 19:13	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPE

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130614
Sample wt/vol: 30.43(g/mL) g Lab File ID: bk1323.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 38.7 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 24 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.037	49000	J
2.	79-09-4	Propanoic acid	3.270	150000	J
3.		Unknown	3.340	66000	J
4.	79-31-2	Propanoic acid, 2-methyl-	3.497	23000	J
5.	107-92-6	Butanoic acid	3.731	19000	J
6.		Unknown	3.801	25000	J
7.		Unknown	3.853	16000	J
8.		Unknown Aldol Condensate	3.905	41000	JB
9.		Unknown	3.993	53000	J
10.		Unknown	4.687	64000	J
11.	142-62-1	Hexanoic acid	5.287	19000	J
12.	103-82-2	Benzeneacetic acid	7.018	3800	J
13.	629-50-5	Tridecane	7.333	8400	J
14.	629-59-4	Tetradecane	7.886	6400	J
15.	57-10-3	n-Hexadecanoic acid	10.503	140000	J
16.	60-33-3	9,12-Octadecadienoic acid (Z	11.174	12000	J
17.	112-79-8	9-Octadecenoic acid, (E)-	11.191	10000	J
18.		Unknown	11.325	1900	J
19.		Unknown	11.494	2300	J
20.		Unknown	11.535	3600	J
21.		Unknown	11.687	1100	J
22.		Unknown	11.815	1100	J
23.		Unknown	11.902	9700	J
24.		Unknown	11.978	7100	J
25.					
26.	SVOCTIC	Total SVOC TICs		730000	J
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130615
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:12 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPF SDG#: KVM60-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	78	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	67	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	100	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	40	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	46	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	96	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	760	J	530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,400	5
10727	Fluoranthene	206-44-0	140		27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	45	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130615
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:12 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPF SDG#: KVM60-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	200	J	130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	60	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	110	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	8,600		2,100	5,700	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	7,100		1,400	4,300	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,400	4,300	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,400	4,300	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,400	4,300	10
06918	HMX	2691-41-0	N.D.		3,600	11,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,400	4,300	10
06918	Nitroglycerin	55-63-0	N.D.		29,000	86,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,400	4,300	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,900	5,700	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,600	7,200	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,900	5,700	10
06918	PETN	78-11-5	N.D.		29,000	86,000	10
06918	RDX	121-82-4	N.D.		1,900	4,300	10
06918	Tetryl	479-45-8	N.D.		2,300	5,700	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,400	4,300	10
06918	2,4,6-Trinitrotoluene	118-96-7	18,000		1,400	4,300	10
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130615
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:12 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPF SDG#: KVM60-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	14,300	1,410	4,240	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	37.6	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 03:08	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 03:12	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 23:13	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15336820007A	12/02/2015 19:13	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPF

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130615
Sample wt/vol: 30.05(g/mL) g Lab File ID: bk1324.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 37.6 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	2.722	22000	J
2.	Unknown	2.856	25000	J
3.	Unknown	3.002	33000	J
4.	Unknown	3.060	13000	J
5.	Unknown	3.136	39000	J
6.	Unknown	3.602	13000	J
7.	Unknown	3.701	23000	J
8.	Unknown	6.995	3900	J
9.61141-72-8	Dodecane, 4,6-dimethyl-	7.164	4000	J
10.629-50-5	Tridecane	7.333	6800	J
11.	Unknown Alkane	7.426	2700	J
12.629-59-4	Tetradecane	7.886	7600	J
13.	Unknown Alkane	8.137	3100	J
14.	Unknown	10.282	9800	J
15.19406-51-0	p-Toluidine, 3,5-dinitro-	10.358	10000	J
16.57-10-3	n-Hexadecanoic acid	10.480	51000	J
17.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.585	1700	J
18.60-33-3	9,12-Octadecadienoic acid (Z	11.150	8600	J
19.112-79-8	9-Octadecenoic acid, (E)-	11.168	8300	J
20.1000336-36-2	Methyl 9,12-heptadecadienoat	11.319	4200	J
21.	Unknown	11.518	2600	J
22.	Unknown	11.891	9700	J
23.	Unknown	11.949	3200	J
24.	Unknown	12.042	2000	J
25.295-48-7	Cyclopentadecane	12.386	1700	J
26.				
27.SVOCTIC	Total SVOC TICs		310000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130616
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:40 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPG SDG#: KVM60-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		26	130	5
10727	Acenaphthylene	208-96-8	N.D.		26	130	5
10727	Acetophenone	98-86-2	170	J	130	260	5
10727	Anthracene	120-12-7	26	J	26	130	5
10727	Atrazine	1912-24-9	N.D.		260	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		520	1,300	5
10727	Benzo(a)anthracene	56-55-3	84	J	26	130	5
10727	Benzo(a)pyrene	50-32-8	58	J	26	130	5
10727	Benzo(b)fluoranthene	205-99-2	110	J	26	130	5
10727	Benzo(g,h,i)perylene	191-24-2	41	J	26	130	5
10727	Benzo(k)fluoranthene	207-08-9	43	J	26	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	260	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	260	5
10727	Butylbenzylphthalate	85-68-7	N.D.		520	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		520	1,300	5
10727	Caprolactam	105-60-2	N.D.		260	1,300	5
10727	Carbazole	86-74-8	N.D.		130	260	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	260	5
10727	4-Chloroaniline	106-47-8	N.D.		260	520	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	260	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	260	5
10727	2-Chloronaphthalene	91-58-7	N.D.		52	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	260	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	260	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	260	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	93	J	26	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		26	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	260	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		790	2,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	260	5
10727	Diethylphthalate	84-66-2	N.D.		520	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	260	5
10727	Dimethylphthalate	131-11-3	N.D.		520	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	3,900	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	7,900	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		520	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	N.D.		130	260	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		520	1,300	5
10727	Fluoranthene	206-44-0	160		26	130	5
10727	Fluorene	86-73-7	N.D.		26	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		26	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	260	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	3,900	5
10727	Hexachloroethane	67-72-1	N.D.		260	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	43	J	26	130	5
10727	Isophorone	78-59-1	N.D.		130	260	5
10727	2-Methylnaphthalene	91-57-6	37	J	26	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130616
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:40 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPG SDG#: KVM60-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	260	5
10727	4-Methylphenol	106-44-5	4,800		130	260	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	140		26	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	260	5
10727	3-Nitroaniline	99-09-2	N.D.		520	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		520	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	260	5
10727	2-Nitrophenol	88-75-5	N.D.		130	260	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	3,900	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	260	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	260	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		520	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		260	1,300	5
10727	Phenanthrene	85-01-8	94	J	26	130	5
10727	Phenol	108-95-2	N.D.		130	260	5
10727	Pyrene	129-00-0	130	J	26	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	260	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	260	5
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,900	J	2,100	5,600	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,900	J	1,400	4,200	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,400	4,200	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,400	4,200	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,400	4,200	10
06918	HMX	2691-41-0	N.D.		3,500	11,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,400	4,200	10
06918	Nitroglycerin	55-63-0	N.D.		28,000	84,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,400	4,200	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,800	5,600	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,500	7,000	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,800	5,600	10
06918	PETN	78-11-5	N.D.		28,000	84,000	10
06918	RDX	121-82-4	N.D.		1,800	4,200	10
06918	Tetryl	479-45-8	N.D.		2,300	5,600	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,400	4,200	10
06918	2,4,6-Trinitrotoluene	118-96-7	16,000		1,400	4,200	10

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130616
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:40 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPG SDG#: KVM60-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	19,700	844	2,530	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	37.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 03:30	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 04:37	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 23:42	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15336820007A	12/02/2015 19:13	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPG

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130616
Sample wt/vol: 30.35(g/mL) g Lab File ID: bk1325.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 37.1 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	2.914	21000	J
2.	Unknown	3.841	49000	J
3.	Unknown Aldol Condensate	3.865	23000	JB
4.	Unknown	3.923	21000	J
5.107-92-6	Butanoic acid	4.028	69000	J
6.	Unknown	4.109	71000	J
7.	Unknown	4.686	48000	J
8.142-62-1	Hexanoic acid	5.351	37000	J
9.	Unknown	7.018	6800	J
10.61141-72-8	Dodecane, 4,6-dimethyl-	7.164	4600	J
11.629-50-5	Tridecane	7.333	11000	J
12.	Unknown Alkane	7.426	4600	J
13.501-52-0	Hydrocinnamic acid	7.525	5700	J
14.	Unknown Cycloalkane	7.624	3400	J
15.629-59-4	Tetradecane	7.886	6800	J
16.	Unknown Alkane	8.137	3400	J
17.	Unknown Organic Acid	9.629	26000	J
18.57-10-3	n-Hexadecanoic acid	10.538	260000	J
19.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.591	1400	J
20.59229-75-3	1,3-Benzenediamine, 2-methyl	10.626	1100	J
21.13126-39-1	cis-13-Octadecenoic acid	11.174	4700	J
22.	Unknown	11.197	2400	J
23.	Unknown	11.523	1300	J
24.	Unknown	11.879	2200	J
25.	Unknown	11.960	3900	J
26.				
27.SVOCTIC	Total SVOC TICs		700000	J
28.				
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page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130617
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:50 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPH SDG#: KVM60-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	150	J	130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	96	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	71	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	110	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	52	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	50	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	110	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	N.D.		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	250	J	130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,400	5
10727	Fluoranthene	206-44-0	140		27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	42	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130617
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:50 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPH SDG#: KVM60-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	6,100		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	65	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	120	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	5,600	J	2,300	6,200	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	4,600	J	1,500	4,600	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,500	4,600	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,500	4,600	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,500	4,600	10
06918	HMX	2691-41-0	N.D.		3,900	12,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,500	4,600	10
06918	Nitroglycerin	55-63-0	N.D.		31,000	93,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,500	4,600	10
06918	2-Nitrotoluene	88-72-2	N.D.		3,100	6,200	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,900	7,700	10
06918	4-Nitrotoluene	99-99-0	N.D.		3,100	6,200	10
06918	PETN	78-11-5	N.D.		31,000	93,000	10
06918	RDX	121-82-4	N.D.		2,000	4,600	10
06918	Tetryl	479-45-8	N.D.		2,500	6,200	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,500	4,600	10
06918	2,4,6-Trinitrotoluene	118-96-7	19,000		1,500	4,600	10
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130617
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:50 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPH SDG#: KVM60-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,900	749	2,250	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	37.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 03:52	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 06:01	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 23:49	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15336820007A	12/02/2015 19:13	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
TNTPH

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130617
Sample wt/vol: 30.22(g/mL) g Lab File ID: bk1326.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 37.8 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79-09-4	Propanoic acid	2.914	19000	J
2.	Unknown	3.363	20000	J
3. 79-31-2	Propanoic acid, 2-methyl-	3.468	16000	J
4.	Unknown	3.649	16000	J
5. 107-92-6	Butanoic acid	3.824	54000	J
6.	Unknown Aldol Condensate	3.864	29000	JB
7.	Unknown	3.917	23000	J
8.	Unknown	3.999	57000	J
9.	Unknown	4.068	63000	J
10.	Unknown	4.098	28000	J
11.	Unknown	4.296	16000	J
12. 109-52-4	Pentanoic acid	4.616	27000	J
13. 142-62-1	Hexanoic acid	5.368	50000	J
14. 103-82-2	Benzeneacetic acid	7.024	6700	J
15. 61141-72-8	Dodecane, 4,6-dimethyl-	7.164	4200	J
16. 629-50-5	Tridecane	7.333	11000	J
17. 501-52-0	Hydrocinnamic acid	7.537	5800	J
18. 629-59-4	Tetradecane	7.886	6700	J
19. 544-63-8	Tetradecanoic acid	9.612	8200	J
20.	Unknown	10.282	8900	J
21. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.358	9100	J
22. 57-10-3	n-Hexadecanoic acid	10.503	120000	J
23. 593-39-5	6-Octadecenoic acid, (Z)-	11.162	9200	J
24.	Unknown	11.873	2300	J
25.	Unknown	11.955	4300	J
26.				
27. SVOCTIC	Total SVOC TICs		620000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130618
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:00 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPI SDG#: KVM60-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		27	140	5
10727	Acenaphthylene	208-96-8	N.D.		27	140	5
10727	Acetophenone	98-86-2	N.D.		130	270	5
10727	Anthracene	120-12-7	N.D.		27	140	5
10727	Atrazine	1912-24-9	N.D.		270	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		540	1,300	5
10727	Benzo(a)anthracene	56-55-3	85	J	27	140	5
10727	Benzo(a)pyrene	50-32-8	55	J	27	140	5
10727	Benzo(b)fluoranthene	205-99-2	97	J	27	140	5
10727	Benzo(g,h,i)perylene	191-24-2	38	J	27	140	5
10727	Benzo(k)fluoranthene	207-08-9	54	J	27	140	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	270	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	270	5
10727	Butylbenzylphthalate	85-68-7	N.D.		540	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		540	1,300	5
10727	Caprolactam	105-60-2	N.D.		270	1,300	5
10727	Carbazole	86-74-8	N.D.		130	270	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	270	5
10727	4-Chloroaniline	106-47-8	N.D.		270	540	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	270	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	270	5
10727	2-Chloronaphthalene	91-58-7	N.D.		54	270	5
10727	2-Chlorophenol	95-57-8	N.D.		130	270	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	270	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	270	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	84	J	27	140	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		27	140	5
10727	Dibenzofuran	132-64-9	N.D.		130	270	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		800	2,700	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	270	5
10727	Diethylphthalate	84-66-2	N.D.		540	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	270	5
10727	Dimethylphthalate	131-11-3	N.D.		540	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	8,000	5
10727	2,4-Dinitrotoluene	121-14-2	980	J	540	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	300		130	270	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		540	1,400	5
10727	Fluoranthene	206-44-0	130	J	27	140	5
10727	Fluorene	86-73-7	N.D.		27	140	5
10727	Hexachlorobenzene	118-74-1	N.D.		27	140	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	270	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		270	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	39	J	27	140	5
10727	Isophorone	78-59-1	N.D.		130	270	5
10727	2-Methylnaphthalene	91-57-6	N.D.		27	140	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130618
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:00 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPI SDG#: KVM60-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	270	5
10727	4-Methylphenol	106-44-5	1,300		130	270	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		27	140	5
10727	2-Nitroaniline	88-74-4	N.D.		130	270	5
10727	3-Nitroaniline	99-09-2	N.D.		540	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		540	1,300	5
10727	Nitrobenzene	98-95-3	N.D.		130	270	5
10727	2-Nitrophenol	88-75-5	N.D.		130	270	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	270	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	270	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		540	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		270	1,400	5
10727	Phenanthrene	85-01-8	60	J	27	140	5
10727	Phenol	108-95-2	N.D.		130	270	5
10727	Pyrene	129-00-0	110	J	27	140	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	270	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	270	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	9,100		2,100	5,700	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	5,800		1,400	4,300	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,400	4,300	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,400	4,300	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,400	4,300	10
06918	HMX	2691-41-0	N.D.		3,600	11,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,400	4,300	10
06918	Nitroglycerin	55-63-0	N.D.		29,000	86,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,400	4,300	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,900	5,700	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,600	7,200	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,900	5,700	10
06918	PETN	78-11-5	N.D.		29,000	86,000	10
06918	RDX	121-82-4	N.D.		1,900	4,300	10
06918	Tetryl	479-45-8	N.D.		2,300	5,700	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,400	4,300	10
06918	2,4,6-Trinitrotoluene	118-96-7	25,000		1,400	4,300	10
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130618
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:00 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPI SDG#: KVM60-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,800	917	2,750	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	38.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 04:14	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 07:26	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/19/2015 23:57	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15336820007A	12/02/2015 19:13	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPI

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130618
Sample wt/vol: 30.46(g/mL) g Lab File ID: bk1327.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 38.8 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.79-09-4	Propanoic acid	2.868	36000	J
2.	Unknown	3.660	26000	J
3.	Unknown	3.754	21000	J
4.	Unknown	3.864	55000	J
5.	Unknown	4.570	19000	J
6.	Unknown	5.275	15000	J
7.142-62-1	Hexanoic acid	5.322	15000	J
8.112-40-3	Dodecane	6.738	3800	J
9.	Unknown	6.994	3400	J
10.	Unknown	7.018	3300	J
11.	Unknown Alkane	7.164	4500	J
12.629-50-5	Tridecane	7.333	12000	J
13.501-52-0	Hydrocinnamic acid	7.525	3900	J
14.	Unknown Cycloalkane	7.624	3300	J
15.629-59-4	Tetradecane	7.886	8300	J
16.	Unknown	8.137	2700	J
17.	Unknown	9.378	33000	J
18.	Unknown	9.990	8300	J
19.	Unknown	10.288	13000	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	10.363	12000	J
21.57-10-3	n-Hexadecanoic acid	10.492	71000	J
22.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.591	2800	J
23.593-39-5	6-Octadecenoic acid, (Z)-	11.162	12000	J
24.	Unknown	11.879	3200	J
25.	Unknown	11.955	3200	J
26.				
27.SVOCTIC	Total SVOC TICs		390000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130619
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:20 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPJ SDG#: KVM60-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		26	130	5
10727	Acenaphthylene	208-96-8	N.D.		26	130	5
10727	Acetophenone	98-86-2	N.D.		130	260	5
10727	Anthracene	120-12-7	N.D.		26	130	5
10727	Atrazine	1912-24-9	N.D.		260	1,300	5
10727	Benzaldehyde	100-52-7	N.D.		530	1,300	5
10727	Benzo(a)anthracene	56-55-3	65	J	26	130	5
10727	Benzo(a)pyrene	50-32-8	48	J	26	130	5
10727	Benzo(b)fluoranthene	205-99-2	77	J	26	130	5
10727	Benzo(g,h,i)perylene	191-24-2	30	J	26	130	5
10727	Benzo(k)fluoranthene	207-08-9	42	J	26	130	5
10727	1,1'-Biphenyl	92-52-4	N.D.		130	260	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		130	260	5
10727	Butylbenzylphthalate	85-68-7	N.D.		530	1,300	5
10727	Di-n-butylphthalate	84-74-2	N.D.		530	1,300	5
10727	Caprolactam	105-60-2	N.D.		260	1,300	5
10727	Carbazole	86-74-8	N.D.		130	260	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		130	260	5
10727	4-Chloroaniline	106-47-8	N.D.		260	530	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		130	260	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		130	260	5
10727	2-Chloronaphthalene	91-58-7	N.D.		53	260	5
10727	2-Chlorophenol	95-57-8	N.D.		130	260	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		130	260	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		130	260	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	72	J	26	130	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		26	130	5
10727	Dibenzofuran	132-64-9	N.D.		130	260	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		790	2,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		130	260	5
10727	Diethylphthalate	84-66-2	N.D.		530	1,300	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		130	260	5
10727	Dimethylphthalate	131-11-3	N.D.		530	1,300	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		1,300	4,000	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		2,400	7,900	5
10727	2,4-Dinitrotoluene	121-14-2	4,100		530	1,300	5
10727	2,6-Dinitrotoluene	606-20-2	990		130	260	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		530	1,300	5
10727	Fluoranthene	206-44-0	120	J	26	130	5
10727	Fluorene	86-73-7	N.D.		26	130	5
10727	Hexachlorobenzene	118-74-1	N.D.		26	130	5
10727	Hexachlorobutadiene	87-68-3	N.D.		130	260	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		1,300	4,000	5
10727	Hexachloroethane	67-72-1	N.D.		260	1,300	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	29	J	26	130	5
10727	Isophorone	78-59-1	N.D.		130	260	5
10727	2-Methylnaphthalene	91-57-6	N.D.		26	130	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130619
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:20 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPJ SDG#: KVM60-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		130	260	5
10727	4-Methylphenol	106-44-5	N.D.		130	260	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		26	130	5
10727	2-Nitroaniline	88-74-4	N.D.		130	260	5
10727	3-Nitroaniline	99-09-2	N.D.		530	1,300	5
10727	4-Nitroaniline	100-01-6	N.D.		530	1,300	5
10727	Nitrobenzene	98-95-3	140	J	130	260	5
10727	2-Nitrophenol	88-75-5	N.D.		130	260	5
10727	4-Nitrophenol	100-02-7	N.D.		1,300	4,000	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		130	260	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		130	260	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		530	1,300	5
10727	Pentachlorophenol	87-86-5	N.D.		260	1,300	5
10727	Phenanthrene	85-01-8	68	J	26	130	5
10727	Phenol	108-95-2	N.D.		130	260	5
10727	Pyrene	129-00-0	95	J	26	130	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		130	260	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		130	260	5
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	37,000		2,300	6,000	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	36,000		1,500	4,500	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,500	4,500	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,500	4,500	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,500	4,500	10
06918	HMX	2691-41-0	N.D.		3,800	11,000	10
06918	Nitrobenzene	98-95-3	N.D.		1,500	4,500	10
06918	Nitroglycerin	55-63-0	N.D.		30,000	91,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,500	4,500	10
06918	2-Nitrotoluene	88-72-2	N.D.		3,000	6,000	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,800	7,600	10
06918	4-Nitrotoluene	99-99-0	N.D.		3,000	6,000	10
06918	PETN	78-11-5	N.D.		30,000	91,000	10
06918	RDX	121-82-4	N.D.		2,000	4,500	10
06918	Tetryl	479-45-8	N.D.		2,400	6,000	10
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,500	4,500	10
06918	2,4,6-Trinitrotoluene	118-96-7	1,400,000		30,000	91,000	200
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130619
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 15:20 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPJ SDG#: KVM60-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	11,600	1,030	3,100	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	37.0	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 04:35	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 09:33	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 10:16	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531A	11/20/2015 00:06	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	15336820007A	12/02/2015 19:13	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPJ

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130619
Sample wt/vol: 30.12(g/mL) g Lab File ID: bk1328.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 37 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 112-40-3	Dodecane	6.732	2600	J
2.	Unknown	6.767	1500	J
3.	Unknown	6.814	2100	J
4. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.995	2100	J
5. 6044-71-9	Dodecane, 6-methyl-	7.047	1800	J
6. 6117-97-1	Dodecane, 4-methyl-	7.088	1600	J
7.	Unknown	7.123	2200	J
8. 61141-72-8	Dodecane, 4,6-dimethyl-	7.164	3300	J
9. 629-50-5	Tridecane	7.333	8500	J
10.	Unknown Alkane	7.426	3200	J
11.	Unknown	7.461	2400	J
12.	Unknown Alkane	7.525	1700	J
13.	Unknown	7.572	1300	J
14.	Unknown Cycloalkane	7.624	1600	J
15. 1560-96-9	Tridecane, 2-methyl-	7.688	1800	J
16. 629-59-4	Tetradecane	7.886	5500	J
17.	Unknown Alkane	7.927	1800	J
18.	Unknown	7.991	1400	J
19.	Unknown Alkane	8.137	2400	J
20.	Unknown	9.466	470000	J
21. 19406-51-0	p-Toluidine, 3,5-dinitro-	10.381	23000	J
22. 35572-78-2	Benzenamine, 2-methyl-3,5-di	10.603	21000	J
23.	Unknown	10.742	2400	J
24. 54833-23-7	Eicosane, 10-methyl-	13.703	3000	J
25. 646-31-1	Tetracosane	14.362	3200	J
26.				
27. SVOCTIC	Total SVOC TICs		570000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130620
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:10 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPK SDG#: KVM60-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	N.D.		16	84	5
10727	Acenaphthylene	208-96-8	N.D.		16	84	5
10727	Acetophenone	98-86-2	N.D.		82	160	5
10727	Anthracene	120-12-7	N.D.		16	84	5
10727	Atrazine	1912-24-9	N.D.		160	820	5
10727	Benzaldehyde	100-52-7	N.D.		330	820	5
10727	Benzo(a)anthracene	56-55-3	40	J	16	84	5
10727	Benzo(a)pyrene	50-32-8	28	J	16	84	5
10727	Benzo(b)fluoranthene	205-99-2	55	J	16	84	5
10727	Benzo(g,h,i)perylene	191-24-2	27	J	16	84	5
10727	Benzo(k)fluoranthene	207-08-9	20	J	16	84	5
10727	1,1'-Biphenyl	92-52-4	N.D.		82	160	5
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		82	160	5
10727	Butylbenzylphthalate	85-68-7	N.D.		330	820	5
10727	Di-n-butylphthalate	84-74-2	N.D.		330	820	5
10727	Caprolactam	105-60-2	N.D.		160	820	5
10727	Carbazole	86-74-8	N.D.		82	160	5
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		82	160	5
10727	4-Chloroaniline	106-47-8	N.D.		160	330	5
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		82	160	5
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		82	160	5
10727	2-Chloronaphthalene	91-58-7	N.D.		33	160	5
10727	2-Chlorophenol	95-57-8	N.D.		82	160	5
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		82	160	5
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		82	160	5
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	43	J	16	84	5
10727	Dibenz(a,h)anthracene	53-70-3	N.D.		16	84	5
10727	Dibenzofuran	132-64-9	N.D.		82	160	5
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		490	1,600	5
10727	2,4-Dichlorophenol	120-83-2	N.D.		82	160	5
10727	Diethylphthalate	84-66-2	N.D.		330	820	5
10727	2,4-Dimethylphenol	105-67-9	N.D.		82	160	5
10727	Dimethylphthalate	131-11-3	N.D.		330	820	5
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		820	2,500	5
10727	2,4-Dinitrophenol	51-28-5	N.D.		1,500	4,900	5
10727	2,4-Dinitrotoluene	121-14-2	2,600		330	820	5
10727	2,6-Dinitrotoluene	606-20-2	820		82	160	5
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		330	840	5
10727	Fluoranthene	206-44-0	67	J	16	84	5
10727	Fluorene	86-73-7	N.D.		16	84	5
10727	Hexachlorobenzene	118-74-1	N.D.		16	84	5
10727	Hexachlorobutadiene	87-68-3	N.D.		82	160	5
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		820	2,500	5
10727	Hexachloroethane	67-72-1	N.D.		160	820	5
10727	Indeno(1,2,3-cd)pyrene	193-39-5	30	J	16	84	5
10727	Isophorone	78-59-1	N.D.		82	160	5
10727	2-Methylnaphthalene	91-57-6	N.D.		16	84	5

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130620
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:10 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPK SDG#: KVM60-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylphenol	95-48-7	N.D.		82	160	5
10727	4-Methylphenol	106-44-5	N.D.		82	160	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	20	J	16	84	5
10727	2-Nitroaniline	88-74-4	N.D.		82	160	5
10727	3-Nitroaniline	99-09-2	N.D.		330	820	5
10727	4-Nitroaniline	100-01-6	N.D.		330	820	5
10727	Nitrobenzene	98-95-3	N.D.		82	160	5
10727	2-Nitrophenol	88-75-5	N.D.		82	160	5
10727	4-Nitrophenol	100-02-7	N.D.		820	2,500	5
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		82	160	5
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		82	160	5
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		330	820	5
10727	Pentachlorophenol	87-86-5	N.D.		160	840	5
10727	Phenanthrene	85-01-8	44	J	16	84	5
10727	Phenol	108-95-2	N.D.		82	160	5
10727	Pyrene	129-00-0	57	J	16	84	5
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		82	160	5
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		82	160	5
00886 SVOA TIC Interpretive(25)							
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	57,000		1,400	3,800	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	36,000		960	2,900	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		960	2,900	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		960	2,900	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		960	2,900	10
06918	HMX	2691-41-0	N.D.		2,400	7,200	10
06918	Nitrobenzene	98-95-3	N.D.		960	2,900	10
06918	Nitroglycerin	55-63-0	N.D.		19,000	58,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		960	2,900	10
06918	2-Nitrotoluene	88-72-2	N.D.		1,900	3,800	10
06918	3-Nitrotoluene	99-08-1	N.D.		2,400	4,800	10
06918	4-Nitrotoluene	99-99-0	N.D.		1,900	3,800	10
06918	PETN	78-11-5	N.D.		19,000	58,000	10
06918	RDX	121-82-4	N.D.		1,300	2,900	10
06918	Tetryl	479-45-8	N.D.		1,500	3,800	10
06918	1,3,5-Trinitrobenzene	99-35-4	1,200	J	960	2,900	10
06918	2,4,6-Trinitrotoluene	118-96-7	1,200,000		19,000	58,000	200
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-11102015 Composite Soil Sample
Ashland/Hercules

LL Sample # SW 8130620
LL Group # 1608680
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 11/10/2015 16:10 by SL

Submitted: 11/11/2015 20:10
Reported: 12/03/2015 16:15

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

TNTPK SDG#: KVM60-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	6,890	810	2,430	1

General Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	15324SLF026	11/23/2015 04:57	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	15324SLF026	11/21/2015 12:55	Shawn J McMullen	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 10:58	James H Place	10
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	153250021A	11/26/2015 11:41	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	153250021A	11/23/2015 14:30	Kelli M Barto	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	15323049531B	11/20/2015 01:37	James S Mathiot	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TNTPK

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8130620
Sample wt/vol: 30.38(g/mL) g Lab File ID: bk1329.d
Level: (low/med) LOW Date Received: 11/11/15
% Moisture: 0 Decanted: (Y/N) Date Extracted: 11/21/15
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/23/15
Injection Volume: 1 (uL) Dilution Factor: 5
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Aldol Condensate	3.841	4000	JB
2.	1000152-47-3	trans-Decalin, 2-methyl-	6.248	1100	J
3.		Unknown	6.767	1100	J
4.		Unknown Alkane	6.814	1100	J
5.	66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.994	1500	J
6.		Unknown	7.047	1200	J
7.	6117-97-1	Dodecane, 4-methyl-	7.088	1100	J
8.		Unknown	7.123	1500	J
9.		Unknown Alkane	7.163	3200	J
10.	629-50-5	Tridecane	7.333	5700	J
11.		Unknown	7.408	1100	J
12.		Unknown	7.461	1100	J
13.		Unknown Alkane	7.525	1200	J
14.		Unknown	7.571	800	J
15.		Unknown Cycloalkane	7.624	970	J
16.	1560-96-9	Tridecane, 2-methyl-	7.688	1100	J
17.	629-59-4	Tetradecane	7.886	3300	J
18.	62238-13-5	Decane, 2,3,7-trimethyl-	7.927	1100	J
19.		Unknown	8.067	760	J
20.		Unknown Alkane	8.137	1400	J
21.		Unknown	9.460	290000	J
22.	1000297-95-5	4-((1E)-3-Hydroxy-1-propenyl	9.582	2600	J
23.		Unknown	9.740	2200	J
24.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.387	25000	J
25.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.608	20000	J
26.					
27.	SVOCTIC	Total SVOC TICs		370000	JB
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1608680
Reported: 12/03/2015 16:15

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 15324SLF026	Sample number(s): 8130610-8130620								
Acenaphthene	N.D.	3.	17	ug/kg	103		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	103		83-127		
Acetophenone	N.D.	17.	33	ug/kg	94		74-116		
Anthracene	N.D.	3.	17	ug/kg	107		82-118		
Atrazine	N.D.	33.	170	ug/kg	128		63-148		
Benzaldehyde	N.D.	67.	170	ug/kg	29		10-69		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	105		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	102		85-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	110		78-129		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	102		82-119		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	104		79-120		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	92		80-116		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	106		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	109		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	112		84-120		
Caprolactam	N.D.	33.	170	ug/kg	106		71-129		
Carbazole	N.D.	17.	33	ug/kg	103		78-117		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	115		79-127		
4-Chloroaniline	N.D.	33.	67	ug/kg	25		10-103		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	107		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	101		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	99		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	107		85-123		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	108		81-120		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	108		63-126		
Chrysene	N.D.	3.	17	ug/kg	106		80-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	104		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	103		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	45		10-104		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	111		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	110		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	105		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	107		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	98		59-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	88		27-140		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	112		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	113		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	109		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	105		81-117		
Fluorene	N.D.	3.	17	ug/kg	111		86-118		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1608680
Reported: 12/03/2015 16:15

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachlorobenzene	N.D.	3.	17	ug/kg	102		75-123		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	103		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	95		68-145		
Hexachloroethane	N.D.	33.	170	ug/kg	100		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	101		81-118		
Isophorone	N.D.	17.	33	ug/kg	108		78-125		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	104		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	114		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	110		75-119		
Naphthalene	N.D.	3.	17	ug/kg	102		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	108		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	93		66-119		
4-Nitroaniline	N.D.	67.	170	ug/kg	71		50-100		
Nitrobenzene	N.D.	17.	33	ug/kg	103		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	108		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	100		60-129		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	104		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	104		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	118		74-146		
Pentachlorophenol	N.D.	33.	170	ug/kg	96		57-126		
Phenanthrene	N.D.	3.	17	ug/kg	101		80-114		
Phenol	N.D.	17.	33	ug/kg	106		73-122		
Pyrene	N.D.	3.	17	ug/kg	101		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	107		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	106		81-123		
Batch number: 153250021A	Sample number(s): 8130610-8130620								
4-Amino-2,6-Dinitrotoluene	N.D.	150.	400	ug/kg	111		81-133		
2-Amino-4,6-Dinitrotoluene	N.D.	100.	300	ug/kg	105		79-120		
1,2-Dinitrobenzene	N.D.	100.	300	ug/kg	110		94-129		
1,3-Dinitrobenzene	N.D.	100.	300	ug/kg	108		94-124		
1,4-Dinitrobenzene	N.D.	100.	300	ug/kg	95		83-122		
HMX	N.D.	250.	750	ug/kg	73		65-121		
Nitrobenzene	N.D.	100.	300	ug/kg	105		81-116		
Nitroglycerin	N.D.	2,000.	6,000	ug/kg	98		70-118		
1-Nitronaphthalene	N.D.	100.	300	ug/kg	108		83-122		
2-Nitrotoluene	N.D.	200.	400	ug/kg	107		86-113		
3-Nitrotoluene	N.D.	250.	500	ug/kg	109		85-135		
4-Nitrotoluene	N.D.	200.	400	ug/kg	109		80-122		
PETN	N.D.	2,000.	6,000	ug/kg	102		64-121		
RDX	N.D.	130.	300	ug/kg	102		84-122		
Tetryl	N.D.	160.	400	ug/kg	102		67-152		
1,3,5-Trinitrobenzene	N.D.	100.	300	ug/kg	97		83-119		
2,4,6-Trinitrotoluene	N.D.	100.	300	ug/kg	109		82-133		
Batch number: 15323049531A	Sample number(s): 8130610-8130619								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	71		47-143		
Batch number: 15323049531B	Sample number(s): 8130620								
TOC by Lloyd Kahn	N.D.	100.	300	mg/kg	71		47-143		
Batch number: 15336820007A	Sample number(s): 8130613-8130619								
Moisture					100		99-101		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1608680
Reported: 12/03/2015 16:15

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15324SLF026	Sample number(s): 8130610-8130620 UNSPK: 8130619								
Acenaphthene	97	103	83-116	6	30				
Acenaphthylene	97	102	83-127	7	30				
Acetophenone	89	95	74-116	7	30				
Anthracene	101	109	82-118	9	30				
Atrazine	80	90	63-148	14	30				
Benzaldehyde	40	41	10-69	4	30				
Benzo(a)anthracene	95	105	76-119	10	30				
Benzo(a)pyrene	95	103	85-117	9	30				
Benzo(b)fluoranthene	101	108	78-129	8	30				
Benzo(g,h,i)perylene	99	106	82-119	8	30				
Benzo(k)fluoranthene	98	109	79-120	11	30				
1,1'-Biphenyl	89	97	80-116	9	30				
4-Bromophenyl-phenylether	86	96	84-120	11	30				
Butylbenzylphthalate	104	113	80-118	9	30				
Di-n-butylphthalate	106	118	84-120	12	30				
Caprolactam	93	100	71-129	8	30				
Carbazole	93	100	78-117	9	30				
4-Chloro-3-methylphenol	96	99	79-127	4	30				
4-Chloroaniline	59	58	10-103	1	30				
bis(2-Chloroethoxy)methane	100	106	77-116	7	30				
bis(2-Chloroethyl)ether	98	104	77-115	7	30				
2-Chloronaphthalene	112	113	63-146	2	30				
2-Chlorophenol	98	104	85-123	7	30				
4-Chlorophenyl-phenylether	102	109	81-120	8	30				
2,2'-oxybis(1-Chloropropane)	104	109	63-126	6	30				
Chrysene	99	104	80-121	5	30				
Dibenz(a,h)anthracene	101	106	81-123	6	30				
Dibenzofuran	94	101	85-115	9	30				
3,3'-Dichlorobenzidine	32	0*	10-104	200*	30				
2,4-Dichlorophenol	92	97	81-123	6	30				
Diethylphthalate	98	105	81-118	8	30				
2,4-Dimethylphenol	91	98	83-120	8	30				
Dimethylphthalate	95	103	82-113	9	30				
4,6-Dinitro-2-methylphenol	89	97	59-131	10	30				
2,4-Dinitrophenol	62	74	27-140	18	30				
2,4-Dinitrotoluene	93	144*	81-122	19	30				
2,6-Dinitrotoluene	95	109	83-120	11	30				
bis(2-Ethylhexyl)phthalate	113	122*	81-121	9	30				
Fluoranthene	96	102	81-117	7	30				
Fluorene	98	106	86-118	9	30				
Hexachlorobenzene	94	92	75-123	1	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1608680
Reported: 12/03/2015 16:15

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Hexachlorobutadiene	99	106	72-120	8	30				
Hexachlorocyclopentadiene	0*	26*	68-145	200*	30				
Hexachloroethane	95	101	78-114	7	30				
Indeno(1,2,3-cd)pyrene	98	104	81-118	7	30				
Isophorone	112	123	78-125	10	30				
2-Methylnaphthalene	93	100	83-109	9	30				
2-Methylphenol	102	109	82-125	8	30				
4-Methylphenol	98	101	75-119	4	30				
Naphthalene	102	110	83-112	9	30				
2-Nitroaniline	92	100	84-126	10	30				
3-Nitroaniline	80	83	66-119	5	30				
4-Nitroaniline	81	82	50-100	2	30				
Nitrobenzene	94	102	70-122	9	30				
2-Nitrophenol	105	113	83-120	8	30				
4-Nitrophenol	72	95	60-129	29	30				
N-Nitroso-di-n-propylamine	96	104	67-121	9	30				
N-Nitrosodiphenylamine	103	112	83-118	9	30				
Di-n-octylphthalate	123	132	74-146	8	30				
Pentachlorophenol	58	67	57-126	15	30				
Phenanthrene	94	103	80-114	10	30				
Phenol	95	102	73-122	8	30				
Pyrene	93	101	81-114	9	30				
2,4,5-Trichlorophenol	100	108	86-123	8	30				
2,4,6-Trichlorophenol	98	102	81-123	5	30				
Batch number: 153250021A	Sample number(s): 8130610-8130620 UNSPK: 8130620								
4-Amino-2,6-Dinitrotoluene	16 (2)	-120 (2)	81-133	11	50				
2-Amino-4,6-Dinitrotoluene	28 (2)	-75 (2)	79-120	13	50				
1,2-Dinitrobenzene	103	99	94-129	12	50				
1,3-Dinitrobenzene	141*	145*	94-124	6	50				
1,4-Dinitrobenzene	93	91	83-122	10	50				
HMX	56*	0*	65-121	200*	50				
Nitrobenzene	114	108	81-116	14	50				
Nitroglycerin	123*	118	70-118	12	50				
1-Nitronaphthalene	82*	80*	83-122	12	50				
2-Nitrotoluene	95	0*	86-113	200*	50				
3-Nitrotoluene	113	136*	85-135	11	50				
4-Nitrotoluene	114	145*	80-122	16	50				
PETN	116	0*	64-121	200*	50				
RDX	95	91	84-122	13	50				
Tetryl	79	83	67-152	4	50				
1,3,5-Trinitrobenzene	88	87	83-119	7	50				
2,4,6-Trinitrotoluene	-11099 (2)	-9121 (2)	82-133	19	50				
Batch number: 15323049531A	Sample number(s): 8130610-8130619 UNSPK: 8130610 BKG: 8130610								
TOC by Lloyd Kahn	112		47-143			7,060	7,760	9* (1)	7

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1608680
Reported: 12/03/2015 16:15

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 15323049531B	Sample number(s): 8130620			UNSPK: 8130620		BKG: 8130620			
TOC by Lloyd Kahn	115		47-143			6,890	5,740	18* (1)	7
Batch number: 15336820007A	Sample number(s): 8130613-8130619					BKG: P148683			
Moisture						16.0	15.4	4	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 15324SLF026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8130610	91	87	90	91	94	101
8130611	91	88	89	91	93	98
8130612	97	95	92	96	98	102
8130613	89	85	84	35*	88	98
8130614	92	87	86	36*	89	96
8130615	91	86	88	62	85	96
8130616	91	85	87	50*	87	93
8130617	94	89	89	69	91	99
8130618	89	85	86	77	84	95
8130619	84	82	77	81	82	91
8130620	86	86	80	88	87	95
Blank	96	96	100	96	94	97
LCS	102	99	98	98	94	99
MS	93	91	85	93	93	100
MSD	98	98	91	98	101	106
Limits:	58-122	49-134	36-142	54-123	63-117	59-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 153250021A

	2-Nitro-m-xylene
8130610	108
8130611	88
8130612	72
8130613	99
8130614	0*
8130615	86
8130616	90
8130617	94
8130618	78
8130619	117
8130620	88
Blank	108

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1608680
Reported: 12/03/2015 16:15

Surrogate Quality Control

LCS	109
MS	69
MSD	108
Limits:	65-129

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # G6716 Group # 1608680 Sample # 8130610-20

COC # 387317

Client Information

Client: Arcadis - US	Acct. #: 06716
Project Name/#: Ashland / Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ007000.NS78
Sampler: S. Lemoine & L. Everett	Quote #:
State where samples were collected: NJ	For Compliance: Yes ☐ No ☐

Matrix

Sediment ☐ Soil ☒ Water: Ground ☐ Potable ☐ NPDES ☐ Surface ☐ Other: ____

Total # of Containers

Analysis Requested

Preservation Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Amino DNTs + TNTs (SW846 8330)	DNTs (SW846 8270)	TOC	% Moisture
TNT-PS-A-11102015	11/10/15	1620		X	X	X	X	X
TNT-PS-B-11102015		1530		X	X	X	X	X
TNT-PS-C-11102015		1445		X	X	X	X	X
TNT-PS-D-11102015		1450		X	X	X	X	X
TNT-PS-E-11102015		1505		X	X	X	X	X
TNT-PS-F-11102015		1512		X	X	X	X	X
TNT-PS-G-11102015		1540		X	X	X	X	X
TNT-PS-H-11102015		1550		X	X	X	X	X
TNT-PS-I-11102015		1600		X	X	X	X	X
TNT-PS-J-11102015		1520		X	X	X	X	X

For Lab Use Only

FSC: ____

SCR#: 177159

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Remarks

TNT conc. between 500-1500 mg/kg

Please call Mitch Wacksman @ 516-405-1448 Prior to Analysis

Turnaround Time (TAT) Requested (please circle)

(Standard) Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ____

E-mail address: ____

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Bottle Storage	9/8/15	6:30		9/8/15	6:30
	9/8/15	10:05		9/9/15	1005
	11/10/15	12:12		11/11/15	12:12
	11/11/15	20:16			
				11/11/15	2010

EDD Required? Yes No

If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.9 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 6716 For Eurofins Lancaster Laboratories Environmental Use only Group # 1008080 Sample # 8730610-20

Instructions on reverse side correspond with circled numbers.

384029

1 Client Information

Client: Arcadis - US	Acct. #: 06716
Project Name/#: Ashland / Hercules	PWSID #:
Project Manager: Jim McLaughlin	P.O. #: NJ 007000. NJ78
Sampler: S. Lemoine + L. Everett	Quote #:

Name of state where samples were collected: NJ

4 Matrix

Sediment ☐ Soil ☒ | Ground ☐ Potable ☐ Water | Surface ☐ NPDES ☐ | Other: ____

5 Analysis Requested

Preservation Codes

For Lab Use Only

FSC: ____

SCR#: ____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

TNT conc between 500-1500 mg/kg

Please call Mitch Wachsman @ 616-405-1448 prior to Analysis

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Matrix	Total # of Containers	Amino DNTs+TNTs (SW846 8330)	DNTs (SW846 8270)	TOC	% Moisture
TNT-PS K-111020 15	11/10/15	1610		X	X	1	X	X	X	X

7 Turnaround Time (TAT) Requested (please circle)

~~Standard~~ Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ____

E-mail address: ____

8 Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	11/11/15	12:12	[signature]	11/11/15	12:12
[signature]	11/11/15	20:10	[signature]		
			[signature]	11/11/15	2010

9

EDD Required? Yes No

If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.9 °C

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Attachment 4

Technical Memorandum – Post-Study Monitoring of TNT Pilot Study Soil

21 June 2019

Memorandum

To: Mr. Edward Meeks – Hercules LLC

From: Mr. Scott Larew – Kennedy Jenks Consultants

Subject: TNT Project Area Soil Bioremediation Pilot Study Addendum
KJ 1540001*57

Background

On behalf of Hercules LLC (Hercules), Kennedy Jenks Consultants (KJ) prepared this technical memorandum summarizing results of long-term monitoring of the TNT bioremediation pilot study (pilot study) soil at the Hercules' Kenvil Works Facility, located in Kenvil, Morris County, New Jersey (the Facility). The pilot study assessed ex-situ bioremediation approaches to address target constituents[1] in Facility soil. The pilot study design, methods, conclusions, and recommendations are presented in the *TNT Soil Bioremediation Pilot Study Report* (Hercules 2017) (Pilot Study Report) (**Attachment 3** to the *TNT Project Area Soil Remedial Action Work Plan* [TNT RAWP]).

The Pilot Study Report presents monitoring results from the 84-day study period, as well as a 30-day post study sampling event. Treated soil remained in the study boxes following the pilot study period to monitor ongoing degradation of target constituents without active study management. Additional long-term monitoring occurred at 12-, 18-, and 24-months post study, following preparation of the Pilot Study Report. This technical memorandum presents the results of these long-term monitoring events.

The long-term monitoring data presented herein establishes a Facility-specific technical basis for the in-situ biodegradation phase of the remedy presented in the TNT RAWP.

Post-Study Monitoring

Monitoring during the pilot study period relied on two separate sampling approaches. Three events (i.e., Study Days 0, 57, and 84) collected multiple discrete samples per trial to monitoring the degradation of target constituents as well as assess the homogeneity of the material within individual study boxes. The remaining events collected a single 4-part composite from each trail to monitor target constituent degradation. Based on the homogeneity observed in the pilot study data, post-study soil sample collection and handling procedures used were consistent with the single 4-part composite approach. Consistent with pilot study monitoring, long-term monitoring

[1] As established in the TNT RAWP, target constituents include: 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene (2,4-DNT), 2,6-DNT, 2-amino-4,6-DNT (2ADNT), and 4-amino-2,6-DNT (4ADNT).

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composite samples were submitted to Eurofins Lancaster Laboratories Environmental for analysis.

Each of the three post-study sampling events (i.e., 12-, 18-, and 24-month) assessed various study trails (study boxes), with a focus on monitoring the progress of target constituent degradation in the DARAMEND OE® trails. The following table summarizes the trials evaluated during each monitoring event and associated analytical testing parameters.

Trials	Post-Study Event (month)		
	12	***18***	***24***
Analytes	***SVOC, E&E, TOC***	***SVOC, E&E, Metals, Hg, TOC***	***E&E***
A – Control (no water/no turn)	Y	Y	
B – Control (water/single turn)		Y	
C – Control (water/cyclical turn)		Y	
D – DARAMEND OE® (4%, cyclical turn)	Y	Y	Y
E – DARAMEND OE® (3%, cyclical turn)	Y	Y	Y
F – DARAMEND OE® (2%, cyclical turn)	Y	Y	Y
G – DARAMEND OE® (4%, single turn)	Y	Y	Y
H – DARAMEND OE® (3%, single turn)	Y	Y	Y
I – DARAMEND OE® (2%, single turn)	Y	Y	Y
J – Wood Chips (10%, cyclical turn)		Y	
K – Wood Chips (10%, single turn)	Y	Y	

Notes:
SVOC: Semi-Volatile Organic Compounds via United States Environmental Protection Agency (USEPA) SW-846 8270C
E&E: Nitroaromatics and Nitramines via USEPA SW-846 8330
TOC: Total Organic Carbon via Lloyd Kahn Method
Metals: Target Analyte List Metals via USEPA SW-846 6010B
Hg: Mercury via USEPA SW-846 7471A

Table 1 presents the results of the baseline sampling and cyclical sampling events for study constituents. From these data, Hercules updated the target constituent degradation tracking table (**Table 2**) (originally presented as Table 4 in the Pilot Study Report).

Exhibit 1 presents analytical laboratory packages. Electronic data deliverables (EDDs) corresponding to the post-study data were generated in NJDEP's HAZSITE format, checked for errors using NJDEP's Electronic Data Submission Application (EDSA) (Version 7.1.5; Last updated September 2016), and submitted electronically to NJDEP via email.

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As shown in **Table 2**, long-term monitoring identified:

- Biodegradation of target constituents in soil in DARAMEND OE® trials continues to occur following active management.

- Long-term monitoring documented a 63 percent reduction of target constituent concentrations (based on Total Nitrotoluenes[2]) across DARAMEND OE® trials in the 18 months following the pilot study monitoring period.

- Total removal efficiency across DARAMEND OE® trials averaged 99.5 percent for target constituents, with target constituent concentrations attaining NJDEP non-residential direct contact soil remediation standards (NRDCSRS) at the end of the pilot study monitoring period, and residential direct contact soil remediation standards (RDCSRS) by the end of the long-term monitoring period.

Long-Term Monitoring Conclusions

The pilot study demonstrated the effectiveness of bioremediation using DARAMEND OE® to degrade target constituents in soil in a single field season. Long-term monitoring of DARAMEND OE® trials quantified post-study target constituent concentration reductions following the conclusion of active study management.

Overall, long-term monitoring demonstrated that bioremediation using a commercially-available amendment is a viable mass reduction component of a comprehensive remedy for target constituents in the TNT Project Area. Residual constituent mass (i.e., concentrations greater than IGWSRS) will be addressed via the lasting effects of the amendment in soil (i.e., DARAMEND OE® continues to support biological breakdown for approximately 5 years (**Appendix H** to the TNT RAWP). Natural attenuation by native microbial communities will continue following the effective timeframe of DARAMEND OE® and will be the final remedy for soil and groundwater.

Enclosure(s) (2)

Table 1 – TNT Bioremediation Pilot Study Analytical Data
Table 2 – TNT Bioremediation Study Box Monitoring Results
Exhibit 1 – Analytical Laboratory Packages

[2] Total Nitrotoluenes represents the sum of target constituent concentrations

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Table 1. TNT Bioremediation Pilot Study Analytical Data
TNT Project Area Bioremediation Pilot Study Addendum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TNT-PS-A	TNT-PS-K	TNT-PS-I	TNT-PS-H	TNT-PS-G	TNT-PS-E	TNT-PS-E	TNT-PS-D	TNT-PS-K	TNT-PS-A	TNT-PS-I	TNT-PS-H	TNT-PS-G
					Sample Date	10/24/2016	10/24/2016	10/24/2016	10/24/2016	10/25/2016	10/25/2016	10/25/2016	10/25/2016	5/9/2017	5/9/2017	5/9/2017	5/9/2017	5/9/2017
					Sample Depths	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft
					Sample ID	TNT-PS-A-10242016	TNT-PS-K-10242016	TNT-PS-I-10242016	TNT-PS-H-10242016	TNT-PS-G-10252016	TNT-PS-F-10252016	TNT-PS-E-10252016	TNT-PS-D-10252016	TNT-PS-K-05092017	TNT-PS-A-05092017	TNT-PS-I-05092017	TNT-PS-H-05092017	TNT-PS-G-05092017
					Parent ID													
					Notes													
Chemical	**CAS Number**	**Units**	**IGWSRS**	**RDCSRS**	**NRDCSRS**													
Explosives																		
1,2-Dinitrobenzene	528-29-0	ug/kg	NS	NS	NS	< 140 U	< 160 U	< 140 U	< 140 U	< 130 U	< 130 U	< 140 U	< 130 U	2700 U	< 2900 U	< 130 U	< 140 U	< 140 U
1,3,5-Trinitrobenzene	99-35-4	ug/kg	NS	2300000	10000000	2900	< 1800 U	< 140 U	< 140 U	< 130 U	< 130 U	< 140 U	< 130 U	< 2700 U	< 2900 U	< 130 U	< 140 U	< 140 U
1,3-Dinitrobenzene	99-65-0	ug/kg	500	7800	100000	200 J	260 J	< 140 U	< 140 U	< 130 U	< 130 U	< 140 U	< 130 U	**< 2700 U**	**< 2900 U**	< 130 U	< 140 U	< 140 U
1,4-Dinitrobenzene	100-25-4	ug/kg	NS	NS	NS	< 140 U	< 160 U	< 140 U	< 140 U	< 130 U	< 130 U	< 140 U	< 130 U	< 2700 U	< 2900 U	< 130 U	< 140 U	< 140 U
1-Nitronaphthalene	86-57-7	ug/kg	NS	NS	NS	< 140 U	< 160 U	< 140 U	< 140 U	< 130 U	< 130 U	< 140 U	< 130 U	< 2700 U	< 8100 U	< 130 U	< 140 U	< 140 U
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	21000	95000	**1800000**	**1100000**	**27000**	**7000**	**4500**	**5100**	**5200**	**5100**	**1000000**	**1600000**	**4700**	**6500**	**4300**
2,4-Dinitrotoluene	121-14-2	ug/kg	700	700	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	700	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	4700	61000	**84000 J**	**160000**	**2900**	**2200**	**1400**	**1900**	**1900**	**1900**	**100000**	**81000**	**1500**	**1800**	**1000**
2-Nitrotoluene	88-72-2	ug/kg	NS	780000	10000000	< 280 U	< 320 U	< 280 U	< 280 U	< 260 U	< 260 U	< 280 U	< 260 U	< 5400 U	< 5700 U	< 250 U	< 280 U	< 280 U
3-Nitrotoluene	99-08-1	ug/kg	NS	1600000	10000000	< 350 U	< 400 U	< 350 U	< 350 U	< 330 U	< 330 U	< 340 U	< 330 U	< 6700 U	< 7200 U	< 310 U	< 350 U	< 350 U
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	NS	4700	61000	130000	170000	3800	2800	1800	2800	2200	2300	130000	110000	2800	2300	1700
4-Nitrotoluene	99-99-0	ug/kg	NS	780000	10000000	< 280 U	< 320 U	< 280 U	< 280 U	< 260 U	< 260 U	< 280 U	< 260 U	< 5400 U	< 5700 U	< 250 U	880	< 280 U
Nitrobenzene	98-95-3	ug/kg	200	5000	14000	**1600**	**1300**	< 140 U	< 140 U	< 130 U	< 130 U	< 140 U	< 130 U	**< 2700 U**	**< 2900 U**	< 130 U	< 140 U	< 140 U
Nitroglycerin	55-63-0	ug/kg	NS	46000	200000	< 2800 U	< 3200 U	< 2800 U	< 2800 U	< 2600 U	< 2600 U	< 2800 U	< 2600 U	< 54000 U	< 57000 U	< 2500 U	< 2800 U	< 2800 U
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	NS	3900000	10000000	< 350 U	< 400 U	< 350 U	< 350 U	< 330 U	< 330 U	< 340 U	< 330 U	< 6700 U	< 7200 U	< 310 U	< 350 U	< 350 U
Pentaerythritol Tetranitrate	78-11-5	ug/kg	NS	NS	NS	< 2800 U	< 3200 U	< 2800 U	< 2800 U	< 2600 U	< 2600 U	< 2800 U	< 2600 U	< 54000 U	< 57000 U	< 2500 U	< 2800 U	< 2800 U
RDX (Cyclonite)	121-82-4	ug/kg	NS	5800	26000	< 180 U	< 210 U	< 180 U	< 180 U	< 170 U	< 170 U	< 180 U	< 170 U	< 3500 U	< 3700 U	< 160 U	< 180 U	< 180 U
Tetryl	479-45-8	ug/kg	NS	780000	10000000	< 220 U	< 250 U	< 220 U	< 220 U	< 210 U	< 210 U	< 220 U	< 210 U	< 4300 U	< 4600 U	< 200 U	< 220 U	< 230 U
Metals																		
Aluminum	7429-90-5	mg/kg	6000	78000	NS	NA	NA	NA	NA	NA	NA	NA	NA	**16400**	**18200**	**15000**	**15700**	**17200**
Antimony	7440-36-0	mg/kg	6	31	450	NA	NA	NA	NA	NA	NA	NA	NA	< 0.792 U	< 0.953 U	1.60 J	< 0.975 U	< 0.911 U
Arsenic	7440-38-2	mg/kg	19	19	19	NA	NA	NA	NA	NA	NA	NA	NA	4.63	5.29	4.07	3.85	4.05
Barium	7440-39-3	mg/kg	2100	16000	59000	NA	NA	NA	NA	NA	NA	NA	NA	53.0	56.7	48.7	52.2	60.7
Beryllium	7440-41-7	mg/kg	1.08	16	140	NA	NA	NA	NA	NA	NA	NA	NA	0.488 J	0.527 J	0.445 J	0.489 J	0.562 J
Cadmium	7440-43-9	mg/kg	2	78	78	NA	NA	NA	NA	NA	NA	NA	NA	0.110 J	0.127 J	0.196 J	0.230 J	0.156 J
Calcium	7440-70-2	mg/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	1690	1540	1640	1610	1470
Chromium	7440-47-3	mg/kg	NS	120000	NS	NA	NA	NA	NA	NA	NA	NA	NA	15.1	14.8	17.0	20.7	22.6
Cobalt	7440-48-4	mg/kg	90	1600	590	NA	NA	NA	NA	NA	NA	NA	NA	4.83	5.11	8.63	10.6	12.2
Copper	7440-50-8	mg/kg	11000	3100	45000	NA	NA	NA	NA	NA	NA	NA	NA	17.0	19.1	27.0	29.4	34.6
Iron	7439-89-6	mg/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	22100	22200	30500	37500	43600
Lead	7439-92-1	mg/kg	90	400	800	NA	NA	NA	NA	NA	NA	NA	NA	**246**	**264**	**241**	**222**	**209**
Magnesium	7439-95-4	mg/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	1260	1340	1190	1310	1440
Manganese	7439-96-5	mg/kg	65	11000	5900	NA	NA	NA	NA	NA	NA	NA	NA	**182**	**170**	**179**	**204**	**210**
Mercury	7439-97-6	mg/kg	0.32	23	65	NA	NA	NA	NA	NA	NA	NA	NA	0.0477 J	0.0487 J	0.0445 J	0.0406 J	0.0447 J
Nickel	7440-02-0	mg/kg	48	1600	23000	NA	NA	NA	NA	NA	NA	NA	NA	7.44	8.27	14.5	19.3	23.1
Potassium	7440-09-7	mg/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	919	917	919	1120	1160
Selenium	7782-49-2	mg/kg	11	390	5700	NA	NA	NA	NA	NA	NA	NA	NA	2.85	3.85	5.50	5.43	3.51
Silver	7440-22-4	mg/kg	1	390	5700	NA	NA	NA	NA	NA	NA	NA	NA	< 0.170 U	< 0.204 U	0.230 J	0.309 J	0.504 J
Sodium	7440-23-5	mg/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	76.5 J	81.0 J	99.6 J	108 J	90.7 J
Thallium	7440-28-0	mg/kg	3	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	< 0.928 U	1.18 J	1.47 J	2.02 J	1.80 J
Vanadium	7440-62-2	mg/kg	NS	78	1100	NA	NA	NA	NA	NA	NA	NA	NA	32.4	33.5	33.6	38.0	40.2
Zinc	7440-66-6	mg/kg	930	23000	110000.0052	NA	NA	NA	NA	NA	NA	NA	NA	83.3	37.0	43.3	51.7	54.1
SVOCs																		
1,1'-Biphenyl	92-52-4	ug/kg	140000	61000	240000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	6100000	68000000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	19000	74000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2,4-Dichlorophenol	120-83-2	ug/kg	200	180000	2100000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2,4-Dimethylphenol	105-67-9	ug/kg	1000	1200000	14000000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2,4-Dinitrophenol	51-28-5	ug/kg	300	120000	1400000	**< 470 U**	**< 480 U**	**< 460 U**	**< 460 U**	**< 440 U**	**< 440 U**	**< 430 U**	**< 430 U**	**< 480 U**	**< 460 U**	**< 440 U**	**< 440 U**	**< 430 U**
2,4-Dinitrotoluene	121-14-2	ug/kg	700	700	3000	**2300**	**1600**	< 100 U	< 100 U	< 97 U	110 J	120 J	150 J	**2600**	**3400**	120 J	130 J	120 J
2,6-Dinitrotoluene	606-20-2	ug/kg	500	700	3000	**710**	410	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	**1100**	**1500**	< 25 U	< 24 U	< 24 U
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	4700	61000	**15000 J**	**18000 J**	NA	NA	**1100 J**	NA	NA	NA	**31000 J**	**24000 J**	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	NS	NS	NS	< 10 U	< 11 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 11 U	< 10 U	< 10 U	< 10 U	< 10 U
2-Chlorophenol	95-57-8	ug/kg	800	310000	2200000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2-Methylnaphthalene	91-57-6	ug/kg	8000	230000	2400000	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	9 J	< 5 U	7 J	5 J
2-Methylpentanoic acid	97-61-0	ug/kg	NS	NS	NS	NA	NA	NA	NA	NA	12000 J	NA	2800 J	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	NS	310000	3400000	< 26 U	< 27 U	< 25 U	< 25 U	27 J	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2-Nitroaniline	88-74-4	ug/kg	NS	39000	23000000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
2-Nitrophenol	88-75-5	ug/kg	NS	NS	NS	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	1000	4000	< 160 U	< 160 U	< 150 U	< 150 U	< 150 U	< 150 U	< 140 U	< 140 U	< 160 U	< 150 U	< 150 U	< 150 U	< 140 U
3-Nitroaniline	99-09-2	ug/kg	NS	NS	NS	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U
4-Bromophenyl-phenylether	101-55-3	ug/kg	NS	NS	NS	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
4-Chloro-3-methylphenol	59-50-7	ug/kg	NS	NS	NS	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
4-Chloroaniline	106-47-8	ug/kg	NS	NS	NS	< 52 U	< 53 U	< 51 U	< 51 U	< 49 U	< 49 U	< 48 U	< 48 U	< 53 U	< 51 U	< 49 U	< 48 U	< 48 U
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	NS	NS	NS	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
4-Nitroaniline	100-01-6	ug/kg	NS	NS	NS	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U

Table 1. TNT Bioremediation Pilot Study Analytical Data
TNT Project Area Bioremediation Pilot Study Addendum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TNT-PS-A	TNT-PS-K	TNT-PS-I	TNT-PS-H	TNT-PS-G	TNT-PS-E	TNT-PS-E	TNT-PS-D	TNT-PS-K	TNT-PS-A	TNT-PS-I	TNT-PS-H	TNT-PS-G
					Sample Date	10/24/2016	10/24/2016	10/24/2016	10/24/2016	10/25/2016	10/25/2016	10/25/2016	10/25/2016	5/9/2017	5/9/2017	5/9/2017	5/9/2017	5/9/2017
					Sample Depths	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft
					Sample ID	TNT-PS-A-10242016	TNT-PS-K-10242016	TNT-PS-I-10242016	TNT-PS-H-10242016	TNT-PS-G-10252016	TNT-PS-F-10252016	TNT-PS-E-10252016	TNT-PS-D-10252016	TNT-PS-K-05092017	TNT-PS-A-05092017	TNT-PS-I-05092017	TNT-PS-H-05092017	TNT-PS-G-05092017
					Parent ID													
					Notes													
Chemical	**CAS Number**	**Units**	**IGWSRS**	**RDCSRS**	**NRDCSRS**													
4-Nitrophenol	100-02-7	ug/kg	NS	NS	NS	< 260 U	< 270 U	< 250 U	< 250 U	< 240 U	< 240 U	< 240 U	< 240 U	< 260 U	< 260 U	< 250 U	< 240 U	< 240 U
Acenaphthene	83-32-9	ug/kg	110000	3400000	37000000	< 5 U	< 5 U	< 5 U	9 J	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Acenaphthylene	208-96-8	ug/kg	NS	NS	300000000	8 J	8 J	< 5 U	13 J	12 J	8 J	20 J	< 5 U	< 5 U	23 J	< 5 U	17 J	< 5 U
Acetophenone	98-86-2	ug/kg	3000	2000	5000	< 26 U	< 27 U	< 25 U	< 25 U	35 J	47 J	29 J	69	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
Anthracene	120-12-7	ug/kg	2400000	17000000	30000000	6 J	7 J	7 J	19 J	8 J	6 J	21 J	7 J	16 J	29	11 J	12 J	8 J
Atrazine	1912-24-9	ug/kg	200	210000	2400000	< 52 U	< 53 U	< 51 U	< 51 U	< 49 U	< 49 U	< 48 U	< 48 U	< 53 U	< 51 U	< 49 U	< 48 U	< 48 U
Benzaldehyde	100-52-7	ug/kg	NS	6100000	68000000	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	140 J	< 98 U	< 97 U	< 96 U
Benzo[a]anthracene	56-55-3	ug/kg	13000	5000	17000	44	39	42	88	46	39	140	41	69	100	48	61	54
Benzo[a]pyrene	50-32-8	ug/kg	3000	500	2000	39	34	42	80	40	35	100	34	53	86	48	54	45
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	5000	17000	46	48	58	110	65	57	130	60	100	150	84	92	81
Benzo[g,h,i]perylene	191-24-2	ug/kg	NS	380000000	30000000	24 J	19 J	23 J	51	27	26	59	35	46	70	35	38	31
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	45000	170000	31	20 J	20 J	54	27	26	78	21 J	41	66	33	42	35
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	NS	NS	NS	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	400	2000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	35000	140000	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	97 J	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U
Butylbenzylphthalate	85-68-7	ug/kg	230000	1200000	14000000	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U
Butyric Acid	107-92-6	ug/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	31000000	340000000	< 52 U	< 53 U	< 51 U	< 51 U	< 49 U	< 49 U	< 48 U	< 48 U	< 53 U	< 51 U	< 49 U	< 48 U	< 48 U
Carbazole	86-74-8	ug/kg	NS	24000	96000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
Chrysene	218-01-9	ug/kg	80000	450000	1700000	48	39	46	93	56	46	120	53	82	120	63	68	60
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	500	2000	9 J	7 J	9 J	14 J	8 J	13 J	22 J	12 J	14 J	20 J	12 J	12 J	12 J
Dibenzofuran	132-64-9	ug/kg	NS	NS	NS	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
Diethylphthalate	84-66-2	ug/kg	88000	49000000	550000000	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U
Dimethylphthalate	131-11-3	ug/kg	NS	NS	NS	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U
Di-n-butylphthalate	84-74-2	ug/kg	760000	6100000	68000000	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U
Di-n-octylphthalate	117-84-0	ug/kg	3300000	2400000	27000000	< 100 U	< 110 U	< 100 U	< 100 U	< 97 U	< 97 U	< 95 U	< 96 U	< 110 U	< 100 U	< 98 U	< 97 U	< 96 U
Fluoranthene	206-44-0	ug/kg	1300000	2300000	24000000	59	62	70	150	80	51	160	81	130	230	97	110	77
Fluorene	86-73-7	ug/kg	170000	2300000	24000000	< 5 U	< 5 U	< 5 U	7 J	< 5 U	< 5 U	< 5 U	< 5 U	6 J	6 J	< 5 U	< 5 U	< 5 U
Hexachlorobenzene	118-74-1	ug/kg	200	300	1000	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	45000	110000	< 260 U	< 270 U	< 250 U	< 250 U	< 240 U	< 240 U	< 240 U	< 240 U	< 260 U	< 260 U	< 250 U	< 240 U	< 240 U
Hexachloroethane	67-72-1	ug/kg	200	12000	48000	< 52 U	< 53 U	< 51 U	< 51 U	< 49 U	< 49 U	< 48 U	< 48 U	< 53 U	< 51 U	< 49 U	< 48 U	< 48 U
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	5000	17000	23 J	18 J	24 J	50	24 J	21 J	60	28	41	58	33	36	30
Isophorone	78-59-1	ug/kg	280	510000	2000000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
Naphthalene	91-20-3	ug/kg	25000	6000	17000	6 J	< 5 U	< 5 U	9 J	6 J	5 J	11 J	< 5 U	< 5 U	12 J	8 J	11 J	6 J
Nitrobenzene	98-95-3	ug/kg	200	5000	14000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	200	300	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	99000	390000	< 26 U	< 27 U	< 25 U	< 25 U	< 24 U	< 24 U	< 24 U	< 24 U	< 26 U	< 26 U	< 25 U	< 24 U	< 24 U
Pentachlorophenol	87-86-5	ug/kg	300	900	3000	< 52 U	< 53 U	< 51 U	< 51 U	< 49 U	< 49 U	< 48 U	< 48 U	< 53 U	< 51 U	< 49 U	< 48 U	< 48 U
Phenanthrene	85-01-8	ug/kg	NS	NS	300000000	23 J	22 J	27	82	36	25	34	42	80	150	52	51	40
Phenol	108-95-2	ug/kg	8000	18000000	210000000	< 26 U	52 J	110	< 25 U	420	< 24 U	200	120	< 26 U	< 26 U	390	500	500
Pyrene	129-00-0	ug/kg	840000	1700000	18000000	47	49	57	120	63	43	140	57	100	180	86	91	70
Total Organic Carbon																		
Total Organic Carbon	TOC	mg/kg	NS	NS	NS	8240	7710	10400	12900	15800	15000	15600	15700	13300	16000	16300	18500	17300

Notes:
SRS = Soil Remediation Standard
IGW = Impact to Groundwater
RDC = Residential Direct Contact
NRDC = Non Residential Direct Contact
NA = Not Analyzed
NS = No screening standard available
U = Consituent not detected, associated value is laboratory detection limit
J = Estimated concentration
ug/kg = microgram per kilogram
mg/kg = milligram per kilgram
Bolded values indicate a concentration above IGWSRS
Underlined values indicate a concentration above RDCSRS
Shaded values indicate a concentration above NRDCSRS

Table 1. TNT Bioremediation Pilot Study Analytical Data
TNT Project Area Bioremediation Pilot Study Addendum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

					Location	TNT-PS-B	TNT-PS-J	TNT-PS-F	TNT-PS-E	TNT-PS-D	TNT-PS-C	TNT-PS-D	TNT-PS-E	TNT-PS-F	TNT-PS-G	TNT-PS-H	TNT-PS-I
					Sample Date	5/9/2017	5/9/2017	5/9/2017	5/9/2017	5/9/2017	5/9/2017	9/20/2017	9/20/2017	9/20/2017	9/20/2017	9/20/2017	9/20/2017
					Sample Depths	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft
					Sample ID	TNT-PS-B-05092017	TNT-PS-J-05092017	TNT-PS-F-05092017	TNT-PS-E-05092017	TNT-PS-D-05092017	TNT-PS-C-05092017	TNT-PS-D-09202017	TNT-PS-E-09202017	TNT-PS-F-09202017	TNT-PS-G-09202017	TNT-PS-H-09202017	TNT-PS-I-09202017
					Parent ID												
					Notes												
Chemical	**CAS Number**	**Units**	**IGWSRS**	**RDCSRS**	**NRDCSRS**												
Explosives																	
1,2-Dinitrobenzene	528-29-0	ug/kg	NS	NS	NS	< 2700 U	< 2600 U	< 120 U	< 130 U	< 1200 U	< 3000 U	< 130 U	< 130 U	< 130 U	< 130 U	< 140 U	< 140 U
1,3,5-Trinitrobenzene	99-35-4	ug/kg	NS	2300000	10000000	< 2700 U	< 2600 U	< 120 U	< 130 U	< 1200 U	< 3000 U	< 130 U	< 130 U	< 130 U	< 130 U	< 140 U	< 140 U
1,3-Dinitrobenzene	99-65-0	ug/kg	500	7800	100000	**< 2700 U**	**< 2600 U**	< 120 U	< 130 U	**< 1200 U**	**< 3000 U**	< 130 U	< 130 U	< 130 U	< 130 U	< 140 U	< 140 U
1,4-Dinitrobenzene	100-25-4	ug/kg	NS	NS	NS	< 2700 U	< 2600 U	< 120 U	< 130 U	< 1200 U	< 3000 U	< 130 U	< 130 U	< 130 U	< 130 U	< 140 U	< 140 U
1-Nitronaphthalene	86-57-7	ug/kg	NS	NS	NS	< 2700 U	< 2600 U	< 120 U	< 130 U	< 1200 U	< 3000 U	< 130 U	< 600 U	< 270 U	< 490 U	< 560 U	170 J
2,4,6-Trinitrotoluene	118-96-7	ug/kg	200	21000	95000	**2100000**	**1100000**	**4500**	**3500**	**170000**	**1600000**	**2300**	**6100**	**3700**	**3600**	**7700**	**4600**
2,4-Dinitrotoluene	121-14-2	ug/kg	700	700	3000	NA	NA	NA	NA	NA	NA	360 J	< 600 U	< 310 U	< 260 U	< 390 U	< 350 U
2,6-Dinitrotoluene	606-20-2	ug/kg	500	700	3000	NA	NA	NA	NA	NA	NA	< 130 U	< 130 U	< 130 U	< 130 U	< 140 U	< 140 U
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	4700	61000	**49000**	**81000**	**1400**	**1000**	**8400**	**68000**	**2400**	< 130 U	**< 1600 U**	**< 1300 U**	**< 4500 U**	**< 1700 U**
2-Nitrotoluene	88-72-2	ug/kg	NS	780000	10000000	< 5300 U	< 5200 U	< 250 U	< 270 U	< 2400 U	< 6100 U	< 250 U	< 250 U	< 260 U	< 260 U	< 280 U	< 280 U
3-Nitrotoluene	99-08-1	ug/kg	NS	1600000	10000000	< 6700 U	< 6500 U	< 310 U	< 330 U	< 3000 U	< 7600 U	< 320 U	< 330 U	< 320 U	< 330 U	< 350 U	< 350 U
4-Amino-2,6-dinitrotoluene	19406-51-0	ug/kg	NS	4700	61000	44000	91000	2700	1500	3000 J	63000	3800	< 190 U	< 3800 U	< 2600 U	< 5300 U	< 4200 U
4-Nitrotoluene	99-99-0	ug/kg	NS	780000	10000000	< 5300 U	< 5200 U	< 250 U	< 270 U	< 2400 U	< 6100 U	< 250 U	< 250 U	< 260 U	< 260 U	< 280 U	< 280 U
Nitrobenzene	98-95-3	ug/kg	200	5000	14000	**< 2700 U**	**< 2600 U**	< 120 U	< 130 U	**< 1200 U**	**< 3000 U**	< 130 U	< 130 U	< 130 U	< 130 U	< 140 U	< 140 U
Nitroglycerin	55-63-0	ug/kg	NS	46000	200000	< 53000 U	< 52000 U	< 2500 U	< 2700 U	< 24000 U	< 61000 U	< 2500 U	< 2500 U	< 2600 U	< 2600 U	< 2800 U	< 2800 U
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	ug/kg	NS	3900000	10000000	< 6700 U	< 6500 U	< 310 U	< 330 U	< 3000 U	< 7600 U	< 320 U	< 320 U	< 320 U	< 330 U	< 350 U	< 350 U
Pentaerythritol Tetranitrate	78-11-5	ug/kg	NS	NS	NS	< 53000 U	< 52000 U	< 2500 U	< 2700 U	< 24000 U	< 61000 U	< 2500 U	< 2500 U	< 2600 U	< 2600 U	< 2800 U	< 2800 U
RDX (Cyclonite)	121-82-4	ug/kg	NS	5800	26000	< 3500 U	< 3400 U	< 160 U	< 170 U	< 1600 U	< 3900 U	< 170 U	< 170 U	< 170 U	< 170 U	< 180 U	< 180 U
Tetryl	479-45-8	ug/kg	NS	780000	10000000	< 4300 U	< 4200 U	< 200 U	< 210 U	< 1900 U	< 4800 U	< 200 U	< 200 U	< 210 U	< 210 U	< 220 U	< 220 U
Metals																	
Aluminum	7429-90-5	mg/kg	6000	78000	NS	**17700**	**18800**	**17800**	**14300**	**16800**	**17700**	NA	NA	NA	NA	NA	NA
Antimony	7440-36-0	mg/kg	6	31	450	< 0.922 U	< 0.916 U	1.30 J	< 0.854 U	< 0.790 U	< 1.05 U	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	mg/kg	19	19	19	4.92	4.63	4.48	3.82	3.63	4.58	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	mg/kg	2100	16000	59000	54.6	58.0	55.2	46.3	49.3	56.2	NA	NA	NA	NA	NA	NA
Beryllium	7440-41-7	mg/kg	1.08	16	140	0.566 J	0.586 J	0.538 J	0.428 J	0.527 J	0.534 J	NA	NA	NA	NA	NA	NA
Cadmium	7440-43-9	mg/kg	2	78	78	0.141 J	0.157 J	0.105 J	0.111 J	0.163 J	0.142 J	NA	NA	NA	NA	NA	NA
Calcium	7440-70-2	mg/kg	NS	NS	NS	985	1150	1200	1460	1360	1030	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	mg/kg	NS	120000	NS	15.4	16.7	20.5	22.2	22.0	14.7	NA	NA	NA	NA	NA	NA
Cobalt	7440-48-4	mg/kg	90	1600	590	5.58	5.80	10.7	14.4	13.4	5.47	NA	NA	NA	NA	NA	NA
Copper	7440-50-8	mg/kg	11000	3100	45000	17.6	18.0	25.5	36.9	30.8	18.8	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	mg/kg	NS	NS	NS	22800	23200	33900	46000	42100	23500	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	mg/kg	90	400	800	**212**	**218**	**207**	**210**	**175**	**236**	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	mg/kg	NS	NS	NS	1480	1340	1400	1220	1330	1260	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	mg/kg	65	11000	5900	**188**	**203**	**201**	**192**	**209**	**196**	NA	NA	NA	NA	NA	NA
Mercury	7439-97-6	mg/kg	0.32	23	65	0.0489 J	0.0481 J	0.0464 J	0.0428 J	0.0412 J	0.0468 J	NA	NA	NA	NA	NA	NA
Nickel	7440-02-0	mg/kg	48	1600	23000	8.39	8.58	19.4	30.1	23.6	8.20	NA	NA	NA	NA	NA	NA
Potassium	7440-09-7	mg/kg	NS	NS	NS	892	874	1050	1110	1110	859	NA	NA	NA	NA	NA	NA
Selenium	7782-49-2	mg/kg	11	390	5700	3.36	3.65	3.98	8.38	4.48	1.85 J	NA	NA	NA	NA	NA	NA
Silver	7440-22-4	mg/kg	1	390	5700	< 0.198 U	0.207 J	0.429 J	**1.01**	0.771	0.243 J	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	mg/kg	NS	NS	NS	65.1 J	64.1 J	76.1 J	94.6 J	79.5 J	70.5 J	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	mg/kg	3	NS	NS	1.27 J	< 1.07 U	2.28 J	2.67 J	1.60 J	< 1.23 U	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	mg/kg	NS	78	1100	34.2	35.8	41.8	37.5	41.3	34.3	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	mg/kg	930	23000	110000.0052	44.3	36.4	46.1	53.4	47.7	46.3	NA	NA	NA	NA	NA	NA
SVOCs																	
1,1'-Biphenyl	92-52-4	ug/kg	140000	61000	240000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	ug/kg	68000	6100000	68000000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	19000	74000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	ug/kg	200	180000	2100000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	ug/kg	1000	1200000	14000000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	ug/kg	300	120000	1400000	**< 460 U**	**< 450 U**	**< 400 U**	**< 450 U**	**< 390 U**	**< 450 U**	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	ug/kg	700	700	3000	**3300**	**2900**	170 J	< 100 U	200 J	**3400**	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	500	700	3000	**1100**	**970**	< 22 U	< 25 U	< 22 U	**1100**	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	35572-78-2	ug/kg	400	4700	61000	**19000 J**	**21000 J**	NA	**1300 J**	NA	**20000 J**	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	NS	NS	NS	< 10 U	< 10 U	< 9 U	< 10 U	< 9 U	< 10 U	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	ug/kg	800	310000	2200000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	ug/kg	8000	230000	2400000	< 5 U	< 5 U	5 J	5 J	5 J	< 5 U	NA	NA	NA	NA	NA	NA
2-Methylpentanoic acid	97-61-0	ug/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	95-48-7	ug/kg	NS	310000	3400000	< 26 U	< 25 U	< 22 U	30 J	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	ug/kg	NS	39000	23000000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
2-Nitrophenol	88-75-5	ug/kg	NS	NS	NS	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	ug/kg	200	1000	4000	< 150 U	< 150 U	< 130 U	< 150 U	< 130 U	< 150 U	NA	NA	NA	NA	NA	NA
3-Nitroaniline	99-09-2	ug/kg	NS	NS	NS	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	ug/kg	NS	NS	NS	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	ug/kg	NS	NS	NS	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	ug/kg	NS	NS	NS	< 52 U	< 50 U	< 45 U	< 50 U	< 44 U	< 50 U	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	NS	NS	NS	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	ug/kg	NS	NS	NS	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA

Table 1. TNT Bioremediation Pilot Study Analytical Data
TNT Project Area Bioremediation Pilot Study Addendum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Location						TNT-PS-B	TNT-PS-J	TNT-PS-F	TNT-PS-E	TNT-PS-D	TNT-PS-C	TNT-PS-D	TNT-PS-E	TNT-PS-F	TNT-PS-G	TNT-PS-H	TNT-PS-I
Sample Date						5/9/2017	5/9/2017	5/9/2017	5/9/2017	5/9/2017	5/9/2017	9/20/2017	9/20/2017	9/20/2017	9/20/2017	9/20/2017	9/20/2017
Sample Depths						0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft
Sample ID						TNT-PS-B-05092017	TNT-PS-J-05092017	TNT-PS-F-05092017	TNT-PS-E-05092017	TNT-PS-D-05092017	TNT-PS-C-05092017	TNT-PS-D-09202017	TNT-PS-E-09202017	TNT-PS-F-09202017	TNT-PS-G-09202017	TNT-PS-H-09202017	TNT-PS-I-09202017
Parent ID																	
Notes																	
Chemical	**CAS Number**	**Units**	**IGWSRS**	**RDCSRS**	**NRDCSRS**												
4-Nitrophenol	100-02-7	ug/kg	NS	NS	NS	< 260 U	< 250 U	< 220 U	< 250 U	< 220 U	< 250 U	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	ug/kg	110000	3400000	37000000	< 5 U	< 5 U	< 4 U	< 5 U	< 4 U	13 J	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	ug/kg	NS	NS	300000000	10 J	16 J	16 J	16 J	15 J	< 5 U	NA	NA	NA	NA	NA	NA
Acetophenone	98-86-2	ug/kg	3000	2000	5000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	ug/kg	2400000	17000000	30000000	13 J	21 J	11 J	10 J	12 J	14 J	NA	NA	NA	NA	NA	NA
Atrazine	1912-24-9	ug/kg	200	210000	2400000	< 52 U	< 50 U	< 45 U	< 50 U	< 44 U	< 50 U	NA	NA	NA	NA	NA	NA
Benzaldehyde	100-52-7	ug/kg	NS	6100000	68000000	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	56-55-3	ug/kg	13000	5000	17000	55	62	60	56	73	47	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	50-32-8	ug/kg	3000	500	2000	51	59	53	53	62	41	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	205-99-2	ug/kg	41000	5000	17000	83	89	90	88	120	72	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	191-24-2	ug/kg	NS	380000000	30000000	40	45	37	39	44	28	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	207-08-9	ug/kg	25000	45000	170000	41	37	39	42	44	28	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	NS	NS	NS	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)ether	111-44-4	ug/kg	200	400	2000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	1200000	35000	140000	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	ug/kg	230000	1200000	14000000	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
Butyric Acid	107-92-6	ug/kg	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	105-60-2	ug/kg	12000	31000000	340000000	< 52 U	< 50 U	< 45 U	< 50 U	< 44 U	< 50 U	NA	NA	NA	NA	NA	NA
Carbazole	86-74-8	ug/kg	NS	24000	96000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	ug/kg	80000	450000	1700000	71	71	69	69	80	54	NA	NA	NA	NA	NA	NA
Dibenzo[a,h]anthracene	53-70-3	ug/kg	13000	500	2000	13 J	12 J	13 J	14 J	12 J	11 J	NA	NA	NA	NA	NA	NA
Dibenzofuran	132-64-9	ug/kg	NS	NS	NS	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
Diethylphthalate	84-66-2	ug/kg	88000	49000000	550000000	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
Dimethylphthalate	131-11-3	ug/kg	NS	NS	NS	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	ug/kg	760000	6100000	68000000	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	117-84-0	ug/kg	3300000	2400000	27000000	< 100 U	< 100 U	< 89 U	< 100 U	< 87 U	< 100 U	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	ug/kg	1300000	2300000	24000000	110	140	110	100	120	87	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	ug/kg	170000	2300000	24000000	< 5 U	9 J	< 4 U	< 5 U	5 J	< 5 U	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	ug/kg	200	300	1000	< 5 U	< 5 U	< 4 U	< 5 U	< 4 U	< 5 U	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	ug/kg	320000	45000	110000	< 260 U	< 250 U	< 220 U	< 250 U	< 220 U	< 250 U	NA	NA	NA	NA	NA	NA
Hexachloroethane	67-72-1	ug/kg	200	12000	48000	< 52 U	< 50 U	< 45 U	< 50 U	< 44 U	< 50 U	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	193-39-5	ug/kg	7000	5000	17000	38	43	38	38	45	26	NA	NA	NA	NA	NA	NA
Isophorone	78-59-1	ug/kg	280	510000	2000000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	ug/kg	25000	6000	17000	10 J	54	10 J	13 J	13 J	8 J	NA	NA	NA	NA	NA	NA
Nitrobenzene	98-95-3	ug/kg	200	5000	14000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	621-64-7	ug/kg	200	200	300	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	86-30-6	ug/kg	6000	99000	390000	< 26 U	< 25 U	< 22 U	< 25 U	< 22 U	< 25 U	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	ug/kg	300	900	3000	< 52 U	< 50 U	< 45 U	< 50 U	< 44 U	< 50 U	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	ug/kg	NS	NS	300000000	58	95	53	42	47	48	NA	NA	NA	NA	NA	NA
Phenol	108-95-2	ug/kg	8000	18000000	210000000	30 J	48 J	30 J	58	38 J	30 J	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	ug/kg	840000	1700000	18000000	87	120	93	87	96	71	NA	NA	NA	NA	NA	NA
Total Organic Carbon																	
Total Organic Carbon	TOC	mg/kg	NS	NS	NS	11200	16000	14900	18100	18600	11900	NA	NA	NA	NA	NA	NA

Notes:
SRS = Soil Remediation Standard
IGW = Impact to Groundwater
RDC = Residential Direct Contact
NRDC = Non Residential Direct Contact
NA = Not Analyzed
NS = No screening standard available
U = Consituent not detected, associated value is laboratory detection limit
J = Estimated concentration
ug/kg = microgram per kilogram
mg/kg = milligram per kilgram
Bolded values indicate a concentration above IGWSRS
Underlined values indicate a concentration above RDCSRS
Shaded values indicate a concentration above NRDCSRS

Table 2. TNT Bioremediation Study Box Monitoring Results
TNT Project Area Soil Bioremediation Pilot Study Addendum
Hercules LLC, Former Kenvil Works Facility
Kenvil, NJ

Sample Event	Sample Date	Study Container: A - Control (no water/no turn)								Study Container: B - Control (water/one turn)								Study Container: C - Control (water/cyclical turns)							
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)
Baseline Average	07.20.2015	2,170,833	908	328	27,009	33,787	2,232,864	---	9,985	2,170,833	2,075	523	27,009	33,787	2,234,227	---	10,600	2,170,833	2,100	583	27,009	33,787	2,234,312	---	6,970
End of 2nd Cycle	08.17.2015	1,900,000	*540*	1,200	27,000	39,000	1,967,740	11.9%	8,550	1,900,000	4,000	800	19,000	19,000	1,942,800	13.0%	9,240	2,000,000	4,100	900	19,000	20,000	2,044,000	8.5%	9,730
End of 3rd Cycle	08.31.2015	2,100,000	1,200	330	19,000	33,000	2,153,530	3.6%	9,120	1,300,000	1,400	380	13,000	14,000	1,328,780	40.5%	6,840	1,800,000	*170*	*33*	16,000	17,000	1,833,203	18.0%	6,920
End of 4th Cycle (Average)	09.14.2015	2,100,000	4,725	2,775	43,000	69,250	2,219,750	0.6%	17,900	3,425,000	5,850	1,925	27,000	29,500	3,489,275	-56.2%	22,925	2,825,000	6,150	2,425	35,667	37,667	2,906,909	-30.1%	33,250
End of 5th Cycle	09.28.2015	2,000,000	3,700	1,800	43,000	65,000	2,113,500	5.3%	18,300	2,100,000	5,000	1,500	28,000	29,000	2,163,500	3.2%	211,000	3,000,000	4,500	1,400	30,000	30,000	3,065,900	-37.2%	27,400
End of 6th Cycle (Average)	10.12.2015	2,775,000	3,750	1,250	50,750	78,750	2,909,500	-30.3%	20,750	2,000,000	5,025	1,118	23,750	25,000	2,054,893	8.0%	15,425	2,750,000	5,000	1,300	32,000	30,000	2,818,300	-26.1%	18,975
1 Month Post Study	11.10.2015	1,500,000	2,300	670	26,000	40,000	1,568,970	29.8%	7,060	1,700,000	3,200	800	15,000	14,000	1,733,000	22.4%	6,160	1,900,000	3,700	820	19,000	18,000	1,941,520	13.1%	10,400
12 Months Post Study	10.24.2016	1,800,000	2,300	710	84,000	130,000	2,017,010	9.7%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18 Months Post Study	05.09.2017	1,600,000	3,400	1,500	81,000	110,000	1,795,900	19.6%	16,000	2,100,000	3,300	1,100	49,000	44,000	2,197,400	1.7%	11,200	1,600,000	3,400	1,100	68,000	63,000	1,735,500	22.3%	11,900
24 Months Post Study	09.20.2017	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Overall Reduction (%)		26.3%	-274.7%	-358.0%	-199.9%	-225.6%	20%			3.3%	-59.0%	-110.5%	-81.4%	-30.2%	2%			26.3%	-61.9%	-88.8%	-151.8%	-86.5%	22%		
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000				95,000	3,000	3,000	61,000	61,000				95,000	3,000	3,000	61,000	61,000			
Percent Attainment		6%	88%	200%	75%	55%				5%	91%	273%	124%	139%				6%	88%	273%	90%	97%			
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700				21,000	700	700	4,700	4,700				21,000	700	700	4,700	4,700			
Percent Attainment		1%	21%	47%	6%	4%				1%	21%	64%	10%	11%				1%	21%	64%	7%	7%			
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300				200	700	500	400	300				200	700	500	400	300			
Percent Attainment		0%	21%	33%	0%	0%				0%	21%	45%	1%	1%				0%	21%	45%	1%	0%			

Sample Event	Sample Date	Study Container: D - DARAMEND OE (4%, cyclical turns)								Study Container: E - DARAMEND OE (3%, cyclical turns)								Study Container: F - DARAMEND OE (2%, cyclical turns)							
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)
Baseline Average	07.20.2015	2,170,833	2,225	643	27,009	33,787	2,234,497	---	6,718	2,170,833	2,300	528	27,009	33,787	2,234,457	---	6,423	2,170,833	2,000	540	27,009	33,787	2,234,169	---	8,795
End of 2nd Cycle	08.17.2015	550,000	1,100	260	130,000	130,000	811,360	63.7%	14,000	47,000	1,100	370	87,000	120,000	255,470	88.6%	15,300	280,000	2,000	640	320,000	350,000	952,640	57.4%	13,200
End of 3rd Cycle	08.31.2015	47,000	390	110	5,000	6,400	58,900	97.4%	11,500	11,000	<830	86	5,700	7,800	24,586	98.9%	11,900	94,000	360	*170*	58,000	78,000	230,530	89.7%	10,300
End of 4th Cycle (Average)	09.14.2015	102,750	815	53	10,825	9,150	123,593	94.5%	29,900	51,500	978	350	11,525	11,800	76,153	96.6%	38,450	230,500	953	105	20,000	24,500	276,058	87.6%	27,150
End of 5th Cycle	09.28.2015	12,000	520	*46*	3,700	4,900	21,166	99.1%	18,400	15,000	520	<46	3,900	5,400	24,820	98.9%	40,800	29,000	680	220	11,000	13,000	53,900	97.6%	31,300
End of 6th Cycle (Average)	10.12.2015	11,625	1,325	263	3,950	5,475	22,638	99.0%	26,650	22,250	*1,350*	235	3,975	5,750	33,560	98.5%	26,650	26,000	823	263	9,800	13,250	50,136	97.8%	22,100
1 Month Post Study	11.10.2015	10,000	*530*	*130*	2,500	3,200	16,360	99.3%	24,000	260,000	*540*	190	3,700	3,800	268,230	88.0%	23,500	18,000	760	*130*	7,100	8,600	34,590	98.5%	14,300
12 Months Post Study	10.24.2016	5,100	150	48	1,900	2,300	9,498	99.6%	---	5,200	120	*48*	1,900	2,200	9,468	99.6%	---	5,100	110	*49*	1,900	2,800	9,959	99.6%	---
18 Months Post Study	05.09.2017	170,000	200	*130*	8,400	3,000	181,730	91.9%	18,600	3,500	*540*	*130*	1,000	1,500	6,670	99.7%	18,100	4,500	170	*130*	1,400	2,700	8,900	99.6%	14,900
24 Months Post Study	09.20.2017	2,300	360	380	2,400	3,800	9,240	99.6%		6,100	*380*	*510*	*380*	*600*	7,970	99.6%		3,700	*390*	*390*	*1,600*	*3,800*	9,880	99.6%	
Overall Reduction (%)		99.9%	83.8%	40.9%	91.1%	88.8%	99.3%			99.7%	83.5%	3.4%	98.6%	98.2%	99.6%			99.8%	80.5%	27.8%	94.1%	88.8%	99.6%		
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000				95,000	3,000	3,000	61,000	61,000				95,000	3,000	3,000	61,000	61,000			
Percent Attainment		4130%	833%	799%	2542%	1605%				1557%	789%	588%	16053%	10167%				2568%	769%	769%	3813%	1605%			
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700				21,000	700	700	4,700	4,700				21,000	700	700	4,700	4,700			
Percent Attainment		913%	194%	184%	196%	124%				344%	184%	137%	1237%	783%				568%	179%	179%	294%	124%			
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300				200	700	500	400	300				200	700	500	400	300			
Percent Attainment		9%	194%	132%	17%	8%				3%	184%	98%	105%	50%				5%	179%	128%	25%	8%			

Sample Event	Sample Date	Study Container: G - DARAMEND OE (4%, single turn)								Study Container: H - DARAMEND OE (3%, single turn)								Study Container: I - DARAMEND OE (2%, single turn)							
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)
Baseline Average	07.20.2015	2,170,833	2,850	798	27,009	33,787	2,235,277	---	9,863	2,170,833	2,150	593	27,009	33,787	2,234,372	---	7,818	2,170,833	1,925	493	27,009	33,787	2,234,047	---	8,115
End of 2nd Cycle	08.17.2015	13,000	690	260	4,300	8,700	26,950	98.8%	16,300	410,000	710	230	34,000	61,000	505,940	77.4%	13,000	190,000	1,400	620	130,000	220,000	542,020	75.7%	14,500
End of 3rd Cycle	08.31.2015	14,000	490	150	6,800	8,100	29,540	98.7%	13,100	14,000	380	180	4,400	6,700	25,660	98.9%	10,900	220,000	800	200	43,000	72,000	336,000	85.0%	8,440
End of 4th Cycle (Average)	09.14.2015	16,250	638	57	3,500	5,600	26,045	98.8%	38,625	26,000	908	477	5,800	9,125	42,309	98.1%	30,350	407,750	988	412	34,700	44,000	487,850	78.2%	29,275
End of 5th Cycle	09.28.2015	20,000	520	190	2,500	4,700	27,910	98.8%	46,900	140,000	600	200	7,700	10,000	158,500	92.9%	29,300	21,000	800	*50*	8,800	13,000	43,650	98.0%	21,100
End of 6th Cycle (Average)	10.12.2015	15,975	1,425	258	2,825	4,350	24,833	98.9%	24,200	20,750	*1,400*	250	5,775	7,650	35,825	98.4%	22,875	37,333	1,240	300	13,225	20,000	72,098	96.8%	25,350
1 Month Post Study	11.10.2015	16,000	*520*	*130*	2,900	2,900	22,450	99.0%	19,700	19,000	*530*	250	4,600	5,600	29,980	98.7%	16,900	25,000	980	300	5,800	9,100	41,180	98.2%	16,800
12 Months Post Study	10.24.2016	4,500	*240*	*49*	1,400	1,800	7,989	99.6%		7,000	*250*	*51*	2,200	2,800	12,301	99.4%		27,000	*250*	*51*	2,900	3,800	34,001	98.5%	
18 Months Post Study	05.09.2017	4,300	120	*130*	1,000	1,700	7,250	99.7%	17,300	6,500	130	*130*	1,800	2,300	10,860	99.5%	18,500	4,700	120	*130*	1,500	2,800	9,250	99.6%	16,300
24 Months Post Study	09.20.2017	3,600	*400*	*400*	*1,300*	*2,600*	8,300	99.6%		7,700	*420*	*420*	4,500	5,300	18,340	99.2%		4,600	*420*	*420*	*1,700*	4,200	11,340	99.5%	
Overall Reduction (%)		99.8%	86.0%	49.8%	95.2%	92.3%	99.6%			99.6%	80.5%	29.1%	83.3%	84.3%	99.2%			99.8%	78.2%	14.7%	93.7%	87.6%	99.5%		
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000				95,000	3,000	3,000	61,000	61,000				95,000	3,000	3,000	61,000	61,000			
Percent Attainment		2639%	750%	750%	4692%	2346%				1234%	714%	714%	1356%	1151%				2065%	714%	714%	3588%	1452%			
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700				21,000	700	700	4,700	4,700				21,000	700	700	4,700	4,700			
Percent Attainment		583%	175%	175%	362%	181%				273%	167%	167%	104%	89%				457%	167%	167%	276%	112%			
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300				200	700	500	400	300				200	700	500	400	300			
Percent Attainment		6%	175%	125%	31%	12%				3%	167%	119%	9%	6%				4%	167%	119%	24%	7%			

Sample Event	Sample Date	Study Container: J - Wood Chips (10% by volume, cyclical turns)								Study Container: K - Wood Chips (10% by volume, single turn)							
		2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)	2,4,6-TNT (µg/kg)	2,4-DNT (µg/kg)	2,6-DNT (µg/kg)	2-A-4,6-DNT (µg/kg)	4-A-2,6-DNT (µg/kg)	Total NTs (µg/kg)	Total Removal Efficiency (TNT, DNTs, A-DNTs)	TOC (mg/kg)
Baseline Average	07.20.2015	2,170,833	2,225	152	27,009	33,787	2,234,006	---	6,975	2,170,833	1,588	455	27,009	33,787	2,233,672	---	8,033
End of 2nd Cycle	08.17.2015	2,800,000	4,000	1,000	24,000	26,000	2,855,000	-28%	9,870	1,700,000	3,500	1,200	47,000	70,000	1,821,700	18%	14,500
End of 3rd Cycle	08.31.2015	1,400,000	2,500	790	17,000	20,000	1,440,290	36%	6,770	750,000	870	360	26,000	39,000	816,230	63%	6,560
End of 4th Cycle (Average)	09.14.2015	2,350,000	4,025	1,750	36,500	43,250	2,435,525	-9%	34,775	1,550,000	3,825	3,400	58,250	95,500	1,710,975	23%	32,825
End of 5th Cycle	09.28.2015	1,900,000	4,300	1,400	35,000	42,000	1,982,700	11%	30,800	2,200,000	3,200	1,500	55,000	86,000	2,345,700	-5%	24,000
End of 6th Cycle (Average)	10.12.2015	2,300,000	2,475	723	50,250	52,250	2,405,698	-8%	21,675	2,275,000	2,850	908	82,500	137,500	2,498,758	-12%	21,675
1 Month Post Study	11.10.2015	1,400,000	4,100	990	36,000	37,000	1,478,090	34%	11,600	1,200,000	2,600	820	36,000	57,000	1,296,420	42%	6,890
12 Months Post Study	10.24.2016	---	---	---	---	---	---	---	---	1,100,000	1,600	410	160,000	170,000	1,432,010	36%	
18 Months Post Study	05.09.2017	1,100,000	2,900	970	81,000	91,000	1,275,870	43%	16,000	1,000,000	2,600	1,100	100,000	130,000	1,233,700	45%	13,300
24 Months Post Study	09.20.2017	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Overall Reduction (%)		49.3%	-30.3%	-538.2%	-199.9%	-169.3%	43%			53.9%	-63.7%	-141.8%	-270.2%	-284.8%	45%		
Non-Residential SRS (NJDEP)		95,000	3,000	3,000	61,000	61,000				95,000	3,000	3,000	61,000	61,000			
Percent Attainment		9%	103%	309%	75%	67%				10%	115%	273%	61%	47%			
Residential SRS (NJDEP)		21,000	700	700	4,700	4,700				21,000	700	700	4,700	4,700			
Percent Attainment		2%	24%	72%	6%	5%				2%	27%	64%	5%	4%			
Impact to Groundwater SRS (NJDEP)		200	700	500	400	300				200	700	500	400	300			
Percent Attainment		0%	24%	52%	0%	0%				0%	27%	45%	0%	0%			

Notes:
Italicized values represent non-detect reporting limits (or average thereof)
--- = Not analyzed

mg/kg = milligrams per kilogram
µg/kg = Micrograms per kilogram
% = Percent

TOC = total organic carbon
NJDEP = New Jersey Department of Environmental Protection
SRS = Soil remediation standard

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

Report Date: January 17, 2017

Project: Kenvil TNT Bioremediaton Pilot

Submittal Date: 10/26/2016
Group Number: 1725898
SDG: KVM92
PO Number: PO265938
Release Number: KENVIL
State of Sample Origin: NJ

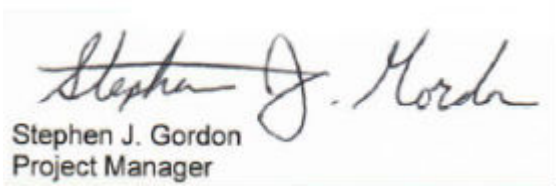
Client Sample Description	Lancaster Labs (LL) #
TNT-PS-A-10242016 Composite Soil	8665686
TNT-PS-K-10242016 Composite Soil	8665687
TNT-PS-I-10242016 Composite Soil	8665688
TNT-PS-H-10242016 Composite Soil	8665689
TNT-PS-G-10252016 Composite Soil	8665690
TNT-PS-F-10252016 Composite Soil	8665691
TNT-PS-E-10252016 Composite Soil	8665692
TNT-PS-D-10252016 Composite Soil	8665693

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	Kennedy/Jenks	Attn: Lora Sterner
Electronic Copy To	Hercules	Attn: Scott Larew
Electronic Copy To	Ashland	Attn: Ed Meeks

Respectfully Submitted,



Stephen J. Gordon
Project Manager

(724) 597-2027

Sample Description: TNT-PS-A-10242016 Composite Soil
Kenvil

LL Sample # SW 8665686
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 11:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTA SDG#: KVM92-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	8	J	5	27	1
10727	Acetophenone	98-86-2	N.D.		26	52	1
10727	Anthracene	120-12-7	6	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		52	260	1
10727	Benzaldehyde	100-52-7	N.D.		100	260	1
10727	Benzo(a)anthracene	56-55-3	44		5	27	1
10727	Benzo(a)pyrene	50-32-8	39		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	46		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	24	J	5	27	1
10727	Benzo(k)fluoranthene	207-08-9	31		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	52	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	52	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		52	260	1
10727	Carbazole	86-74-8	N.D.		26	52	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	52	1
10727	4-Chloroaniline	106-47-8	N.D.		52	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	52	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	52	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	52	1
10727	2-Chlorophenol	95-57-8	N.D.		26	52	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	52	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	52	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	48		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	9	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		26	52	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	520	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	52	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	52	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	780	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		470	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	2,300		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	710		26	52	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	270	1
10727	Fluoranthene	206-44-0	59		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	52	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	780	1
10727	Hexachloroethane	67-72-1	N.D.		52	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	23	J	5	27	1
10727	Isophorone	78-59-1	N.D.		26	52	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-10242016 Composite Soil
Kenvil

LL Sample # SW 8665686
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 11:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTA SDG#: KVM92-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1
10727	2-Methylphenol	95-48-7	N.D.		26	52	1
10727	4-Methylphenol	106-44-5	N.D.		26	52	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	6	J	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.		26	52	1
10727	3-Nitroaniline	99-09-2	N.D.		100	260	1
10727	4-Nitroaniline	100-01-6	N.D.		100	260	1
10727	Nitrobenzene	98-95-3	N.D.		26	52	1
10727	2-Nitrophenol	88-75-5	N.D.		26	52	1
10727	4-Nitrophenol	100-02-7	N.D.		260	780	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		26	52	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		26	52	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	260	1
10727	Pentachlorophenol	87-86-5	N.D.		52	270	1
10727	Phenanthrene	85-01-8	23	J	5	27	1
10727	Phenol	108-95-2	N.D.		26	52	1
10727	Pyrene	129-00-0	47		5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		26	52	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		26	52	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	130,000		42,000	110,000	200
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	84,000	J	28,000	84,000	200
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	200	J	140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,100	1
06918	Nitrobenzene	98-95-3	1,600		140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	560	1
06918	3-Nitrotoluene	99-08-1	N.D.		350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	560	1
06918	PETN	78-11-5	N.D.		2,800	8,400	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	2,900		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,800,000		28,000	84,000	200

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-10242016 Composite Soil
Kenvil

LL Sample # SW 8665686
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 11:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTA SDG#: KVM92-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	8,240	1,120	3,360	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	36.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 19:25	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/11/2016 18:45	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/16/2016 01:52	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16302121731B	10/31/2016 00:42	Samuel J Weaver	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

KTNTA

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665686
Sample wt/vol: 30.36(g/mL) g Lab File ID: bk0070.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 36.7 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.691	460	J
2.112-40-3	Dodecane	6.204	1000	J
3.17301-23-4	Undecane, 2,6-dimethyl-	6.279	460	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.437	550	J
5.74630-13-0	3,7-Decadiene, 2,9-dimethyl-	6.472	580	J
6.	Unknown Alkane	6.524	650	J
7.	Unknown acid	6.588	780	J
8.5911-04-6	Nonane, 3-methyl-	6.629	1300	J
9.	Unknown Cycloalkane	6.769	700	J
10.629-50-5	Tridecane	6.798	2300	J
11.	Unknown Alkane	6.856	540	J
12.107770-99-0	3,5-Dimethyldodecane	6.886	900	J
13.	Unknown Alkane	7.072	2100	J
14.1560-96-9	Tridecane, 2-methyl-	7.154	1500	J
15.	Unknown Alkane	7.189	1600	J
16.3178-23-2	Cyclohexane, 1,1'-methyleneb	7.288	1300	J
17.629-59-4	Tetradecane	7.352	4800	J
18.	Unknown Alkane	7.597	2000	J
19.	Unknown Alkane	7.655	1300	J
20.	Unknown Alkane	7.865	2300	J
21.	Unknown Amine	8.354	1400	J
22.19406-51-0	p-Toluidine, 3,5-dinitro-	8.821	1600	J
23.	Unknown Hydrocarbon	9.054	300000	J
24.	Unknown	9.899	17000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.115	15000	J
26.				
27.SVOCTIC	Total SVOC TICs		360000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-K-10242016 Composite Soil
Kenvil

LL Sample # SW 8665687
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 11:35 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTK SDG#: KVM92-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	8	J	5	27	1
10727	Acetophenone	98-86-2	N.D.		27	53	1
10727	Anthracene	120-12-7	7	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		53	270	1
10727	Benzaldehyde	100-52-7	N.D.		110	270	1
10727	Benzo(a)anthracene	56-55-3	39		5	27	1
10727	Benzo(a)pyrene	50-32-8	34		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	48		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	19	J	5	27	1
10727	Benzo(k)fluoranthene	207-08-9	20	J	5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		27	53	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		27	53	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	270	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	270	1
10727	Caprolactam	105-60-2	N.D.		53	270	1
10727	Carbazole	86-74-8	N.D.		27	53	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		27	53	1
10727	4-Chloroaniline	106-47-8	N.D.		53	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		27	53	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		27	53	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	53	1
10727	2-Chlorophenol	95-57-8	N.D.		27	53	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		27	53	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		27	53	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	39		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	7	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		27	53	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	530	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		27	53	1
10727	Diethylphthalate	84-66-2	N.D.		110	270	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		27	53	1
10727	Dimethylphthalate	131-11-3	N.D.		110	270	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		270	800	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		480	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	1,600		110	270	1
10727	2,6-Dinitrotoluene	606-20-2	410		27	53	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	270	1
10727	Fluoranthene	206-44-0	62		5	27	1
10727	Fluorene	86-73-7	N.D.		5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		27	53	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		270	800	1
10727	Hexachloroethane	67-72-1	N.D.		53	270	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	18	J	5	27	1
10727	Isophorone	78-59-1	N.D.		27	53	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-10242016 Composite Soil
Kenvil

LL Sample # SW 8665687
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 11:35 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTK SDG#: KVM92-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	27	1
10727	2-Methylphenol	95-48-7	N.D.		27	53	1
10727	4-Methylphenol	106-44-5	N.D.		27	53	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	N.D.		5	27	1
10727	2-Nitroaniline	88-74-4	N.D.		27	53	1
10727	3-Nitroaniline	99-09-2	N.D.		110	270	1
10727	4-Nitroaniline	100-01-6	N.D.		110	270	1
10727	Nitrobenzene	98-95-3	N.D.		27	53	1
10727	2-Nitrophenol	88-75-5	N.D.		27	53	1
10727	4-Nitrophenol	100-02-7	N.D.		270	800	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		27	53	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		27	53	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		110	270	1
10727	Pentachlorophenol	87-86-5	N.D.		53	270	1
10727	Phenanthrene	85-01-8	22	J	5	27	1
10727	Phenol	108-95-2	52	J	27	53	1
10727	Pyrene	129-00-0	49		5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		27	53	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		27	53	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	170,000		24,000	63,000	100
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	160,000		16,000	48,000	100
06918	1,2-Dinitrobenzene	528-29-0	N.D.		160	480	1
06918	1,3-Dinitrobenzene	99-65-0	260	J	160	480	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		160	480	1
06918	HMX	2691-41-0	N.D.		400	1,200	1
06918	Nitrobenzene	98-95-3	1,300		160	480	1
06918	Nitroglycerin	55-63-0	N.D.		3,200	9,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		160	480	1
06918	2-Nitrotoluene	88-72-2	N.D.		320	630	1
06918	3-Nitrotoluene	99-08-1	N.D.		400	790	1
06918	4-Nitrotoluene	99-99-0	N.D.		320	630	1
06918	PETN	78-11-5	N.D.		3,200	9,500	1
06918	RDX	121-82-4	N.D.		210	480	1
06918	Tetryl	479-45-8	N.D.		250	630	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,800	1,800	1
06918	2,4,6-Trinitrotoluene	118-96-7	1,100,000		16,000	48,000	100

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-10242016 Composite Soil
Kenvil

LL Sample # SW 8665687
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 11:35 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTK SDG#: KVM92-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	7,710	1,240	3,710	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	38.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 19:45	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/11/2016 19:27	James H Place	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/16/2016 02:35	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16302121731B	10/30/2016 22:49	Samuel J Weaver	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

KTNTK

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665687
Sample wt/vol: 30.28(g/mL) g Lab File ID: bk0071.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 38.2 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	6.064	450	J
2.	112-40-3	Dodecane	6.198	890	J
3.	66660-43-3	trans, cis-3-Ethylbicyclo[4.	6.437	500	J
4.		Unknown Cycloalkane	6.472	550	J
5.		Unknown Alkane	6.524	740	J
6.		Unknown Alkane	6.583	760	J
7.		Unknown Alkane	6.629	910	J
8.		Unknown Alkane	6.664	670	J
9.		Unknown Cycloalkane	6.763	580	J
10.	629-50-5	Tridecane	6.798	2400	J
11.		Unknown	6.851	530	J
12.		Unknown Alkane	6.886	910	J
13.		Unknown PAH	7.014	990	J
14.		Unknown	7.072	1700	J
15.	1560-96-9	Tridecane, 2-methyl-	7.148	1100	J
16.		Unknown Alkane	7.189	1300	J
17.	3178-23-2	Cyclohexane, 1,1'-methyleneb	7.288	1200	J
18.	629-59-4	Tetradecane	7.346	3700	J
19.		Unknown Alkane	7.387	1500	J
20.		Unknown Alkane	7.597	1600	J
21.		Unknown Alkane	7.655	1000	J
22.	629-62-9	Pentadecane	7.865	1700	J
23.		Unknown Amine	8.996	190000	J
24.	19406-51-0	p-Toluidine, 3,5-dinitro-	9.887	18000	J
25.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.109	18000	J
26.					
27.	SVOCTIC	Total SVOC TICs		250000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-10242016 Composite Soil
Kenvil

LL Sample # SW 8665688
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 12:45 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTI SDG#: KVM92-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	N.D.		5	26	1
10727	Acetophenone	98-86-2	N.D.		25	51	1
10727	Anthracene	120-12-7	7	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		51	250	1
10727	Benzaldehyde	100-52-7	N.D.		100	250	1
10727	Benzo(a)anthracene	56-55-3	42		5	26	1
10727	Benzo(a)pyrene	50-32-8	42		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	58		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	23	J	5	26	1
10727	Benzo(k)fluoranthene	207-08-9	20	J	5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	51	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	51	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		51	250	1
10727	Carbazole	86-74-8	N.D.		25	51	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	51	1
10727	4-Chloroaniline	106-47-8	N.D.		51	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	51	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	51	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	50	1
10727	2-Chlorophenol	95-57-8	N.D.		25	51	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	51	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	51	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	46		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	9	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		25	51	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	510	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	51	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	51	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	760	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		460	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		25	51	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	70		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	51	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	760	1
10727	Hexachloroethane	67-72-1	N.D.		51	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	24	J	5	26	1
10727	Isophorone	78-59-1	N.D.		25	51	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-10242016 Composite Soil
Kenvil

LL Sample # SW 8665688
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 12:45 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTI SDG#: KVM92-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.	5	26	1
10727	2-Methylphenol	95-48-7	N.D.	25	51	1
10727	4-Methylphenol	106-44-5	1,300	25	51	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.	25	51	1
10727	3-Nitroaniline	99-09-2	N.D.	100	250	1
10727	4-Nitroaniline	100-01-6	N.D.	100	250	1
10727	Nitrobenzene	98-95-3	N.D.	25	51	1
10727	2-Nitrophenol	88-75-5	N.D.	25	51	1
10727	4-Nitrophenol	100-02-7	N.D.	250	760	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	25	51	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	25	51	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	100	250	1
10727	Pentachlorophenol	87-86-5	N.D.	51	260	1
10727	Phenanthrene	85-01-8	27	5	26	1
10727	Phenol	108-95-2	110	25	51	1
10727	Pyrene	129-00-0	57	5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	25	51	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	25	51	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,800	210	560	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,900	140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	140	420	1
06918	HMX	2691-41-0	N.D.	350	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	140	420	1
06918	Nitroglycerin	55-63-0	N.D.	2,800	8,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.	140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.	280	560	1
06918	3-Nitrotoluene	99-08-1	N.D.	350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.	280	560	1
06918	PETN	78-11-5	N.D.	2,800	8,400	1
06918	RDX	121-82-4	N.D.	180	420	1
06918	Tetryl	479-45-8	N.D.	220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	27,000	140	420	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-10242016 Composite Soil
Kenvil

LL Sample # SW 8665688
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 12:45 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTI SDG#: KVM92-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	10,400	1,220	3,650	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	35.2	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 20:05	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/11/2016 20:09	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16302121731B	10/30/2016 23:53	Samuel J Weaver	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
KTNTI

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665688
Sample wt/vol: 30.32(g/mL) g Lab File ID: bk0072.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 35.2 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.691	440	J
2.	Unknown	6.064	480	J
3.112-40-3	Dodecane	6.204	1000	J
4.6044-71-9	Dodecane, 6-methyl-	6.279	470	J
5.1618-23-1	Naphthalene, 2-ethyldecahydr	6.437	570	J
6.	Unknown Cycloalkane	6.472	590	J
7.	Unknown acid	6.524	790	J
8.	Unknown Alkane	6.588	810	J
9.31295-56-4	Dodecane, 2,6,11-trimethyl-	6.629	1300	J
10.	Unknown Cycloalkane	6.769	690	J
11.629-50-5	Tridecane	6.798	2300	J
12.	Unknown	6.857	580	J
13.107770-99-0	3,5-Dimethyldodecane	6.886	950	J
14.	Unknown Hydrocarbon	7.020	1200	J
15.	Unknown Cycloalkane	7.072	2100	J
16.	Unknown Alkane	7.148	1600	J
17.	Unknown Alkane	7.189	1400	J
18.	Unknown Cycloalkane	7.288	1000	J
19.	Unknown Alkane	7.352	5000	J
20.	Unknown	7.597	1900	J
21.	Unknown Alkane	7.655	1100	J
22.629-59-4	Tetradecane	7.865	1800	J
23.	Unknown	7.888	1000	J
24.57-10-3	n-Hexadecanoic acid	9.963	12000	J
25.57-11-4	Octadecanoic acid	10.698	1700	J
26.				
27.SVOCTIC	Total SVOC TICs		43000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-H-10242016 Composite Soil
Kenvil

LL Sample # SW 8665689
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 13:15 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTH SDG#: KVM92-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/kg		ug/kg	ug/kg	
10727	Acenaphthene	83-32-9	9	J	5	26	1
10727	Acenaphthylene	208-96-8	13	J	5	26	1
10727	Acetophenone	98-86-2	N.D.		25	51	1
10727	Anthracene	120-12-7	19	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		51	250	1
10727	Benzaldehyde	100-52-7	N.D.		100	250	1
10727	Benzo(a)anthracene	56-55-3	88		5	26	1
10727	Benzo(a)pyrene	50-32-8	80		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	110		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	51		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	54		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	51	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	51	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		51	250	1
10727	Carbazole	86-74-8	N.D.		25	51	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	51	1
10727	4-Chloroaniline	106-47-8	N.D.		51	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	51	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	51	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	50	1
10727	2-Chlorophenol	95-57-8	N.D.		25	51	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	51	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	51	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	93		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		25	51	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	510	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	51	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	51	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	760	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		460	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		25	51	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	150		5	26	1
10727	Fluorene	86-73-7	7	J	5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	51	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	760	1
10727	Hexachloroethane	67-72-1	N.D.		51	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	50		5	26	1
10727	Isophorone	78-59-1	N.D.		25	51	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-10242016 Composite Soil
Kenvil

LL Sample # SW 8665689
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 13:15 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTH SDG#: KVM92-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1
10727	2-Methylphenol	95-48-7	N.D.		25	51	1
10727	4-Methylphenol	106-44-5	1,700		25	51	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	9	J	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.		25	51	1
10727	3-Nitroaniline	99-09-2	N.D.		100	250	1
10727	4-Nitroaniline	100-01-6	N.D.		100	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	51	1
10727	2-Nitrophenol	88-75-5	N.D.		25	51	1
10727	4-Nitrophenol	100-02-7	N.D.		250	760	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	51	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	51	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	250	1
10727	Pentachlorophenol	87-86-5	N.D.		51	260	1
10727	Phenanthrene	85-01-8	82		5	26	1
10727	Phenol	108-95-2	N.D.		25	51	1
10727	Pyrene	129-00-0	120		5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	51	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	51	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,800		210	560	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,200		140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	560	1
06918	3-Nitrotoluene	99-08-1	N.D.		350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	560	1
06918	PETN	78-11-5	N.D.		2,800	8,400	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	7,000		140	420	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-10242016 Composite Soil
Kenvil

LL Sample # SW 8665689
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/24/2016 13:15 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTH SDG#: KVM92-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	12,900	1,000	3,000	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	35.3	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 20:25	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/11/2016 20:52	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16302121731B	10/31/2016 00:03	Samuel J Weaver	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

KTNTH

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665689
Sample wt/vol: 30.49(g/mL) g Lab File ID: bk0073.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 35.3 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1618-22-0	Naphthalene, decahydro-2,6-d	6.064	520	J
2.112-40-3	Dodecane	6.204	980	J
3.6044-71-9	Dodecane, 6-methyl-	6.279	510	J
4.	Unknown	6.373	520	J
5.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.437	640	J
6.	Unknown Cycloalkane	6.472	660	J
7.	Unknown Alkane	6.524	800	J
8.	Unknown Alkane	6.588	980	J
9.	Unknown Alkane	6.635	1000	J
10.	Unknown Alkane	6.670	810	J
11.	Unknown	6.769	680	J
12.629-50-5	Tridecane	6.804	2500	J
13.	Unknown	6.856	650	J
14.	Unknown Alkane	6.891	1000	J
15.	Unknown	7.020	1600	J
16.	Unknown Alkane	7.072	2900	J
17.26730-12-1	Tridecane, 4-methyl-	7.119	1400	J
18.1560-96-9	Tridecane, 2-methyl-	7.154	2000	J
19.	Unknown Alkane	7.189	1900	J
20.629-62-9	Pentadecane	7.358	7000	J
21.56862-62-5	10-Methylnonadecane	7.393	1400	J
22.	Unknown Alkane	7.597	2700	J
23.	Unknown Alkane	7.661	2700	J
24.57-10-3	n-Hexadecanoic acid	9.992	14000	J
25.57-11-4	Octadecanoic acid	10.715	3500	J
26.				
27.SVOCTIC	Total SVOC TICs		54000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-10252016 Composite Soil
Kenvil

LL Sample # SW 8665690
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 08:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTG SDG#: KVM92-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	12	J	5	25	1
10727	Acetophenone	98-86-2	35	J	24	49	1
10727	Anthracene	120-12-7	8	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	240	1
10727	Benzaldehyde	100-52-7	N.D.		97	240	1
10727	Benzo(a)anthracene	56-55-3	46		5	25	1
10727	Benzo(a)pyrene	50-32-8	40		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	65		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	27		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	27		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		24	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		24	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		97	240	1
10727	Di-n-butylphthalate	84-74-2	N.D.		97	240	1
10727	Caprolactam	105-60-2	N.D.		49	240	1
10727	Carbazole	86-74-8	N.D.		24	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		24	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	97	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		24	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		24	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	48	1
10727	2-Chlorophenol	95-57-8	N.D.		24	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		24	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		24	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	56		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	8	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		24	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		24	49	1
10727	Diethylphthalate	84-66-2	N.D.		97	240	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		24	49	1
10727	Dimethylphthalate	131-11-3	N.D.		97	240	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		240	730	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.		97	240	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		24	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		97	250	1
10727	Fluoranthene	206-44-0	80		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		24	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		240	730	1
10727	Hexachloroethane	67-72-1	N.D.		49	240	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	24	J	5	25	1
10727	Isophorone	78-59-1	N.D.		24	49	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-10252016 Composite Soil
Kenvil

LL Sample # SW 8665690
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 08:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTG SDG#: KVM92-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1
10727	2-Methylphenol	95-48-7	27	J	24	49	1
10727	4-Methylphenol	106-44-5	1,900		24	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	6	J	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		24	49	1
10727	3-Nitroaniline	99-09-2	N.D.		97	240	1
10727	4-Nitroaniline	100-01-6	N.D.		97	240	1
10727	Nitrobenzene	98-95-3	N.D.		24	49	1
10727	2-Nitrophenol	88-75-5	N.D.		24	49	1
10727	4-Nitrophenol	100-02-7	N.D.		240	730	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		24	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		24	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		97	240	1
10727	Pentachlorophenol	87-86-5	N.D.		49	250	1
10727	Phenanthrene	85-01-8	36		5	25	1
10727	Phenol	108-95-2	420		24	49	1
10727	Pyrene	129-00-0	63		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		24	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		24	49	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,800		200	520	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,400		130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	390	1
06918	HMX	2691-41-0	N.D.		330	980	1
06918	Nitrobenzene	98-95-3	N.D.		130	390	1
06918	Nitroglycerin	55-63-0	N.D.		2,600	7,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.		260	520	1
06918	3-Nitrotoluene	99-08-1	N.D.		330	650	1
06918	4-Nitrotoluene	99-99-0	N.D.		260	520	1
06918	PETN	78-11-5	N.D.		2,600	7,800	1
06918	RDX	121-82-4	N.D.		170	390	1
06918	Tetryl	479-45-8	N.D.		210	520	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		130	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,500		130	390	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-10252016 Composite Soil
Kenvil

LL Sample # SW 8665690
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 08:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTG SDG#: KVM92-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,800	699	2,100	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.3	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 20:45	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/11/2016 21:34	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16307837931B	11/02/2016 12:49	Chelsea Thomas	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

KTNTG

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665690
Sample wt/vol: 30.43(g/mL) g Lab File ID: bk0074.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 32.3 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.1618-22-0	Naphthalene, decahydro-2,6-d	6.064	470	J
2.112-40-3	Dodecane	6.204	850	J
3.6044-71-9	Dodecane, 6-methyl-	6.280	520	J
4.54676-39-0	Cyclohexane, 2-butyl-1,1,3-t	6.373	470	J
5.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.437	590	J
6.	Unknown Cycloalkane	6.472	600	J
7.	Unknown	6.524	730	J
8.	Unknown	6.588	820	J
9.	Unknown Alkane	6.629	1000	J
10.	Unknown	6.769	630	J
11.629-50-5	Tridecane	6.804	2100	J
12.	Unknown	6.857	600	J
13.107770-99-0	3,5-Dimethyldodecane	6.892	930	J
14.	Unknown	7.020	1300	J
15.	Unknown	7.072	2400	J
16.1560-96-9	Tridecane, 2-methyl-	7.154	1800	J
17.	Unknown Alkane	7.189	1600	J
18.629-59-4	Tetradecane	7.352	6300	J
19.	Unknown Alkane	7.393	1200	J
20.	Unknown Alkane	7.597	2200	J
21.17312-62-8	Decane, 5-propyl-	7.661	1300	J
22.544-76-3	Hexadecane	7.865	2200	J
23.57-10-3	n-Hexadecanoic acid	9.992	13000	J
24.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.057	1100	J
25.57-11-4	Octadecanoic acid	10.715	3000	J
26.				
27.SVOCTIC	Total SVOC TICs		47000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-10252016 Composite Soil
Kenvil

LL Sample # SW 8665691
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 09:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTF SDG#: KVM92-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	8	J	5	25	1
10727	Acetophenone	98-86-2	47	J	24	49	1
10727	Anthracene	120-12-7	6	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	240	1
10727	Benzaldehyde	100-52-7	N.D.		97	240	1
10727	Benzo(a)anthracene	56-55-3	39		5	25	1
10727	Benzo(a)pyrene	50-32-8	35		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	57		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	26		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	26		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		24	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		24	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		97	240	1
10727	Di-n-butylphthalate	84-74-2	N.D.		97	240	1
10727	Caprolactam	105-60-2	N.D.		49	240	1
10727	Carbazole	86-74-8	N.D.		24	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		24	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	97	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		24	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		24	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	48	1
10727	2-Chlorophenol	95-57-8	N.D.		24	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		24	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		24	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	46		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		24	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		24	49	1
10727	Diethylphthalate	84-66-2	N.D.		97	240	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		24	49	1
10727	Dimethylphthalate	131-11-3	N.D.		97	240	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		240	730	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	110	J	97	240	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		24	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		97	250	1
10727	Fluoranthene	206-44-0	51		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		24	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		240	730	1
10727	Hexachloroethane	67-72-1	N.D.		49	240	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	21	J	5	25	1
10727	Isophorone	78-59-1	N.D.		24	49	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-10252016 Composite Soil
Kenvil

LL Sample # SW 8665691
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 09:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTF SDG#: KVM92-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg		ug/kg	ug/kg	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1
10727	2-Methylphenol	95-48-7	N.D.		24	49	1
10727	4-Methylphenol	106-44-5	1,600		24	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	5	J	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		24	49	1
10727	3-Nitroaniline	99-09-2	N.D.		97	240	1
10727	4-Nitroaniline	100-01-6	N.D.		97	240	1
10727	Nitrobenzene	98-95-3	N.D.		24	49	1
10727	2-Nitrophenol	88-75-5	N.D.		24	49	1
10727	4-Nitrophenol	100-02-7	N.D.		240	730	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		24	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		24	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		97	240	1
10727	Pentachlorophenol	87-86-5	N.D.		49	250	1
10727	Phenanthrene	85-01-8	25		5	25	1
10727	Phenol	108-95-2	N.D.		24	49	1
10727	Pyrene	129-00-0	43		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		24	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		24	49	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		ug/kg		ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,800		200	520	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,900		130	390	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	390	1
06918	HMX	2691-41-0	N.D.		330	980	1
06918	Nitrobenzene	98-95-3	N.D.		130	390	1
06918	Nitroglycerin	55-63-0	N.D.		2,600	7,800	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	390	1
06918	2-Nitrotoluene	88-72-2	N.D.		260	520	1
06918	3-Nitrotoluene	99-08-1	N.D.		330	650	1
06918	4-Nitrotoluene	99-99-0	N.D.		260	520	1
06918	PETN	78-11-5	N.D.		2,600	7,800	1
06918	RDX	121-82-4	N.D.		170	390	1
06918	Tetryl	479-45-8	N.D.		210	520	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		130	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	5,100		130	390	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-10252016 Composite Soil
Kenvil

LL Sample # SW 8665691
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 09:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTF SDG#: KVM92-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,000	703	2,110	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	32.0	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 21:05	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/11/2016 22:17	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16307837931B	11/02/2016 13:16	Chelsea Thomas	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

KTNTF

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665691
Sample wt/vol: 30.31(g/mL) g Lab File ID: bk0075.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 32 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown acid	2.176	2100	J
2.		Unknown acid	2.398	2000	J
3.		Unknown	2.468	2200	J
4.	79-09-4	Propanoic acid	2.567	5600	J
5.		Unknown acid	4.205	2700	J
6.		Unknown acid	4.257	2200	J
7.	97-61-0	Pentanoic acid, 2-methyl-	4.822	12000	J
8.	2958-76-1	Naphthalene, decahydro-2-met	5.691	560	J
9.		Unknown Hydrocarbon	5.796	580	J
10.	112-40-3	Dodecane	6.204	960	J
11.		Unknown acid	6.524	410	J
12.	6117-97-1	Dodecane, 4-methyl-	6.554	760	J
13.	61141-72-8	Dodecane, 4,6-dimethyl-	6.629	720	J
14.	629-59-4	Tetradecane	6.798	2400	J
15.		Unknown Alkane	6.886	470	J
16.		Unknown acid	7.072	3600	J
17.		Unknown Carboxylic Acid	7.189	2200	J
18.		Unknown Alkane	7.352	6600	J
19.		Unknown Alkane	7.865	2500	J
20.	544-63-8	Tetradecanoic acid	9.107	4700	J
21.		Unknown	9.439	1400	J
22.		Unknown	9.736	1400	J
23.	57-10-3	n-Hexadecanoic acid	9.998	22000	J
24.	57-11-4	Octadecanoic acid	10.709	2200	J
25.		Unknown	11.345	1700	J
26.					
27.	SVOCTIC	Total SVOC TICs		84000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-10252016 Composite Soil
Kenvil

LL Sample # SW 8665692
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 09:45 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTE SDG#: KVM92-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	24	1
10727	Acenaphthylene	208-96-8	20	J	5	24	1
10727	Acetophenone	98-86-2	29	J	24	48	1
10727	Anthracene	120-12-7	21	J	5	24	1
10727	Atrazine	1912-24-9	N.D.		48	240	1
10727	Benzaldehyde	100-52-7	N.D.		95	240	1
10727	Benzo(a)anthracene	56-55-3	140		5	24	1
10727	Benzo(a)pyrene	50-32-8	100		5	24	1
10727	Benzo(b)fluoranthene	205-99-2	130		5	24	1
10727	Benzo(g,h,i)perylene	191-24-2	59		5	24	1
10727	Benzo(k)fluoranthene	207-08-9	78		5	24	1
10727	1,1'-Biphenyl	92-52-4	N.D.		24	48	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		24	48	1
10727	Butylbenzylphthalate	85-68-7	N.D.		95	240	1
10727	Di-n-butylphthalate	84-74-2	N.D.		95	240	1
10727	Caprolactam	105-60-2	N.D.		48	240	1
10727	Carbazole	86-74-8	N.D.		24	48	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		24	48	1
10727	4-Chloroaniline	106-47-8	N.D.		48	95	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		24	48	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		24	48	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	47	1
10727	2-Chlorophenol	95-57-8	N.D.		24	48	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		24	48	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		24	48	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	120		5	24	1
10727	Dibenz(a,h)anthracene	53-70-3	22	J	5	24	1
10727	Dibenzofuran	132-64-9	N.D.		24	48	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		140	480	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		24	48	1
10727	Diethylphthalate	84-66-2	N.D.		95	240	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		24	48	1
10727	Dimethylphthalate	131-11-3	N.D.		95	240	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		240	710	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		430	1,400	1
10727	2,4-Dinitrotoluene	121-14-2	120	J	95	240	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		24	48	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	97	J	95	240	1
10727	Fluoranthene	206-44-0	160		5	24	1
10727	Fluorene	86-73-7	N.D.		5	24	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	24	1
10727	Hexachlorobutadiene	87-68-3	N.D.		24	48	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		240	710	1
10727	Hexachloroethane	67-72-1	N.D.		48	240	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	60		5	24	1
10727	Isophorone	78-59-1	N.D.		24	48	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-10252016 Composite Soil
Kenvil

LL Sample # SW 8665692
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 09:45 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTE SDG#: KVM92-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	24	1
10727	2-Methylphenol	95-48-7	N.D.		24	48	1
10727	4-Methylphenol	106-44-5	1,500		24	48	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	11	J	5	24	1
10727	2-Nitroaniline	88-74-4	N.D.		24	48	1
10727	3-Nitroaniline	99-09-2	N.D.		95	240	1
10727	4-Nitroaniline	100-01-6	N.D.		95	240	1
10727	Nitrobenzene	98-95-3	N.D.		24	48	1
10727	2-Nitrophenol	88-75-5	N.D.		24	48	1
10727	4-Nitrophenol	100-02-7	N.D.		240	710	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		24	48	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		24	48	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		95	240	1
10727	Pentachlorophenol	87-86-5	N.D.		48	240	1
10727	Phenanthrene	85-01-8	34		5	24	1
10727	Phenol	108-95-2	200		24	48	1
10727	Pyrene	129-00-0	140		5	24	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		24	48	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		24	48	1
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,200		210	550	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,900		140	410	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	410	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	410	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	410	1
06918	HMX	2691-41-0	N.D.		340	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		140	410	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	410	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	550	1
06918	3-Nitrotoluene	99-08-1	N.D.		340	690	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	550	1
06918	PETN	78-11-5	N.D.		2,800	8,300	1
06918	RDX	121-82-4	N.D.		180	410	1
06918	Tetryl	479-45-8	N.D.		220	550	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	410	1
06918	2,4,6-Trinitrotoluene	118-96-7	5,200		140	410	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-10252016 Composite Soil
Kenvil

LL Sample # SW 8665692
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 09:45 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTE SDG#: KVM92-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,600	906	2,720	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	29.9	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 21:25	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/11/2016 22:59	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16307837931B	11/02/2016 13:24	Chelsea Thomas	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
KTNTE

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665692
Sample wt/vol: 30.02(g/mL) g Lab File ID: bk0076.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 29.9 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown acid	4.817	400	J
2. 112-40-3	Dodecane	6.204	830	J
3. 66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.437	570	J
4.	Unknown Cycloalkane	6.472	580	J
5.	Unknown Alkane	6.524	670	J
6.	Unknown Alkane	6.589	810	J
7.	Unknown Alkane	6.629	1000	J
8.	Unknown Cycloalkane	6.769	620	J
9. 629-50-5	Tridecane	6.804	2100	J
10.	Unknown acid	6.857	580	J
11.	Unknown Alkane	6.892	920	J
12.	Unknown Cycloalkane	7.072	2500	J
13. 1560-96-9	Tridecane, 2-methyl-	7.154	1800	J
14.	Unknown Alkane	7.189	2000	J
15. 629-59-4	Tetradecane	7.352	6500	J
16.	Unknown Alkane	7.597	2400	J
17. 544-76-3	Hexadecane	7.865	2500	J
18. 544-63-8	Tetradecanoic acid	9.124	8500	J
19. 57-10-3	n-Hexadecanoic acid	10.033	11000	J
20. 57-11-4	Octadecanoic acid	10.733	2500	J
21.	Unknown	10.960	470	J
22.	Unknown Cycloalkane	10.995	470	J
23.	Unknown	11.351	560	J
24. 301-02-0	9-Octadecenamide, (Z)-	11.420	700	J
25. 55103-80-5	Pregn-5-en-3-ol, 21-bromo-20	14.504	2200	J
26.				
27. SVOCTIC	Total SVOC TICs		54000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-10252016 Composite Soil
Kenvil

LL Sample # SW 8665693
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 10:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTD SDG#: KVM92-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	69		24	48	1
10727	Anthracene	120-12-7	7	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		48	240	1
10727	Benzaldehyde	100-52-7	N.D.		96	240	1
10727	Benzo(a)anthracene	56-55-3	41		5	25	1
10727	Benzo(a)pyrene	50-32-8	34		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	60		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	35		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	21	J	5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		24	48	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		24	48	1
10727	Butylbenzylphthalate	85-68-7	N.D.		96	240	1
10727	Di-n-butylphthalate	84-74-2	N.D.		96	240	1
10727	Caprolactam	105-60-2	N.D.		48	240	1
10727	Carbazole	86-74-8	N.D.		24	48	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		24	48	1
10727	4-Chloroaniline	106-47-8	N.D.		48	96	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		24	48	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		24	48	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	48	1
10727	2-Chlorophenol	95-57-8	N.D.		24	48	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		24	48	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		24	48	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	53		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		24	48	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		140	480	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		24	48	1
10727	Diethylphthalate	84-66-2	N.D.		96	240	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		24	48	1
10727	Dimethylphthalate	131-11-3	N.D.		96	240	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		240	720	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		430	1,400	1
10727	2,4-Dinitrotoluene	121-14-2	150	J	96	240	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		24	48	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		96	250	1
10727	Fluoranthene	206-44-0	81		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		24	48	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		240	720	1
10727	Hexachloroethane	67-72-1	N.D.		48	240	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	28		5	25	1
10727	Isophorone	78-59-1	N.D.		24	48	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-10252016 Composite Soil
Kenvil

LL Sample # SW 8665693
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 10:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTD SDG#: KVM92-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/kg	ug/kg	ug/kg	
10727	2-Methylnaphthalene	91-57-6	N.D.	5	25	1
10727	2-Methylphenol	95-48-7	N.D.	24	48	1
10727	4-Methylphenol	106-44-5	5,400	24	48	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.	24	48	1
10727	3-Nitroaniline	99-09-2	N.D.	96	240	1
10727	4-Nitroaniline	100-01-6	N.D.	96	240	1
10727	Nitrobenzene	98-95-3	N.D.	24	48	1
10727	2-Nitrophenol	88-75-5	N.D.	24	48	1
10727	4-Nitrophenol	100-02-7	N.D.	240	720	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	24	48	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	24	48	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	96	240	1
10727	Pentachlorophenol	87-86-5	N.D.	48	250	1
10727	Phenanthrene	85-01-8	42	5	25	1
10727	Phenol	108-95-2	120	24	48	1
10727	Pyrene	129-00-0	57	5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	24	48	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	24	48	1
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		ug/kg	ug/kg	ug/kg	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,300	200	530	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,900	130	400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	400	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	400	1
06918	HMX	2691-41-0	N.D.	330	990	1
06918	Nitrobenzene	98-95-3	N.D.	130	400	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.	130	400	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	530	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	660	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	530	1
06918	PETN	78-11-5	N.D.	2,600	7,900	1
06918	RDX	121-82-4	N.D.	170	400	1
06918	Tetryl	479-45-8	N.D.	210	530	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	130	400	1
06918	2,4,6-Trinitrotoluene	118-96-7	5,100	130	400	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-10252016 Composite Soil
Kenvil

LL Sample # SW 8665693
LL Group # 1725898
Account # 06716

Project Name: Kenvil TNT Bioremediaton Pilot

Collected: 10/25/2016 10:00 by LS

Submitted: 10/26/2016 20:33
Reported: 01/17/2017 13:07

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

KTNTD SDG#: KVM92-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	15,700	823	2,470	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	31.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	16309SLA026	11/06/2016 21:45	Anthony P Bauer	1
10809	BNA Soil Microwave	SW-846 3546	1	16309SLA026	11/04/2016 21:00	Sally L Appleyard	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	163100022A	11/12/2016 01:49	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	163100022A	11/07/2016 13:10	Wanda F Oswald	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	16307837931B	11/02/2016 13:48	Chelsea Thomas	1
00111	Moisture	SM 2540 G-1997	1	16307820008A	11/02/2016 20:14	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

KTNTD

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8665693
Sample wt/vol: 30.5 (g/mL) g Lab File ID: bk0077.d
Level: (low/med) LOW Date Received: 10/26/16
% Moisture: 31.8 Decanted: (Y/N) Date Extracted: 11/04/16
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/06/16
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown acid	2.578	230	J
2.		Unknown acid	4.368	370	J
3.		Unknown acid	4.997	790	J
4.		Unknown acid	5.021	320	J
5.	97-61-0	Pentanoic acid, 2-methyl-	5.160	2800	J
6.	142-62-1	Hexanoic acid	5.219	220	J
7.	112-40-3	Dodecane	6.210	640	J
8.		Unknown Alkane	6.594	700	J
9.		Unknown Alkane	6.635	950	J
10.	629-50-5	Tridecane	6.810	2000	J
11.		Unknown Alkane	6.892	550	J
12.		Unknown Cycloalkane	7.078	7300	J
13.	501-52-0	Hydrocinnamic acid	7.125	5000	J
14.		Unknown Cycloalkane	7.195	3700	J
15.	334-48-5	n-Decanoic acid	7.276	9600	J
16.	629-59-4	Tetradecane	7.358	14000	J
17.	17312-62-8	Decane, 5-propyl-	7.661	3500	J
18.	629-62-9	Pentadecane	7.871	5500	J
19.	544-63-8	Tetradecanoic acid	9.165	25000	J
20.	57-10-3	n-Hexadecanoic acid	10.109	33000	J
21.	57-11-4	Octadecanoic acid	10.768	4600	J
22.		Unknown	10.983	860	J
23.		Unknown acid	11.030	1300	J
24.		Unknown	11.397	2600	J
25.		Unknown	11.461	2000	J
26.					
27.	SVOCTIC	Total SVOC TICs		130000	J
28.					
29.					
30.					

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FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1725898
Reported: 01/17/2017 13:07

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/kg	ug/kg	ug/kg
Batch number: 16309SLA026	Sample number(s): 8665686-8665693		
Acenaphthene	N.D.	3	17
Acenaphthylene	N.D.	3	17
Acetophenone	N.D.	17	33
Anthracene	N.D.	3	17
Atrazine	N.D.	33	170
Benzaldehyde	N.D.	67	170
Benzo(a)anthracene	N.D.	3	17
Benzo(a)pyrene	N.D.	3	17
Benzo(b)fluoranthene	N.D.	3	17
Benzo(g,h,i)perylene	N.D.	3	17
Benzo(k)fluoranthene	N.D.	3	17
1,1'-Biphenyl	N.D.	17	33
4-Bromophenyl-phenylether	N.D.	17	33
Butylbenzylphthalate	N.D.	67	170
Di-n-butylphthalate	N.D.	67	170
Caprolactam	N.D.	33	170
Carbazole	N.D.	17	33
4-Chloro-3-methylphenol	N.D.	17	33
4-Chloroaniline	N.D.	33	67
bis(2-Chloroethoxy)methane	N.D.	17	33
bis(2-Chloroethyl)ether	N.D.	17	33
2-Chloronaphthalene	N.D.	7	33
2-Chlorophenol	N.D.	17	33
4-Chlorophenyl-phenylether	N.D.	17	33
2,2'-oxybis(1-Chloropropane)	N.D.	17	33
Chrysene	N.D.	3	17
Dibenz(a,h)anthracene	N.D.	3	17
Dibenzofuran	N.D.	17	33
3,3'-Dichlorobenzidine	N.D.	100	330
2,4-Dichlorophenol	N.D.	17	33
Diethylphthalate	N.D.	67	170
2,4-Dimethylphenol	N.D.	17	33
Dimethylphthalate	N.D.	67	170
4,6-Dinitro-2-methylphenol	N.D.	170	500
2,4-Dinitrophenol	N.D.	300	1,000
2,4-Dinitrotoluene	N.D.	67	170
2,6-Dinitrotoluene	N.D.	17	33
bis(2-Ethylhexyl)phthalate	N.D.	67	170
Fluoranthene	N.D.	3	17
Fluorene	N.D.	3	17

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated
Reported: 01/17/2017 13:07

Group Number: 1725898

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ug/kg	ug/kg	ug/kg
Hexachlorobenzene	N.D.	3	17
Hexachlorobutadiene	N.D.	17	33
Hexachlorocyclopentadiene	N.D.	170	500
Hexachloroethane	N.D.	33	170
Indeno(1,2,3-cd)pyrene	N.D.	3	17
Isophorone	N.D.	17	33
2-Methylnaphthalene	N.D.	3	17
2-Methylphenol	N.D.	17	33
4-Methylphenol	N.D.	17	33
Naphthalene	N.D.	3	17
2-Nitroaniline	N.D.	17	33
3-Nitroaniline	N.D.	67	170
4-Nitroaniline	N.D.	67	170
Nitrobenzene	N.D.	17	33
2-Nitrophenol	N.D.	17	33
4-Nitrophenol	N.D.	170	500
N-Nitroso-di-n-propylamine	N.D.	17	33
N-Nitrosodiphenylamine	N.D.	17	33
Di-n-octylphthalate	N.D.	67	170
Pentachlorophenol	N.D.	33	170
Phenanthrene	N.D.	3	17
Phenol	N.D.	17	33
Pyrene	N.D.	3	17
2,4,5-Trichlorophenol	N.D.	17	33
2,4,6-Trichlorophenol	N.D.	17	33
Batch number: 163100022A	Sample number(s): 8665686-8665693		
4-Amino-2,6-Dinitrotoluene	N.D.	150	400
2-Amino-4,6-Dinitrotoluene	N.D.	100	300
1,2-Dinitrobenzene	N.D.	100	300
1,3-Dinitrobenzene	N.D.	100	300
1,4-Dinitrobenzene	N.D.	100	300
HMX	N.D.	250	750
Nitrobenzene	N.D.	100	300
Nitroglycerin	N.D.	2,000	6,000
1-Nitronaphthalene	N.D.	100	300
2-Nitrotoluene	N.D.	200	400
3-Nitrotoluene	N.D.	250	500
4-Nitrotoluene	N.D.	200	400
PETN	N.D.	2,000	6,000
RDX	N.D.	130	300
Tetryl	N.D.	160	400
1,3,5-Trinitrobenzene	N.D.	100	300
2,4,6-Trinitrotoluene	N.D.	100	300
	mg/kg	mg/kg	mg/kg
Batch number: 16302121731B	Sample number(s): 8665686-8665689		
TOC by Lloyd Kahn	N.D.	100	300
Batch number: 16307837931B	Sample number(s): 8665690-8665693		

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 01/17/2017 13:07

Group Number: 1725898

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	mg/kg	mg/kg	mg/kg
TOC by Lloyd Kahn	N.D.	100	300

LCS/LCSD

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 16309SLA026	Sample number(s): 8665686-8665693								
Acenaphthene	1666.67	1724.37			103		83-116		
Acenaphthylene	1666.67	1690.7			101		83-119		
Acetophenone	1666.67	1486.19			89		70-107		
Anthracene	1666.67	1660.13			100		82-118		
Atrazine	1666.67	1593.97			96		69-131		
Benzaldehyde	1666.67	1025.63			62		10-93		
Benzo(a)anthracene	1666.67	1757.71			105		76-119		
Benzo(a)pyrene	1666.67	1662.74			100		85-117		
Benzo(b)fluoranthene	1666.67	1662.93			100		79-121		
Benzo(g,h,i)perylene	1666.67	1587			95		71-123		
Benzo(k)fluoranthene	1666.67	1743.61			105		79-120		
1,1'-Biphenyl	1666.67	1635.7			98		78-106		
4-Bromophenyl-phenylether	1666.67	1718			103		78-122		
Butylbenzylphthalate	1666.67	1722.73			103		80-118		
Di-n-butylphthalate	1666.67	1711.71			103		84-120		
Caprolactam	1666.67	1542.02			93		63-121		
Carbazole	1666.67	1658.96			100		80-120		
4-Chloro-3-methylphenol	1666.67	1645.49			99		74-132		
4-Chloroaniline	1666.67	1236.21			74		10-100		
bis(2-Chloroethoxy)methane	1666.67	1639.73			98		77-116		
bis(2-Chloroethyl)ether	1666.67	1510.85			91		77-115		
2-Chloronaphthalene	1666.67	1637.84			98		59-140		
2-Chlorophenol	1666.67	1570.71			94		85-123		
4-Chlorophenyl-phenylether	1666.67	1664.86			100		81-120		
2,2'-oxybis(1-Chloropropane)	1666.67	1378.02			83		60-123		
Chrysene	1666.67	1757.11			105		80-121		
Dibenz(a,h)anthracene	1666.67	1660.73			100		81-123		
Dibenzofuran	1666.67	1693.51			102		85-115		
3,3'-Dichlorobenzidine	1666.67	1213.59			73		10-116		
2,4-Dichlorophenol	1666.67	1689.3			101		86-125		
Diethylphthalate	1666.67	1705.27			102		81-118		
2,4-Dimethylphenol	1666.67	1266.13			76		73-117		
Dimethylphthalate	1666.67	1677.58			101		82-113		
4,6-Dinitro-2-methylphenol	1666.67	1639.24			98		53-130		
2,4-Dinitrophenol	3333.33	3013.01			90		16-132		
2,4-Dinitrotoluene	1666.67	1712.32			103		81-122		
2,6-Dinitrotoluene	1666.67	1772.13			106		80-120		

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 01/17/2017 13:07

Group Number: 1725898

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
bis(2-Ethylhexyl)phthalate	1666.67	1702.21			102		81-121		
Fluoranthene	1666.67	1722.5			103		81-117		
Fluorene	1666.67	1663.73			100		86-118		
Hexachlorobenzene	1666.67	1673.73			100		79-116		
Hexachlorobutadiene	1666.67	1770.62			106		72-120		
Hexachlorocyclopentadiene	3333.33	4483.16			134		57-142		
Hexachloroethane	1666.67	1576.22			95		78-114		
Indeno(1,2,3-cd)pyrene	1666.67	1611.87			97		75-118		
Isophorone	1666.67	1571.5			94		77-118		
2-Methylnaphthalene	1666.67	1646.38			99		83-109		
2-Methylphenol	1666.67	1463.53			88		80-133		
4-Methylphenol	1666.67	1384.95			83		73-125		
Naphthalene	1666.67	1657.34			99		82-112		
2-Nitroaniline	1666.67	1703.07			102		84-126		
3-Nitroaniline	1666.67	1616.1			97		66-119		
4-Nitroaniline	1666.67	1375.26			83		44-110		
Nitrobenzene	1666.67	1606.19			96		70-122		
2-Nitrophenol	1666.67	1688.32			101		83-120		
4-Nitrophenol	1666.67	1605.02			96		52-133		
N-Nitroso-di-n-propylamine	1666.67	1504.85			90		67-121		
N-Nitrosodiphenylamine	1666.67	1679.43			101		83-118		
Di-n-octylphthalate	1666.67	1759.58			106		80-140		
Pentachlorophenol	1666.67	1616.88			97		63-128		
Phenanthrene	1666.67	1648.36			99		80-120		
Phenol	1666.67	1576.35			95		73-122		
Pyrene	1666.67	1641.91			99		80-120		
2,4,5-Trichlorophenol	1666.67	1723.53			103		86-123		
2,4,6-Trichlorophenol	1666.67	1780.22			107		81-123		
	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 163100022A	Sample number(s): 8665686-8665693								
4-Amino-2,6-Dinitrotoluene	5000	5844.79			117		81-133		
2-Amino-4,6-Dinitrotoluene	5020	5657.61			113		79-120		
1,2-Dinitrobenzene	10000	11800.87			118		94-129		
1,3-Dinitrobenzene	5020	5783.71			115		94-124		
1,4-Dinitrobenzene	10000	11978.61			120		83-122		
HMX	5010	4443.43			89		65-121		
Nitrobenzene	5020	5410.81			108		81-116		
Nitroglycerin	2510	2510.77			100		70-118		
1-Nitronaphthalene	10000	13230.91			132*		83-122		
2-Nitrotoluene	5020	5108.15			102		86-113		
3-Nitrotoluene	5030	5876.11			117		85-135		
4-Nitrotoluene	5040	5051.27			100		80-122		
PETN	2520	2423.74			96		64-121		
RDX	5010	5498.68			110		84-122		
Tetryl	5050	4993.37			99		67-152		
1,3,5-Trinitrobenzene	5020	5353.82			107		83-119		
2,4,6-Trinitrotoluene	5040	4974.28			99		82-133		

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 01/17/2017 13:07

Group Number: 1725898

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 16302121731B	Sample number(s): 8665686-8665689								
TOC by Lloyd Kahn	5830	4419.78			76		50-150		
Batch number: 16307837931B	Sample number(s): 8665690-8665693								
TOC by Lloyd Kahn	5830	4020.33			69		50-150		
	%	%	%	%					
Batch number: 16307820008A	Sample number(s): 8665686-8665693								
Moisture	89.5	89.44			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 16309SLA026	Sample number(s): 8665686-8665693 UNSPK: P668532									
Acenaphthene	453.76	1666.11	2062.32	1655.08	2052.99	97	97	83-116	0	30
Acenaphthylene	177.76	1666.11	1863.55	1655.08	1851.35	101	101	83-119	1	30
Acetophenone	N.D.	1666.11	1483.99	1655.08	1544.47	89	93	70-107	4	30
Anthracene	1132.55	1666.11	2655.62	1655.08	2395.34	91	76*	82-118	10	30
Atrazine	N.D.	1666.11	1716.59	1655.08	1725.44	103	104	69-131	1	30
Benzaldehyde	N.D.	1666.11	1097.38	1655.08	1072.78	66	65	10-93	2	30
Benzo(a)anthracene	2325.52	1666.11	3681.17	1655.08	3269.68	81	57*	76-119	12	30
Benzo(a)pyrene	1683.52	1666.11	2985.28	1655.08	2925.47	78*	75*	85-117	2	30
Benzo(b)fluoranthene	1950.53	1666.11	3697.76	1655.08	2643.84	105	42*	79-121	33*	30
Benzo(g,h,i)perylene	1037.84	1666.11	2680.83	1655.08	2343.6	99	79	71-123	13	30
Benzo(k)fluoranthene	937.66	1666.11	2394.53	1655.08	2403.24	87	89	79-120	0	30
1,1'-Biphenyl	N.D.	1666.11	1748.21	1655.08	1766.12	105	107*	78-106	1	30
4-Bromophenyl-phenylether	N.D.	1666.11	1885.16	1655.08	1916.39	113	116	78-122	2	30
Butylbenzylphthalate	N.D.	1666.11	2051.68	1655.08	2515.16	123*	152*	80-118	20	30
Di-n-butylphthalate	N.D.	1666.11	1848.19	1655.08	1817.54	111	110	84-120	2	30
Caprolactam	N.D.	1666.11	1357.95	1655.08	1589.43	82	96	63-121	16	30
Carbazole	521.19	1666.11	2199.14	1655.08	1999.77	101	89	80-120	9	30
4-Chloro-3-methylphenol	N.D.	1666.11	1459.95	1655.08	1471.45	88	89	74-132	1	30
4-Chloroaniline	N.D.	1666.11	1014.54	1655.08	1179.35	61	71	10-100	15	30
bis(2-Chloroethoxy)methane	N.D.	1666.11	1711.48	1655.08	1683.2	103	102	77-116	2	30
bis(2-Chloroethyl)ether	N.D.	1666.11	1557.32	1655.08	1552.99	93	94	77-115	0	30
2-Chloronaphthalene	N.D.	1666.11	1529.9	1655.08	1580.5	92	95	59-140	3	30
2-Chlorophenol	N.D.	1666.11	1170.87	1655.08	1198.79	70*	72*	85-123	2	30
4-Chlorophenyl-phenylether	N.D.	1666.11	1727.99	1655.08	1775.76	104	107	81-120	3	30

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Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1725898
Reported: 01/17/2017 13:07

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
2,2'-oxybis(1-Chloropropane)	N.D.	1666.11	1420.17	1655.08	1432.76	85	87	60-123	1	30
Chrysene	2264.4	1666.11	3539.67	1655.08	3141.15	77*	53*	80-121	12	30
Dibenz(a,h)anthracene	255.19	1666.11	1841.53	1655.08	2055.49	95	109	81-123	11	30
Dibenzofuran	376.23	1666.11	2003.14	1655.08	1961.22	98	96	85-115	2	30
3,3'-Dichlorobenzidine	N.D.	1666.11	1396.74	1655.08	1479.65	84	89	10-116	6	30
2,4-Dichlorophenol	N.D.	1666.11	1120.8	1655.08	1195.92	67*	72*	86-125	6	30
Diethylphthalate	N.D.	1666.11	1738.46	1655.08	1738.01	104	105	81-118	0	30
2,4-Dimethylphenol	N.D.	1666.11	1224.88	1655.08	1243.55	74	75	73-117	2	30
Dimethylphthalate	N.D.	1666.11	1775.97	1655.08	1812.1	107	109	82-113	2	30
4,6-Dinitro-2-methylphenol	N.D.	1666.11	N.D.	1655.08	N.D.	0*	0*	53-130	0	30
2,4-Dinitrophenol	N.D.	3332.22	N.D.	3310.16	N.D.	0*	0*	16-132	0	30
2,4-Dinitrotoluene	N.D.	1666.11	1535.89	1655.08	1533.83	92	93	81-122	0	30
2,6-Dinitrotoluene	N.D.	1666.11	1696.96	1655.08	1767.1	102	107	80-120	4	30
bis(2-Ethylhexyl)phthalate	N.D.	1666.11	2662.81	1655.08	2460.48	160*	149*	81-121	8	30
Fluoranthene	4740.81	1666.11	5739.71	1655.08	4758.05	60*	1*	81-117	19	30
Fluorene	616.69	1666.11	2142.19	1655.08	2110.06	92	90	86-118	2	30
Hexachlorobenzene	N.D.	1666.11	1801.75	1655.08	1753.45	108	106	79-116	3	30
Hexachlorobutadiene	N.D.	1666.11	1859.45	1655.08	1755.59	112	106	72-120	6	30
Hexachlorocyclopentadiene	N.D.	3332.22	N.D.	3310.16	N.D.	0*	0*	57-142	0	30
Hexachloroethane	N.D.	1666.11	1020.46	1655.08	1068.27	61*	65*	78-114	5	30
Indeno(1,2,3-cd)pyrene	891.68	1666.11	2520.57	1655.08	2270.7	98	83	75-118	10	30
Isophorone	N.D.	1666.11	1592.02	1655.08	1587.99	96	96	77-118	0	30
2-Methylnaphthalene	242.59	1666.11	1820.34	1655.08	1868.42	95	98	83-109	3	30
2-Methylphenol	N.D.	1666.11	1413.23	1655.08	1428.28	85	86	80-133	1	30
4-Methylphenol	N.D.	1666.11	1301.13	1655.08	1308.35	78	79	73-125	1	30
Naphthalene	388.29	1666.11	2044.24	1655.08	2051.94	99	101	82-112	0	30
2-Nitroaniline	N.D.	1666.11	1903.76	1655.08	1902.24	114	115	84-126	0	30
3-Nitroaniline	N.D.	1666.11	1598.5	1655.08	1532.8	96	93	66-119	4	30
4-Nitroaniline	N.D.	1666.11	1916.94	1655.08	1915.07	115*	116*	44-110	0	30
Nitrobenzene	N.D.	1666.11	1631.6	1655.08	1650.48	98	100	70-122	1	30
2-Nitrophenol	N.D.	1666.11	912.02	1655.08	878.63	55*	53*	83-120	4	30
4-Nitrophenol	N.D.	1666.11	N.D.	1655.08	N.D.	0*	0*	52-133	0	30
N-Nitroso-di-n-propylamine	N.D.	1666.11	1586.93	1655.08	1568.13	95	95	67-121	1	30
N-Nitrosodiphenylamine	N.D.	1666.11	1839.49	1655.08	1886.35	110	114	83-118	3	30
Di-n-octylphthalate	N.D.	1666.11	1792.95	1655.08	1828.65	108	110	80-140	2	30
Pentachlorophenol	N.D.	1666.11	1395.71	1655.08	1320.74	84	80	63-128	6	30
Phenanthrene	4597.7	1666.11	5364.67	1655.08	4532.44	46*	-3*	80-120	17	30
Phenol	N.D.	1666.11	1463.83	1655.08	1559.93	88	94	73-122	6	30
Pyrene	4077.3	1666.11	4926.63	1655.08	4189.3	51*	7*	80-120	16	30
2,4,5-Trichlorophenol	N.D.	1666.11	976.09	1655.08	1058.48	59*	64*	86-123	8	30
2,4,6-Trichlorophenol	N.D.	1666.11	1038.41	1655.08	994.86	62*	60*	81-123	4	30
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 163100022A	Sample number(s): 8665686-8665693 UNSPK: 8665692									
4-Amino-2,6-Dinitrotoluene	1570.39	5000	6636.74	4590	5553.61	101	87	81-133	18	50
2-Amino-4,6-Dinitrotoluene	1315.59	5020	6064.3	4600	4994.15	95	80	79-120	19	50

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1725898
Reported: 01/17/2017 13:07

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
1,2-Dinitrobenzene	N.D.	10000	8664.43	9210	6845.65	87*	74*	94-129	23	50
1,3-Dinitrobenzene	N.D.	5020	4402.08	4600	3433.59	88*	75*	94-124	25	50
1,4-Dinitrobenzene	N.D.	10000	8182.66	9190	6512.67	82*	71*	83-122	23	50
HMX	N.D.	5010	6999.82	4590	8775.32	140*	191*	65-121	23	50
Nitrobenzene	N.D.	5020	5215.8	4600	4291.47	104	93	81-116	19	50
Nitroglycerin	N.D.	2510	2702.62	2300	N.D.	108	0*	70-118	200*	50
1-Nitronaphthalene	N.D.	10000	9496.4	9210	7944.95	95	86	83-122	18	50
2-Nitrotoluene	N.D.	5020	4941.3	4600	4121.82	98	90	86-113	18	50
3-Nitrotoluene	N.D.	5030	5597.37	4610	4952.41	111	107	85-135	12	50
4-Nitrotoluene	N.D.	5040	4818.98	4630	4078.68	96	88	80-122	17	50
PETN	N.D.	2520	4049.64	2320	2792.44	161*	120	64-121	37	50
RDX	N.D.	5010	4957.12	4600	4636.05	99	101	84-122	7	50
Tetryl	N.D.	5050	3012.11	4630	1823.12	60*	39*	67-152	49	50
1,3,5-Trinitrobenzene	N.D.	5020	4340.45	4600	3528.77	86	77*	83-119	21	50
2,4,6-Trinitrotoluene	3612.66	5040	6513.41	4620	5160.13	58*	33*	82-133	23	50
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 16302121731B	Sample number(s): 8665686-8665689 UNSPK: P654854									
TOC by Lloyd Kahn	20284.09	58260	61902.91			71		47-143		
Batch number: 16307837931B	Sample number(s): 8665690-8665693 UNSPK: 8665692									
TOC by Lloyd Kahn	10926.4	27570	37426.47			96		47-143		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/kg	mg/kg		
Batch number: 16302121731B	Sample number(s): 8665686-8665689 BKG: P654854			
TOC by Lloyd Kahn	20284.09	21752.49	7	7
Batch number: 16307837931B	Sample number(s): 8665690-8665693 BKG: 8665692			
TOC by Lloyd Kahn	10926.4	11459.81	5	7
	%	%		
Batch number: 16307820008A	Sample number(s): 8665686-8665693 BKG: P668700			
Moisture	7.12	5.70	22*	5

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated
Group Number: 1725898
Reported: 01/17/2017 13:07

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 16309SLA026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8665686	83	88	94	90	84	93
8665687	79	83	89	86	82	87
8665688	84	88	91	88	86	93
8665689	78	82	85	83	82	90
8665690	85	88	91	85	84	92
8665691	69	72	75	71	74	77
8665692	83	88	92	85	91	95
8665693	79	84	85	69	83	87
Blank	93	94	113	94	96	101
LCS	89	93	104	94	95	96
MS	80	63	56	92	101	98
MSD	85	66	62	99	104	100
Limits:	58-122	57-126	28-141	54-123	63-117	49-129

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 163100022A

	2-Nitro-m-xylene
8665686	114
8665687	87
8665688	111
8665689	127
8665690	116
8665691	127
8665692	119
8665693	112
Blank	76
LCS	110
MS	105
MSD	95
Limits:	65-129

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only

Acct. # 6716 Group # 1725898 Sample # 8665686-93

COC # 513336

Client Information

Client: Ashland	Acct. #:
Project Name/#: Kenvil	PWSID #:
Project Manager: Scott Larew	P.O. #: 1540001#17
Sampler: Lora Sterner	Quote #:
State where samples were collected: New Jersey	For Compliance: Yes ☐ No ☒

Matrix: Soil ☒ Sediment ☐ Tissue ☐ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

Analysis Requested — Preservation Codes

For Lab Use Only
FSC:
SCR#: 196464

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil ☒ Sediment	Water	Other:	Total # of Containers	E:E 8330	SVOCs 8270 + TICs	TOC	Hold-freeze 1 Jar	Remarks
TNT-PS-A-10242016	10/24/16	1100		X	X			2	X	X	X	X	Jars held to be analyzed later for DANT, TANT
TNT-PS-K-10242016	10/24/16	1135		X	X			2	X	X	X	X	
TNT-PS-I-10242016	10/24/16	1245		X	X			2	X	X	X	X	
TNT-PS-H-10242016	10/24/16	1315		X	X			2	X	X	X	X	
TNT-PS-G-10252016	10/25/16	800		X	X			2	X	X	X	X	
TNT-PS-F-10252016	10/25/16	900		X	X			2	X	X	X	X	
TNT-PS-E-10252016	10/25/16	945		X	X			2	X	X	X	X	
TNT-PS-D-10252016	10/25/16	1000		X	X			2	X	X	X	X	

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: lora sterner@kennedyjenks.com

Relinquished by	Date	Time	Received by	Date	Time
S Dekel	10/19/16	12:35	Lauster	10/19/16	1600
Lauster	10/25/16	1500	H Washington	10-26-16	1320
Washington	10-26-16	2033			
			Kenvil	10/26/16	2033

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EqQuis

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 5.4 °C

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Sample Administration Receipt Documentation Log

Doc Log ID: 166418

Group Number(s): 1725898

Client: Ashland

Delivery and Receipt Information

Delivery Method:	ELLE Courier	Arrival Timestamp:	10/26/2016 20:33
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	NJ		

Arrival Condition Summary

Shipping Container Sealed:	No	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	0
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Karen Diem (3060) at 23:53 on 10/26/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	32170023	4.9	IR	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	none detected
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

Report Date: June 01, 2017

Project: Kenvil TNT Bioremediation Pilot

Submittal Date: 05/10/2017
Group Number: 1799663
SDG: KVM97
PO Number: PO286992
Release Number: KENVIL
State of Sample Origin: NJ

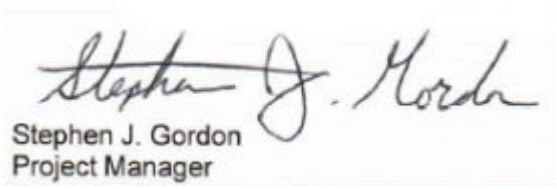
Client Sample Description	Lancaster Labs (LL) #
TNT-PS-K-05092017 Composite Soil	8986363
TNT-PS-A-05092017 Composite Soil	8986364
TNT-PS-I-05092017 Composite Soil	8986365
TNT-PS-H-05092017 Composite Soil	8986366
TNT-PS-G-05092017 Composite Soil	8986367
TNT-PS-B-05092017 Composite Soil	8986368
TNT-PS-J-05092017 Composite Soil	8986369
TNT-PS-F-05092017 Composite Soil	8986370
TNT-PS-E-05092017 Composite Soil	8986371
TNT-PS-D-05092017 Composite Soil	8986372
TNT-PS-C-05092017 Composite Soil	8986373

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	Kennedy/Jenks	Attn: Lora Sterner
Electronic Copy To	Hercules	Attn: Scott Larew
Electronic Copy To	Ashland	Attn: Ed Meeks

Respectfully Submitted,



Stephen J. Gordon
Project Manager

(724) 597-2027

Sample Description: TNT-PS-K-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986363
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 08:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9701 SDG#: KVM97-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	27	1
10727	Acenaphthylene	208-96-8	N.D.		5	27	1
10727	Acetophenone	98-86-2	N.D.		26	53	1
10727	Anthracene	120-12-7	16	J	5	27	1
10727	Atrazine	1912-24-9	N.D.		53	260	1
10727	Benzaldehyde	100-52-7	N.D.		110	260	1
10727	Benzo(a)anthracene	56-55-3	69		5	27	1
10727	Benzo(a)pyrene	50-32-8	53		5	27	1
10727	Benzo(b)fluoranthene	205-99-2	100		5	27	1
10727	Benzo(g,h,i)perylene	191-24-2	46		5	27	1
10727	Benzo(k)fluoranthene	207-08-9	41		5	27	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	53	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	53	1
10727	Butylbenzylphthalate	85-68-7	N.D.		110	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		110	260	1
10727	Caprolactam	105-60-2	N.D.		53	260	1
10727	Carbazole	86-74-8	N.D.		26	53	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	53	1
10727	4-Chloroaniline	106-47-8	N.D.		53	110	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	53	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	53	1
10727	2-Chloronaphthalene	91-58-7	N.D.		11	53	1
10727	2-Chlorophenol	95-57-8	N.D.		26	53	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	53	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	53	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	82		5	27	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	5	27	1
10727	Dibenzofuran	132-64-9	N.D.		26	53	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		160	530	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	53	1
10727	Diethylphthalate	84-66-2	N.D.		110	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	53	1
10727	Dimethylphthalate	131-11-3	N.D.		110	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	790	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		480	1,600	1
10727	2,4-Dinitrotoluene	121-14-2	2,600		110	260	1
10727	2,6-Dinitrotoluene	606-20-2	1,100		26	53	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		110	270	1
10727	Fluoranthene	206-44-0	130		5	27	1
10727	Fluorene	86-73-7	6	J	5	27	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	27	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	53	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	790	1
10727	Hexachloroethane	67-72-1	N.D.		53	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	41		5	27	1
10727	Isophorone	78-59-1	N.D.		26	53	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986363
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 08:35 by LS

Submitted: 05/10/2017 17:15
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Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9701 SDG#: KVM97-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.	5	27	1
10727	2-Methylphenol	95-48-7	N.D.	26	53	1
10727	4-Methylphenol	106-44-5	32 J	26	53	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	5	27	1
10727	2-Nitroaniline	88-74-4	N.D.	26	53	1
10727	3-Nitroaniline	99-09-2	N.D.	110	260	1
10727	4-Nitroaniline	100-01-6	N.D.	110	260	1
10727	Nitrobenzene	98-95-3	N.D.	26	53	1
10727	2-Nitrophenol	88-75-5	N.D.	26	53	1
10727	4-Nitrophenol	100-02-7	N.D.	260	790	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	26	53	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	26	53	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	110	260	1
10727	Pentachlorophenol	87-86-5	N.D.	53	270	1
10727	Phenanthrene	85-01-8	80	5	27	1
10727	Phenol	108-95-2	N.D.	26	53	1
10727	Pyrene	129-00-0	100	5	27	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	26	53	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	26	53	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.					
00886	**SVOA TIC Interpretive(25)**					
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.					
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	130,000	4,000	11,000	20
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	100,000	2,700	8,000	20
06918	1,2-Dinitrobenzene	528-29-0	N.D.	2,700	8,000	20
06918	1,3-Dinitrobenzene	99-65-0	N.D.	2,700	8,000	20
06918	1,4-Dinitrobenzene	100-25-4	N.D.	2,700	8,000	20
06918	HMX	2691-41-0	N.D.	6,700	20,000	20
06918	Nitrobenzene	98-95-3	N.D.	2,700	8,000	20
06918	Nitroglycerin	55-63-0	N.D.	54,000	160,000	20
06918	1-Nitronaphthalene	86-57-7	N.D.	2,700	8,000	20
06918	2-Nitrotoluene	88-72-2	N.D.	5,400	11,000	20
06918	3-Nitrotoluene	99-08-1	N.D.	6,700	13,000	20
06918	4-Nitrotoluene	99-99-0	N.D.	5,400	11,000	20
06918	PETN	78-11-5	N.D.	54,000	160,000	20
06918	RDX	121-82-4	N.D.	3,500	8,000	20
06918	Tetryl	479-45-8	N.D.	4,300	11,000	20

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986363
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 08:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9701 SDG#: KVM97-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	2,700	8,000	20
06918	2,4,6-Trinitrotoluene	118-96-7	1,000,000	13,000	40,000	100
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,400	9.82	22.6	1
06944	Antimony	7440-36-0	N.D.	0.792	2.26	1
06935	Arsenic	7440-38-2	4.63	1.10	2.26	1
06946	Barium	7440-39-3	53.0	0.0373	0.566	1
06947	Beryllium	7440-41-7	0.488 J	0.0758	0.566	1
06949	Cadmium	7440-43-9	0.110 J	0.0554	0.566	1
01650	Calcium	7440-70-2	1,690	6.40	22.6	1
06951	Chromium	7440-47-3	15.1	0.158	1.70	1
06952	Cobalt	7440-48-4	4.83	0.136	0.566	1
06953	Copper	7440-50-8	17.0	0.314	1.36	1
01654	Iron	7439-89-6	22,100	5.62	27.3	1
06955	Lead	7439-92-1	246	0.750	2.04	1
01657	Magnesium	7439-95-4	1,260	2.15	11.3	1
06958	Manganese	7439-96-5	182	0.0939	0.566	1
06961	Nickel	7440-02-0	7.44	0.339	1.13	1
01662	Potassium	7440-09-7	919	27.0	56.6	1
06936	Selenium	7782-49-2	2.85	1.02	2.26	1
06966	Silver	7440-22-4	N.D.	0.170	0.566	1
01667	Sodium	7440-23-5	76.5 J	27.0	113	1
06925	Thallium	7440-28-0	N.D.	0.928	3.39	1
06971	Vanadium	7440-62-2	32.4	0.158	0.566	1
06972	Zinc	7440-66-6	83.3	0.927	2.73	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0477 J	0.0159	0.159	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	13,300	949	2,850	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	37.3	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-K-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986363
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 08:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9701 SDG#: KVM97-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 15:12	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/18/2017 02:49	James H Place	20
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 10:02	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171320570801	05/16/2017 06:58	Jonathan Allen	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 11:55	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/18/2017 11:55	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 11:55	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:06	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 11:55	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:05	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631A	05/16/2017 14:37	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K9701

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986363
Sample wt/vol: 30.19(g/mL) g Lab File ID: be1187.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 37.3 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 24 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.947	730	J
2.	Unknown Hydrocarbon	6.052	500	J
3.	Unknown PAH	6.315	500	J
4.112-40-3	Dodecane	6.449	1200	J
5.17301-23-4	Undecane, 2,6-dimethyl-	6.525	440	J
6.58462-32-1	trans,trans-3-Ethylbicyclo[4	6.694	460	J
7.	Unknown Cycloalkane	6.723	460	J
8.	Unknown Alkane	6.758	520	J
9.1560-97-0	Dodecane, 2-methyl-	6.833	410	J
10.	Unknown Alkane	6.880	1100	J
11.629-50-5	Tridecane	7.049	3000	J
12.	Unknown Hydrocarbon	7.160	320	J
13.	Unknown Cycloalkane	7.323	540	J
14.1560-96-9	Tridecane, 2-methyl-	7.399	330	J
15.	Unknown	7.440	330	J
16.629-59-4	Tetradecane	7.603	1700	J
17.	Unknown Alkane	7.638	270	J
18.544-76-3	Hexadecane	8.594	320	J
19.	Unknown Alkane	9.060	2800	J
20.	Unknown Hydrocarbon	9.252	250000	J
21.19406-51-0	p-Toluidine, 3,5-dinitro-	10.144	38000	J
22.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.371	31000	J
23.	Unknown Amine	10.471	1900	J
24.629-94-7	Heneicosane	13.356	1400	J
25.				
26.SVOCTIC	Total SVOC TICs		340000	J
27.				
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-A-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986364
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 08:55 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9702 SDG#: KVM97-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	23	J	5	26	1
10727	Acetophenone	98-86-2	N.D.		26	51	1
10727	Anthracene	120-12-7	29		5	26	1
10727	Atrazine	1912-24-9	N.D.		51	260	1
10727	Benzaldehyde	100-52-7	140	J	100	260	1
10727	Benzo(a)anthracene	56-55-3	100		5	26	1
10727	Benzo(a)pyrene	50-32-8	86		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	150		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	70		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	66		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	51	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	51	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		51	260	1
10727	Carbazole	86-74-8	N.D.		26	51	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	51	1
10727	4-Chloroaniline	106-47-8	N.D.		51	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	51	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	51	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	51	1
10727	2-Chlorophenol	95-57-8	N.D.		26	51	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	51	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	51	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	120		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	20	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		26	51	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	510	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	51	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	51	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	770	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		460	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	3,400		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	1,500		26	51	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	230		5	26	1
10727	Fluorene	86-73-7	6	J	5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	51	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	770	1
10727	Hexachloroethane	67-72-1	N.D.		51	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	58		5	26	1
10727	Isophorone	78-59-1	N.D.		26	51	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986364
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 08:55 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9702 SDG#: KVM97-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	9	J	5	26	1
10727	2-Methylphenol	95-48-7	N.D.		26	51	1
10727	4-Methylphenol	106-44-5	N.D.		26	51	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	12	J	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.		26	51	1
10727	3-Nitroaniline	99-09-2	N.D.		100	260	1
10727	4-Nitroaniline	100-01-6	N.D.		100	260	1
10727	Nitrobenzene	98-95-3	N.D.		26	51	1
10727	2-Nitrophenol	88-75-5	N.D.		26	51	1
10727	4-Nitrophenol	100-02-7	N.D.		260	770	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		26	51	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		26	51	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	260	1
10727	Pentachlorophenol	87-86-5	N.D.		51	260	1
10727	Phenanthrene	85-01-8	150		5	26	1
10727	Phenol	108-95-2	N.D.		26	51	1
10727	Pyrene	129-00-0	180		5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		26	51	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		26	51	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	110,000		4,300	11,000	20
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	81,000		2,900	8,600	20
06918	1,2-Dinitrobenzene	528-29-0	N.D.		2,900	8,600	20
06918	1,3-Dinitrobenzene	99-65-0	N.D.		2,900	8,600	20
06918	1,4-Dinitrobenzene	100-25-4	N.D.		2,900	8,600	20
06918	HMX	2691-41-0	N.D.		7,200	21,000	20
06918	Nitrobenzene	98-95-3	N.D.		2,900	8,600	20
06918	Nitroglycerin	55-63-0	N.D.		57,000	170,000	20
06918	1-Nitronaphthalene	86-57-7	N.D.		8,100	8,600	20
06918	2-Nitrotoluene	88-72-2	N.D.		5,700	11,000	20
06918	3-Nitrotoluene	99-08-1	N.D.		7,200	14,000	20
06918	4-Nitrotoluene	99-99-0	N.D.		5,700	11,000	20
06918	PETN	78-11-5	N.D.		57,000	170,000	20
06918	RDX	121-82-4	N.D.		3,700	8,600	20
06918	Tetryl	479-45-8	N.D.		4,600	11,000	20

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986364
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 08:55 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9702 SDG#: KVM97-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	2,900	8,600	20
06918	2,4,6-Trinitrotoluene	118-96-7	1,600,000	14,000	43,000	100
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,200	11.8	27.2	1
06944	Antimony	7440-36-0	N.D.	0.953	2.72	1
06935	Arsenic	7440-38-2	5.29	1.32	2.72	1
06946	Barium	7440-39-3	56.7	0.0449	0.681	1
06947	Beryllium	7440-41-7	0.527 J	0.0913	0.681	1
06949	Cadmium	7440-43-9	0.127 J	0.0667	0.681	1
01650	Calcium	7440-70-2	1,540	7.71	27.2	1
06951	Chromium	7440-47-3	14.8	0.191	2.04	1
06952	Cobalt	7440-48-4	5.11	0.163	0.681	1
06953	Copper	7440-50-8	19.1	0.300	1.30	1
01654	Iron	7439-89-6	22,200	5.38	26.1	1
06955	Lead	7439-92-1	264	0.718	1.96	1
01657	Magnesium	7439-95-4	1,340	2.59	13.6	1
06958	Manganese	7439-96-5	170	0.113	0.681	1
06961	Nickel	7440-02-0	8.27	0.409	1.36	1
01662	Potassium	7440-09-7	917	32.6	68.1	1
06936	Selenium	7782-49-2	3.85	1.23	2.72	1
06966	Silver	7440-22-4	N.D.	0.204	0.681	1
01667	Sodium	7440-23-5	81.0 J	32.6	136	1
06925	Thallium	7440-28-0	1.18 J	1.12	4.09	1
06971	Vanadium	7440-62-2	33.5	0.191	0.681	1
06972	Zinc	7440-66-6	37.0	0.887	2.61	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0487 J	0.0148	0.148	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,000	1,040	3,120	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	35.6	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-A-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986364
LL Group # 1799663
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PO Box 2219
Columbus OH 43016-0381

K9702 SDG#: KVM97-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 19:06	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/18/2017 03:32	James H Place	20
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 10:44	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171320570801	05/16/2017 07:02	Jonathan Allen	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 11:59	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/18/2017 11:59	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 11:59	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:09	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 11:59	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:35	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631A	05/16/2017 14:45	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K9702

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986364
Sample wt/vol: 30.25(g/mL) g Lab File ID: be1188a.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 35.6 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.948	610	J
2.1618-22-0	Naphthalene, decahydro-2,6-d	6.321	590	J
3.112-40-3	Dodecane	6.455	1200	J
4.17301-23-4	Undecane, 2,6-dimethyl-	6.525	940	J
5.66660-41-1	cis,trans-3-Ethylbicyclo[4.4	6.694	780	J
6.	Unknown Cycloalkane	6.729	570	J
7.	Unknown acid	6.775	600	J
8.	Unknown acid	6.834	780	J
9.61141-72-8	Dodecane, 4,6-dimethyl-	6.880	2000	J
10.	Unknown Alkane	7.026	550	J
11.629-50-5	Tridecane	7.055	2900	J
12.92-51-3	1,1'-Bicyclohexyl	7.166	680	J
13.	Unknown Alkane	7.277	350	J
14.	Unknown acid	7.323	680	J
15.26730-12-1	Tridecane, 4-methyl-	7.370	330	J
16.	Unknown Alkane	7.399	500	J
17.6418-41-3	Tridecane, 3-methyl-	7.440	430	J
18.629-59-4	Tetradecane	7.603	1400	J
19.	Unknown acid	7.638	510	J
20.	Unknown	7.690	380	J
21.	Unknown Ketone	7.755	400	J
22.	Unknown Organic Acid	7.848	520	J
23.	Unknown Hydrocarbon	9.305	310000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.162	25000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.383	24000	J
26.				
27.SVOCTIC	Total SVOC TICs		380000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-I-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986365
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:05 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9703 SDG#: KVM97-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		25	49	1
10727	Anthracene	120-12-7	11	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		49	250	1
10727	Benzaldehyde	100-52-7	N.D.		98	250	1
10727	Benzo(a)anthracene	56-55-3	48		5	25	1
10727	Benzo(a)pyrene	50-32-8	48		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	84		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	35		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	33		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	49	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	49	1
10727	Butylbenzylphthalate	85-68-7	N.D.		98	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		98	250	1
10727	Caprolactam	105-60-2	N.D.		49	250	1
10727	Carbazole	86-74-8	N.D.		25	49	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	49	1
10727	4-Chloroaniline	106-47-8	N.D.		49	98	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	49	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	49	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	49	1
10727	2-Chlorophenol	95-57-8	N.D.		25	49	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	49	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	49	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	63		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	49	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	490	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	49	1
10727	Diethylphthalate	84-66-2	N.D.		98	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	49	1
10727	Dimethylphthalate	131-11-3	N.D.		98	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	740	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	120	J	98	250	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		25	49	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		98	250	1
10727	Fluoranthene	206-44-0	97		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	49	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	740	1
10727	Hexachloroethane	67-72-1	N.D.		49	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	33		5	25	1
10727	Isophorone	78-59-1	N.D.		25	49	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986365
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:05 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9703 SDG#: KVM97-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1
10727	2-Methylphenol	95-48-7	N.D.		25	49	1
10727	4-Methylphenol	106-44-5	5,400		25	49	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	8	J	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		25	49	1
10727	3-Nitroaniline	99-09-2	N.D.		98	250	1
10727	4-Nitroaniline	100-01-6	N.D.		98	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	49	1
10727	2-Nitrophenol	88-75-5	N.D.		25	49	1
10727	4-Nitrophenol	100-02-7	N.D.		250	740	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	49	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	49	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		98	250	1
10727	Pentachlorophenol	87-86-5	N.D.		49	250	1
10727	Phenanthrene	85-01-8	52		5	25	1
10727	Phenol	108-95-2	390		25	49	1
10727	Pyrene	129-00-0	86		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	49	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	49	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,800		190	500	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,500		130	380	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	380	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	380	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	380	1
06918	HMX	2691-41-0	N.D.		310	940	1
06918	Nitrobenzene	98-95-3	N.D.		130	380	1
06918	Nitroglycerin	55-63-0	N.D.		2,500	7,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	380	1
06918	2-Nitrotoluene	88-72-2	N.D.		250	500	1
06918	3-Nitrotoluene	99-08-1	N.D.		310	630	1
06918	4-Nitrotoluene	99-99-0	N.D.		250	500	1
06918	PETN	78-11-5	N.D.		2,500	7,600	1
06918	RDX	121-82-4	N.D.		160	380	1
06918	Tetryl	479-45-8	N.D.		200	500	1

*=This limit was used in the evaluation of the final result

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Account # 06716

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Collected: 05/09/2017 09:05 by LS

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K9703 SDG#: KVM97-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		130	380	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,700		130	380	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,000		12.3	28.4	1
06944	Antimony	7440-36-0	1.60	J	0.995	2.84	1
06935	Arsenic	7440-38-2	4.07		1.38	2.84	1
06946	Barium	7440-39-3	48.7		0.0469	0.711	1
06947	Beryllium	7440-41-7	0.445	J	0.0952	0.711	1
06949	Cadmium	7440-43-9	0.196	J	0.0697	0.711	1
01650	Calcium	7440-70-2	1,640		8.05	28.4	1
06951	Chromium	7440-47-3	17.0		0.199	2.13	1
06952	Cobalt	7440-48-4	8.63		0.171	0.711	1
06953	Copper	7440-50-8	27.0		0.249	1.08	1
01654	Iron	7439-89-6	30,500		8.91	43.3	2
06955	Lead	7439-92-1	241		0.595	1.62	1
01657	Magnesium	7439-95-4	1,190		2.70	14.2	1
06958	Manganese	7439-96-5	179		0.118	0.711	1
06961	Nickel	7440-02-0	14.5		0.426	1.42	1
01662	Potassium	7440-09-7	919		34.0	71.1	1
06936	Selenium	7782-49-2	5.50		1.28	2.84	1
06966	Silver	7440-22-4	0.230	J	0.213	0.711	1
01667	Sodium	7440-23-5	99.6	J	34.0	142	1
06925	Thallium	7440-28-0	1.47	J	1.17	4.26	1
06971	Vanadium	7440-62-2	33.6		0.199	0.711	1
06972	Zinc	7440-66-6	43.3		0.735	2.16	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0445	J	0.0149	0.149	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,300		806	2,420	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	33.0		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-I-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986365
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:05 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9703 SDG#: KVM97-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 15:55	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 11:27	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171320570801	05/16/2017 07:05	Jonathan Allen	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:02	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/22/2017 07:00	Jonathan Allen	2
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:02	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:12	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:02	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:38	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631A	05/16/2017 14:52	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K9703

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986365
Sample wt/vol: 30.42(g/mL) g Lab File ID: be1189.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 33 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.948	560	J
2.112-40-3	Dodecane	6.449	1200	J
3.	Unknown Alkane	6.525	520	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.694	550	J
5.	Unknown Cycloalkane	6.729	540	J
6.	Unknown acid	6.775	730	J
7.	Unknown Alkane	6.834	650	J
8.	Unknown Alkane	6.880	1400	J
9.	Unknown Cycloalkane	7.020	540	J
10.629-50-5	Tridecane	7.055	2700	J
11.	Unknown Cycloalkane	7.078	480	J
12.	Unknown Cycloalkane	7.108	540	J
13.	Unknown Alkane	7.137	470	J
14.	Unknown	7.160	480	J
15.	Unknown Alkane	7.236	590	J
16.	Unknown Alkane	7.323	670	J
17.26730-12-1	Tridecane, 4-methyl-	7.370	280	J
18.1560-96-9	Tridecane, 2-methyl-	7.399	460	J
19.	Unknown Alkane	7.440	430	J
20.629-59-4	Tetradecane	7.603	1600	J
21.	Unknown Alkane	7.638	450	J
22.66563-30-2	Bacchotricuneatin c	7.906	360	J
23.	Unknown Amine	9.987	3900	J
24.57-10-3	n-Hexadecanoic acid	10.226	48000	J
25.57-11-4	Octadecanoic acid	10.954	5800	J
26.				
27.SVOCTIC	Total SVOC TICs		74000	J
28.				
29.				
30.				

Sample Description: TNT-PS-H-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986366
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:15 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9704 SDG#: KVM97-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	17	J	5	25	1
10727	Acetophenone	98-86-2	N.D.		24	48	1
10727	Anthracene	120-12-7	12	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		48	240	1
10727	Benzaldehyde	100-52-7	N.D.		97	240	1
10727	Benzo(a)anthracene	56-55-3	61		5	25	1
10727	Benzo(a)pyrene	50-32-8	54		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	92		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	38		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	42		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		24	48	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		24	48	1
10727	Butylbenzylphthalate	85-68-7	N.D.		97	240	1
10727	Di-n-butylphthalate	84-74-2	N.D.		97	240	1
10727	Caprolactam	105-60-2	N.D.		48	240	1
10727	Carbazole	86-74-8	N.D.		24	48	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		24	48	1
10727	4-Chloroaniline	106-47-8	N.D.		48	97	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		24	48	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		24	48	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	48	1
10727	2-Chlorophenol	95-57-8	N.D.		24	48	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		24	48	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		24	48	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	68		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		24	48	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	480	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		24	48	1
10727	Diethylphthalate	84-66-2	N.D.		97	240	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		24	48	1
10727	Dimethylphthalate	131-11-3	N.D.		97	240	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		240	730	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		440	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	130	J	97	240	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		24	48	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		97	250	1
10727	Fluoranthene	206-44-0	110		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		24	48	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		240	730	1
10727	Hexachloroethane	67-72-1	N.D.		48	240	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	36		5	25	1
10727	Isophorone	78-59-1	N.D.		24	48	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986366
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:15 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9704 SDG#: KVM97-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	7	J	5	25	1
10727	2-Methylphenol	95-48-7	N.D.		24	48	1
10727	4-Methylphenol	106-44-5	8,000		120	240	5
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	11	J	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		24	48	1
10727	3-Nitroaniline	99-09-2	N.D.		97	240	1
10727	4-Nitroaniline	100-01-6	N.D.		97	240	1
10727	Nitrobenzene	98-95-3	N.D.		24	48	1
10727	2-Nitrophenol	88-75-5	N.D.		24	48	1
10727	4-Nitrophenol	100-02-7	N.D.		240	730	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		24	48	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		24	48	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		97	240	1
10727	Pentachlorophenol	87-86-5	N.D.		48	250	1
10727	Phenanthrene	85-01-8	51		5	25	1
10727	Phenol	108-95-2	500		24	48	1
10727	Pyrene	129-00-0	91		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		24	48	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		24	48	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,300		210	550	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,800		140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	550	1
06918	3-Nitrotoluene	99-08-1	N.D.		350	690	1
06918	4-Nitrotoluene	99-99-0	880		280	550	1
06918	PETN	78-11-5	N.D.		2,800	8,300	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		220	550	1

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Sample Description: TNT-PS-H-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986366
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:15 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9704 SDG#: KVM97-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	6,500		140	420	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,700		12.1	27.8	1
06944	Antimony	7440-36-0	N.D.		0.975	2.78	1
06935	Arsenic	7440-38-2	3.85		1.35	2.78	1
06946	Barium	7440-39-3	52.2		0.0459	0.696	1
06947	Beryllium	7440-41-7	0.489	J	0.0933	0.696	1
06949	Cadmium	7440-43-9	0.230	J	0.0682	0.696	1
01650	Calcium	7440-70-2	1,610		7.88	27.8	1
06951	Chromium	7440-47-3	20.7		0.195	2.09	1
06952	Cobalt	7440-48-4	10.6		0.167	0.696	1
06953	Copper	7440-50-8	29.4		0.333	1.45	1
01654	Iron	7439-89-6	37,500		5.96	29.0	1
06955	Lead	7439-92-1	222		0.796	2.17	1
01657	Magnesium	7439-95-4	1,310		2.65	13.9	1
06958	Manganese	7439-96-5	204		0.116	0.696	1
06961	Nickel	7440-02-0	19.3		0.418	1.39	1
01662	Potassium	7440-09-7	1,120		33.3	69.6	1
06936	Selenium	7782-49-2	5.43		1.25	2.78	1
06966	Silver	7440-22-4	0.309	J	0.209	0.696	1
01667	Sodium	7440-23-5	108	J	33.3	139	1
06925	Thallium	7440-28-0	2.02	J	1.14	4.18	1
06971	Vanadium	7440-62-2	38.0		0.195	0.696	1
06972	Zinc	7440-66-6	51.7		0.984	2.90	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0406	J	0.0141	0.141	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	18,500		905	2,710	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	31.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-H-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986366
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:15 by LS

Submitted: 05/10/2017 17:15
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Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9704 SDG#: KVM97-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 16:16	Linda M Hartenstine	1
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 19:48	Linda M Hartenstine	5
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 12:09	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
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06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171320570801	05/16/2017 07:09	Jonathan Allen	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:06	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/18/2017 12:06	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:06	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:15	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:06	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:40	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631A	05/16/2017 14:59	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K9704

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986366
Sample wt/vol: 30.21(g/mL) g Lab File ID: be1190.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 31.6 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 24 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Aldol Condensate	3.534	3800	JB
2.	2958-76-1	Naphthalene, decahydro-2-met	5.947	800	J
3.		Unknown PAH	6.058	440	J
4.		Unknown PAH	6.321	460	J
5.	112-40-3	Dodecane	6.449	1100	J
6.	17301-23-4	Undecane, 2,6-dimethyl-	6.525	410	J
7.	58462-32-1	trans,trans-3-Ethylbicyclo[4	6.694	450	J
8.		Unknown Cycloalkane	6.729	400	J
9.		Unknown Cycloalkane	6.775	420	J
10.	6117-97-1	Dodecane, 4-methyl-	6.804	900	J
11.		Unknown Alkane	6.880	840	J
12.	629-59-4	Tetradecane	7.055	2700	J
13.		Unknown Cycloalkane	7.323	430	J
14.	1560-96-9	Tridecane, 2-methyl-	7.399	280	J
15.		Unknown Alkane	7.440	250	J
16.		Unknown Alkane	7.603	1400	J
17.		Unknown Alkane	7.638	210	J
18.	54833-48-6	Heptadecane, 2,6,10,15-tetra	7.906	300	J
19.	544-76-3	Hexadecane	9.054	2000	J
20.		Unknown Amine	9.987	4500	J
21.	57-10-3	n-Hexadecanoic acid	10.232	61000	J
22.	57-11-4	Octadecanoic acid	10.960	8400	J
23.	2136-70-1	Ethanol, 2-(tetradecyloxy)-	13.362	8900	J
24.		Unknown Organic Acid	14.877	12000	J
25.					
26.	SVOCTIC	Total SVOC TICs		110000	JB
27.					
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-G-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986367
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:25 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9705 SDG#: KVM97-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	N.D.		5	25	1
10727	Acetophenone	98-86-2	N.D.		24	48	1
10727	Anthracene	120-12-7	8	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		48	240	1
10727	Benzaldehyde	100-52-7	N.D.		96	240	1
10727	Benzo(a)anthracene	56-55-3	54		5	25	1
10727	Benzo(a)pyrene	50-32-8	45		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	81		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	31		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	35		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		24	48	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		24	48	1
10727	Butylbenzylphthalate	85-68-7	N.D.		96	240	1
10727	Di-n-butylphthalate	84-74-2	N.D.		96	240	1
10727	Caprolactam	105-60-2	N.D.		48	240	1
10727	Carbazole	86-74-8	N.D.		24	48	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		24	48	1
10727	4-Chloroaniline	106-47-8	N.D.		48	96	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		24	48	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		24	48	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	48	1
10727	2-Chlorophenol	95-57-8	N.D.		24	48	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		24	48	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		24	48	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	60		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		24	48	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		140	480	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		24	48	1
10727	Diethylphthalate	84-66-2	N.D.		96	240	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		24	48	1
10727	Dimethylphthalate	131-11-3	N.D.		96	240	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		240	720	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		430	1,400	1
10727	2,4-Dinitrotoluene	121-14-2	120	J	96	240	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		24	48	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		96	250	1
10727	Fluoranthene	206-44-0	77		5	25	1
10727	Fluorene	86-73-7	N.D.		5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		24	48	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		240	720	1
10727	Hexachloroethane	67-72-1	N.D.		48	240	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	30		5	25	1
10727	Isophorone	78-59-1	N.D.		24	48	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986367
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:25 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9705 SDG#: KVM97-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	5	J	5	25	1
10727	2-Methylphenol	95-48-7	N.D.		24	48	1
10727	4-Methylphenol	106-44-5	2,300		24	48	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	6	J	5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		24	48	1
10727	3-Nitroaniline	99-09-2	N.D.		96	240	1
10727	4-Nitroaniline	100-01-6	N.D.		96	240	1
10727	Nitrobenzene	98-95-3	N.D.		24	48	1
10727	2-Nitrophenol	88-75-5	N.D.		24	48	1
10727	4-Nitrophenol	100-02-7	N.D.		240	720	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		24	48	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		24	48	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		96	240	1
10727	Pentachlorophenol	87-86-5	N.D.		48	250	1
10727	Phenanthrene	85-01-8	40		5	25	1
10727	Phenol	108-95-2	500		24	48	1
10727	Pyrene	129-00-0	70		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		24	48	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		24	48	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,700		210	560	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,000		140	420	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,100	1
06918	Nitrobenzene	98-95-3	N.D.		140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,500	1
06918	1-Nitronaphthalene	86-57-7	N.D.		140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	560	1
06918	3-Nitrotoluene	99-08-1	N.D.		350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	560	1
06918	PETN	78-11-5	N.D.		2,800	8,500	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		230	560	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986367
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:25 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9705 SDG#: KVM97-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,300		140	420	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,200		11.3	26.0	1
06944	Antimony	7440-36-0	N.D.		0.911	2.60	1
06935	Arsenic	7440-38-2	4.05		1.26	2.60	1
06946	Barium	7440-39-3	60.7		0.0430	0.651	1
06947	Beryllium	7440-41-7	0.562	J	0.0872	0.651	1
06949	Cadmium	7440-43-9	0.156	J	0.0638	0.651	1
01650	Calcium	7440-70-2	1,470		7.37	26.0	1
06951	Chromium	7440-47-3	22.6		0.182	1.95	1
06952	Cobalt	7440-48-4	12.2		0.156	0.651	1
06953	Copper	7440-50-8	34.6		0.299	1.30	1
01654	Iron	7439-89-6	43,600		10.7	52.1	2
06955	Lead	7439-92-1	209		0.716	1.95	1
01657	Magnesium	7439-95-4	1,440		2.47	13.0	1
06958	Manganese	7439-96-5	210		0.108	0.651	1
06961	Nickel	7440-02-0	23.1		0.390	1.30	1
01662	Potassium	7440-09-7	1,160		31.1	65.1	1
06936	Selenium	7782-49-2	3.51		1.17	2.60	1
06966	Silver	7440-22-4	0.504	J	0.195	0.651	1
01667	Sodium	7440-23-5	90.7	J	31.1	130	1
06925	Thallium	7440-28-0	1.80	J	1.07	3.90	1
06971	Vanadium	7440-62-2	40.2		0.182	0.651	1
06972	Zinc	7440-66-6	54.1		0.885	2.60	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0447	J	0.0135	0.135	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	17,300		685	2,060	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	31.4		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-G-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986367
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:25 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9705 SDG#: KVM97-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 16:37	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 12:51	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171320570801	05/16/2017 07:12	Jonathan Allen	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:09	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/22/2017 07:09	Jonathan Allen	2
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:09	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/16/2017 14:12	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:18	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:09	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:43	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631A	05/16/2017 15:07	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K9705

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986367
Sample wt/vol: 30.34(g/mL) g Lab File ID: be1191.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 31.4 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.17301-23-4	Undecane, 2,6-dimethyl-	6.525	670	J
2.	Unknown Alkane	6.694	570	J
3.61142-20-9	Cyclohexane, (4-methylpentyl	6.723	520	J
4.	Unknown acid	6.758	1100	J
5.1560-97-0	Dodecane, 2-methyl-	6.833	620	J
6.	Unknown Alkane	6.874	1800	J
7.	Unknown Cycloalkane	7.020	560	J
8.112-40-3	Dodecane	7.049	2300	J
9.	Unknown Alkane	7.137	560	J
10.	Unknown	7.160	540	J
11.	Unknown Alkane	7.230	600	J
12.	Unknown Cycloalkane	7.323	910	J
13.26730-12-1	Tridecane, 4-methyl-	7.364	360	J
14.1560-96-9	Tridecane, 2-methyl-	7.399	560	J
15.	Unknown	7.440	510	J
16.83-34-1	1H-Indole, 3-methyl-	7.574	620	J
17.629-59-4	Tetradecane	7.597	1500	J
18.	Unknown Alkane	7.638	550	J
19.	Unknown Hydrocarbon	7.754	420	J
20.	Unknown Cycloalkane	7.888	490	J
21.66563-30-2	Bacchotricuneatin c	7.906	630	J
22.	Unknown Amine	8.133	440	J
23.57-10-3	n-Hexadecanoic acid	10.226	28000	J
24.57-11-4	Octadecanoic acid	10.960	4800	J
25.83-47-6	.gamma.-Sitosterol	14.877	4300	J
26.				
27.SVOCTIC	Total SVOC TICs		54000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-B-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986368
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9706 SDG#: KVM97-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	10	J	5	26	1
10727	Acetophenone	98-86-2	N.D.		26	52	1
10727	Anthracene	120-12-7	13	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		52	260	1
10727	Benzaldehyde	100-52-7	N.D.		100	260	1
10727	Benzo(a)anthracene	56-55-3	55		5	26	1
10727	Benzo(a)pyrene	50-32-8	51		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	83		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	40		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	41		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		26	52	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		26	52	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	260	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	260	1
10727	Caprolactam	105-60-2	N.D.		52	260	1
10727	Carbazole	86-74-8	N.D.		26	52	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		26	52	1
10727	4-Chloroaniline	106-47-8	N.D.		52	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		26	52	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		26	52	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	52	1
10727	2-Chlorophenol	95-57-8	N.D.		26	52	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		26	52	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		26	52	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	71		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		26	52	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	520	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		26	52	1
10727	Diethylphthalate	84-66-2	N.D.		100	260	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		26	52	1
10727	Dimethylphthalate	131-11-3	N.D.		100	260	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		260	770	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		460	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	3,300		100	260	1
10727	2,6-Dinitrotoluene	606-20-2	1,100		26	52	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	110		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		26	52	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		260	770	1
10727	Hexachloroethane	67-72-1	N.D.		52	260	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38		5	26	1
10727	Isophorone	78-59-1	N.D.		26	52	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986368
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9706 SDG#: KVM97-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1
10727	2-Methylphenol	95-48-7	N.D.		26	52	1
10727	4-Methylphenol	106-44-5	N.D.		26	52	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	10	J	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.		26	52	1
10727	3-Nitroaniline	99-09-2	N.D.		100	260	1
10727	4-Nitroaniline	100-01-6	N.D.		100	260	1
10727	Nitrobenzene	98-95-3	N.D.		26	52	1
10727	2-Nitrophenol	88-75-5	N.D.		26	52	1
10727	4-Nitrophenol	100-02-7	N.D.		260	770	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		26	52	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		26	52	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	260	1
10727	Pentachlorophenol	87-86-5	N.D.		52	260	1
10727	Phenanthrene	85-01-8	58		5	26	1
10727	Phenol	108-95-2	30	J	26	52	1
10727	Pyrene	129-00-0	87		5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		26	52	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		26	52	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	44,000		4,000	11,000	20
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	49,000		2,700	8,000	20
06918	1,2-Dinitrobenzene	528-29-0	N.D.		2,700	8,000	20
06918	1,3-Dinitrobenzene	99-65-0	N.D.		2,700	8,000	20
06918	1,4-Dinitrobenzene	100-25-4	N.D.		2,700	8,000	20
06918	HMX	2691-41-0	N.D.		6,700	20,000	20
06918	Nitrobenzene	98-95-3	N.D.		2,700	8,000	20
06918	Nitroglycerin	55-63-0	N.D.		53,000	160,000	20
06918	1-Nitronaphthalene	86-57-7	N.D.		2,700	8,000	20
06918	2-Nitrotoluene	88-72-2	N.D.		5,300	11,000	20
06918	3-Nitrotoluene	99-08-1	N.D.		6,700	13,000	20
06918	4-Nitrotoluene	99-99-0	N.D.		5,300	11,000	20
06918	PETN	78-11-5	N.D.		53,000	160,000	20
06918	RDX	121-82-4	N.D.		3,500	8,000	20
06918	Tetryl	479-45-8	N.D.		4,300	11,000	20

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986368
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9706 SDG#: KVM97-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	2,700	8,000	20
06918	2,4,6-Trinitrotoluene	118-96-7	2,100,000	27,000	80,000	200
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,700	11.4	26.3	1
06944	Antimony	7440-36-0	N.D.	0.922	2.63	1
06935	Arsenic	7440-38-2	4.92	1.28	2.63	1
06946	Barium	7440-39-3	54.6	0.0435	0.659	1
06947	Beryllium	7440-41-7	0.566 J	0.0882	0.659	1
06949	Cadmium	7440-43-9	0.141 J	0.0645	0.659	1
01650	Calcium	7440-70-2	985	6.62	23.4	1
06951	Chromium	7440-47-3	15.4	0.184	1.98	1
06952	Cobalt	7440-48-4	5.58	0.158	0.659	1
06953	Copper	7440-50-8	17.6	0.269	1.17	1
01654	Iron	7439-89-6	22,800	4.82	23.4	1
06955	Lead	7439-92-1	212	0.643	1.75	1
01657	Magnesium	7439-95-4	1,480	2.50	13.2	1
06958	Manganese	7439-96-5	188	0.109	0.659	1
06961	Nickel	7440-02-0	8.39	0.395	1.32	1
01662	Potassium	7440-09-7	892	31.5	65.9	1
06936	Selenium	7782-49-2	3.36	1.19	2.63	1
06966	Silver	7440-22-4	N.D.	0.198	0.659	1
01667	Sodium	7440-23-5	65.1 J	31.5	132	1
06925	Thallium	7440-28-0	1.27 J	1.08	3.95	1
06971	Vanadium	7440-62-2	34.2	0.184	0.659	1
06972	Zinc	7440-66-6	44.3	0.795	2.34	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0489 J	0.0145	0.145	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	11,200	887	2,660	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	36.2	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-B-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986368
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9706 SDG#: KVM97-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 16:58	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/18/2017 07:46	James H Place	20
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 14:59	James H Place	200
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171350570804	05/18/2017 12:13	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:13	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/18/2017 12:13	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:13	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:21	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:13	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:45	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631B	05/16/2017 15:15	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K9706

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986368
Sample wt/vol: 30.43(g/mL) g Lab File ID: be1192.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 36.2 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.948	680	J
2.112-40-3	Dodecane	6.449	1300	J
3.17301-23-4	Undecane, 2,6-dimethyl-	6.525	580	J
4.58462-32-1	trans,trans-3-Ethylbicyclo[4	6.694	590	J
5.	Unknown Cycloalkane	6.729	550	J
6.	Unknown Cycloalkane	6.775	580	J
7.1000309-17-7	Sulfurous acid, butyl decyl	6.834	690	J
8.61141-72-8	Dodecane, 4,6-dimethyl-	6.880	1500	J
9.	Unknown Alkane	7.026	560	J
10.629-50-5	Tridecane	7.055	2800	J
11.	Unknown Cycloalkane	7.078	500	J
12.	Unknown Alkane	7.137	500	J
13.	Unknown	7.160	510	J
14.	Unknown Alkane	7.230	510	J
15.	Unknown Cycloalkane	7.323	730	J
16.26730-12-1	Tridecane, 4-methyl-	7.364	310	J
17.1560-96-9	Tridecane, 2-methyl-	7.399	500	J
18.	Unknown Alkane	7.440	470	J
19.629-59-4	Tetradecane	7.603	1800	J
20.	Unknown Alkane	7.638	510	J
21.	Unknown Alkane	9.060	4300	J
22.	Unknown Hydrocarbon	9.258	300000	J
23.	Unknown Hydrocarbon	9.287	89000	J
24.19406-51-0	p-Toluidine, 3,5-dinitro-	10.133	16000	J
25.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.360	19000	J
26.				
27.SVOCTIC	Total SVOC TICs		440000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-J-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986369
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:45 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9707 SDG#: KVM97-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	25	1
10727	Acenaphthylene	208-96-8	16	J	5	25	1
10727	Acetophenone	98-86-2	N.D.		25	50	1
10727	Anthracene	120-12-7	21	J	5	25	1
10727	Atrazine	1912-24-9	N.D.		50	250	1
10727	Benzaldehyde	100-52-7	N.D.		100	250	1
10727	Benzo(a)anthracene	56-55-3	62		5	25	1
10727	Benzo(a)pyrene	50-32-8	59		5	25	1
10727	Benzo(b)fluoranthene	205-99-2	89		5	25	1
10727	Benzo(g,h,i)perylene	191-24-2	45		5	25	1
10727	Benzo(k)fluoranthene	207-08-9	37		5	25	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	50	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	50	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		50	250	1
10727	Carbazole	86-74-8	N.D.		25	50	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	50	1
10727	4-Chloroaniline	106-47-8	N.D.		50	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	50	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	50	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	50	1
10727	2-Chlorophenol	95-57-8	N.D.		25	50	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	50	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	50	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	71		5	25	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	5	25	1
10727	Dibenzofuran	132-64-9	N.D.		25	50	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	500	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	50	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	50	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	750	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		450	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	2,900		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	970		25	50	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	250	1
10727	Fluoranthene	206-44-0	140		5	25	1
10727	Fluorene	86-73-7	9	J	5	25	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	25	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	50	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	750	1
10727	Hexachloroethane	67-72-1	N.D.		50	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	43		5	25	1
10727	Isophorone	78-59-1	N.D.		25	50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986369
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:45 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9707 SDG#: KVM97-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	25	1
10727	2-Methylphenol	95-48-7	N.D.		25	50	1
10727	4-Methylphenol	106-44-5	N.D.		25	50	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	54		5	25	1
10727	2-Nitroaniline	88-74-4	N.D.		25	50	1
10727	3-Nitroaniline	99-09-2	N.D.		100	250	1
10727	4-Nitroaniline	100-01-6	N.D.		100	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	50	1
10727	2-Nitrophenol	88-75-5	N.D.		25	50	1
10727	4-Nitrophenol	100-02-7	N.D.		250	750	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	50	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	50	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	250	1
10727	Pentachlorophenol	87-86-5	N.D.		50	250	1
10727	Phenanthrene	85-01-8	95		5	25	1
10727	Phenol	108-95-2	48	J	25	50	1
10727	Pyrene	129-00-0	120		5	25	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	50	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	50	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	91,000		3,900	10,000	20
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	81,000		2,600	7,800	20
06918	1,2-Dinitrobenzene	528-29-0	N.D.		2,600	7,800	20
06918	1,3-Dinitrobenzene	99-65-0	N.D.		2,600	7,800	20
06918	1,4-Dinitrobenzene	100-25-4	N.D.		2,600	7,800	20
06918	HMX	2691-41-0	N.D.		6,500	20,000	20
06918	Nitrobenzene	98-95-3	N.D.		2,600	7,800	20
06918	Nitroglycerin	55-63-0	N.D.		52,000	160,000	20
06918	1-Nitronaphthalene	86-57-7	N.D.		2,600	7,800	20
06918	2-Nitrotoluene	88-72-2	N.D.		5,200	10,000	20
06918	3-Nitrotoluene	99-08-1	N.D.		6,500	13,000	20
06918	4-Nitrotoluene	99-99-0	N.D.		5,200	10,000	20
06918	PETN	78-11-5	N.D.		52,000	160,000	20
06918	RDX	121-82-4	N.D.		3,400	7,800	20
06918	Tetryl	479-45-8	N.D.		4,200	10,000	20

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986369
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:45 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9707 SDG#: KVM97-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	2,600	7,800	20
06918	2,4,6-Trinitrotoluene	118-96-7	1,100,000	13,000	39,000	100
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	18,800	11.4	26.2	1
06944	Antimony	7440-36-0	N.D.	0.916	2.62	1
06935	Arsenic	7440-38-2	4.63	1.27	2.62	1
06946	Barium	7440-39-3	58.0	0.0432	0.654	1
06947	Beryllium	7440-41-7	0.586 J	0.0876	0.654	1
06949	Cadmium	7440-43-9	0.157 J	0.0641	0.654	1
01650	Calcium	7440-70-2	1,150	6.05	21.4	1
06951	Chromium	7440-47-3	16.7	0.183	1.96	1
06952	Cobalt	7440-48-4	5.80	0.157	0.654	1
06953	Copper	7440-50-8	18.0	0.246	1.07	1
01654	Iron	7439-89-6	23,200	4.40	21.4	1
06955	Lead	7439-92-1	218	0.588	1.60	1
01657	Magnesium	7439-95-4	1,340	2.49	13.1	1
06958	Manganese	7439-96-5	203	0.109	0.654	1
06961	Nickel	7440-02-0	8.58	0.392	1.31	1
01662	Potassium	7440-09-7	874	31.3	65.4	1
06936	Selenium	7782-49-2	3.65	1.18	2.62	1
06966	Silver	7440-22-4	0.207 J	0.196	0.654	1
01667	Sodium	7440-23-5	64.1 J	31.3	131	1
06925	Thallium	7440-28-0	N.D.	1.07	3.92	1
06971	Vanadium	7440-62-2	35.8	0.183	0.654	1
06972	Zinc	7440-66-6	36.4	0.727	2.14	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0481 J	0.0140	0.140	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**	**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	16,000	862	2,590	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	34.1	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-J-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986369
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 09:45 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9707 SDG#: KVM97-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 19:27	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/18/2017 08:29	James H Place	20
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 15:41	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171350570804	05/18/2017 12:16	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:16	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/18/2017 12:16	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:16	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:24	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:16	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:48	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631B	05/16/2017 15:23	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K9707

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986369
Sample wt/vol: 30.47(g/mL) g Lab File ID: be1193a.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 34.1 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.2958-76-1	Naphthalene, decahydro-2-met	5.947	790	J
2.2547-27-5	trans-4a-Methyl-decahydronap	6.058	440	J
3.1618-22-0	Naphthalene, decahydro-2,6-d	6.321	470	J
4.112-40-3	Dodecane	6.449	1100	J
5.17301-28-9	Undecane, 3,6-dimethyl-	6.525	540	J
6.1618-23-1	Naphthalene, 2-ethyldecahydr	6.694	420	J
7.	Unknown Alkane	6.758	470	J
8.	Unknown Alkane	6.874	860	J
9.629-59-4	Tetradecane	7.049	2800	J
10.	Unknown Cycloalkane	7.323	560	J
11.1560-96-9	Tridecane, 2-methyl-	7.399	300	J
12.	Unknown Hydrocarbon	7.440	280	J
13.	Unknown Alkane	7.597	1600	J
14.	Unknown Alkane	7.638	230	J
15.544-76-3	Hexadecane	8.594	260	J
16.	Unknown Amine	9.066	2400	J
17.	Unknown Amine	9.206	130000	J
18.	Unknown	9.258	100000	J
19.	Unknown Cycloalkane	9.276	33000	J
20.19406-51-0	p-Toluidine, 3,5-dinitro-	10.144	21000	J
21.35572-78-2	Benzenamine, 2-methyl-3,5-di	10.366	21000	J
22.	Unknown Amine	10.476	1700	J
23.629-94-7	Heneicosane	13.356	1000	J
24.7098-22-8	Tetratetracontane	13.985	1300	J
25.	Unknown Organic Acid	14.871	1600	J
26.				
27.SVOCTIC	Total SVOC TICs		320000	J
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-F-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986370
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:00 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9708 SDG#: KVM97-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		4	23	1
10727	Acenaphthylene	208-96-8	16	J	4	23	1
10727	Acetophenone	98-86-2	N.D.		22	45	1
10727	Anthracene	120-12-7	11	J	4	23	1
10727	Atrazine	1912-24-9	N.D.		45	220	1
10727	Benzaldehyde	100-52-7	N.D.		89	220	1
10727	Benzo(a)anthracene	56-55-3	60		4	23	1
10727	Benzo(a)pyrene	50-32-8	53		4	23	1
10727	Benzo(b)fluoranthene	205-99-2	90		4	23	1
10727	Benzo(g,h,i)perylene	191-24-2	37		4	23	1
10727	Benzo(k)fluoranthene	207-08-9	39		4	23	1
10727	1,1'-Biphenyl	92-52-4	N.D.		22	45	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		22	45	1
10727	Butylbenzylphthalate	85-68-7	N.D.		89	220	1
10727	Di-n-butylphthalate	84-74-2	N.D.		89	220	1
10727	Caprolactam	105-60-2	N.D.		45	220	1
10727	Carbazole	86-74-8	N.D.		22	45	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		22	45	1
10727	4-Chloroaniline	106-47-8	N.D.		45	89	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		22	45	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		22	45	1
10727	2-Chloronaphthalene	91-58-7	N.D.		9	45	1
10727	2-Chlorophenol	95-57-8	N.D.		22	45	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		22	45	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		22	45	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	69		4	23	1
10727	Dibenz(a,h)anthracene	53-70-3	13	J	4	23	1
10727	Dibenzofuran	132-64-9	N.D.		22	45	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		130	450	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		22	45	1
10727	Diethylphthalate	84-66-2	N.D.		89	220	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		22	45	1
10727	Dimethylphthalate	131-11-3	N.D.		89	220	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		220	670	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		400	1,300	1
10727	2,4-Dinitrotoluene	121-14-2	170	J	89	220	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		22	45	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		89	230	1
10727	Fluoranthene	206-44-0	110		4	23	1
10727	Fluorene	86-73-7	N.D.		4	23	1
10727	Hexachlorobenzene	118-74-1	N.D.		4	23	1
10727	Hexachlorobutadiene	87-68-3	N.D.		22	45	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		220	670	1
10727	Hexachloroethane	67-72-1	N.D.		45	220	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38		4	23	1
10727	Isophorone	78-59-1	N.D.		22	45	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986370
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:00 by LS

Submitted: 05/10/2017 17:15
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PO Box 2219
Columbus OH 43016-0381

K9708 SDG#: KVM97-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	5	J	4	23	1
10727	2-Methylphenol	95-48-7	N.D.		22	45	1
10727	4-Methylphenol	106-44-5	480		22	45	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	10	J	4	23	1
10727	2-Nitroaniline	88-74-4	N.D.		22	45	1
10727	3-Nitroaniline	99-09-2	N.D.		89	220	1
10727	4-Nitroaniline	100-01-6	N.D.		89	220	1
10727	Nitrobenzene	98-95-3	N.D.		22	45	1
10727	2-Nitrophenol	88-75-5	N.D.		22	45	1
10727	4-Nitrophenol	100-02-7	N.D.		220	670	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		22	45	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		22	45	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		89	220	1
10727	Pentachlorophenol	87-86-5	N.D.		45	230	1
10727	Phenanthrene	85-01-8	53		4	23	1
10727	Phenol	108-95-2	30	J	22	45	1
10727	Pyrene	129-00-0	93		4	23	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		22	45	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		22	45	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	2,700		190	490	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,400		120	370	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		120	370	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		120	370	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		120	370	1
06918	HMX	2691-41-0	N.D.		310	930	1
06918	Nitrobenzene	98-95-3	N.D.		120	370	1
06918	Nitroglycerin	55-63-0	N.D.		2,500	7,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.		120	370	1
06918	2-Nitrotoluene	88-72-2	N.D.		250	490	1
06918	3-Nitrotoluene	99-08-1	N.D.		310	620	1
06918	4-Nitrotoluene	99-99-0	N.D.		250	490	1
06918	PETN	78-11-5	N.D.		2,500	7,400	1
06918	RDX	121-82-4	N.D.		160	370	1
06918	Tetryl	479-45-8	N.D.		200	490	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986370
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:00 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9708 SDG#: KVM97-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		120	370	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,500		120	370	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,800		10.9	25.1	1
06944	Antimony	7440-36-0	1.30	J	0.878	2.51	1
06935	Arsenic	7440-38-2	4.48		1.22	2.51	1
06946	Barium	7440-39-3	55.2		0.0414	0.627	1
06947	Beryllium	7440-41-7	0.538	J	0.0840	0.627	1
06949	Cadmium	7440-43-9	0.105	J	0.0615	0.627	1
01650	Calcium	7440-70-2	1,200		6.72	23.8	1
06951	Chromium	7440-47-3	20.5		0.176	1.88	1
06952	Cobalt	7440-48-4	10.7		0.151	0.627	1
06953	Copper	7440-50-8	25.5		0.273	1.19	1
01654	Iron	7439-89-6	33,900		9.79	47.5	2
06955	Lead	7439-92-1	207		0.653	1.78	1
01657	Magnesium	7439-95-4	1,400		2.38	12.5	1
06958	Manganese	7439-96-5	201		0.104	0.627	1
06961	Nickel	7440-02-0	19.4		0.376	1.25	1
01662	Potassium	7440-09-7	1,050		30.0	62.7	1
06936	Selenium	7782-49-2	3.98		1.13	2.51	1
06966	Silver	7440-22-4	0.429	J	0.188	0.627	1
01667	Sodium	7440-23-5	76.1	J	30.0	125	1
06925	Thallium	7440-28-0	2.28	J	1.03	3.76	1
06971	Vanadium	7440-62-2	41.8		0.176	0.627	1
06972	Zinc	7440-66-6	46.1		0.808	2.38	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0464	J	0.0126	0.126	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	14,900		631	1,890	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	25.5		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-F-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986370
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:00 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9708 SDG#: KVM97-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 17:41	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 17:06	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171350570804	05/18/2017 12:20	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:20	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/22/2017 07:12	Jonathan Allen	2
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:20	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/16/2017 14:23	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:27	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:20	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:50	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631B	05/16/2017 15:30	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K9708

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986370
Sample wt/vol: 30.16(g/mL) g Lab File ID: be1194.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 25.5 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Alkane	6.443	680	J
2.	66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.688	750	J
3.	1000309-17-7	Sulfurous acid, butyl decyl	6.828	740	J
4.	61141-72-8	Dodecane, 4,6-dimethyl-	6.874	1000	J
5.		Unknown Alkane	6.933	670	J
6.	629-50-5	Tridecane	7.043	1100	J
7.		Unknown Alkane	7.195	590	J
8.		Unknown PAH	7.271	400	J
9.		Unknown Cycloalkane	7.317	600	J
10.		Unknown Alkane	7.393	570	J
11.		Unknown	7.539	380	J
12.		Unknown Alkane	7.591	1000	J
13.	35599-77-0	Tridecane, 1-iodo-	7.632	580	J
14.		Unknown Ketone	7.749	640	J
15.		Unknown Alkane	7.842	600	J
16.		Unknown Alkane	7.906	410	J
17.		Unknown Cycloalkane	8.017	380	J
18.		Unknown Hydrocarbon	9.060	1900	J
19.	544-63-8	Tetradecanoic acid	9.328	1700	J
20.		Unknown Amine	9.981	1800	J
21.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.068	2000	J
22.	57-10-3	n-Hexadecanoic acid	10.232	20000	J
23.	57-11-4	Octadecanoic acid	10.954	3600	J
24.	629-94-7	Heneicosane	13.356	2000	J
25.	83-47-6	.gamma.-Sitosterol	14.871	2700	J
26.					
27.	SVOCTIC	Total SVOC TICs		47000	J
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-E-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986371
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:20 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9709 SDG#: KVM97-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		5	26	1
10727	Acenaphthylene	208-96-8	16	J	5	26	1
10727	Acetophenone	98-86-2	N.D.		25	50	1
10727	Anthracene	120-12-7	10	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		50	250	1
10727	Benzaldehyde	100-52-7	N.D.		100	250	1
10727	Benzo(a)anthracene	56-55-3	56		5	26	1
10727	Benzo(a)pyrene	50-32-8	53		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	88		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	39		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	42		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	50	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	50	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		50	250	1
10727	Carbazole	86-74-8	N.D.		25	50	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	50	1
10727	4-Chloroaniline	106-47-8	N.D.		50	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	50	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	50	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	50	1
10727	2-Chlorophenol	95-57-8	N.D.		25	50	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	50	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	50	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	69		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	14	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		25	50	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	500	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	50	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	50	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	750	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		450	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		25	50	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	100		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	50	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	750	1
10727	Hexachloroethane	67-72-1	N.D.		50	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	38		5	26	1
10727	Isophorone	78-59-1	N.D.		25	50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986371
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:20 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9709 SDG#: KVM97-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	5	J	5	26	1
10727	2-Methylphenol	95-48-7	30	J	25	50	1
10727	4-Methylphenol	106-44-5	1,400		25	50	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	13	J	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.		25	50	1
10727	3-Nitroaniline	99-09-2	N.D.		100	250	1
10727	4-Nitroaniline	100-01-6	N.D.		100	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	50	1
10727	2-Nitrophenol	88-75-5	N.D.		25	50	1
10727	4-Nitrophenol	100-02-7	N.D.		250	750	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	50	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	50	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	250	1
10727	Pentachlorophenol	87-86-5	N.D.		50	260	1
10727	Phenanthrene	85-01-8	42		5	26	1
10727	Phenol	108-95-2	58		25	50	1
10727	Pyrene	129-00-0	87		5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	50	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	50	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	1,500		200	540	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	1,000		130	400	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	400	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	400	1
06918	HMX	2691-41-0	N.D.		330	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		130	400	1
06918	Nitroglycerin	55-63-0	N.D.		2,700	8,000	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	400	1
06918	2-Nitrotoluene	88-72-2	N.D.		270	540	1
06918	3-Nitrotoluene	99-08-1	N.D.		330	670	1
06918	4-Nitrotoluene	99-99-0	N.D.		270	540	1
06918	PETN	78-11-5	N.D.		2,700	8,000	1
06918	RDX	121-82-4	N.D.		170	400	1
06918	Tetryl	479-45-8	N.D.		210	540	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986371
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:20 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9709 SDG#: KVM97-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		130	400	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,500		130	400	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,300		10.6	24.4	1
06944	Antimony	7440-36-0	N.D.		0.854	2.44	1
06935	Arsenic	7440-38-2	3.82		1.18	2.44	1
06946	Barium	7440-39-3	46.3		0.0403	0.610	1
06947	Beryllium	7440-41-7	0.428	J	0.0817	0.610	1
06949	Cadmium	7440-43-9	0.111	J	0.0598	0.610	1
01650	Calcium	7440-70-2	1,460		6.59	23.3	1
06951	Chromium	7440-47-3	22.2		0.171	1.83	1
06952	Cobalt	7440-48-4	14.4		0.146	0.610	1
06953	Copper	7440-50-8	36.9		0.268	1.16	1
01654	Iron	7439-89-6	46,000		24.0	116	5
06955	Lead	7439-92-1	210		0.640	1.75	1
01657	Magnesium	7439-95-4	1,220		2.32	12.2	1
06958	Manganese	7439-96-5	192		0.101	0.610	1
06961	Nickel	7440-02-0	30.1		0.366	1.22	1
01662	Potassium	7440-09-7	1,110		29.2	61.0	1
06936	Selenium	7782-49-2	8.38		1.10	2.44	1
06966	Silver	7440-22-4	1.01		0.183	0.610	1
01667	Sodium	7440-23-5	94.6	J	29.2	122	1
06925	Thallium	7440-28-0	2.67	J	1.00	3.66	1
06971	Vanadium	7440-62-2	37.5		0.171	0.610	1
06972	Zinc	7440-66-6	53.4		0.791	2.33	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0428	J	0.0149	0.149	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	18,100		735	2,210	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	33.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-E-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986371
LL Group # 1799663
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Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:20 by LS

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Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9709 SDG#: KVM97-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 18:02	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 17:49	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171350570804	05/18/2017 12:23	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:23	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/22/2017 07:15	Jonathan Allen	5
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:23	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:30	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:23	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 09:53	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631B	05/16/2017 15:37	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K9709

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986371
Sample wt/vol: 30.15(g/mL) g Lab File ID: be1195.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 33.9 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Aldol Condensate	3.541	4500	JB
2.	1000152-47-3	trans-Decalin, 2-methyl-	5.942	400	J
3.	1618-22-0	Naphthalene, decahydro-2,6-d	6.315	370	J
4.		Unknown Alkane	6.443	490	J
5.	66660-41-1	cis,trans-3-Ethylbicyclo[4.4	6.688	430	J
6.	629-59-4	Tetradecane	7.044	1000	J
7.		Unknown Alkane	7.591	980	J
8.	544-63-8	Tetradecanoic acid	9.328	1100	J
9.		Unknown Amine	9.975	1200	J
10.	57-10-3	n-Hexadecanoic acid	10.220	22000	J
11.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.278	1300	J
12.		Unknown	10.739	1200	J
13.	57-11-4	Octadecanoic acid	10.955	4600	J
14.	15594-90-8	1-Heneicosanol	12.715	1600	J
15.	2425-77-6	1-Decanol, 2-hexyl-	13.362	2600	J
16.	646-31-1	Tetracosane	13.985	1700	J
17.		Unknown acid	14.009	950	J
18.	59-02-9	Vitamin E	14.114	770	J
19.	7695-91-2	(.+/-.)-.alpha.-Tocopherol a	14.254	830	J
20.	474-62-4	Campesterol	14.527	1200	J
21.	83-48-7	Stigmasterol	14.627	1300	J
22.		Unknown Alkane	14.673	780	J
23.		Unknown Ketone	14.766	810	J
24.	55103-80-5	Pregn-5-en-3-ol, 21-bromo-20	14.871	3400	J
25.		Unknown Hydrocarbon	15.314	780	J
26.					
27.	SVOCTIC	Total SVOC TICs		56000	JB
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-D-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986372
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:25 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9710 SDG#: KVM97-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.		4	22	1
10727	Acenaphthylene	208-96-8	15	J	4	22	1
10727	Acetophenone	98-86-2	N.D.		22	44	1
10727	Anthracene	120-12-7	12	J	4	22	1
10727	Atrazine	1912-24-9	N.D.		44	220	1
10727	Benzaldehyde	100-52-7	N.D.		87	220	1
10727	Benzo(a)anthracene	56-55-3	73		4	22	1
10727	Benzo(a)pyrene	50-32-8	62		4	22	1
10727	Benzo(b)fluoranthene	205-99-2	120		4	22	1
10727	Benzo(g,h,i)perylene	191-24-2	44		4	22	1
10727	Benzo(k)fluoranthene	207-08-9	44		4	22	1
10727	1,1'-Biphenyl	92-52-4	N.D.		22	44	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		22	44	1
10727	Butylbenzylphthalate	85-68-7	N.D.		87	220	1
10727	Di-n-butylphthalate	84-74-2	N.D.		87	220	1
10727	Caprolactam	105-60-2	N.D.		44	220	1
10727	Carbazole	86-74-8	N.D.		22	44	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		22	44	1
10727	4-Chloroaniline	106-47-8	N.D.		44	87	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		22	44	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		22	44	1
10727	2-Chloronaphthalene	91-58-7	N.D.		9	44	1
10727	2-Chlorophenol	95-57-8	N.D.		22	44	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		22	44	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		22	44	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	80		4	22	1
10727	Dibenz(a,h)anthracene	53-70-3	12	J	4	22	1
10727	Dibenzofuran	132-64-9	N.D.		22	44	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		130	440	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		22	44	1
10727	Diethylphthalate	84-66-2	N.D.		87	220	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		22	44	1
10727	Dimethylphthalate	131-11-3	N.D.		87	220	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		220	650	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		390	1,300	1
10727	2,4-Dinitrotoluene	121-14-2	200	J	87	220	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.		22	44	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		87	220	1
10727	Fluoranthene	206-44-0	120		4	22	1
10727	Fluorene	86-73-7	5	J	4	22	1
10727	Hexachlorobenzene	118-74-1	N.D.		4	22	1
10727	Hexachlorobutadiene	87-68-3	N.D.		22	44	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		220	650	1
10727	Hexachloroethane	67-72-1	N.D.		44	220	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	45		4	22	1
10727	Isophorone	78-59-1	N.D.		22	44	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-D-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986372
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:25 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9710 SDG#: KVM97-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	5	J	4	22	1
10727	2-Methylphenol	95-48-7	N.D.		22	44	1
10727	4-Methylphenol	106-44-5	880		22	44	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	13	J	4	22	1
10727	2-Nitroaniline	88-74-4	N.D.		22	44	1
10727	3-Nitroaniline	99-09-2	N.D.		87	220	1
10727	4-Nitroaniline	100-01-6	N.D.		87	220	1
10727	Nitrobenzene	98-95-3	N.D.		22	44	1
10727	2-Nitrophenol	88-75-5	N.D.		22	44	1
10727	4-Nitrophenol	100-02-7	N.D.		220	650	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		22	44	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		22	44	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		87	220	1
10727	Pentachlorophenol	87-86-5	N.D.		44	220	1
10727	Phenanthrene	85-01-8	47		4	22	1
10727	Phenol	108-95-2	38	J	22	44	1
10727	Pyrene	129-00-0	96		4	22	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		22	44	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		22	44	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,000	J	1,800	4,900	10
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	8,400		1,200	3,700	10
06918	1,2-Dinitrobenzene	528-29-0	N.D.		1,200	3,700	10
06918	1,3-Dinitrobenzene	99-65-0	N.D.		1,200	3,700	10
06918	1,4-Dinitrobenzene	100-25-4	N.D.		1,200	3,700	10
06918	HMX	2691-41-0	N.D.		3,000	9,100	10
06918	Nitrobenzene	98-95-3	N.D.		1,200	3,700	10
06918	Nitroglycerin	55-63-0	N.D.		24,000	73,000	10
06918	1-Nitronaphthalene	86-57-7	N.D.		1,200	3,700	10
06918	2-Nitrotoluene	88-72-2	N.D.		2,400	4,900	10
06918	3-Nitrotoluene	99-08-1	N.D.		3,000	6,100	10
06918	4-Nitrotoluene	99-99-0	N.D.		2,400	4,900	10
06918	PETN	78-11-5	N.D.		24,000	73,000	10
06918	RDX	121-82-4	N.D.		1,600	3,700	10
06918	Tetryl	479-45-8	N.D.		1,900	4,900	10

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Sample Description: TNT-PS-D-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986372
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:25 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9710 SDG#: KVM97-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		1,200	3,700	10
06918	2,4,6-Trinitrotoluene	118-96-7	170,000		1,200	3,700	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	16,800		9.80	22.6	1
06944	Antimony	7440-36-0	N.D.		0.790	2.26	1
06935	Arsenic	7440-38-2	3.63		1.10	2.26	1
06946	Barium	7440-39-3	49.3		0.0373	0.565	1
06947	Beryllium	7440-41-7	0.527	J	0.0756	0.565	1
06949	Cadmium	7440-43-9	0.163	J	0.0553	0.565	1
01650	Calcium	7440-70-2	1,360		6.39	22.6	1
06951	Chromium	7440-47-3	22.0		0.158	1.69	1
06952	Cobalt	7440-48-4	13.4		0.135	0.565	1
06953	Copper	7440-50-8	30.8		0.220	0.957	1
01654	Iron	7439-89-6	42,100		19.7	95.7	5
06955	Lead	7439-92-1	175		0.526	1.44	1
01657	Magnesium	7439-95-4	1,330		2.15	11.3	1
06958	Manganese	7439-96-5	209		0.0937	0.565	1
06961	Nickel	7440-02-0	23.6		0.339	1.13	1
01662	Potassium	7440-09-7	1,110		27.0	56.5	1
06936	Selenium	7782-49-2	4.48		1.02	2.26	1
06966	Silver	7440-22-4	0.771		0.169	0.565	1
01667	Sodium	7440-23-5	79.5	J	27.0	113	1
06925	Thallium	7440-28-0	1.60	J	0.926	3.39	1
06971	Vanadium	7440-62-2	41.3		0.158	0.565	1
06972	Zinc	7440-66-6	47.7		0.651	1.91	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0412	J	0.0122	0.122	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	18,600		554	1,660	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	24.3		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Sample Description: TNT-PS-D-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986372
LL Group # 1799663
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K9710 SDG#: KVM97-10

Laboratory Sample Analysis Record

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10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 18:23	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/18/2017 12:01	James H Place	10
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
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06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171320570801	05/16/2017 07:48	Jonathan Allen	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:34	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/22/2017 07:18	Jonathan Allen	5
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:34	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
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06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:39	Eric L Eby	1
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00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 10:00	Damary Valentin	1
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05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631B	05/16/2017 15:45	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

K9710

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986372
Sample wt/vol: 30.35(g/mL) g Lab File ID: be1196.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 24.3 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown Aldol Condensate	3.540	4900	JB
2.	Unknown PAH	6.321	490	J
3.	Unknown Alkane	6.525	480	J
4.66660-42-2	cis, cis-3-Ethylbicyclo[4.4.	6.694	580	J
5.	Unknown Cycloalkane	6.723	680	J
6.	Unknown Cycloalkane	6.898	720	J
7.	Unknown Alkane	7.020	560	J
8.629-50-5	Tridecane	7.043	950	J
9.	Unknown	7.072	460	J
10.	Unknown	7.154	580	J
11.	Unknown Alkene	7.212	500	J
12.	Unknown Alkane	7.271	490	J
13.	Unknown Alkane	7.317	740	J
14.	Unknown Ketone	7.399	600	J
15.	Unknown	7.440	370	J
16.629-50-5	Tridecane	7.591	910	J
17.	Unknown Alkane	7.632	510	J
18.	Unknown Hydrocarbon	7.749	520	J
19.	Unknown Alkane	7.906	660	J
20.544-63-8	Tetradecanoic acid	9.346	3700	J
21.57-10-3	n-Hexadecanoic acid	10.278	11000	J
22.57-11-4	Octadecanoic acid	10.978	1800	J
23.	Unknown Alkane	13.361	3400	J
24.112-95-8	Eicosane	13.985	3400	J
25.83-47-6	.gamma.-Sitosterol	14.883	5700	J
26.				
27.SVOCTIC	Total SVOC TICs		45000	JB
28.				
29.				
30.				

page 1 of 1

FORM I SV-1

Sample Description: TNT-PS-C-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986373
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9711 SDG#: KVM97-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**		**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	13	J	5	26	1
10727	Acenaphthylene	208-96-8	N.D.		5	26	1
10727	Acetophenone	98-86-2	N.D.		25	50	1
10727	Anthracene	120-12-7	14	J	5	26	1
10727	Atrazine	1912-24-9	N.D.		50	250	1
10727	Benzaldehyde	100-52-7	N.D.		100	250	1
10727	Benzo(a)anthracene	56-55-3	47		5	26	1
10727	Benzo(a)pyrene	50-32-8	41		5	26	1
10727	Benzo(b)fluoranthene	205-99-2	72		5	26	1
10727	Benzo(g,h,i)perylene	191-24-2	28		5	26	1
10727	Benzo(k)fluoranthene	207-08-9	28		5	26	1
10727	1,1'-Biphenyl	92-52-4	N.D.		25	50	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.		25	50	1
10727	Butylbenzylphthalate	85-68-7	N.D.		100	250	1
10727	Di-n-butylphthalate	84-74-2	N.D.		100	250	1
10727	Caprolactam	105-60-2	N.D.		50	250	1
10727	Carbazole	86-74-8	N.D.		25	50	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.		25	50	1
10727	4-Chloroaniline	106-47-8	N.D.		50	100	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.		25	50	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.		25	50	1
10727	2-Chloronaphthalene	91-58-7	N.D.		10	50	1
10727	2-Chlorophenol	95-57-8	N.D.		25	50	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.		25	50	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		25	50	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
10727	Chrysene	218-01-9	54		5	26	1
10727	Dibenz(a,h)anthracene	53-70-3	11	J	5	26	1
10727	Dibenzofuran	132-64-9	N.D.		25	50	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.		150	500	1
10727	2,4-Dichlorophenol	120-83-2	N.D.		25	50	1
10727	Diethylphthalate	84-66-2	N.D.		100	250	1
10727	2,4-Dimethylphenol	105-67-9	N.D.		25	50	1
10727	Dimethylphthalate	131-11-3	N.D.		100	250	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		250	750	1
10727	2,4-Dinitrophenol	51-28-5	N.D.		450	1,500	1
10727	2,4-Dinitrotoluene	121-14-2	3,400		100	250	1
10727	2,6-Dinitrotoluene	606-20-2	1,100		25	50	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		100	260	1
10727	Fluoranthene	206-44-0	87		5	26	1
10727	Fluorene	86-73-7	N.D.		5	26	1
10727	Hexachlorobenzene	118-74-1	N.D.		5	26	1
10727	Hexachlorobutadiene	87-68-3	N.D.		25	50	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		250	750	1
10727	Hexachloroethane	67-72-1	N.D.		50	250	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	26		5	26	1
10727	Isophorone	78-59-1	N.D.		25	50	1

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986373
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9711 SDG#: KVM97-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.		5	26	1
10727	2-Methylphenol	95-48-7	N.D.		25	50	1
10727	4-Methylphenol	106-44-5	N.D.		25	50	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10727	Naphthalene	91-20-3	8	J	5	26	1
10727	2-Nitroaniline	88-74-4	N.D.		25	50	1
10727	3-Nitroaniline	99-09-2	N.D.		100	250	1
10727	4-Nitroaniline	100-01-6	N.D.		100	250	1
10727	Nitrobenzene	98-95-3	N.D.		25	50	1
10727	2-Nitrophenol	88-75-5	N.D.		25	50	1
10727	4-Nitrophenol	100-02-7	N.D.		250	750	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		25	50	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		25	50	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		100	250	1
10727	Pentachlorophenol	87-86-5	N.D.		50	260	1
10727	Phenanthrene	85-01-8	48		5	26	1
10727	Phenol	108-95-2	30	J	25	50	1
10727	Pyrene	129-00-0	71		5	26	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.		25	50	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		25	50	1
	A targeted library search was performed yielding the following results: 3 and 4- Aminotoluene are non-detect.						
00886	**SVOA TIC Interpretive(25)**						
	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	63,000		4,500	12,000	20
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	68,000		3,000	9,100	20
06918	1,2-Dinitrobenzene	528-29-0	N.D.		3,000	9,100	20
06918	1,3-Dinitrobenzene	99-65-0	N.D.		3,000	9,100	20
06918	1,4-Dinitrobenzene	100-25-4	N.D.		3,000	9,100	20
06918	HMX	2691-41-0	N.D.		7,600	23,000	20
06918	Nitrobenzene	98-95-3	N.D.		3,000	9,100	20
06918	Nitroglycerin	55-63-0	N.D.		61,000	180,000	20
06918	1-Nitronaphthalene	86-57-7	N.D.		3,000	9,100	20
06918	2-Nitrotoluene	88-72-2	N.D.		6,100	12,000	20
06918	3-Nitrotoluene	99-08-1	N.D.		7,600	15,000	20
06918	4-Nitrotoluene	99-99-0	N.D.		6,100	12,000	20
06918	PETN	78-11-5	N.D.		61,000	180,000	20
06918	RDX	121-82-4	N.D.		3,900	9,100	20
06918	Tetryl	479-45-8	N.D.		4,800	12,000	20

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986373
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9711 SDG#: KVM97-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		3,000	9,100	20
06918	2,4,6-Trinitrotoluene	118-96-7	1,600,000		15,000	45,000	100
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	17,700		13.0	30.0	1
06944	Antimony	7440-36-0	N.D.		1.05	3.00	1
06935	Arsenic	7440-38-2	4.58		1.45	3.00	1
06946	Barium	7440-39-3	56.2		0.0495	0.750	1
06947	Beryllium	7440-41-7	0.534	J	0.100	0.750	1
06949	Cadmium	7440-43-9	0.142	J	0.0735	0.750	1
01650	Calcium	7440-70-2	1,030		7.87	27.8	1
06951	Chromium	7440-47-3	14.7		0.210	2.25	1
06952	Cobalt	7440-48-4	5.47		0.180	0.750	1
06953	Copper	7440-50-8	18.8		0.320	1.39	1
01654	Iron	7439-89-6	23,500		5.73	27.8	1
06955	Lead	7439-92-1	236		0.765	2.09	1
01657	Magnesium	7439-95-4	1,260		2.85	15.0	1
06958	Manganese	7439-96-5	196		0.124	0.750	1
06961	Nickel	7440-02-0	8.20		0.450	1.50	1
01662	Potassium	7440-09-7	859		35.8	75.0	1
06936	Selenium	7782-49-2	1.85	J	1.35	3.00	1
06966	Silver	7440-22-4	0.243	J	0.225	0.750	1
01667	Sodium	7440-23-5	70.5	J	35.8	150	1
06925	Thallium	7440-28-0	N.D.		1.23	4.50	1
06971	Vanadium	7440-62-2	34.3		0.210	0.750	1
06972	Zinc	7440-66-6	46.3		0.945	2.78	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0468	J	0.0150	0.150	1
Wet Chemistry	**Lloyd Kahn modified**		**mg/kg**		**mg/kg**	**mg/kg**	
00383	TOC by Lloyd Kahn	n.a.	11,900		657	1,970	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	34.6		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: TNT-PS-C-05092017 Composite Soil
Kenvil TNT Bioremediation Pilot

LL Sample # SW 8986373
LL Group # 1799663
Account # 06716

Project Name: Kenvil TNT Bioremediation Pilot

Collected: 05/09/2017 10:35 by LS

Submitted: 05/10/2017 17:15
Reported: 06/01/2017 09:28

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

K9711 SDG#: KVM97-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10727	TCL 8270 (microwave)	SW-846 8270C	1	17132SLM026	05/19/2017 20:09	Linda M Hartenstine	1
10809	BNA Soil Microwave	SW-846 3546	1	17132SLM026	05/13/2017 16:00	Elizabeth E Donovan	1
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/18/2017 12:43	James H Place	20
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	171320029A	05/20/2017 18:31	James H Place	100
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	171320029A	05/15/2017 13:00	David S Schrum	1
01643	Aluminum	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06944	Antimony	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06935	Arsenic	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06946	Barium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06947	Beryllium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06949	Cadmium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
01650	Calcium	SW-846 6010B	1	171350570804	05/18/2017 12:48	Katlin N Cataldi	1
06951	Chromium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06952	Cobalt	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06953	Copper	SW-846 6010B	1	171350570804	05/18/2017 12:48	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	171350570804	05/18/2017 12:48	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	171350570804	05/18/2017 12:48	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06958	Manganese	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06961	Nickel	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
01662	Potassium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06936	Selenium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06966	Silver	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
01667	Sodium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06925	Thallium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06971	Vanadium	SW-846 6010B	1	171320570801	05/15/2017 09:42	Eric L Eby	1
06972	Zinc	SW-846 6010B	1	171350570804	05/18/2017 12:48	Katlin N Cataldi	1
00159	Mercury	SW-846 7471A	1	171310571102	05/13/2017 10:03	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	171320570801	05/14/2017 23:15	Denise L Trimby	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	2	171350570804	05/16/2017 06:15	Lisa J Cooke	1
05711	Hg-SW, 7471A - U3	SW-846 7471A	1	171310571102	05/12/2017 17:05	JoElla L Rice	1
00383	TOC by Lloyd Kahn	Lloyd Kahn modified	1	17136667631B	05/16/2017 16:23	Drew M Gerhart	1
00111	Moisture	SM 2540 G-1997	1	17132820006A	05/12/2017 13:21	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
K9711

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) SOIL Lab Sample ID: 8986373
Sample wt/vol: 30.46(g/mL) g Lab File ID: be1197a.d
Level: (low/med) LOW Date Received: 05/10/17
% Moisture: 34.6 Decanted: (Y/N) Date Extracted: 05/13/17
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/19/17
Injection Volume: 1 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Mic
CONCENTRATION UNITS:
Number TICs found: 25 (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown Aldol Condensate	3.558	5700	JB
2.	112-40-3	Dodecane	6.449	1100	J
3.	17301-23-4	Undecane, 2,6-dimethyl-	6.525	750	J
4.	58462-32-1	trans,trans-3-Ethylbicyclo[4	6.694	590	J
5.	61142-20-9	Cyclohexane, (4-methylpentyl	6.723	540	J
6.		Unknown Alkane	6.758	1000	J
7.	1560-97-0	Dodecane, 2-methyl-	6.834	670	J
8.	61141-72-8	Dodecane, 4,6-dimethyl-	6.874	1600	J
9.	629-59-4	Tetradecane	7.049	2300	J
10.		Unknown Alkane	7.102	590	J
11.		Unknown Alkane	7.137	610	J
12.		Unknown	7.160	580	J
13.		Unknown Cycloalkane	7.323	950	J
14.	26730-12-1	Tridecane, 4-methyl-	7.364	370	J
15.	1560-96-9	Tridecane, 2-methyl-	7.399	590	J
16.		Unknown Amide	7.434	530	J
17.		Unknown Cycloalkane	7.539	580	J
18.	629-59-4	Tetradecane	7.597	1600	J
19.	13287-23-5	Heptadecane, 8-methyl-	7.638	580	J
20.		Unknown Cycloalkane	7.883	560	J
21.		Unknown Amine	9.066	2800	J
22.		Unknown Hydrocarbon	9.276	250000	J
23.		Unknown Hydrocarbon	9.311	71000	J
24.	19406-51-0	p-Toluidine, 3,5-dinitro-	10.144	15000	J
25.	35572-78-2	Benzenamine, 2-methyl-3,5-di	10.372	20000	J
26.					
27.	SVOCTIC	Total SVOC TICs		380000	JB
28.					
29.					
30.					

page 1 of 1

FORM I SV-1

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1799663
Reported: 06/01/2017 09:28

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/kg	ug/kg	ug/kg
Batch number: 17132SLM026	Sample number(s): 8986363-8986373		
Acenaphthene	N.D.	3	17
Acenaphthylene	N.D.	3	17
Acetophenone	N.D.	17	33
Anthracene	N.D.	3	17
Atrazine	N.D.	33	170
Benzaldehyde	N.D.	67	170
Benzo(a)anthracene	N.D.	3	17
Benzo(a)pyrene	N.D.	3	17
Benzo(b)fluoranthene	N.D.	3	17
Benzo(g,h,i)perylene	N.D.	3	17
Benzo(k)fluoranthene	N.D.	3	17
1,1'-Biphenyl	N.D.	17	33
4-Bromophenyl-phenylether	N.D.	17	33
Butylbenzylphthalate	N.D.	67	170
Di-n-butylphthalate	N.D.	67	170
Caprolactam	N.D.	33	170
Carbazole	N.D.	17	33
4-Chloro-3-methylphenol	N.D.	17	33
4-Chloroaniline	N.D.	33	67
bis(2-Chloroethoxy)methane	N.D.	17	33
bis(2-Chloroethyl)ether	N.D.	17	33
2-Chloronaphthalene	N.D.	7	33
2-Chlorophenol	N.D.	17	33
4-Chlorophenyl-phenylether	N.D.	17	33
2,2'-oxybis(1-Chloropropane)	N.D.	17	33
Chrysene	N.D.	3	17
Dibenz(a,h)anthracene	N.D.	3	17
Dibenzofuran	N.D.	17	33
3,3'-Dichlorobenzidine	N.D.	100	330
2,4-Dichlorophenol	N.D.	17	33
Diethylphthalate	N.D.	67	170
2,4-Dimethylphenol	N.D.	17	33
Dimethylphthalate	N.D.	67	170
4,6-Dinitro-2-methylphenol	N.D.	170	500
2,4-Dinitrophenol	N.D.	300	1,000
2,4-Dinitrotoluene	N.D.	67	170
2,6-Dinitrotoluene	N.D.	17	33
bis(2-Ethylhexyl)phthalate	N.D.	67	170
Fluoranthene	N.D.	3	17
Fluorene	N.D.	3	17

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Quality Control Summary

Client Name: Hercules Incorporated
Group Number: 1799663
Reported: 06/01/2017 09:28

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ug/kg	ug/kg	ug/kg
Hexachlorobenzene	N.D.	3	17
Hexachlorobutadiene	N.D.	17	33
Hexachlorocyclopentadiene	N.D.	170	500
Hexachloroethane	N.D.	33	170
Indeno(1,2,3-cd)pyrene	N.D.	3	17
Isophorone	N.D.	17	33
2-Methylnaphthalene	N.D.	3	17
2-Methylphenol	N.D.	17	33
4-Methylphenol	N.D.	17	33
Naphthalene	N.D.	3	17
2-Nitroaniline	N.D.	17	33
3-Nitroaniline	N.D.	67	170
4-Nitroaniline	N.D.	67	170
Nitrobenzene	N.D.	17	33
2-Nitrophenol	N.D.	17	33
4-Nitrophenol	N.D.	170	500
N-Nitroso-di-n-propylamine	N.D.	17	33
N-Nitrosodiphenylamine	N.D.	17	33
Di-n-octylphthalate	N.D.	67	170
Pentachlorophenol	N.D.	33	170
Phenanthrene	N.D.	3	17
Phenol	N.D.	17	33
Pyrene	N.D.	3	17
2,4,5-Trichlorophenol	N.D.	17	33
2,4,6-Trichlorophenol	N.D.	17	33
Batch number: 171320029A	Sample number(s): 8986363-8986373		
4-Amino-2,6-Dinitrotoluene	N.D.	150	400
2-Amino-4,6-Dinitrotoluene	N.D.	100	300
1,2-Dinitrobenzene	N.D.	100	300
1,3-Dinitrobenzene	N.D.	100	300
1,4-Dinitrobenzene	N.D.	100	300
HMX	N.D.	250	750
Nitrobenzene	N.D.	100	300
Nitroglycerin	N.D.	2,000	6,000
1-Nitronaphthalene	N.D.	100	300
2-Nitrotoluene	N.D.	200	400
3-Nitrotoluene	N.D.	250	500
4-Nitrotoluene	N.D.	200	400
PETN	N.D.	2,000	6,000
RDX	N.D.	130	300
Tetryl	N.D.	160	400
1,3,5-Trinitrobenzene	N.D.	100	300
2,4,6-Trinitrotoluene	N.D.	100	300
	mg/kg	mg/kg	mg/kg
Batch number: 171310571102	Sample number(s): 8986363-8986373		
Mercury	N.D.	0.0100	0.100
Batch number: 171320570801	Sample number(s): 8986363-8986373		

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 06/01/2017 09:28

Group Number: 1799663

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	mg/kg	mg/kg	mg/kg
Aluminum	N.D.	8.68	20.0
Antimony	N.D.	0.700	2.00
Arsenic	N.D.	0.970	2.00
Barium	0.0740 J	0.0330	0.500
Beryllium	N.D.	0.0670	0.500
Cadmium	N.D.	0.0490	0.500
Calcium	47.8	5.66	20.0
Chromium	N.D.	0.140	1.50
Cobalt	N.D.	0.120	0.500
Magnesium	3.66 J	1.90	10.0
Manganese	2.05	0.0830	0.500
Nickel	N.D.	0.300	1.00
Potassium	N.D.	23.9	50.0
Selenium	N.D.	0.900	2.00
Silver	N.D.	0.150	0.500
Sodium	N.D.	23.9	100
Thallium	N.D.	0.820	3.00
Vanadium	N.D.	0.140	0.500
Batch number: 171350570804	Sample number(s): 8986363-8986373		
Calcium	17.4 J	5.66	20.0
Copper	N.D.	0.230	1.00
Iron	N.D.	4.12	20.0
Lead	N.D.	0.550	1.50
Zinc	N.D.	0.680	2.00
Batch number: 17136667631A	Sample number(s): 8986363-8986367		
TOC by Lloyd Kahn	N.D.	100	300
Batch number: 17136667631B	Sample number(s): 8986368-8986373		
TOC by Lloyd Kahn	N.D.	100	300

LCS/LCSD

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 17132SLM026	Sample number(s): 8986363-8986373								
Acenaphthene	1666.67	1587.13			95		83-116		
Acenaphthylene	1666.67	1646.89			99		83-119		
Acetophenone	1666.67	1454.62			87		70-107		
Anthracene	1666.67	1599.71			96		82-118		
Atrazine	1666.67	1512.26			91		52-142		
Benzaldehyde	1666.67	1265.73			76		10-93		
Benzo(a)anthracene	1666.67	1544.5			93		76-119		
Benzo(a)pyrene	1666.67	1556.17			93		78-117		

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 06/01/2017 09:28

Group Number: 1799663

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Benzo(b)fluoranthene	1666.67	1603.97			96		79-121		
Benzo(g,h,i)perylene	1666.67	1477.44			89		71-123		
Benzo(k)fluoranthene	1666.67	1658.04			99		71-123		
1,1'-Biphenyl	1666.67	1557.63			93		78-115		
4-Bromophenyl-phenylether	1666.67	1677.89			101		78-122		
Butylbenzylphthalate	1666.67	1579.76			95		80-118		
Di-n-butylphthalate	1666.67	1597.05			96		84-120		
Caprolactam	1666.67	1476.3			89		63-121		
Carbazole	1666.67	1539.05			92		80-120		
4-Chloro-3-methylphenol	1666.67	1601.78			96		78-124		
4-Chloroaniline	1666.67	1106.93			66		10-110		
bis(2-Chloroethoxy)methane	1666.67	1557.03			93		77-116		
bis(2-Chloroethyl)ether	1666.67	1449			87		68-115		
2-Chloronaphthalene	1666.67	1345.2			81		57-148		
2-Chlorophenol	1666.67	1595.72			96		80-121		
4-Chlorophenyl-phenylether	1666.67	1581.93			95		73-119		
2,2'-oxybis(1-Chloropropane)	1666.67	1416.66			85		60-123		
Chrysene	1666.67	1532.99			92		72-121		
Dibenz(a,h)anthracene	1666.67	1511.53			91		72-129		
Dibenzofuran	1666.67	1580.2			95		79-114		
3,3'-Dichlorobenzidine	1666.67	981.45			59		12-125		
2,4-Dichlorophenol	1666.67	1643.37			99		86-125		
Diethylphthalate	1666.67	1566.16			94		81-118		
2,4-Dimethylphenol	1666.67	1310.56			79		57-109		
Dimethylphthalate	1666.67	1578.5			95		82-113		
4,6-Dinitro-2-methylphenol	1666.67	1306.06			78		53-130		
2,4-Dinitrophenol	3333.33	2302.59			69		27-136		
2,4-Dinitrotoluene	1666.67	1551.43			93		81-122		
2,6-Dinitrotoluene	1666.67	1610.31			97		80-120		
bis(2-Ethylhexyl)phthalate	1666.67	1558.87			94		81-121		
Fluoranthene	1666.67	1524.42			91		72-120		
Fluorene	1666.67	1555.25			93		75-118		
Hexachlorobenzene	1666.67	1630.29			98		73-120		
Hexachlorobutadiene	1666.67	1528.61			92		72-120		
Hexachlorocyclopentadiene	3333.33	3006.2			90		57-142		
Hexachloroethane	1666.67	1436.43			86		69-116		
Indeno(1,2,3-cd)pyrene	1666.67	1492.79			90		69-125		
Isophorone	1666.67	1524.2			91		70-118		
2-Methylnaphthalene	1666.67	1546.27			93		77-116		
2-Methylphenol	1666.67	1629.08			98		74-128		
4-Methylphenol	1666.67	1573.97			94		72-120		
Naphthalene	1666.67	1529.77			92		75-113		
2-Nitroaniline	1666.67	1576.6			95		84-126		
3-Nitroaniline	1666.67	1496.15			90		60-125		
4-Nitroaniline	1666.67	1065.7			64		50-112		
Nitrobenzene	1666.67	1473.25			88		70-122		
2-Nitrophenol	1666.67	1576.98			95		83-120		
4-Nitrophenol	1666.67	1231.49			74		52-133		

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 06/01/2017 09:28

Group Number: 1799663

LCS/LCSD (continued)

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/kg	ug/kg	ug/kg	ug/kg					
N-Nitroso-di-n-propylamine	1666.67	1506.13			90		67-121		
N-Nitrosodiphenylamine	1666.67	1615.52			97		83-118		
Di-n-octylphthalate	1666.67	1754.83			105		80-140		
Pentachlorophenol	1666.67	1157.78			69		56-131		
Phenanthrene	1666.67	1543.25			93		74-114		
Phenol	1666.67	1415.83			85		73-122		
Pyrene	1666.67	1537			92		74-112		
2,4,5-Trichlorophenol	1666.67	1652.73			99		86-123		
2,4,6-Trichlorophenol	1666.67	1696.07			102		81-123		
	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 171320029A	Sample number(s): 8986363-8986373								
4-Amino-2,6-Dinitrotoluene	5000	5249.87			105		81-133		
2-Amino-4,6-Dinitrotoluene	5020	5129.91			102		79-120		
1,2-Dinitrobenzene	10000	10416.93			104		85-129		
1,3-Dinitrobenzene	5020	5240.25			104		85-124		
1,4-Dinitrobenzene	10000	9434.81			94		83-122		
HMX	5010	4163.17			83		65-121		
Nitrobenzene	5020	4933.69			98		81-116		
Nitroglycerin	20100	18841.42			94		70-118		
1-Nitronaphthalene	10000	10663.85			107		83-122		
2-Nitrotoluene	5020	5150.84			103		85-155		
3-Nitrotoluene	5030	4405.78			88		85-135		
4-Nitrotoluene	5040	5441.77			108		80-122		
PETN	20200	20727.96			103		64-121		
RDX	5010	5041.33			101		84-122		
Tetryl	5050	4942.45			98		67-152		
1,3,5-Trinitrobenzene	5020	4807.74			96		83-119		
2,4,6-Trinitrotoluene	5040	5368.84			107		82-133		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 171310571102	Sample number(s): 8986363-8986373								
Mercury	0.100	0.105			105		80-120		
Batch number: 171320570801	Sample number(s): 8986363-8986373								
Aluminum	200	234.14			117		80-120		
Antimony	50	53.47			107		80-120		
Arsenic	15	17.66			118		80-120		
Barium	200	206.47			103		80-120		
Beryllium	5.00	5.09			102		80-120		
Cadmium	5.00	5.20			104		80-120		
Calcium	400	462.01			116		80-120		
Chromium	20	20.63			103		80-120		
Cobalt	50	52.45			105		80-120		
Magnesium	200	215.44			108		80-120		
Manganese	50	55.88			112		80-120		
Nickel	50	52.57			105		80-120		
Potassium	1000	994.65			99		80-120		

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 06/01/2017 09:28

Group Number: 1799663

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Selenium	15	15.06			100		80-120		
Silver	5.00	5.75			115		80-120		
Sodium	1000	1009.24			101		80-120		
Thallium	15	16.2			108		80-120		
Vanadium	50	51.51			103		80-120		
Batch number: 171350570804	Sample number(s): 8986363-8986373								
Calcium	400	445.28			111		80-120		
Copper	25	26.73			107		80-120		
Iron	100	104.09			104		80-120		
Lead	15	16.02			107		80-120		
Zinc	50	53.86			108		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 17136667631A	Sample number(s): 8986363-8986367								
TOC by Lloyd Kahn	6030	5670.47	6030	5591.75	94	93	47-143	1	20
Batch number: 17136667631B	Sample number(s): 8986368-8986373								
TOC by Lloyd Kahn	6030	5670.47	6030	5591.75	94	93	47-143	1	20
	%	%	%	%					
Batch number: 17132820006A	Sample number(s): 8986363-8986373								
Moisture	89.5	89.38			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 17132SLM026	Sample number(s): 8986363-8986373 UNSPK: 8986373									
Acenaphthene	8.78	1639.34	1535.01	1655.63	1530.41	93	92	83-116	0	30
Acenaphthylene	N.D.	1639.34	1559.73	1655.63	1526.42	95	92	83-119	2	30
Acetophenone	N.D.	1639.34	1478.32	1655.63	1516.72	90	92	70-107	3	30
Anthracene	9.08	1639.34	1556.3	1655.63	1621.7	94	97	82-118	4	30
Atrazine	N.D.	1639.34	1489.45	1655.63	1347.04	91	81	52-142	10	30
Benzaldehyde	N.D.	1639.34	1241.19	1655.63	1339.47	76	81	10-93	8	30
Benzo(a)anthracene	30.82	1639.34	1528.34	1655.63	1598.36	91	95	76-119	4	30
Benzo(a)pyrene	26.84	1639.34	1527.31	1655.63	1586.73	92	94	78-117	4	30
Benzo(b)fluoranthene	46.92	1639.34	1593.65	1655.63	1642.94	94	96	79-121	3	30
Benzo(g,h,i)perylene	18.43	1639.34	1542.09	1655.63	1618.31	93	97	71-123	5	30
Benzo(k)fluoranthene	18.61	1639.34	1636.02	1655.63	1671	99	100	71-123	2	30
1,1'-Biphenyl	N.D.	1639.34	1604.31	1655.63	1541.75	98	93	78-115	4	30
4-Bromophenyl-phenylether	N.D.	1639.34	1620.14	1655.63	1654.12	99	100	78-122	2	30

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Quality Control Summary

Client Name: Hercules Incorporated
Group Number: 1799663
Reported: 06/01/2017 09:28

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Butylbenzylphthalate	N.D.	1639.34	1598.19	1655.63	1626.18	97	98	80-118	2	30
Di-n-butylphthalate	N.D.	1639.34	1617.61	1655.63	1684.88	99	102	84-120	4	30
Caprolactam	N.D.	1639.34	N.D.	1655.63	N.D.	0*	0*	63-121	0	30
Carbazole	N.D.	1639.34	1420.05	1655.63	1508.46	87	91	80-120	6	30
4-Chloro-3-methylphenol	N.D.	1639.34	1481.06	1655.63	1588.13	90	96	78-124	7	30
4-Chloroaniline	N.D.	1639.34	451.82	1655.63	556.23	28	34	10-110	21	30
bis(2-Chloroethoxy)methane	N.D.	1639.34	1611.53	1655.63	1633.22	98	99	77-116	1	30
bis(2-Chloroethyl)ether	N.D.	1639.34	1604.92	1655.63	1645.47	98	99	68-115	2	30
2-Chloronaphthalene	N.D.	1639.34	1713.02	1655.63	1676.37	104	101	57-148	2	30
2-Chlorophenol	N.D.	1639.34	1606.57	1655.63	1636.94	98	99	80-121	2	30
4-Chlorophenyl-phenylether	N.D.	1639.34	1553.38	1655.63	1503.77	95	91	73-119	3	30
2,2'-oxybis(1-Chloropropane)	N.D.	1639.34	1470.86	1655.63	1484.89	90	90	60-123	1	30
Chrysene	35.2	1639.34	1504.48	1655.63	1607.98	90	95	72-121	7	30
Dibenz(a,h)anthracene	7.09	1639.34	1608.1	1655.63	1665.54	98	100	72-129	4	30
Dibenzofuran	N.D.	1639.34	1540.78	1655.63	1513.28	94	91	79-114	2	30
3,3'-Dichlorobenzidine	N.D.	1639.34	325.73	1655.63	279.92	20	17	12-125	15	30
2,4-Dichlorophenol	N.D.	1639.34	1573.01	1655.63	1619.9	96	98	86-125	3	30
Diethylphthalate	N.D.	1639.34	1494.66	1655.63	1476.8	91	89	81-118	1	30
2,4-Dimethylphenol	N.D.	1639.34	1278.91	1655.63	1328.51	78	80	57-109	4	30
Dimethylphthalate	N.D.	1639.34	1490.02	1655.63	1448.93	91	88	82-113	3	30
4,6-Dinitro-2-methylphenol	N.D.	1639.34	1440.49	1655.63	1603.8	88	97	53-130	11	30
2,4-Dinitrophenol	N.D.	3278.69	2210.64	3311.26	2374.77	67	72	27-136	7	30
2,4-Dinitrotoluene	2198.75	1639.34	3693.52	1655.63	4092.2	91	114	81-122	10	30
2,6-Dinitrotoluene	701.7	1639.34	2118.82	1655.63	2225.4	86	92	80-120	5	30
bis(2-Ethylhexyl)phthalate	N.D.	1639.34	1724.53	1655.63	1774.47	105	107	81-121	3	30
Fluoranthene	56.94	1639.34	1472.7	1655.63	1564.7	86	91	72-120	6	30
Fluorene	N.D.	1639.34	1477.61	1655.63	1441.85	90	87	75-118	2	30
Hexachlorobenzene	N.D.	1639.34	1538.09	1655.63	1553.31	94	94	73-120	1	30
Hexachlorobutadiene	N.D.	1639.34	1623.3	1655.63	1631.02	99	99	72-120	0	30
Hexachlorocyclopentadiene	N.D.	3278.69	N.D.	3311.26	N.D.	0*	0*	57-142	0	30
Hexachloroethane	N.D.	1639.34	1370.69	1655.63	1498.05	84	90	69-116	9	30
Indeno(1,2,3-cd)pyrene	17.06	1639.34	1567.17	1655.63	1640.51	95	98	69-125	5	30
Isophorone	N.D.	1639.34	1577.73	1655.63	1651.31	96	100	70-118	5	30
2-Methylnaphthalene	N.D.	1639.34	1445.62	1655.63	1523.98	88	92	77-116	5	30
2-Methylphenol	N.D.	1639.34	1578.46	1655.63	1629.21	96	98	74-128	3	30
4-Methylphenol	N.D.	1639.34	1456.75	1655.63	1528.69	89	92	72-120	5	30
Naphthalene	5.36	1639.34	1652.98	1655.63	1776.2	101	107	75-113	7	30
2-Nitroaniline	N.D.	1639.34	1443.92	1655.63	1449.17	88	88	84-126	0	30
3-Nitroaniline	N.D.	1639.34	1114.64	1655.63	1079.32	68	65	60-125	3	30
4-Nitroaniline	N.D.	1639.34	905.69	1655.63	932.56	55	56	50-112	3	30
Nitrobenzene	N.D.	1639.34	1611.19	1655.63	1669.68	98	101	70-122	4	30
2-Nitrophenol	N.D.	1639.34	1667.59	1655.63	1733.25	102	105	83-120	4	30
4-Nitrophenol	N.D.	1639.34	1069.85	1655.63	1018.83	65	62	52-133	5	30
N-Nitroso-di-n-propylamine	N.D.	1639.34	1557.36	1655.63	1592.81	95	96	67-121	2	30
N-Nitrosodiphenylamine	N.D.	1639.34	1653.92	1655.63	1685.59	101	102	83-118	2	30
Di-n-octylphthalate	N.D.	1639.34	1788.64	1655.63	1745.26	109	105	80-140	2	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1799663
Reported: 06/01/2017 09:28

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Pentachlorophenol	N.D.	1639.34	1210.56	1655.63	1255.6	74	76	56-131	4	30
Phenanthrene	31.21	1639.34	1535.89	1655.63	1609.46	92	95	74-114	5	30
Phenol	19.69	1639.34	1475.97	1655.63	1520.15	89	91	73-122	3	30
Pyrene	46.67	1639.34	1559.62	1655.63	1589.3	92	93	74-112	2	30
2,4,5-Trichlorophenol	N.D.	1639.34	1545.14	1655.63	1497.82	94	90	86-123	3	30
2,4,6-Trichlorophenol	N.D.	1639.34	1654.35	1655.63	1581.41	101	96	81-123	5	30
	ug/kg	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**					
Batch number: 171320029A	Sample number(s): 8986363-8986373 UNSPK: 8986367									
4-Amino-2,6-Dinitrotoluene	1135.54	4240	5727.53	4420	6029.93	108	111	81-133	5	50
2-Amino-4,6-Dinitrotoluene	715.28	4250	4575.1	4440	4763.49	91	91	79-120	4	50
1,2-Dinitrobenzene	N.D.	8510	7232.41	8880	8234.34	85	93	85-129	13	50
1,3-Dinitrobenzene	N.D.	4250	3736.89	4440	4111.16	88	93	85-124	10	50
1,4-Dinitrobenzene	N.D.	8490	6034.06	8870	6912.29	71*	78*	83-122	14	50
HMX	N.D.	4240	5742.51	4430	5409.28	135*	122*	65-121	6	50
Nitrobenzene	N.D.	4250	3890	4440	4093.01	92	92	81-116	5	50
Nitroglycerin	N.D.	17000	15432.84	17800	16358.56	91	92	70-118	6	50
1-Nitronaphthalene	N.D.	8510	8338	8880	8764.36	98	99	83-122	5	50
2-Nitrotoluene	N.D.	4250	3500.6	4440	4071.09	82*	92	85-115	15	50
3-Nitrotoluene	N.D.	4260	3335.31	4450	3731.84	78*	84*	85-135	11	50
4-Nitrotoluene	N.D.	4270	4303.4	4460	4823.67	101	108	80-122	11	50
PETN	N.D.	17100	18814.35	17900	19210.25	110	107	64-121	2	50
RDX	N.D.	4240	3662.78	4430	3931.76	86	89	84-122	7	50
Tetryl	N.D.	4280	2349.93	4470	2687.14	55*	60*	67-152	13	50
1,3,5-Trinitrobenzene	N.D.	4250	3546.74	4440	3988.6	83	90	83-119	12	50
2,4,6-Trinitrotoluene	2955.64	4270	6974.17	4460	7048.15	94	92	82-133	1	50
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 171310571102	Sample number(s): 8986363-8986373 UNSPK: 8986363									
Mercury	0.0299	0.161	0.204	0.164	0.206	108	107	80-120	1	20
Batch number: 171320570801	Sample number(s): 8986363-8986373 UNSPK: P986118									
Aluminum	4246.17	165.29	5368.62	162.6	5468.16	679 (2)	752 (2)	75-125	2	20
Antimony	28.62	41.32	71.77	40.65	68.11	104	97	75-125	5	20
Arsenic	78.61	12.4	51.8	12.2	51.57	-216 (2)	-222 (2)	75-125	0	20
Barium	123.62	165.29	282.76	162.6	248.62	96	77	75-125	13	20
Beryllium	0.568	4.13	4.61	4.07	4.47	98	96	75-125	3	20
Cadmium	1.02	4.13	5.16	4.07	3.64	100	64*	75-125	35*	20
Calcium	3665.92	330.58	2551.96	325.2	5418.19	-337 (2)	539 (2)	75-125	72*	20
Chromium	61.7	16.53	71.7	16.26	69.16	60*	46*	75-125	4	20
Cobalt	17.9	41.32	54.1	40.65	54.23	88	89	75-125	0	20
Magnesium	753.03	165.29	848.78	162.6	1008.79	58 (2)	157 (2)	75-125	17	20
Manganese	243.17	41.32	235.46	40.65	474.03	-19 (2)	568 (2)	75-125	67*	20
Nickel	27.8	41.32	62.9	40.65	82.41	85	134*	75-125	27*	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated
Group Number: 1799663
Reported: 06/01/2017 09:28

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Potassium	406.92	826.45	1494.82	813.01	1450.93	132*	128*	75-125	3	20
Selenium	10.08	12.4	17.85	12.2	29.3	63*	158*	75-125	49*	20
Silver	2.10	4.13	6.25	4.07	8.93	100	168*	75-125	35*	20
Sodium	402.3	826.45	1223.83	813.01	1164.19	99	94	75-125	5	20
Thallium	2.22	12.4	14.3	12.2	15.87	97	112	75-125	10	20
Vanadium	23.33	41.32	61.94	40.65	61.49	93	94	75-125	1	20
Batch number: 171350570804	Sample number(s): 8986363-8986373 UNSPK: P980603									
Calcium	629.98	360.36	980.12	363.64	1050.63	97	116	75-125	7	20
Copper	682.77	22.52	716.19	22.73	763.44	148 (2)	355 (2)	75-125	6	20
Iron	80292.25	90.09	81711.81	90.91	93692.14	1576 (2)	14740 (2)	75-125	14	20
Lead	83.01	13.51	98.62	13.64	103.02	116 (2)	147 (2)	75-125	4	20
Zinc	574.33	45.05	626.27	45.45	761.62	115 (2)	412 (2)	75-125	20	20
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 17136667631A	Sample number(s): 8986363-8986367 UNSPK: P985272									
TOC by Lloyd Kahn	13015.35	64800	66025.92			82		47-143		
Batch number: 17136667631B	Sample number(s): 8986368-8986373 UNSPK: P988171									
TOC by Lloyd Kahn	N.D.	14160	12396.23			88		47-143		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 171310571102	Sample number(s): 8986363-8986373 BKG: 8986363			
Mercury	0.0299	0.0324	8 (1)	20
Batch number: 171320570801	Sample number(s): 8986363-8986373 BKG: P986118			
Aluminum	4246.17	4177.04	2	20
Antimony	28.62	34.09	17	20
Arsenic	78.61	51.39	42*	20
Barium	123.62	117.1	5	20
Beryllium	0.568	0.841	39* (1)	20
Cadmium	1.02	1.00	1 (1)	20
Calcium	3665.92	3770.44	3	20
Chromium	61.7	54.23	13	20
Cobalt	17.9	26.77	40*	20
Magnesium	753.03	700.28	7	20
Manganese	243.17	513.15	71*	20

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated Group Number: 1799663
Reported: 06/01/2017 09:28

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/kg	mg/kg		
Nickel	27.8	25.01	11	20
Potassium	406.92	401.61	1	20
Selenium	10.08	8.29	19 (1)	20
Silver	2.10	1.77	17 (1)	20
Sodium	402.3	389.36	3 (1)	20
Thallium	2.22	3.12	34* (1)	20
Vanadium	23.33	61.06	89*	20
Batch number: 171350570804	Sample number(s): 8986363-8986373	BKG: P980603		
Calcium	629.98	728.52	15	20
Copper	682.77	650.61	5	20
Iron	80292.25	90720.11	12	20
Lead	83.01	85.01	2	20
Zinc	574.33	649.53	12	20
	mg/kg	mg/kg		
Batch number: 17136667631A	Sample number(s): 8986363-8986367	BKG: P985272		
TOC by Lloyd Kahn	13015.35	12136.03	7 (1)	7
Batch number: 17136667631B	Sample number(s): 8986368-8986373	BKG: P988171		
TOC by Lloyd Kahn	N.D.	N.D.	0 (1)	7
	%	%		
Batch number: 17132820006A	Sample number(s): 8986363-8986373	BKG: P980518		
Moisture	21.44	20.97	2	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 17132SLM026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8986363	94	96	84	96	92	98
8986364	90	93	77	96	90	98
8986365	92	96	81	86	88	93
8986366	91	94	80	81	87	91
8986367	88	91	78	81	89	91
8986368	89	92	80	94	91	96
8986369	91	94	81	93	94	96
8986370	89	91	75	85	87	90
8986371	90	92	77	73	88	91
8986372	92	95	82	86	90	91
8986373	88	90	79	90	89	98

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated
Group Number: 1799663
Reported: 06/01/2017 09:28

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL 8270 (microwave)
Batch number: 17132SLM026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
Blank	87	91	95	86	90	93
LCS	91	90	89	86	93	91
MS	90	95	82	93	94	95
MSD	91	95	79	95	89	96
Limits:	46-125	43-130	28-141	45-125	50-124	43-132

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 171320029A

	2-Nitro-m-xylene
8986363	0*
8986364	0*
8986365	86
8986366	80
8986367	81
8986368	0*
8986369	0*
8986370	81
8986371	84
8986372	193*
8986373	0*
Blank	115
LCS	100
MS	79
MSD	83
Limits:	79-149

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only

Acct. # 6716 Group # 1799663 Sample # 89863363-73

COC # 526447

Client Information

Client: Ashland	Acct. #:
Project Name/#: Kenvil	PWSID #:
Project Manager: Scott Larew	P.O. #: 1540001.31
Sampler: Lora Sterner	Quote #:
State where samples were collected: NJ	For Compliance: Yes ☐ No ☑

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ Surface ☐ NPDES ☐ | Other: ____

Analysis Requested — Preservation Codes

For Lab Use Only: FSC: 205898 SCR#:

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TCL SVOCs	TAL metals	E, Es vs 8330	TOC	1 Jar Hold/Freeze	Remarks
TNT-PS-K-05092017	5/9/17	835		X	2	X	X	X	X	X	Hold 1 Jar and freeze for future E?E analysis
TNT-PS-A-05092017		855		X	2	X	X	X	X	X	
TNT-PS-I-05092017		905		X	2	X	X	X	X	X	
TNT-PS-H-05092017		915		X	2	X	X	X	X	X	
TNT-PS-G-05092017		925		X	2	X	X	X	X	X	
TNT-PS-B-05092017		935		X	2	X	X	X	X	X	
TNT-PS-J-05092017		945		X	2	X	X	X	X	X	
TNT-PS-F-05092017		1000		X	2	X	X	X	X	X	
TNT-PS-E-05092017		1020		X	2	X	X	X	X	X	
TNT-PS-D-05092017	↓	1025		X	2	X	X	X	X	X	

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is ~~subject to~~ laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: loracterner@kennedyjenks.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	5/5/17	1410	Lora Sterner	5/5/17	1490
[signature]	5/9/17	1130	[signature]	5/9/17	11:30
Katie Pemberg	5/10/17	11:25	[signature]	5/10/17	11:25
[signature]	5/10/17	12:18			
			[signature]	5/10/17	1715

EDD Required? Yes No

If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.3 °C

Environmental Analysis Request/Chain of Custody

3

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For Eurofins Lancaster Laboratories Environmental use only

Acct. # 6716 Group # 1799663 Sample # 8986363-73

COC # 526448

Client Information

Client: Ashland	Acct. #:
Project Name/#: Kenvil	PWSID #:
Project Manager: Scott Larew	P.O. #: 1540001.31
Sampler: Lora Sterner	Quote #:
State where samples were collected: NJ	For Compliance: Yes ☐ No ☑

Matrix: Soil ☒ Sediment ☐ Tissue ☐ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

Analysis Requested — Preservation Codes

For Lab Use Only: FSC: ____ SCR#: ____

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TCL SVOCs	TAL metals	E&Es via 8330	TOC	1 Jar on hold/freeze						Remarks
TNT-PS-C-05092017	5/9/17	1035		X	X			2	X	X	X	X	X						Hold 1 Jar from each sample to freeze/hold for later E&E analysis

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ____

E-mail address: lorasterner@kennedyjenks.com

Relinquished by	Date	Time	Received by	Date	Time
Lora Sterner	5/9/17	1130	Kahe Engberg	5/9/17	11:30
Kahe Engberg	5/10/17	1125	[signature]	5/10/17	11:25
[signature]	5/10/17	17:15			
			[signature]	5/10/17	1715

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) NJ DKQP TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No

If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 1.3 °C

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Sample Administration Receipt Documentation Log

Doc Log ID: 183362

Group Number(s): 1799663

Client: Ashland

Delivery and Receipt Information

Delivery Method:	ELLE Courier	Arrival Timestamp:	05/10/2017 17:15
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	NJ		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25112) at 22:58 on 05/10/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	1.3	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	none detected
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Hercules Incorporated
Accounts Payable Dept.
PO Box 2219
Columbus OH 43016-0381

Report Date: November 16, 2017 14:54

Project: Kenvil Treatability Study

Account #: 06716
Group Number: 1853714
SDG: KVN22
PO Number: 1540001
Release Number: KENVIL
State of Sample Origin: NJ

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	Hercules	Attn: Scott Larew
Electronic Copy To	Kennedy Jenks	Attn: Katie Engberg
Electronic Copy To	Ashland	Attn: Ed Meeks

Respectfully Submitted,

Stephen J. Gordon
Project Manager

(724) 597-2027

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
TNT-PS-D-09202017 Composite Soil	09/20/2017 10:00	9222697
TNT-PS-E-09202017 Composite Soil	09/20/2017 10:10	9222698
TNT-PS-F-09202017 Composite Soil	09/20/2017 10:15	9222699
TNT-PS-G-09202017 Composite Soil	09/20/2017 10:20	9222700
TNT-PS-H-09202017 Composite Soil	09/20/2017 10:30	9222701
TNT-PS-I-09202017 Composite Soil	09/20/2017 10:35	9222702

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Analysis Report

Sample Description: TNT-PS-D-09202017 Composite Soil
Kenvil Treatability Study

Project Name: Kenvil Treatability Study

Submittal Date/Time: 09/21/2017 18:31
Collection Date/Time: 09/20/2017 10:00
SDG#: KVN22-01

Hercules Incorporated
ELLE Sample #: SW 9222697
ELLE Group #: 1853714
Matrix: Soil

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	3,800		190	510	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	2,400		130	380	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		130	380	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		130	380	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		130	380	1
06918	2,4-Dinitrotoluene	121-14-2	360	J	130	380	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.		130	380	1
06918	HMX	2691-41-0	N.D.		320	950	1
06918	Nitrobenzene	98-95-3	N.D.		130	380	1
06918	Nitroglycerin	55-63-0	N.D.		2,500	7,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.		130	380	1
06918	2-Nitrotoluene	88-72-2	N.D.		250	510	1
06918	3-Nitrotoluene	99-08-1	N.D.		320	640	1
06918	4-Nitrotoluene	99-99-0	N.D.		250	510	1
06918	PETN	78-11-5	N.D.		2,500	7,600	1
06918	RDX	121-82-4	N.D.		170	380	1
06918	Tetryl	479-45-8	N.D.		200	510	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		130	380	1
06918	2,4,6-Trinitrotoluene	118-96-7	2,300		130	380	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Wet Chemistry	**SM 2540 G-1997 %Moisture Calc**		**%**		**%**	**%**	
00111	Moisture	n.a.	21.3		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

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Sample Description: **TNT-PS-D-09202017 Composite Soil**
Kenvil Treatability Study

Project Name: **Kenvil Treatability Study**

Submittal Date/Time: 09/21/2017 18:31
Collection Date/Time: 09/20/2017 10:00
SDG#: KVN22-01

Hercules Incorporated
ELLE Sample #: SW 9222697
ELLE Group #: 1853714
Matrix: Soil

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	172730004A	10/19/2017 11:00	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	172730004A	10/02/2017 14:15	David S Schrum	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	17268820004B	09/25/2017 20:43	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: **TNT-PS-E-09202017 Composite Soil**
Kenvil Treatability Study

Project Name: **Kenvil Treatability Study**

Submittal Date/Time: 09/21/2017 18:31
Collection Date/Time: 09/20/2017 10:10
SDG#: KVN22-02

Hercules Incorporated
ELLE Sample #: **SW 9222698**
ELLE Group #: **1853714**
Matrix: Soil

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	190	510	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	130	380	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	380	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	380	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	380	1
06918	2,4-Dinitrotoluene	121-14-2	N.D.	600	600	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	380	1
06918	HMX	2691-41-0	N.D.	320	950	1
06918	Nitrobenzene	98-95-3	N.D.	130	380	1
06918	Nitroglycerin	55-63-0	N.D.	2,500	7,600	1
06918	1-Nitronaphthalene	86-57-7	N.D.	600	600	1
06918	2-Nitrotoluene	88-72-2	N.D.	250	510	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	640	1
06918	4-Nitrotoluene	99-99-0	N.D.	250	510	1
06918	PETN	78-11-5	N.D.	2,500	7,600	1
06918	RDX	121-82-4	N.D.	170	380	1
06918	Tetryl	479-45-8	N.D.	200	510	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	130	380	1
06918	2,4,6-Trinitrotoluene	118-96-7	6,100	130	380	1
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997 %Moisture Calc**		**%**	**%**	**%**	
00111	Moisture	n.a.	25.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	172730004A	10/19/2017 11:43	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	172730004A	10/02/2017 14:15	David S Schrum	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	17268820004B	09/25/2017 20:43	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: **TNT-PS-F-09202017 Composite Soil**
Kenvil Treatability Study

Project Name: **Kenvil Treatability Study**

Submittal Date/Time: 09/21/2017 18:31
Collection Date/Time: 09/20/2017 10:15
SDG#: KVN22-03

Hercules Incorporated
ELLE Sample #: SW 9222699
ELLE Group #: 1853714
Matrix: Soil

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	3,800	3,800	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	1,600	1,600	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	390	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	390	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	390	1
06918	2,4-Dinitrotoluene	121-14-2	N.D.	310	390	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	390	1
06918	HMX	2691-41-0	N.D.	320	960	1
06918	Nitrobenzene	98-95-3	N.D.	130	390	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,700	1
06918	1-Nitronaphthalene	86-57-7	N.D.	270	390	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	510	1
06918	3-Nitrotoluene	99-08-1	N.D.	320	640	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	510	1
06918	PETN	78-11-5	N.D.	2,600	7,700	1
06918	RDX	121-82-4	N.D.	170	390	1
06918	Tetryl	479-45-8	N.D.	210	510	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	130	390	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,700	130	390	1
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997 %Moisture Calc**		**%**	**%**	**%**	
00111	Moisture	n.a.	25.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	172730004A	10/19/2017 12:25	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	172730004A	10/02/2017 14:15	David S Schrum	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	17268820004B	09/25/2017 20:43	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: **TNT-PS-G-09202017 Composite Soil**
Kenvil Treatability Study

Project Name: **Kenvil Treatability Study**

Submittal Date/Time: 09/21/2017 18:31
Collection Date/Time: 09/20/2017 10:20
SDG#: KVN22-04

Hercules Incorporated
ELLE Sample #: SW 9222700
ELLE Group #: 1853714
Matrix: Soil

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	2,600	2,600	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	1,300	1,300	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	130	400	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	130	400	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	130	400	1
06918	2,4-Dinitrotoluene	121-14-2	N.D.	260	400	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	130	400	1
06918	HMX	2691-41-0	N.D.	330	990	1
06918	Nitrobenzene	98-95-3	N.D.	130	400	1
06918	Nitroglycerin	55-63-0	N.D.	2,600	7,900	1
06918	1-Nitronaphthalene	86-57-7	N.D.	490	490	1
06918	2-Nitrotoluene	88-72-2	N.D.	260	530	1
06918	3-Nitrotoluene	99-08-1	N.D.	330	660	1
06918	4-Nitrotoluene	99-99-0	N.D.	260	530	1
06918	PETN	78-11-5	N.D.	2,600	7,900	1
06918	RDX	121-82-4	N.D.	170	400	1
06918	Tetryl	479-45-8	N.D.	210	530	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	130	400	1
06918	2,4,6-Trinitrotoluene	118-96-7	3,600	130	400	1
	Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**SM 2540 G-1997 %Moisture Calc**		**%**	**%**	**%**	
00111	Moisture	n.a.	28.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	172730004A	10/19/2017 13:07	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	172730004A	10/02/2017 14:15	David S Schrum	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	17268820004B	09/25/2017 20:43	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: **TNT-PS-H-09202017 Composite Soil**
Kenvil Treatability Study

Project Name: **Kenvil Treatability Study**

Submittal Date/Time: 09/21/2017 18:31
Collection Date/Time: 09/20/2017 10:30
SDG#: KVN22-05

Hercules Incorporated
ELLE Sample #: **SW 9222701**
ELLE Group #: **1853714**
Matrix: Soil

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**	**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.	5,300	5,300	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.	4,500	4,500	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.	140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.	140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.	140	420	1
06918	2,4-Dinitrotoluene	121-14-2	N.D.	390	420	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.	140	420	1
06918	HMX	2691-41-0	N.D.	350	1,100	1
06918	Nitrobenzene	98-95-3	N.D.	140	420	1
06918	Nitroglycerin	55-63-0	N.D.	2,800	8,400	1
06918	1-Nitronaphthalene	86-57-7	N.D.	560	560	1
06918	2-Nitrotoluene	88-72-2	N.D.	280	560	1
06918	3-Nitrotoluene	99-08-1	N.D.	350	700	1
06918	4-Nitrotoluene	99-99-0	N.D.	280	560	1
06918	PETN	78-11-5	N.D.	2,800	8,400	1
06918	RDX	121-82-4	N.D.	180	420	1
06918	Tetryl	479-45-8	N.D.	220	560	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.	140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	7,700	140	420	1

Reporting limits were raised due to interference from the sample matrix.

Wet Chemistry	**SM 2540 G-1997 %Moisture Calc**		**%**	**%**	**%**	
00111	Moisture	n.a.	28.6	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	172730004A	10/19/2017 13:50	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	172730004A	10/02/2017 14:15	David S Schrum	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	17268820004B	09/25/2017 20:43	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: **TNT-PS-I-09202017 Composite Soil**
Kenvil Treatability Study

Project Name: **Kenvil Treatability Study**

Submittal Date/Time: 09/21/2017 18:31
Collection Date/Time: 09/20/2017 10:35
SDG#: KVN22-06

Hercules Incorporated
ELLE Sample #: SW 9222702
ELLE Group #: 1853714
Matrix: Soil

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Explosives	**SW-846 8330**		**ug/kg**		**ug/kg**	**ug/kg**	
06918	4-Amino-2,6-Dinitrotoluene	19406-51-0	N.D.		4,200	4,200	1
06918	2-Amino-4,6-Dinitrotoluene	35572-78-2	N.D.		1,700	1,700	1
06918	1,2-Dinitrobenzene	528-29-0	N.D.		140	420	1
06918	1,3-Dinitrobenzene	99-65-0	N.D.		140	420	1
06918	1,4-Dinitrobenzene	100-25-4	N.D.		140	420	1
06918	2,4-Dinitrotoluene	121-14-2	N.D.		350	420	1
06918	2,6-Dinitrotoluene	606-20-2	N.D.		140	420	1
06918	HMX	2691-41-0	N.D.		350	1,000	1
06918	Nitrobenzene	98-95-3	N.D.		140	420	1
06918	Nitroglycerin	55-63-0	N.D.		2,800	8,300	1
06918	1-Nitronaphthalene	86-57-7	170	J	140	420	1
06918	2-Nitrotoluene	88-72-2	N.D.		280	550	1
06918	3-Nitrotoluene	99-08-1	N.D.		350	690	1
06918	4-Nitrotoluene	99-99-0	N.D.		280	550	1
06918	PETN	78-11-5	N.D.		2,800	8,300	1
06918	RDX	121-82-4	N.D.		180	420	1
06918	Tetryl	479-45-8	N.D.		220	550	1
06918	1,3,5-Trinitrobenzene	99-35-4	N.D.		140	420	1
06918	2,4,6-Trinitrotoluene	118-96-7	4,600		140	420	1

Reporting limits were raised due to interference from the sample matrix.

Wet Chemistry	**SM 2540 G-1997 %Moisture Calc**		**%**		**%**	**%**	
00111	Moisture	n.a.	27.9		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of New Jersey Lab Certification No. PA011

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06918	Nitroaromatics/Amines in Solid	SW-846 8330	1	172730004A	10/19/2017 14:32	James H Place	1
06917	Nitroaromatics/Amines Sol Ext	SW-846 8330	1	172730004A	10/02/2017 14:15	David S Schrum	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	17268820004B	09/25/2017 20:43	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

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Quality Control Summary

Client Name: Hercules Incorporated
Reported: 11/16/2017 14:54

Group Number: 1853714

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/kg	ug/kg	ug/kg
Batch number: 172730004A	Sample number(s): 9222697-9222702		
4-Amino-2,6-Dinitrotoluene	N.D.	150	400
2-Amino-4,6-Dinitrotoluene	N.D.	100	300
1,2-Dinitrobenzene	N.D.	100	300
1,3-Dinitrobenzene	N.D.	100	300
1,4-Dinitrobenzene	N.D.	100	300
2,4-Dinitrotoluene	N.D.	100	300
2,6-Dinitrotoluene	N.D.	100	300
HMX	N.D.	250	750
Nitrobenzene	N.D.	100	300
Nitroglycerin	N.D.	2,000	6,000
1-Nitronaphthalene	N.D.	100	300
2-Nitrotoluene	N.D.	200	400
3-Nitrotoluene	N.D.	250	500
4-Nitrotoluene	N.D.	200	400
PETN	N.D.	2,000	6,000
RDX	N.D.	130	300
Tetryl	N.D.	160	400
1,3,5-Trinitrobenzene	N.D.	100	300
2,4,6-Trinitrotoluene	N.D.	100	300

LCS/LCSD

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 172730004A	Sample number(s): 9222697-9222702								
4-Amino-2,6-Dinitrotoluene	5000	4938.29			99		81-133		
2-Amino-4,6-Dinitrotoluene	5020	4665.23			93		79-120		
1,2-Dinitrobenzene	10000	11142.86			111		85-129		
1,3-Dinitrobenzene	5020	4682.39			93		85-124		
1,4-Dinitrobenzene	10000	9360.43			94		83-122		
2,4-Dinitrotoluene	5030	4836.71			96		83-125		
2,6-Dinitrotoluene	5040	4757.78			94		72-137		
HMX	5010	4879.8			97		65-121		
Nitrobenzene	5020	4941.14			98		81-116		
Nitroglycerin	20100	19705.35			98		70-118		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated
Reported: 11/16/2017 14:54

Group Number: 1853714

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1-Nitronaphthalene	10000	10191.31			102		83-122		
2-Nitrotoluene	5020	4852.11			97		85-155		
3-Nitrotoluene	5030	4396.99			87		85-135		
4-Nitrotoluene	5040	5110.92			101		80-122		
PETN	20000	18435.66			92		64-121		
RDX	5010	5003.62			100		84-122		
Tetryl	5050	5319.99			105		67-152		
1,3,5-Trinitrobenzene	5020	4756.24			95		83-119		
2,4,6-Trinitrotoluene	5040	4736.35			94		82-133		
	%	%	%	%					
Batch number: 17268820004B	Sample number(s): 9222697-9222702								
Moisture	89.5	89.42			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 172730004A	Sample number(s): 9222697-9222702 UNSPK: P238142									
4-Amino-2,6-Dinitrotoluene	N.D.	4930	4533.28	4830	4553.95	92	94	81-133	0	50
2-Amino-4,6-Dinitrotoluene	N.D.	4940	4426.02	4850	4563.53	90	94	79-120	3	50
1,2-Dinitrobenzene	N.D.	9890	10431.73	9700	10603.81	105	109	85-129	2	50
1,3-Dinitrobenzene	N.D.	4940	4472.81	4850	4544.89	91	94	85-124	2	50
1,4-Dinitrobenzene	N.D.	9870	8506.06	9680	8665.32	86	90	83-122	2	50
2,4-Dinitrotoluene	N.D.	4960	4620.93	4860	4760.09	93	98	83-125	3	50
2,6-Dinitrotoluene	N.D.	4960	4390.7	4870	4658.33	89	96	72-137	6	50
HMX	N.D.	4930	4525.57	4840	4725.26	92	98	65-121	4	50
Nitrobenzene	N.D.	4940	4609.11	4850	4733.4	93	98	81-116	3	50
Nitroglycerin	N.D.	19800	18570.03	19400	19011.65	94	98	70-118	2	50
1-Nitronaphthalene	N.D.	9890	9635.46	9700	9824.01	97	101	83-122	2	50
2-Nitrotoluene	N.D.	4940	4584.72	4850	4495.74	93	93	85-115	2	50
3-Nitrotoluene	N.D.	4960	4369.23	4860	4252.23	88	87	85-135	3	50
4-Nitrotoluene	N.D.	4970	4713.7	4870	4368.51	95	90	80-122	8	50
PETN	N.D.	19700	18614.93	19300	19744.29	94	102	64-121	6	50
RDX	N.D.	4940	4606.42	4840	4687.32	93	97	84-122	2	50
Tetryl	N.D.	4980	3839.77	4880	3902.48	77	80	67-152	2	50
1,3,5-Trinitrobenzene	N.D.	4940	4416.43	4840	4464.72	89	92	83-119	1	50
2,4,6-Trinitrotoluene	N.D.	4960	4522.21	4870	4604.13	91	95	82-133	2	50

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Hercules Incorporated
Reported: 11/16/2017 14:54

Group Number: 1853714

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	%	%		
Batch number: 17268820004B	Sample number(s): 9222697-9222702 BKG: P216751			
Moisture	16.32	15.7	4	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: Nitroaromatics/Amines in Solid
Batch number: 172730004A

	2-Nitro-m-xylene
9222697	66*
9222698	67*
9222699	129
9222700	121
9222701	126
9222702	111
Blank	93
LCS	77*
MS	113
MSD	117
Limits:	79-149

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

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Acct. # 6716 Group # 1853714 Sample # 9222697-702

COC # 537999

Client Information

Client: Ashland	Acct. #:
Project Name/#: Kenvil	PWSID #:
Project Manager: Scott Carew	P.O. #: 1540001
Sampler: Katie Engberg	Quote #:

State where samples were collected: New Jersey

For Compliance: Yes ☐ No ☒

Matrix: Soil ☒ Sediment ☐ Tissue ☐ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

Analysis Requested / **Preservation Codes**

For Lab Use Only
FSC:
SCR#: 211464

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	Metals	TOC	Remarks
INT-PS-D-09202017	9/20/17	10:00		X	1	X	X	
INT-PS-E-09202017	9/20/17	10:10		X	1	X	X	
INT-PS-F-09202017	9/20/17	10:15		X	1	X	X	
INT-PS-G-09202017	9/20/17	10:20		X	1	X	X	
INT-PS-H-09202017	9/20/17	10:30		X	1	X	X	
INT-PS-I-09202017	9/20/17	10:35		X	1	X	X	

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ____

E-mail address: ~~Keengl~~ katieengberg@kennedyjenks.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Edwin Hernandez	9/11/17	6:50			
	9/21/17	11:30	Washington	9/21/17	11:32
Washington	9/21/17	18:31			

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 2.6 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0216

FW: [MACRO WARNING] 1853714-Kenvil Treatability Study-09/21/2017 18:31:00 Acknowledgement

Scott Larew [ScottLarew@kennedyjenks.com]

Sent: Monday, September 25, 2017 3:24 PM
To: Stephen Gordon; Jenifer Lewis
Cc: Katie Engberg [KatieEngberg@kennedyjenks.com]
Attachments: EAcknow_1853714.xls (123 KB) ; 1853714c.pdf (281 KB) ; 1853714d.pdf (75 KB)

Stephen/Jenifer,

I just received this copy of the COC for the samples received by ELLE.

We'd like these samples to be run for Energetics and Explosives by Method 8330. The COC indicates Metals and TOC - that is an error based on the description on a previous bottle order.

Please confirm receipt of this email and that the proper analysis will be conducted. Apologies for the confusion on our end.

Thanks.
-Scott

-----Original Message-----
From: LLAutomatedReportingSystem@eurofins.com
[mailto:LLAutomatedReportingSystem@eurofins.com]
Sent: Monday, September 25, 2017 3:18 PM
To: Katie Engberg <KatieEngberg@kennedyjenks.com>; Scott Larew <ScottLarew@kennedyjenks.com>
Subject: [MACRO WARNING] 1853714-Kenvil Treatability Study-09/21/2017 18:31:00 Acknowledgement

The following is an acknowledgement of the receipt of samples by Lancaster Laboratories. Please review this acknowledgement and contact your Client Service Representative if you have concerns.

This is an automated message from an unmonitored address. Please do not reply to this address.

E & E

6916 (14195) /6915

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 195183

Group Number(s): 1853714

Client: Ashland

Delivery and Receipt Information

Delivery Method:	ELLE Courier	Arrival Timestamp:	09/21/2017 18:31
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	NJ		

Arrival Condition Summary

Shipping Container Sealed:	No	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	0
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Karen Diem (3060) at 22:31 on 09/21/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-02	2.8	DT	Wet	Y	Bagged	N

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Lancaster, PA 17605-2425
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	non-detect
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Attachment 5

TNT Soil Plant Design Verification Study Report

Kennedy/Jenks Consultants
Engineers & Scientists
214 Carnegie Center, Suite 103
Princeton, NJ 08540
609-285-2620
Fax: 609-285-2659

22 December 2017

Mr. Edward D. Meeks
Remediation Project Manager
Ashland Global Holdings Inc. - Environment, Health, Safety and Product Regulatory
Ashland Hercules Research Center
500 Hercules Road
Building 8145
Wilmington, DE 19808-1599

Subject: ***TNT Soil Plant Design Verification Study Report***
Former Hercules Kenvil Works Facility
Kenvil, New Jersey

Mr. Meeks:

On behalf of Hercules Incorporated (Hercules), ART Engineering LLC (ART) and Kennedy/Jenks Consultants, Inc. (Kennedy/Jenks) prepared the attached *TNT Soil Plant Design Verification Study Report* (the Report) presenting results of soil processing plant design verification studies conducted between October 16 and 27, 2017 at the Former Hercules Kenvil Works Facility (the Facility).

BACKGROUND

Since 2013, Hercules has conducted bench and field-scale pilot studies to develop, test, and refine the bioremediation remedy to address 2,4,6-trinitrotoluene (TNT) at the Facility. The current approach to TNT remediation in Facility soils involves TNT particle size reduction using a physical processing plant and delivering processed soil to Bio Cells for engineered bioremediation. The *TNT Soil Bioremediation Pilot Study Report* (Hercules 2017) summarized the findings of the field-scale pilot study evaluating enhanced biodegradation techniques. The pilot study demonstrated the effectiveness of bioremediation using commercially-available DARAMEND OE® to degrade TNT and breakdown products in soil and attain direct contact remediation standards in a single field season.

In follow up to the pilot study, Hercules completed a preliminary design of the full-scale soil processing plant. The design process identified a number of estimates and input parameters that required confirmation before progressing to final plant design and engineering. As a result, the ART-Kennedy/Jenks team developed a series of process verification studies to confirm and/or refine design elements of the soil processing plant component of the TNT bioremediation remedy.

DESIGN VERIFICATION STUDY IMPLEMENTATION

Process verification studies were conducted on composite soil samples collected from representative source areas requiring remediation in the TNT Area at the Facility (hereafter referred to as the "uphill" and "downhill" areas).

Studies focused on the following plant design parameters and variables:

- Confirmation of soil particle size distribution (oversize, sand, fines) in "uphill" and "downhill" areas
- Design parameters for drum scrubber
- Attrition scrubber evaluation and post-attrition assessment of particle size and TNT concentration
- Polymer dosage and strength assessment
- Bench-scale simulations of proposed soil plant processes
- Analytical evaluation of TNT concentrations in various particle size fractions before and after process simulation steps

Results and findings related to these process verification studies, described in the attached Report, generally confirmed estimates and aligned with previous assessments related to process design elements, including:

- Particle size distribution data for "uphill" and "downhill" areas align with previously-collected data and design assumptions regarding distribution of oversize, sand, and fines
- Drum scrubber simulation achieved approximately 95% TNT concentration reduction in the target oversize fraction; effectiveness may be enhanced with addition of a "charge" (i.e., large rocks or steel balls)
- A coarse attrition scrubber, not contemplated during preliminary design, effectively reduces TNT particle size such that TNT mass is transferred to the fine oversize fraction for additional processing

- Polymer dosage was optimized, and flocculation effectiveness enhanced via the addition of iron(III)-sulfate (coagulant) and active pH neutralization

The processes tested and information generated during the study demonstrated:

- The overall process effective concentrates TNT in sand and fine particle fraction for enhanced bioremediation using DARAMEND OE®
- Process modifications (addition of coarse drum scrubber) improved the reductions in TNT concentrations in oversize fractions
- Variability in source material grain size distribution and constituent concentrations can be managed with an excavation, blending and staging plan

The latter two items are discussed in more detail in the following sections.

MANAGEMENT OF OVERSIZE FRACTIONS

Study analytical results indicate that TNT in unprocessed "uphill" and "downhill" soils is generally concentrated in sand and fine particle fractions, with larger chunks distributed throughout the coarser fractions. Based on current process plant design (Figures 1 and 2 of attached Report), coarse oversize (+1/2" – 2") and fine oversize (+2mm – ½") are screened out of the process plant following the drum scrubber and coarse attrition scrubber, respectively. The drum scrubber and coarse attrition scrubber steps in the process plant design subject oversize material to aggressive scrubbing followed by wet screening to reduce TNT particle sizes and separate sand and fine particle fractions from the oversize; yielding an oversize fraction visibly free of TNT (e.g., washed stone).

Analytical data collected during process verification studies indicate the drum scrubber and coarse attrition scrubbing steps attain TNT reduction efficiencies exceeded 95 percent. Average baseline (i.e., feed) concentrations of TNT in composite samples generated from "uphill" and "downhill" areas as part of process verification studies were 12,500 mg/kg and 6,300 mg/kg, respectively. Given these initial concentrations, post-processing TNT concentrations in each of these two oversize fractions exceeded New Jersey Department of Environmental Protection (NJDEP) Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS). Additional study of these oversize fractions is recommended to identify handling and process options and/or modifications capable of achieving TNT concentrations that will facilitate onsite reuse of these fractions. These additional activities will also include an evaluation of the range of feed concentrations expected at full scale. This evaluation would rely on SI/RI data as well as refined delineation data generated concurrent with design verification study data, and incorporate a spatial weighting approach.

As noted above, design verification study feed concentrations ranged from 6,300 mg/kg to 12,500 mg/kg. Efforts to source material for the design verification work focused on areas of

representative grain size distribution and the presence of TNT chunks. In contrast, the material sourced for the pilot study represented a range of potential TNT concentrations, resulting in an average feed concentration of 2,000 mg/kg. The average concentrations of the more than 250 SI/RI samples from the TNT Area and more than 400 refined delineation samples are approximately 1,400 mg/kg and 650 mg/kg, respectively. Based on available information, a full-scale feed concentration in the 2,000 mg/kg range appears reasonable.

Applying the above-referenced process efficiencies to a feed concentration of 2,000 mg/kg (as measured during pilot study activities) results in TNT concentrations less than NJDEP NRDCSRS in coarse and fine oversize fractions. That said, it is unknown if TNT reduction efficiencies measured during process verification studies can be applied linearly to feed soil with different TNT concentrations.

In addition to evaluating compliance with NJDEP direct contact standards for oversize soil fractions, impact to groundwater standards must also be considered as part of both regulatory compliance and reuse onsite. Laboratory analysis of coarse and fine oversize material (maintained onsite following study completion) via Synthetic Precipitation Leaching Procedure (SPLP) is recommended to evaluate mobility of TNT in oversize fractions generated during process simulations. The SPLP analysis method, which simulates in-situ conditions for soils exposed to precipitation, represents an efficient and effective means of evaluating TNT mobility in coarse and fine oversize material in support of anticipated on-site reuse of treated TNT area soils. SPLP data will be combined with ongoing Facility-specific impact-to-groundwater (IGW) evaluations to form a basis for recommended on-site reuse of oversize product fractions.

EXCAVATION, BLENDING, AND STAGING PLAN

A full-scale soil processing plant will run most efficiently when the feed material is well blended. The goal of the blending is to achieve a consistent mixture with respect to both physical (grain size distribution) and chemical (contaminant concentration) characteristics. Consistency in feed at the front end of the plant will result in a predictable production rate of biofeed (sand/fines) and oversize fractions. These predictable rates will result in consistencies and efficiencies related to amendment (DARAMEND OE, polymer) dosages as well as labor and equipment allocation (management of oversize stockpiles).

As previously noted, an average feed concentration of approximately 2,000 mg/kg can be expected at full scale after blending high concentration source area soil containing crystalline TNT with soil from adjacent areas with lower TNT concentrations. Observed variability in feed soil concentrations, and its potential effects throughout the soil processing plant, highlight the importance of preparing and blending feed soil in the field prior to introduction to the soil processing plant. Preparing and blending soils from different areas and with varying TNT concentration will assist with maintaining relatively consistent feed concentrations to the plant. An excavation, blending, and staging plan is recommended to guide these efforts and represents an integral component of process plant design.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations of process verification studies performed by ART and Kennedy/Jenks are summarized below.

Conclusions

- Data and findings obtained from process verification studies include particle size distribution, drum scrubber design and effectiveness, attrition scrubber design and effectiveness, and polymer dosing and strength requirements.

- Process verification study results indicate preliminary soil process plant designs are effective at concentrating TNT in sand and fine particle fractions (which will be processed to Bio Cells for DARAMEND OE® treatment and subsequent bioremediation) and reducing TNT concentrations in oversize fractions by over 95 percent.

Recommendations

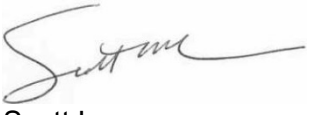
- Kennedy/Jenks recommends additional evaluation of coarse and fine oversize product fractions which will be screened out of the soil processing plant prior to Bio Cell bioremediation. Additional evaluation of coarse and fine oversize product fractions will support approval of on-site reuse of these materials.

- Based on varying TNT concentrations measured in “feed” soils, ART and Kennedy/Jenks recommend development of an Excavation, Blending, Staging Plan that synthesizes existing soil data and outlines an excavation strategy to maintain a generally consistent feed concentration at the processing plant.

If you have any questions regarding this information provided in this report, please call me at (609) 285-2626.

Very truly yours,

Kennedy/Jenks Consultants



Scott Larew
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Enclosure

cc: Carl Seward, ART Engineering LLC
Eric Groenendijk, ART Engineering LLC

TNT Soil Plant Design Verification Study Report

Located at:
Former Kenvil Works Facility
Hercules, LLC
Kenvil, New Jersey

Prepared for:
Kennedy/Jenks Consultants, Inc.

By:
ART Engineering, LLC

November 29, 2017

Executive Summary

ART Engineering, LLC (ART) has completed the Process Design Verification/Confirmation field study at the former Kenvil Works Facility located in Kenvil, New Jersey. The main purpose of the study was to verify the original process design (Ref. *TNT Soil Bioremediation Project, Kenvil Works Facility, April 2017, by ART Engineering, LLC*) to create a bio-feed for subsequent bioremediation, and to achieve the lowest possible TNT concentration in the oversize fractions. This study included characterization of both "uphill" and "downhill" composite samples (containing 12,500 and 6,300 ppm TNT respectively), individual unit process testing, and two process simulations. The TNT levels in the process testing for this study were higher as compared to average TNT level of 2,000 ppm encountered during the 2015 Physical Separation and Bioremediation Pilot Study.

The process verification testing indicated that a design modification (Figure 1) would result in more aggressive treatment of the oversize fractions, and higher quality process oversize products. These design changes were verified in Process Simulation Testing for both the "uphill" and "downhill" composite soil samples.

Average TNT removal efficiencies ranging from 95% to 99% were achieved for both coarse oversize (+½ -inch minus 2-inch), and fine oversize (+2 mm minus ½-inch) products (Figures 2 and 3). No visible TNT was observed in either post-treatment fraction. The average feed during the bioremediation Pilot Study was 2,000 ppm TNT. When these process efficiencies as achieved in this study are applied to a hypothetical feed material at 2,000 ppm TNT, the coarse oversize after treatment contains 57 ppm TNT, and the fine oversize contains 36 ppm TNT. See Figure 1 for details.

Design modifications required to obtain these efficiencies are:

- Change the primary screen deck size from 4 mm to 2 mm;
- Change the post drum scrubber wet screen size from 4 mm to ½-inch;
- Add a coarse attrition scrubber for treatment of the minus ½-inch drum scrubber undersize.

Other conclusions based on this study are:

- The drum scrubber will require the addition of plus 3-inch stone to assist in the breakdown of large-size TNT particulates greater than ½-inch in the drum scrubber;
- The sand attrition scrubber is effective in additional breakdown of sand-sized (0.106 to 2 mm) TNT particles;
- Iron Sulfate improves clarification of process water;
- The chosen polymer is very effective in producing strong flocs able to withstand a 3 foot drop at the bio cell;
- The DARAMEND additive can be effectively added to the final minus 2 mm sand-fines-TNT bio-feed slurry, and flocculated within the soil matrix, when pumped

into the bio-cell. This approach provides optimum mixing of DARAMEND, and eliminates the need for separate handling and stirring of DARAMEND at the bio-cell.

Following are a summary of testing details, photos taken during the study, data tables, data sheets, and supporting analytical. Photos 10, 11 and 12 are indicative of the plant products.

1.0 Study Tasks Performed

Specific tasks performed as part of this study were as follows:

1. Initial characterization of overall general particle size distribution; oversize (2 mm to 2-inch), sand (0.106 to 2 mm), fines (less than 0.106 mm) for “uphill’ and “downhill” composites
2. Determination of TNT concentration as function of particle size;
3. Verification optimum primary wet screen size at 4 mm;
4. Verification of effectiveness of drum scrubber, and oversize wet screen;
5. Simulation of drum scrubber effectiveness to breakdown coarse TNT particulate matter. Determination of need for addition of coarse rock to enhance TNT breakdown;
6. Verification of effectiveness of the attrition scrubber to breakdown fine TNT particulate matter in soil fraction 2.0-4.0 mm to less than 2 mm;
7. Re-verification of selected polymer for strength, and evaluate use of Iron(III)-Sulfate as coagulant;
8. Perform process simulation for “uphill” and “downhill” composites;
9. Inspection of existing equipment for full-scale application;

Extra Tasks Performed:

10. Determination of Estimated Soil Bulk Density;
11. Acetone Extraction of Coarse Fractions.

2.0 Study Outcome

This study was performed by ART in the period of October 16 through 27, 2017. Two composite samples were prepared and used for this study. One “uphill” composite, and one “downhill” composite prepared from soils previously excavated from respective areas by Kennedy/Jenks.

2.1 Initial Characterization of Overall General Particle Size Distribution; Oversize, Sand, Fines for “Uphill’ and “Downhill” Composites, and TNT Concentration as Function of Particle Size

Results of the particle size distribution for both “uphill” and “downhill” composites are provided in Table 1. Results of TNT analysis as function of particle size are provided in Table 2.

The particle size distribution for “uphill” and “downhill” composites were consistent with prior results. The “uphill” composite contains more fines material (fraction less than 0.106 mm), and less coarse oversize (fraction +½-inch to 2-inch). These

differences will be considered in the final plant design, but these particle size results are consistent with data from previous studies.

2.2 Verification of Optimum Primary Wet Screen Size at 4 mm

In the original design, it was planned that the soil fraction 2 to 4 mm would pass through the attrition scrubber together with the sand fraction 0.106 to 2.0 mm. Although the scrubbing reduced the TNT levels in the soil fraction 2.0 to 4.0 mm from 7,100 to 830 mg/kg TNT in the "uphill" composite, and from 2,700 to 860 mg/kg TNT in the "downhill" composite after 10 minutes scrubbing, a higher removal efficiency was desirable. Also, the TNT analysis as function of particle size (Table 2) also indicated significant concentration of TNT in soil fractions greater than 4.0 mm. Considering these factors, it was proposed and tested as part of this study to treat the entire oversize fraction 2.0 mm to ½-inch in a "Coarse Attrition Scrubbing" step.

The results of the "Coarse Attrition Scrubbing" showed an improvement in TNT reduction. TNT levels in the Fine Oversize 2.0 mm to ½-inch were reduced from 12,500 ppm to 150 ppm TNT for the "uphill" soil composite and from 6,300 ppm to 150 ppm TNT for the "downhill" composite. TNT reduction efficiency was on the order of 97-98% in the post-attrition Fine Oversize 2.0 mm to ½-inch, as compared to the feed soil. This improved efficiency, combined with the fact that more of the oversize would be subjected to aggressive coarse scrubbing, resulted in the following design modification:

- Change the primary screen deck size from 4 mm to 2 mm;
- Change the post-drum scrubber wet screen size from 4 mm to ½- inch;
- Add a coarse attrition scrubber for treatment of the minus ½-inch drum scrubber undersize.

2.3 Verification of Effectiveness of Drum Scrubber and Oversize Wet Screen

The drum scrubber effectiveness to breakdown particulate TNT was tested dropping a 5-gallon bucket of oversize material (2 mm to 2-inch) into a wheelbarrow 15 times from 7 feet high. The 15 times simulated 15 drops inside a rotating drum scrubber. After the drop test, the material was screened at plus ½ inch and no visible TNT was observed in the soil fraction greater than ½-inch. The material less than ½-inch would be subjected to the "Coarse Attrition Scrubbing" as per the modified design (Figure 1). The observations of this test indicated that a charge of 3-inch rock inside the drum scrubber would provide additional energy to further breakdown softer brittle TNT material. This provision will be incorporated into the final plant design.

2.4 Verification of Effectiveness of Attrition Scrubber to Breakdown Fine TNT Particulate Matter in Soil Fraction 2.0-4.0 mm to Less than 2 mm

Refer to explanation of Section 2.2 regarding rationale for the design change. Although the attrition scrubber was effective in reducing the TNT concentration in the soil fraction 2.0-4.0 mm, a design change was made to get higher process efficiency for the entire Fine Oversize Fraction 2.0 mm to ½-inch as explained in Section 2.2.

2.5 Re-verification of Selected Polymer for Strength and Evaluate Use of Iron (III)-Sulfate as Coagulant

ART tested different concentrations of previously selected polymer FBS C1082 for effective flocculation of a mixed slurry of sand, fines, and DARAMEND. The polymer FBS C1082 was found to be effective in flocculating the slurry mixture of sand, fines, and DARAMEND into a strong "popcorn" floc, which was determined strong enough to hold up after a three foot drop simulating discharge into the bio-cell. The effective dosage in this study was determined at 3.2 lbs of neat polymer FBS C1082 per ton of plant feed for "uphill" Soil. The "uphill" soil with higher fines content requires the highest polymer dosage, as polymer dosage generally increases based on the amount of fines. It was also observed in this study that a greater polymer dose would further increase floc strength. Actual polymer dosage will be dependent on field conditions, and may be higher or lower as compared to the dosage determined in this study. It was also noted that the clarity of the process water was improved when Iron(III)-Sulfate was used as a coagulant. It is likely that the use of Iron(III)-Sulfate would also reduce polymer consumption in field operation based on ART's previous project experience. For these reasons, use of Iron(III)-Sulfate as 50% solution as a supporting coagulant is recommended for use in full-scale project implementation. As Iron(III)-Sulfate Solution is acidic, active pH neutralization using Sodium Hydroxide (25%) will also be incorporated into the full-scale design.

2.6 Perform Process Simulation for "Uphill" and "Downhill" Composites

ART performed two process simulations for the modified process design. The process simulations involved execution of processing steps that are part of the modified process design. Results of the process simulation for the "uphill" and "downhill" composites are presented in Figures 2 and 3. Concentration of TNT in the feed (prior to processing) for the "uphill" composite was 12,500 ppm TNT and 6,300 ppm TNT for the "downhill" composite. The process efficiencies achieved in the process simulations for reduction of TNT in the Coarse Oversize (½-inch to 2-inch) and Fine Oversize (2mm to ½-inch) were calculated and averaged. The calculated average process efficiency was applied to a hypothetical Plant Feed of 2,000 ppm TNT, similar to the plant feed as encountered during the 2015 Physical Separation and Bioremediation Pilot Study. The

expected TNT levels in Coarse and Fine Oversize Products after processing are presented in Figure 1. The results suggest that TNT levels in the Coarse and Fine Oversize fractions are expected to be below Industrial Standard of 95 ppm TNT.

2.7 Inspection of Existing Equipment for Full-Scale Application

ART inspected the equipment for possible reuse in the full-scale plant. The following equipment is believed to be reusable in the full-scale plant after reconditioning: Feed Conveyor, Wet Screen, and Sand Screw. The electrical control panel may be reusable as a satellite panel for the full-scale project, but would require modification. ART recommends that, at the appropriate time, this equipment is shipped back to Florida for reconditioning, and incorporation into the full-scale plant. Reuse of the two poly-tanks is not contemplated at this time, due to concerns of aging and degradation of the poly-tanks.

2.8 Extra Task: Determination of Estimated Soil Bulk Density

At the request of Kennedy/Jenks, ART determined the estimated bulk density of the "uphill" and "downhill" soil composites. The bulk density was estimated by compacting soil in a 5-gallon bucket, and determining the weight/volume ratio. Results were as follows:

Soil Bulk Density Estimates

	Soil Fraction - 2"	Whole Soil, including +2"
Uphill Soil Bulk Density:	1.34 t/cy	1.38 t/cy
Downhill Soil Bulk Density:	1.61 t/cy	1.61 t/cy

Gross Oversize (+2")

	Soil Fraction - 2"	Gross Oversize +2"	Total
Uphill Soil:	93.1 %	6.9 %	100%
Downhill Soil:	99.7%	0.3%	100%

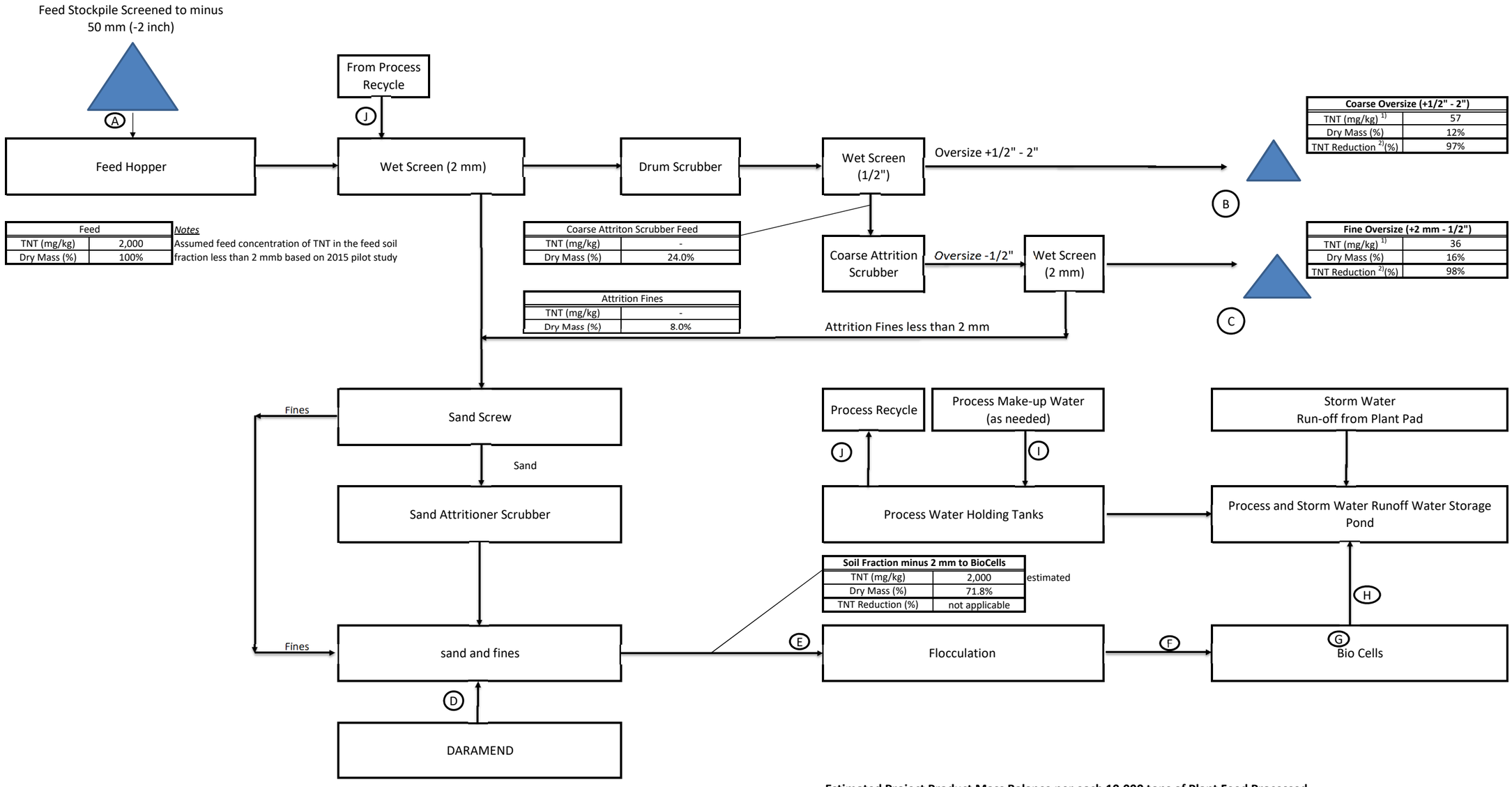
2.9 Extra Task: Acetone Extraction of Coarse Material Samples

To evaluate TNT levels in the coarse soil fractions (greater than 2 mm), ART developed a field procedure to perform a quick Acetone extraction on coarse soil samples, and submit the Acetone extract for analysis (Attachment 6). It was noted that the total

concentration of TNT in the Acetone extract was dependent on contact time and agitation. Therefore, any of the TNT results reported in this report are only indicative of the amount of TNT that may be present. Further validation of the Acetone extraction method to determine TNT concentrations in coarse soil fractions (2 mm to 2-inch) is recommended if this method is to be used as an accurate quantitative method.

Figures

Figure 1: Proposed Modified Design & Process Efficiency Based on Process Verification Study



Notes:

1): Projected results based on Process Verification Study are indicative only

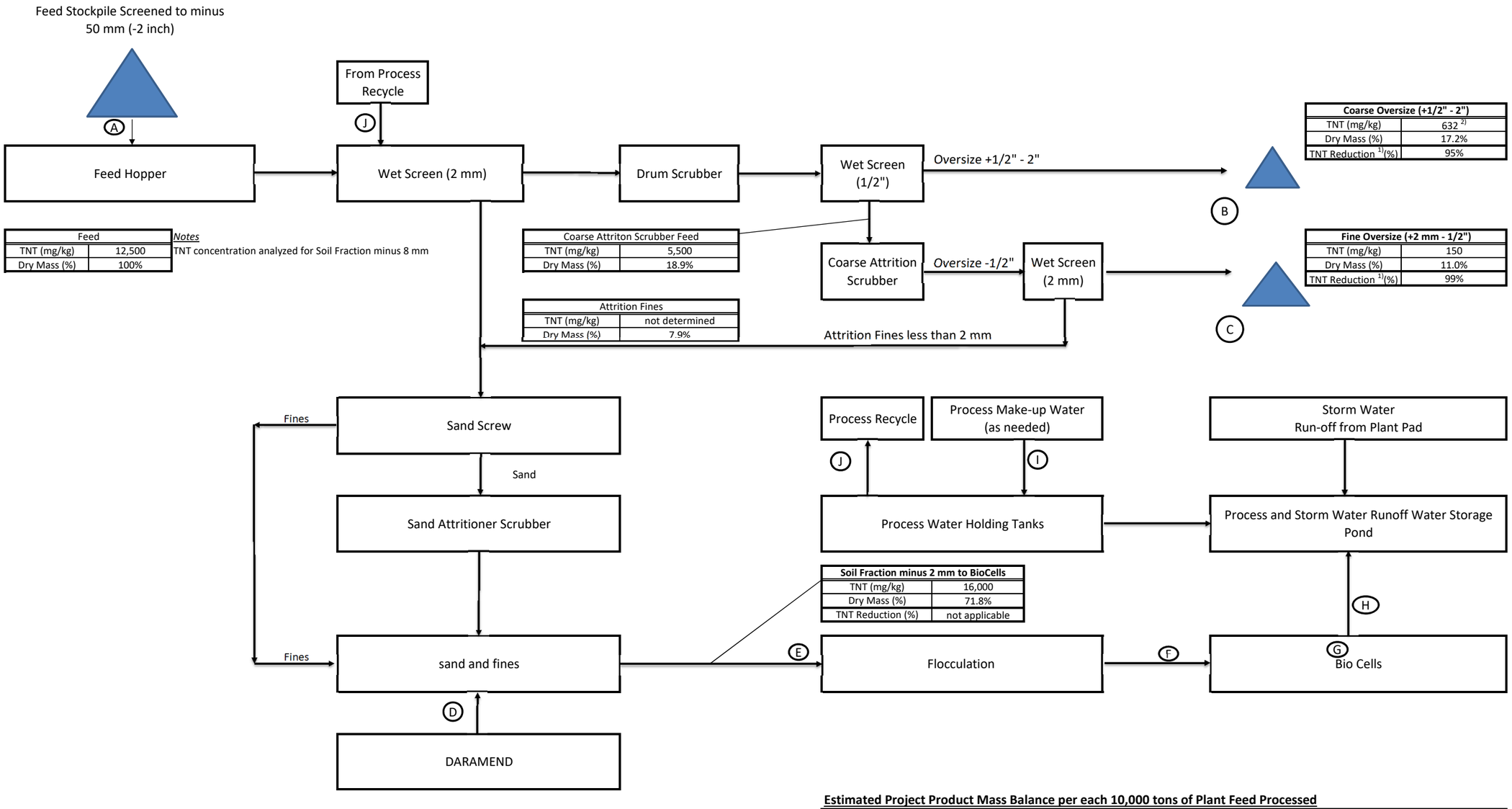
2): TNT Reduction Efficiencies expected are based on Results of this Process Verification Study; actual results may differ

TNT = 2,4,6 Trinitrotoluene

Estimated Project Product Mass Balance per each 10,000 tons of Plant Feed Processed

	Total Plant Feed / Product	Mass Distribution on Dry Weight Basis (%)	Total Product Mass on Dry Weight Basis (Tons)	Percent Solids by Weight (estimated) (%)	Total Product Mass on Wet Weight Basis (with Moisture) (Tons)
A	Plant Feed (-2")	100.0%	9,300	93%	10,000
B	Coarse Oversize (+1/2" - 2")	12.3%	1,140	95%	1,200
C	Fine Oversize (+ 2.0 mm - 1/2")	15.9%	1,483	90%	1,648
G	Sand & Fines after Bio Treatment and consolidation	71.8%	6,677	70%	9,539

Figure 2: Process Simulation Results for Modified Process Design - Uphill Soil Composite



Notes:

1): TNT Reduction Efficiency calculated based on TNT concentration in Feed Soil Fraction minus 8 mm

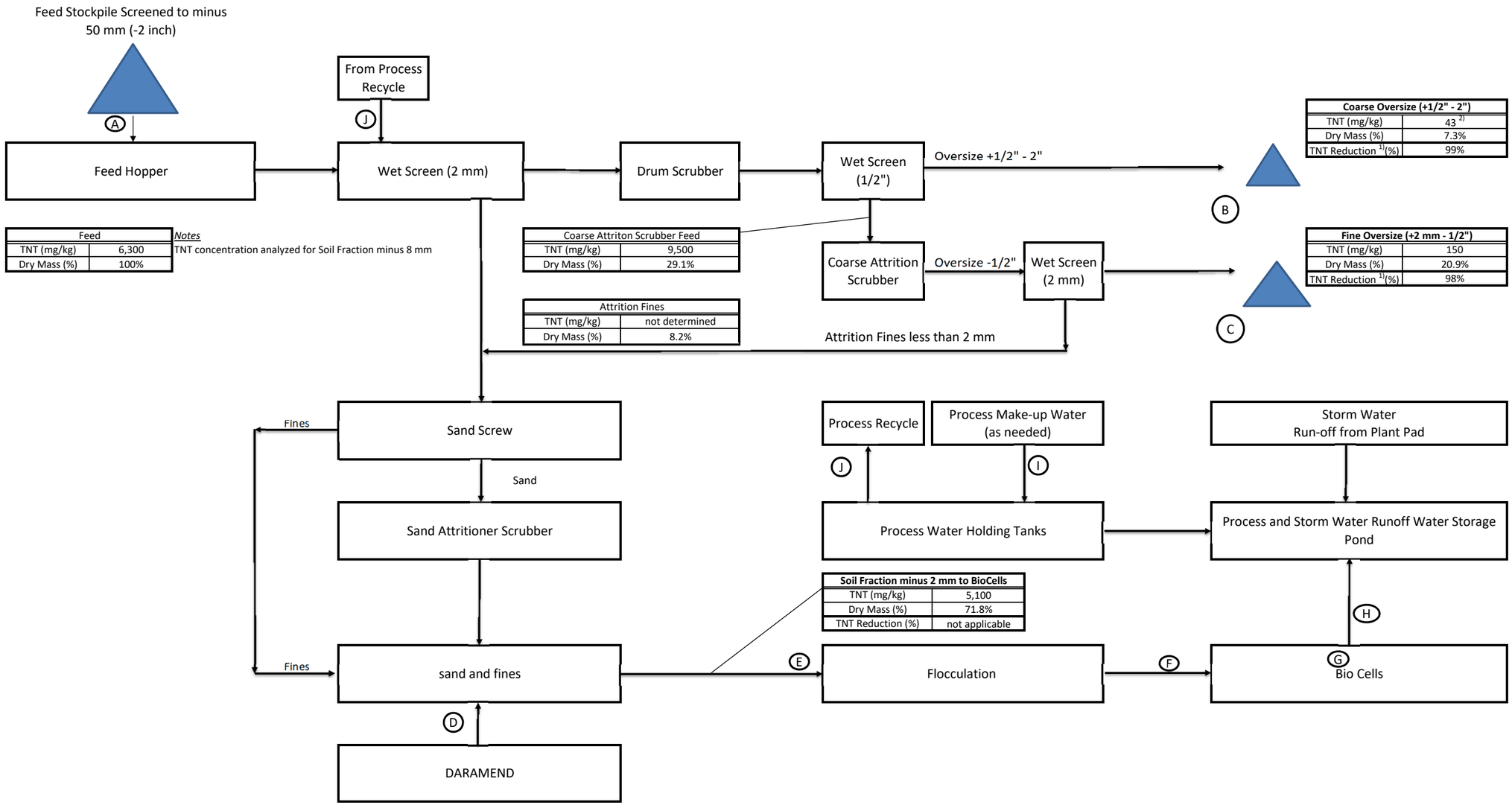
2): TNT concentration estimated based on Field Acetone Extraction; reported result are "indicative only"

TNT = 2,4,6 Trinitrotoluene

Estimated Project Product Mass Balance per each 10,000 tons of Plant Feed Processed

	Total Plant Feed / Product	Mass Distribution on Dry Weight Basis (%)	Total Product Mass on Dry Weight Basis (Tons)	Percent Solids by Weight (estimated) (%)	Total Product Mass on Wet Weight Basis (with Moisture) (Tons)
A	Plant Feed (-2")	100.0%	9,200	92%	10,000
B	Coarse Oversize (+1/2" - 2")	17.2%	1,581	95%	1,664
C	Fine Oversize (+ 2.0 mm - 1/2")	11.0%	1,013	90%	1,125
G	Sand & Fines after Bio Treatment and consolidation	71.8%	6,606	70%	9,437

Figure 3: Process Simulation Results for Modified Process Design - Downhill Soil Composite



Notes:

1): TNT Reduction Efficiency calculated based on TNT concentration in Feed Soil Fraction minus 8 mm

2): TNT concentration estimated based on Field Acetone Extraction; reported results are "indicative only"

TNT = 2,4,6 Trinitrotoluene

Estimated Project Product Mass Balance per each 10,000 tons of Plant Feed Processed

	Total Plant Feed / Product	Mass Distribution on Dry Weight Basis (%)	Total Product Mass on Dry Weight Basis (Tons)	Percent Solids by Weight (estimated) (%)	Total Product Mass on Wet Weight Basis (with Moisture) (Tons)
A	Plant Feed (-2")	100.0%	9,400	94%	10,000
B	Coarse Oversize (+1/2" - 2")	7.3%	688	95%	725
C	Fine Oversize (+ 2.0 mm - 1/2")	20.9%	1,963	90%	2,181
G	Sand & Fines after Bio Treatment and consolidation	71.8%	6,748	70%	9,641

Tables

Table 1: Initial Characterization - Soil Particle Size Distribution and Main Unit Processes for Modified Design

Fraction	UPHILL Composite		DOWNHILL Composite		Description	Main Unit Processes		Plant Product Fraction
	Mass Distribution		Mass Distribution					
	(%)		(%)					
25 - 50 mm	11.6%	17.2%	0.6%	7.3%	Oversize	Drum Scrubber	Screen at 1/2"	Oversize +1/2" - 2"
16 - 25 mm	3.5%		2.4%					
12.5 - 16 mm [Note 1)]	2.1%		4.3%					
8-12.5 mm [Note 1)]	2.1%	18.9%	4.3%	29.1%			Coarse Attrition Scrubber	Oversize +2mm - 1/2"
4.75 - 8.0 mm	4.5%		8.6%					
4.0-4.75 mm	1.9%		2.9%					
2.0-4.0 mm	10.4%		13.3%					
1.0-2.0 mm	12.5%	46.6%	12.8%	55.9%	Sand	Fine Attrition Scrubber	Combine	Bio-Feed
0.5-1.0 mm	14.0%		16.6%					
0.25-0.5 mm	16.2%		17.9%					
0.125-0.25 mm	3.7%		8.5%					
0.106-0.125mm	0.2%		0.2%					
0.063-0.106 mm	2.4%	17.4%	1.6%	7.7%	Fines			
<0.063 mm	14.9%		6.1%					
Total	100.0%		100.0%					

Notes

[Note 1)]: Total amount of material in the particle size fraction of 8 mm to 16 mm was assumed to be equally distributed over the two soil fractions 8 - 12.5 mm and 12.5 -16 mm

Table 2: Initial Characterization - TNT Concentration as Function of Particle Size

	UPHILL COMPOSITE		DOWNHILL COMPOSITE	
Soil Fraction	**% of Total Mass on Dry Weight Basis**	**Result on "dry weight basis" (mg/kg)**	**% of Total Mass on Dry Weight Basis**	**Result on "dry weight basis" (mg/kg)**
		2,4,6 TNT		**2,4,6 TNT**
Soil Fraction < 8 mm		12,000		5,200
Soil Fraction < 8 mm (duplicate)		13,000		7,400
Average		**12,500**		**6,300**
Soil Fraction 25 - 50 mm (1 - 2")	11.6%	118 [1) 1-2hrs]	0.6%	39 [1) 1-2hrs]
Soil Fraction 16 - 25 mm (5/8-1")	3.5%	968 [1) >24hrs]	2.4%	79 [1) 1-2hrs]
Soil Fraction 8 - 16 mm (5/16-5/8")	2.1%	4,855 [1) >24hrs]	4.3%	1,028 [1) >24hrs]
Soil Fraction 4 - 8 mm	6.3%	2,800	11.5%	6,700
Soil Fraction 2 - 4 mm	10.4%	7,900	13.3%	6,000
Soil Fraction 0.106 - 2 mm	48.7%	11,000	60.2%	2,400
Soil Fraction < 0.106 mm	17.4%	24,000	7.7%	17,000
Total	**100.0%**		**100.0%**	

Notes:

[1)]: The "Quick Field Acetone Extraction and Analysis" as used during this study for analysis of coarse material is not an approved or validated method. The purpose of this extraction is to provide a practical method to obtain an indication of TNT levels in samples containing material up to 2" in size without the need for sample crushing. It was noted that the extraction time (1 to 24 hrs) had an influence on the total amount of TNT analyzed in the extract. Also, a higher extraction efficiency was achieved on crushed samples vs. uncrushed samples. The results of acetone analysis performed in this study should only considered to be "general indicative". Further optimization and validation of the acetone extraction method for use on coarse samples would be required if this method or an adaptation of this method would be proposed for use during the actual remediation.

Table 3: Modified Flowsheet - Process Efficiency Coarse Attrition Scrubbing Oversize Fraction 2.0 mm - 1/2" - Process Simulation

Description		UPHILL COMPOSITE			DOWNHILL COMPOSITE		
		Fraction of Total Mass on Dry Weight Basis (%)	**Concentration 2,4,6 TNT (mg/kg)**	**TNT Removal Efficiency Based on Analyzed 2,4,6 TNT Concentration in Feed Soil [2] (%)**	**Fraction of Total Mass on Dry Weight Basis (%)**	**Concentration 2,4,6 TNT (mg/kg)**	**TNT Removal Efficiency Based on Analyzed 2,4,6 TNT Concentration in Feed Soil [2] (%)**
Feed Soil (< 8 mm) [2]							
	Soil Fraction < 8 mm		12,000			5,200	
	Soil Fraction < 8 mm (Duplicate)		13,000			7,400	
	Average Feed Soil < 8 mm [2]		**12,500**			**6,300**	
Before Attrition Scrubbing							
	Total Amount of Soil Fraction 2-12.5 mm (1/2") as fraction of Feed Soil less than 2" [1]	18.9%	5,500		29.1%	9,500	
After Attrition Scrubbing (Soil Fraction 2.0-12.5 mm)							
	Soil Fraction 2 - 12.5 mm after 10 minutes coarse scrubbing	**11.0%**	**150**	**99%**	**20.4%**	**150**	**98%**
	Extra amount of sand/fines less than 2 mm generated for treatment in Bio Cells as percent of Feed Soil	7.9%			8.7%		
Total		18.9%			29.1%		

Notes:

[1] : Refer to Table 1 for percentage of mass in particle size fraction 2.0 - 12.5 mm (2 mm - 1/2")

[2] : The TNT concentration as analyzed in the soil fraction less than 8 mm is used as a reference for the concentration of TNT in the Feed Soil prior to processing

List of Attachments

Attachment 1: PHOTOS

Attachment 2: DATA SHEETS

Attachment 3: WORK PLAN DIAGRAMS

Attachment 4: ANALYTICAL REPORTS – PACE ANALYTICAL

Attachment 5: Selected Polymer FBS C1082 – MSDS

Attachment 6: PROCEDURE STEPS FOR ACETONE EXTRACTION AND EXPRAY ANALYSIS OF OVERSIZE

Attachment 1

PHOTOS

Photo 1: Soil Piles used for Preparation of Composite Soil Samples

Photo 2: Piece of Solid TNT Material found in Uphill Soil

Photo 3: Uphill Soil Composite – Oversize Fraction +8 mm- 50 mm (2”) (Left Side) and Soil Fraction less than 8 mm (Right Side)

Photo 4: Downhill Soil Composite – Oversize Fraction +8 mm- 50 mm(2”) (Left Side) and Soil Fraction less than 8 mm (Right Side)

Photo 5: Decantation Bucket to Simulate Hydraulic Separation in Sand Screw

Photo 6: Attrition Scrubber with Double Blade Impeller for High Density Mixing (Attritrioning)

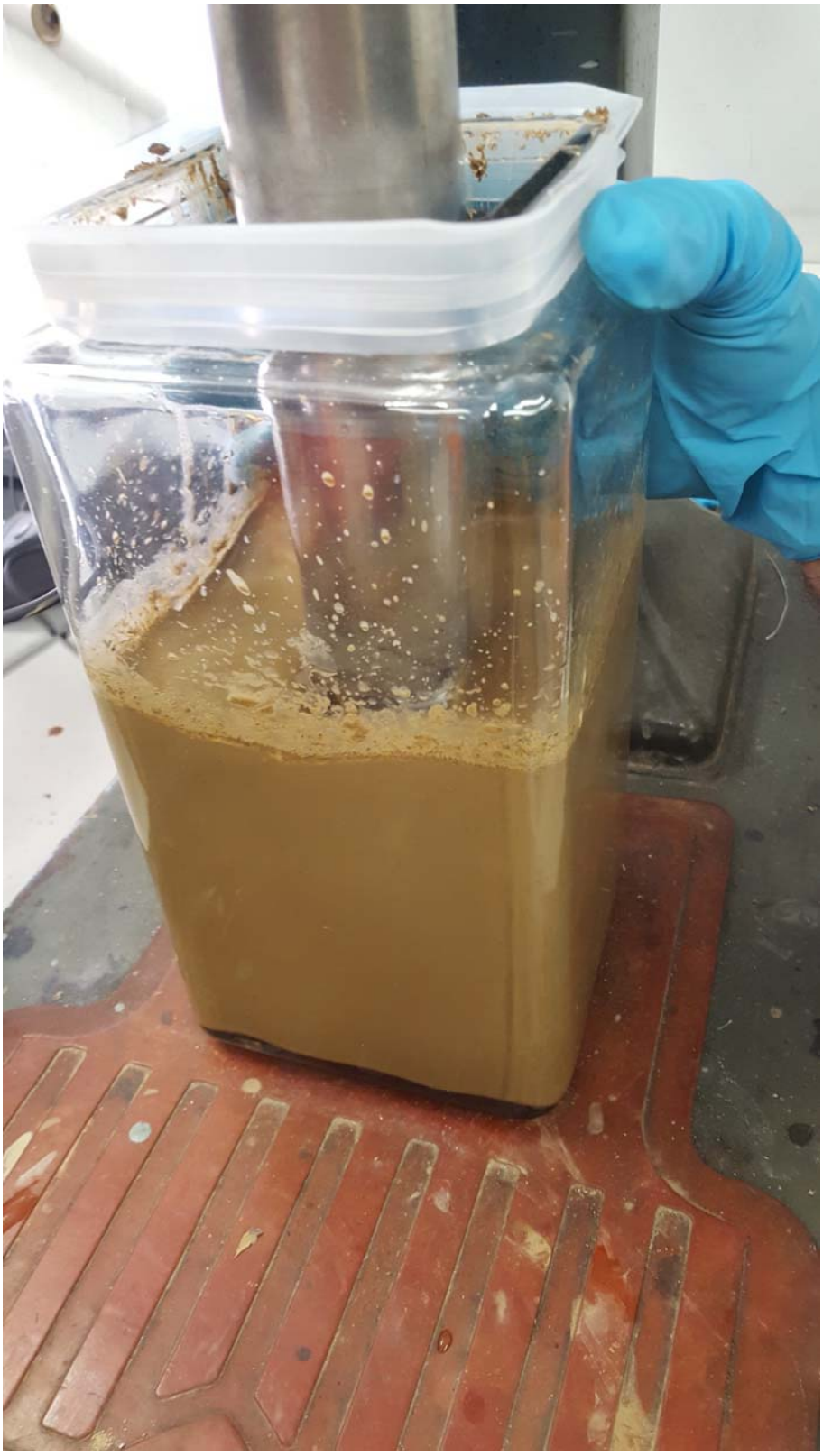


Photo 7: Attrition Scrubbing in Action (1280 RPM)

Photo 8: Comparison Fine Oversize before Attrition Scrubbing (Left Side) and after Attrition Scrubbing (Right Side)

Photo 9: Drum Scrubber Simulation Drop Testing in Wheelbarrow (Drop Height ~7 feet)

Photo 10: Coarse Oversize (+1/2”-2”) after Drum Scrubber and Wet Screen Washing

Photo 11: Fine Oversize (+2mm-1/2”) after Attrition Scrubbing and Wet Screen Washing

Photo 12: Bio-Feed - Final Flocculated Sand and Fines Product with DARAMEND; Decanted Water for Process Reuse

Note:
"Popcorn flocs" shown after slurry drop test (3 feet drop). The DARAMEND additive material has been captured within the matrix of the flocs providing uniform blending of DARAMEND within the soil matrix.

Attachment 2

DATA SHEETS

Data Sheet - Initial Soil Analysis Results

Sample		Sample Code	%Solids by Weight	Final Result on "dry weight basis" (mg/kg)	
				2,4,6 TNT	2,4 DNT
Uphill Soil Composite					
	Soil Fraction < 8 mm	UHC-01	92.1%	12,000	< 110
	Soil Fraction < 8 mm (duplicate)	UHC-01A	91.8%	13,000	< 110
	Average			**12,500**	**< 110**
	Soil Fraction 4 - 8 mm	UHC-4-8 mm	90.4%	2,800	< 110
	Soil Fraction 2 - 4 mm	UHC-2-4 mm	85.6%	7,900	< 120
	Soil Fraction 0.106 - 2 mm	UHC-0.106-2 mm	82.9%	11,000	< 120
	Soil Fraction < 0.106 mm	UHC-0.106 mm	68.7%	24,000	< 150
Downhill Soil Composite					
	Soil Fraction < 8 mm	DHC-01	93.8%	5,200	< 110
	Soil Fraction < 8 mm (duplicate)	DHC-01A	93.7%	7,400	< 110
	Average			**6,300**	**< 110**
	Soil Fraction 4 - 8 mm	DHC-4-8 mm	92.9%	6,700	< 100
	Soil Fraction 2 - 4 mm	DHC-2-4 mm	98.9%	6,000	< 100
	Soil Fraction 0.106 - 2 mm	DHC-0.106-2 mm	85.0%	2,400	< 120
	Soil Fraction < 0.106 mm	DHC-0.106 mm	64.1%	17,000	< 160

Data Sheet - Results Quick Field Acetone Extraction and Analysis

Sample	Sample Code	Soil Weight	Acetone Weight	Soil to Acetone Ratio	Extraction Time (approximate)	2,4,6 TNT concentration measured in Acetone Extract	Calculated 2,4,6 TNT concentration in Solids Fraction "as analyzed" See Note 1)	Comments
		(gr)	(gr)		(hrs)	(mg/L)	(mg/kg)	
Initial Characterization								
Uphill Oversize 25 - 50 mm	UHC-OS 1" - 2"	952	250	3.81	~1 HR	450	118	no visual TNT
Uphill Oversize 16 - 25 mm	UHC-OS 5/8" - 1"	284	250	1.14	~1 HR	120	106	no visual TNT
Uphill Oversize 16 - 25 mm + 24 hrs acetone extraction	UHC-OS 5/8" - 1" + 24 HRS	284	250	1.14	> 24 HRS	1,100	968	no visual TNT
Uphill Oversize 8 - 16 mm	UHC-OS 8 mm - 5/8"	345	250	1.38	~1 HR	1,000	725	no visual TNT
Uphill Oversize 8 - 16 mm +24 hrs acetone extraction	UHC-OS 8 mm - 5/8" + 24 HRS	345	250	1.38	> 24 HRS	6,700	4,855	no visual TNT
Uphill Oversize 4 - 8 mm after approx. 2 hrs acetone extraction time	UHC-4-8 mm	51	23	2.22	~2 HRS	9,600	4,329	
Uphill Oversize 2 - 4 mm after approx. 1.5 hrs extraction time	UHC-2-4 mm	53	24	2.21	~1.5 HRS	8,100	3,668	
Downhill Oversize 1"-2" (25-50 mm)	DHC-OS 1" - 2"	74	100	0.74	~1 HR	29	39	no visual TNT
Downhill Oversize 5/8"-1" (16-25 mm)	DHC-OS 5/8" - 1" (A)	277	250	1.11	~1 HR	88 (89 duplicate)	79 (80 duplicate)	no visual TNT
Downhill Oversize 8 mm-5/8"(8-16 mm)	DHC-OS 8 mm - 5/8"	997	250	3.99	~1 HR	4,100	1,028	
Process Simulation								
Soil fraction 4-8 mm after drum scrubber test	UHC-DRUM-4-8 mm	330	126	2.62	~18 HRS	1,100	420	no visual TNT
Soil fraction 4-8 mm after drum scrubber test - crushed	UHC-DRUM-4-8 mmCRUSHED	50	30	1.67	~18 HRS	2,300	1,380	no visual TNT
Uphill Oversize 8 mm-1/2" mm after drum scrubber test	UHC-DRUM-8mm-1/2"	907	250	3.63	~18 HRS	3,300	910	no visual TNT
Uphill Oversize 1/2" - 2" (12.5-50 mm) after drum scrubber test (Process Simulation)	UHC-DRUM-1/2" - 2"	794	251	3.16	~18 HRS	2,000	632	no visual TNT
Downhill Oversize 1/2"-2" (12.5-50 mm) (Process Simulation)	DHC-PS-1/2" - 2"	352	136	2.59	~18 HRS	110	43	no visual TNT

Notes:

[1)]: The "Quick Field Acetone Extraction and Analysis" as used during this study for analysis of coarse material is not an approved or validated method. The purpose of this extraction is to provide a practical method to obtain an indication of TNT levels in samples containing material up to 2" in size without the need for sample crushing. It was noted that the extraction time (1 to 24 hrs) had an influence on the total amount of TNT analyzed in the extract. Also, a higher extraction efficiency was achieved on crushed samples vs. uncrushed samples. The results of acetone analysis performed in this study should only considered to be "general indicative". Further optimization and validation of the acetone extraction method for use on coarse samples would be required if this method or an adaptation of this method would be proposed for use during the actual remediation.

Data Sheet - Dry Screening at 8 mm - Uphill Composite

Fraction	Net Weight Moist (kg)	% Dry Solids (%)	Net Weight Dry (kg)	Mass Distribution on dry Weight Basis (%)
Oversize + 8 mm	13.2	95% [1)]	12.54	24.7%
Soil - 8 mm	41.55	91.8%	38.16	75.3%
Total			50.70	100.0%

Data Sheet - Dry Screening at 8 mm - Downhill Composite

Fraction	Net Weight Moist (kg)	% Dry Solids (%)	Net Weight Dry (kg)	Mass Distribution on dry Weight Basis (%)
Oversize + 8 mm	7.5	95% [1)]	7.08	14.9%
Soil - 8 mm	43.2	93.5%	40.40	85.1%
Total			47.48	100.0%

Oversize Wet Screening at 8 mm - Uphill Composite

Fraction	Net Weight Moist (g)	% Dry Solids (%)	Net Weight Dry (kg)	Mass Distribution on dry Weight Basis (%)	Mass Distribution on dry Weight Basis (%)
Oversize 25 - 50 mm	974	95% [1)]	925.30	44.5%	60.3%
Oversize 16 - 25 mm	291	95% [1)]	276.45	13.3%	18.0%
Oversize 8 - 16 mm	351	95% [1)]	333.45	16.0%	21.7%
Adhering Soil - 8 mm	544	100.0%	544.00	26.2%	-
Total	2160		2079.20	100.0%	100.0%

Oversize Dry Screening at 8 mm - Downhill Composite

Fraction	Net Weight Moist (g)	% Dry Solids (%)	Net Weight Dry (kg)	Mass Distribution on dry Weight Basis (%)	Mass Distribution on dry Weight Basis (%)
Oversize 25 - 50 mm	74	95% [1)]	70.30	4.3%	5.5%
Oversize 16 - 25 mm	277	95% [1)]	263.15	16.0%	20.5%
Oversize 8 - 16 mm	997	95% [1)]	947.15	57.6%	74.0%
Adhering Soil - 8 mm	363	100.0%	363.00	22.1%	-
Total	1711		1643.60	100.0%	100.0%

Notes:
1): Estimated Values

Uphill Composite - Oversize Corrected for Misplacement (on dry weight basis)

Fraction				Mass Distribution on dry Weight Basis (%)
Oversize + 8 mm				19.3%
Soil - 8 mm				80.7%
Total				100.0%

Downhill Composite - Oversize Corrected for Misplacement (on dry weight basis)

Fraction				Mass Distribution on dry Weight Basis (%)
Oversize + 8 mm				11.6%
Soil - 8 mm				88.4%
Total				100.0%

Data Sheet - Wet Screening Results Soil Fraction < 8 mm

Fraction	UPHILL Composite		DOWNHILL Composite	
	Net	**Distribution**	Net	**Distribution**
	(g)	**(%)**	(g)	**(%)**
4.75- 8.0 mm	12.8	**5.5%**	21.8	**9.7%**
4.0 - 4.75 mm	5.4	**2.3%**	7.4	**3.3%**
2.0 - 4.0 mm	29.9	**12.9%**	33.7	**15.0%**
1.0-2.0 mm	35.9	**15.5%**	32.4	**14.4%**
0.5-1.0 mm	40.2	**17.4%**	42.2	**18.8%**
0.25-0.5 mm	46.5	**20.1%**	45.3	**20.2%**
0.125-0.25 mm	10.7	**4.6%**	21.5	**9.6%**
0.106-0.125mm	0.5	**0.2%**	0.5	**0.2%**
0.063-0.106 mm	6.9	**3.0%**	4.1	**1.8%**
<0.063 mm	42.9	**18.5%**	15.4	**6.9%**
Total	231.7	**100.0%**	224.3	**100.0%**

QA/QC check

Used for particle Size Moist (gram)	259.2		245.6	
% solids (measured)	91.8%		93.5%	
Calculated dry mass used for particle Size-Dry (gram) [A]	238.0		229.7	
Total Recovered dry mass [B]	231.7		224.3	
loss of mass (gram) [A] - [B]	6.3		5.4	
Mass Loss % [1)]	**2.4%**		**2.2%**	

[1)]: Acceptance Criteria: Mass Loss less than 5%

DATA SHEET - Results Attrition Scrubbing on Soil Fraction 2.0 to 4.0 mm

Description		UPHILL COMPOSITE			DOWNHILL COMPOSITE		
		Perctentage of Total Mass on Dry Weight Basis (%)	**2,4,6 TNT Concentration on "dry weight basis" (mg/kg)**	**2,4,6 TNT Removal Efficiency in Soil Fraction 2.0-4.0 mm (%)**	**Perctentage of Total Mass on Dry Weight Basis (%)**	**2,4,6 TNT Concentration on "dry weight basis" (mg/kg)**	**2,4,6 TNT Removal Efficiency in Soil Fraction 2.0-4.0 mm (%)**
Soil Fraction 2 to 4 mm - Before Attrition Scrubbing							
	Soil Fraction 2 - 4 mm (before scrubbing)	10.4%	7,100		13.3%	2,700	
Soil Fraction 2 to 4 mm - After Attrition Scrubbing							
	Soil Fraction 2 - 4 mm 5 min. @ 75 % Solids	8.1%	1,600	77%	11.3%	1,400	48%
	Soil Fraction 2-4 mm 5 min. @ 70 % Solids	7.9%	2,100	70%	-	-	-
	Soil Fraction 2 - 4 mm 10 min @ 75% Solids	7.7%	**830**	**88%**	11.7%	**860**	**68%**

Notes:

-: Not Determined

DATA SHEET - Analytical Results Process Simulation - Uphill Soil Composite

Description	Sample Code	Method	% Solids by Weight (%)	Result [2] (mg/kg)	
				2,4,6 TNT	2,4 DNT
Soil Fraction < 8 mm	UHC-01	Standard	92.1%	12,000	< 110
Soil Fraction < 8 mm (duplicate)	UHC-01A	Standard	91.8%	13,000	< 110
Soil fraction 1/2" - 2" after drum scrubber test	UHC-DRUM-1/2"-2"	Field Acetone [1]	-	632	-
Soil fraction 8 mm-1/2" mm after drum scrubber test	UHC-DRUM-8mm-1/2"	Field Acetone [1]	-	910	-
Soil fraction 4-8 mm after drum scrubber test	UHC-DRUM-4-8 mm	Field Acetone [1]	-	420	-
Soil fraction 4-8 mm after drum scrubber test - crushed	UHC-DRUM-4-8 mmCRUSHED	Field Acetone [1]	-	1,380	-
Soil fraction 4-8 mm after drum scrubber test - crushed	UHC-DRUM-4-8 mmCRUSHED	Standard	95.5%	2,700	< 110
Soil fraction 2-4 mm crushed	UHC-DRUM-2-4 mmCRUSHED	Standard	91.3%	12,000	< 110
Soil fraction 2mm - 1/2" prior to Attrition Scrubbing	UHC-PS-2mm-1/2"	Standard	94.2%	5,500	< 110
Soil fraction 2mm - 1/2" after to Attrition Scrubbing	UHC-PS-2mm-1/2"-AFTERATTRIT	Standard	96.1%	150	< 100

Notes:

[1]: Field Acetone Extraction Results based on 18 HR Contact Time; acetone extraction results are semi-quantitative for indicative purposes only

[2]: Results for standard analysis are reported on dry-weight-basis. Results for Field Acetone analysis are reported on "as is" basis

DATA Sheet - Polymer Strength & Dosage Verification - Uphill Soil Composite Process Simulation

	Mass (gram)	% Solids	Dry Weight (gram)	Slurry Density (% by Weight)	
Sand after Hydraulic Separation & Atttition - Process Simulation	150	80%	120		
Fines Slurry - Process Simulation	500	12%	58	7%	fines slurry density
Dilution Water	200				
TOTAL	850		178	21%	total slurry density

DARAMEND	3%	by weight on dry weight basis for combined "sand and fines"	
DARAMEND addition	5.34	gram	
Iron Dosage (as 60% Iron Sulfate)	2.7	L/MT	
Lab Test Dosage (10% Iron Sulfate solution)	4.0	ml (of 10% Solution)	Iron Sulfate improved water clarity as compared to Polymer only
Polymer			
Polymer Dosage:	3.2	lbs/FEED ton	
Solids Content (100%-% moisture)	90%	% by Weight	
Sand & Fines	72%	% of Dry feed	
Polymer Dosage:	2.53	lbs/ton of Dry Sand & Fines	
Polymer Dosage:	1.15	kg/ton of Dry Sand & Fines	
	2.53	kg/MT (g/kg) of Dry Sand & Fines	
Mass of Solids	178	gr	
Neat Polymer dosage	0.45	gr NEAT Polymer	
Make up Strength Polymer Solution	0.30%		
Lab Polymer Dosage:	150	ml (of 0.3% Solution)	for good Pop-Corn Floc

Notes on Testing of Downhill composite

90 to 120 ml of 0.3% Polymer Solution was found to provide effective flocculation (Good Pop-corn Floc)
4 ml of Iron Sulfate improved water clarity

DATA Sheet - Gross Oversize Determination

		Soil Volume	Soil Density	Soil Mass	Gross Oversize	Total Soil Mass	Soil Mass	Gross Oversize	Total
		estimated	Soil - 2" [1)]	-2"	+2"		-2"	+2"	
		cy	t/cy	kg			(%)	(%)	
Uphill Soil									
	Area 1	1	**1.35**	1224	69.05	1293	94.7%	5.3%	100.0%
	Area 2	1	**1.35**	1224	140.10	1364	89.7%	10.3%	100.0%
	Area 3	1	**1.35**	1224	67.10	1291	94.8%	5.2%	100.0%
						Average	**93.1%**	**6.9%**	**100.0%**
Downhill Soil									
	Area 4	1	**1.61**	1468	4.35	1472	99.7%	0.3%	100.0%
	Area 5	1	**1.61**	1468	4.60	1473	99.7%	0.3%	100.0%
	Area 6	1	**1.61**	1468	3.65	1472	99.8%	0.2%	100.0%
						Average	**99.7%**	**0.3%**	**100.0%**

Notes:

[1)]: *Bulk Density measured by KJ/ART during Process Verification Study by measuring total weight of soil in bucket with calibrated volume of 16 Liters*

Calculation of Soil Bulk Density including Gross Oversize - Uphill Soil

1.00	mass of soil -2" (tons)
0.07	mass of gross oversize +2" (tons)
1.07	total mass
0.74	volume of 1 ton soil (cy)
0.03	volume of Gross oversize associated with 1 ton of soil (cy)
0.78	total volume of 1 ton of soil + Gross Oversize
1.38	Calculated Bulk Density of Mixed Soil and Gross Oversize (t/cy)

DATA Sheet - Soil (Bulk) Density Determination

Net Bucket Volume	16	Liter
Bucket (Tare)	1	kg

Uphill Composite (-2")

Compacted Soil (net weight)	25.55	kg
Soil Density	1.60	kg/l (MT/M3)
Soil Density conversion factor (MT/m3 to t/cy)	0.843	t/cy
Calculated Soil Bulk Density [1)]	1.35	t/cy

Downhill Composite (-2")

Compacted Soil (net weight)	30.65	kg
Soil Density	1.92	kg/l (MT/M3)
Soil Density conversion factor (MT/m3 to t/cy)	0.843	t/cy
Calculated Soil Bulk Density [1)]	1.61	t/cy

Uphill Gross Oversize (> 2") Solids Density Determination

Net volume bucket	16	Liter
Oversize Mass	18.85	kg net
Oversize + Water weight (filled to 16 Liter Mark)	27.6	kg net
Water Weight	8.75	kg net
Solids Volume occupied	7.25	liter
Calculated Solids Density [1)]	2.60	kg/L
Calculated Solids Density [1)]	2.2	t/cy

Notes:

[1)]: Calculated densities are indicative only. Actual in-situ soil densities may vary.

Data Sheet - Soil Moisture Content Results

Sample	**Sample Code**	Tare (g)	Moist Weight + Sample (g)	Dry Weight + Sample (g)	Solids (%)
Uphill Soil Composite Less than 8 mm	UHC-01	9.1	116.9	108.1	91.8%
Downhill Soil Composite Less than 8 mm	DHC-01	9.1	134.2	126.1	93.5%
Uphill Composite Sand after hydraulic separation(~0.106-4 mm)	UHC Sand	8.9	77.0	66.8	85.0%
Downhill Composite Sand after hydraulic separation(~0.106-4 mm)	DHC Sand	9.0	88.4	76.7	85.3%
Uphill Composite Sand after Hydraulic Separation Process Simulation (~0.106-2 mm)	UHC-PS-Sand	2.3	39.6	32.2	80.2%
Uphill Composite Fines Slurry after hydraulic separation Process Simulation (~0.106-2 mm)	UHC-PS-Fines	9.1	219.0	33.5	11.6%

Attachment 3

WORK PLAN DIAGRAMS

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"Technology for a clean environment"

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Project: Former Kenvil Works Facility - Kenvil, New Jersey
Kennedy/Jenks Consultants Project Number: 1540001*27

ART Kenvil Scope of Work for on-site study in October 2017:

Task1
- Confirmation of overall general particle size distribution (oversize, sand, fines) for two types of **representative** plant feed:
  - Collection of representative samples of "up-hill" material by KJ prior to ART arrival
    - 3 composites, of one cubic yard each, prescreen at minus 2 inch on tarps ready for ART on arrival
  - Collection of representative samples of "down-hill" material by KJ prior to ART arrival
    - 3 composites, of one cubic yard each, prescreen at minus 2 inch on tarps ready for ART on arrival
  - Compare oversize, sand and fines for each feed type and determine impact to processing.
  - ART will decide how to use the composites for testing

Task2A+2B
- Determine design parameters for drum scrubber
  - Drop distance (drum diameter)
  - Number of drops (drum length)
  - Verify optimum primary wet screen size as 4 mm

Task 3
- Verification of effectiveness attrition scrubber and post attrition on soil size fraction - 4mm
  - Prepare and perform particle size on minus 4 mm soil feed, perform attritioning, perform particle size on post minus 4 mm attritioned material. Determine TNT concentration as function of particle size before and after attritioning

Task4
- Re-verify selected polymer for strength for both feed types

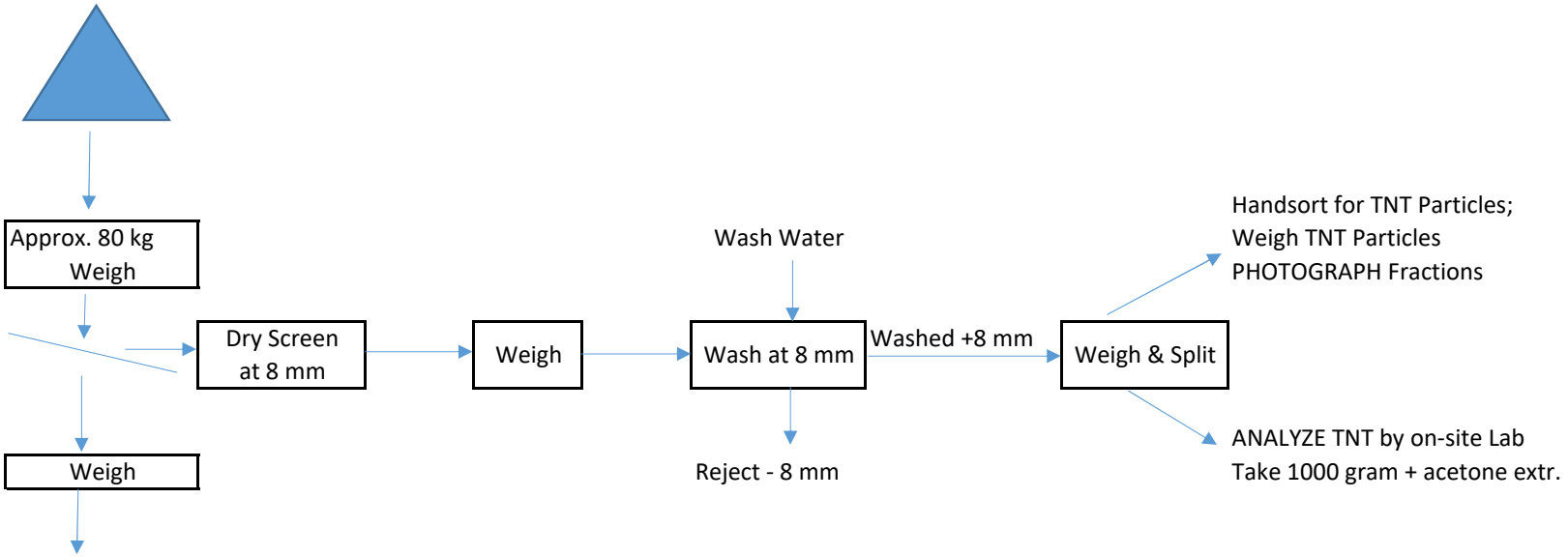
Task5
- Perform a "process simulation" on one type of feed
  - Wet screen at 4 mm
  - Drum scrubber simulation
    - Evaluate material prior to drum scrubbing
    - Screen post scrubber at 4 mm to create coarse oversize and evaluate

ART Engineering LLC

Task 1: Initial Composite Pile Analysis (2 Composites)

Oct 5 2017

Composite Soil Pile



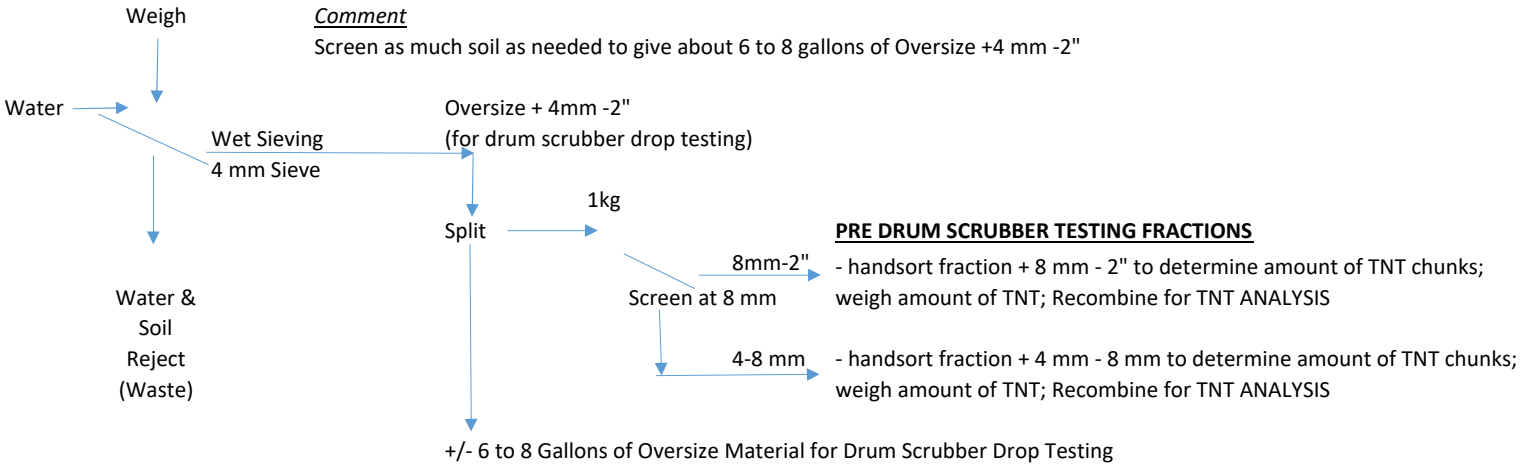
BASE SAMPLE - 8 mm
(2 x 5-gallon bucket)

- Determine Moisture Content (100 gram)
- TNT analysis BASE SAMPLE - extract 1000 gram with Acetone & ANALYZE TNT by on-site Lab (IN DUPLICATE)
- Particle Size Analysis (300 gr), 4 mm, 2 mm, 1 mm, 0.5 mm, 0.25 mm, 0.125 mm, 0.105 mm, 0.063 mm , dry & weigh & archive fractions
- Wet Screening (1000 gr) to generate four size fractions for TNT ANALYTICAL - PRE-PROCESSING:
  - Fraction 4 mm - 8 mm
  - Fraction 2 - 4 mm
  - Fraction 0.105 - 2 mm
  - Fraction < 0.105 mm

Task 2A: Preparation of Oversize Sample for Drum Scrubber Testing

ART Engineering LLC
Oct 5 2017

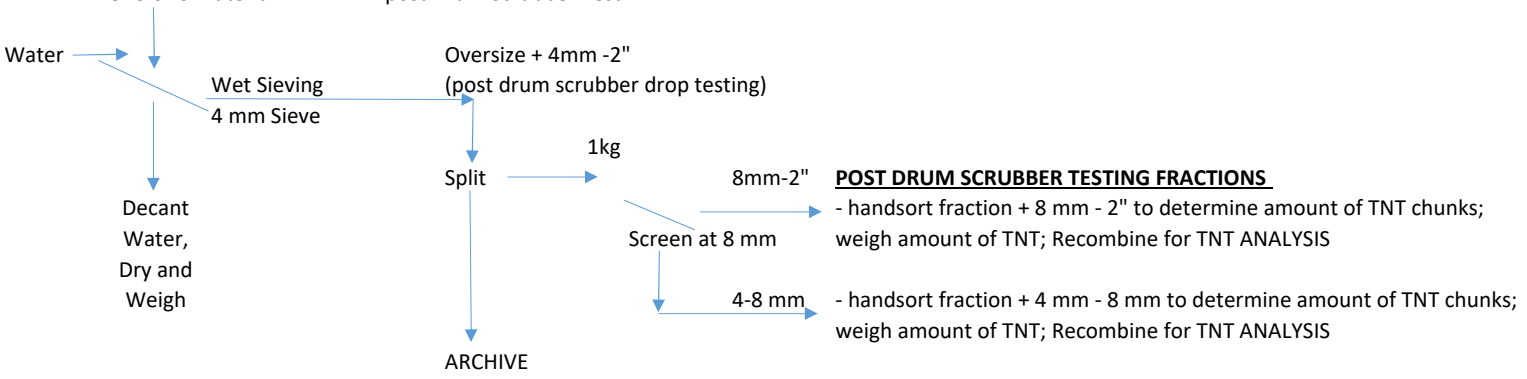
CHOOSEN COMPOSITE with most TNT "chunks" based on outcome of Task 1



Task 2B: Drum Scrubber Testing

- Drop Oversize Material created from Task 2A into Wheelbarel repeatedly (15 times)

Oversize Material +4 mm -2" post Drum Scrubber Test



- if Drum Scrubber test is considered succesfull, perform acetone extraction & TNT analysis by on-site lab

- Repeat Drum Scrubber Test as needed.

Task 3: Attrition Scrubbing Tests - Three Tests: 2 min, 4 min, 6 min

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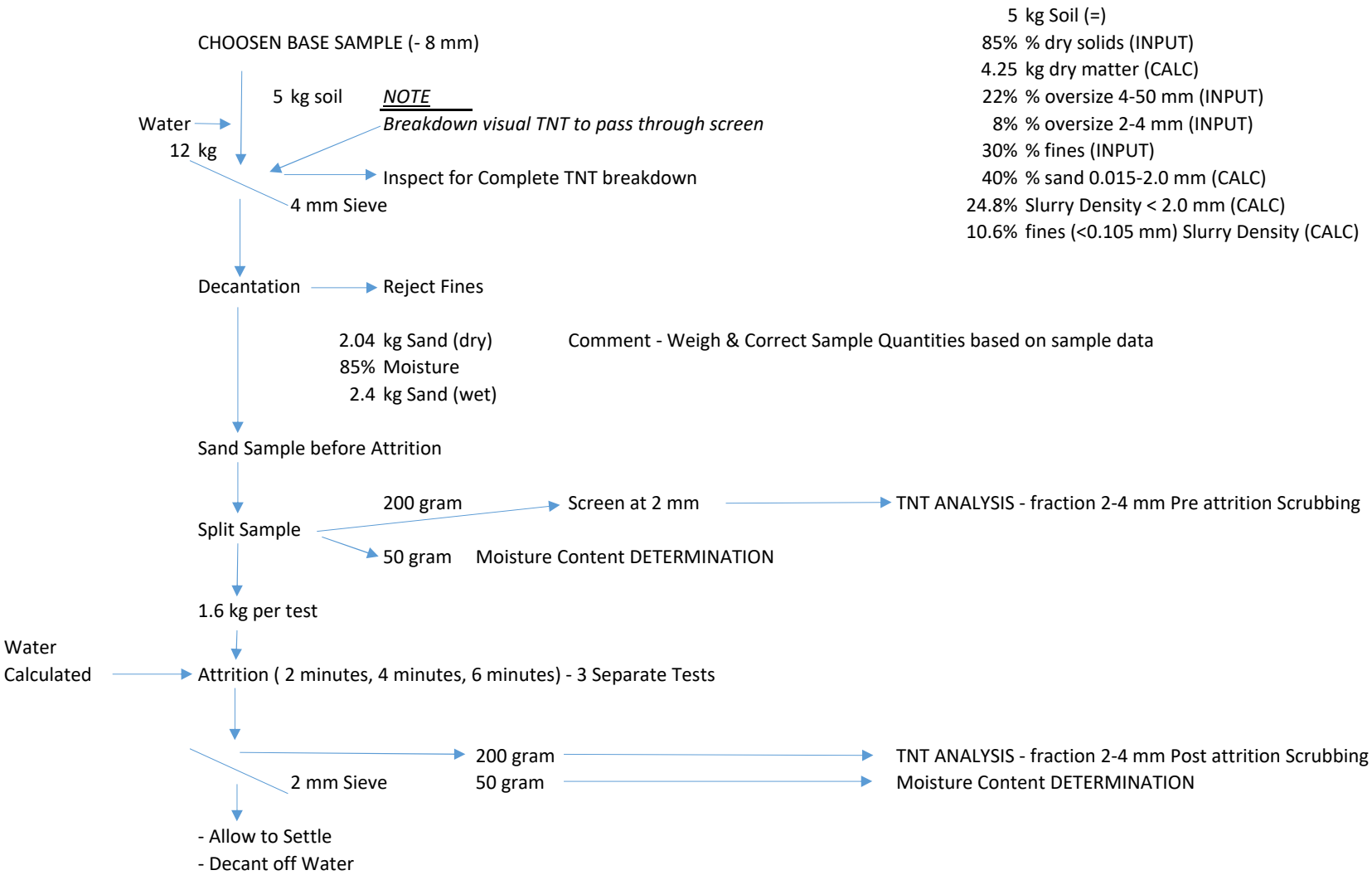
Oct 5 2017



5 kg Soil (=)
85% % dry solids (INPUT)
4.25 kg dry matter (CALC)
22% % oversize 4-50 mm (INPUT)
8% % oversize 2-4 mm (INPUT)
30% % fines (INPUT)
40% % sand 0.015-2.0 mm (CALC)
24.8% Slurry Density < 2.0 mm (CALC)
10.6% fines (<0.105 mm) Slurry Density (CALC)

* FOR BEST SELECTED ATTRITON SCRUBBING TEST - ANALYZE SAND AND FINES FRACTIONS

- Wet Screening (300 gr) to evaluate SAND and FINES fractions for TNT Analysis:
  - TNT ANALYSIS - Sand Fraction 0.105 - 2 mm
  - TNT ANALYSIS - Fines Fraction < 0.105 mm

Task 4A: Polymer Strength Jar Testing

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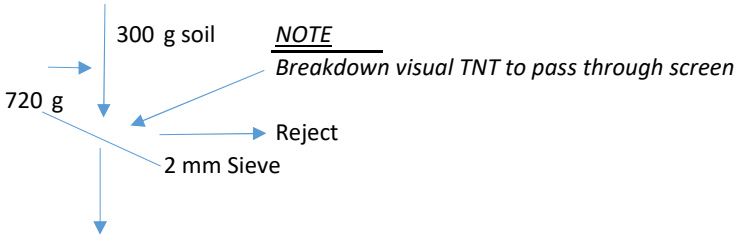
Oct 5 2017

CHOOSEN COMPOSITE BASE SAMPLE

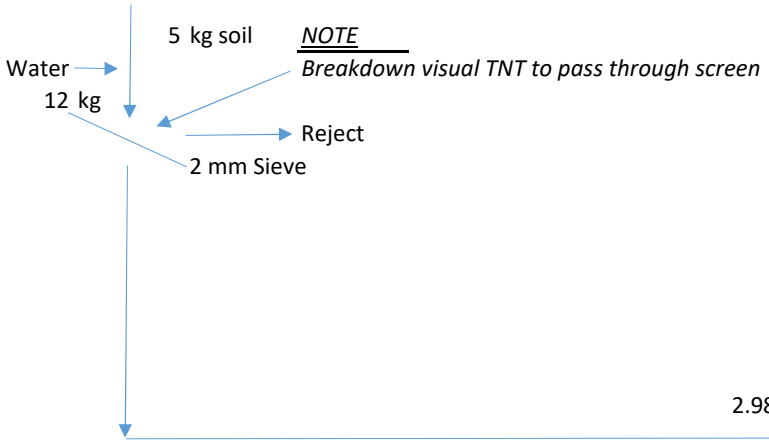


Daramend Dosage	3.6	gram
Polymer Dosage	59.4	gram Polymer Solution @0.3%
Polymer Dosage:	2	lbs/FEED ton
Start Polymer Dosage:	1.00	gr/kg
Make up Strength Polymer Solut	0.30%	

Soil Slurry Jar Tests - Fits 1 Quart Jars
- Multiple Tests- Variables: Polymer Dosage, Floc Strenth Screening

Task 4B: Polymer Strength Verification

CHOOSEN COMPOSITE BASE SAMPLE



5	kg Soil (=)	
85%	% dry solids (INPUT)	
4.25	kg dry matter (CALC)	
22%	% oversize 4-50 mm (INPUT)	
8%	% oversize 2-4 mm (INPUT)	
30%	% fines (INPUT)	
40%	% sand 0.015-2.0 mm (CALC)	
24.8%	Slurry Density < 2.0 mm (CALC)	
10.6%	fines (<0.105 mm) Slurry Density (CALC)	

DARAMEND 2% by weight on dry weight basis for "sand and fines less than 2 mm"

59.5 gram DARAMEND (CALC)

2.98 kg dry solids (CALC) → Flocculate in 5-gal bucket → Poor in 2nd Bucket & Evaluate Strength

Polymer Dosage	990	gram Polymer Solution @0.3%
Polymer Dosage:	2	lbs/FEED ton (BASED ON TASK 4A) (INPUT)
Start Polymer Dosage:	1.00	gr/kg
Make up Strength Polymer Solution	0.30%	

Task 5: Process Simulation

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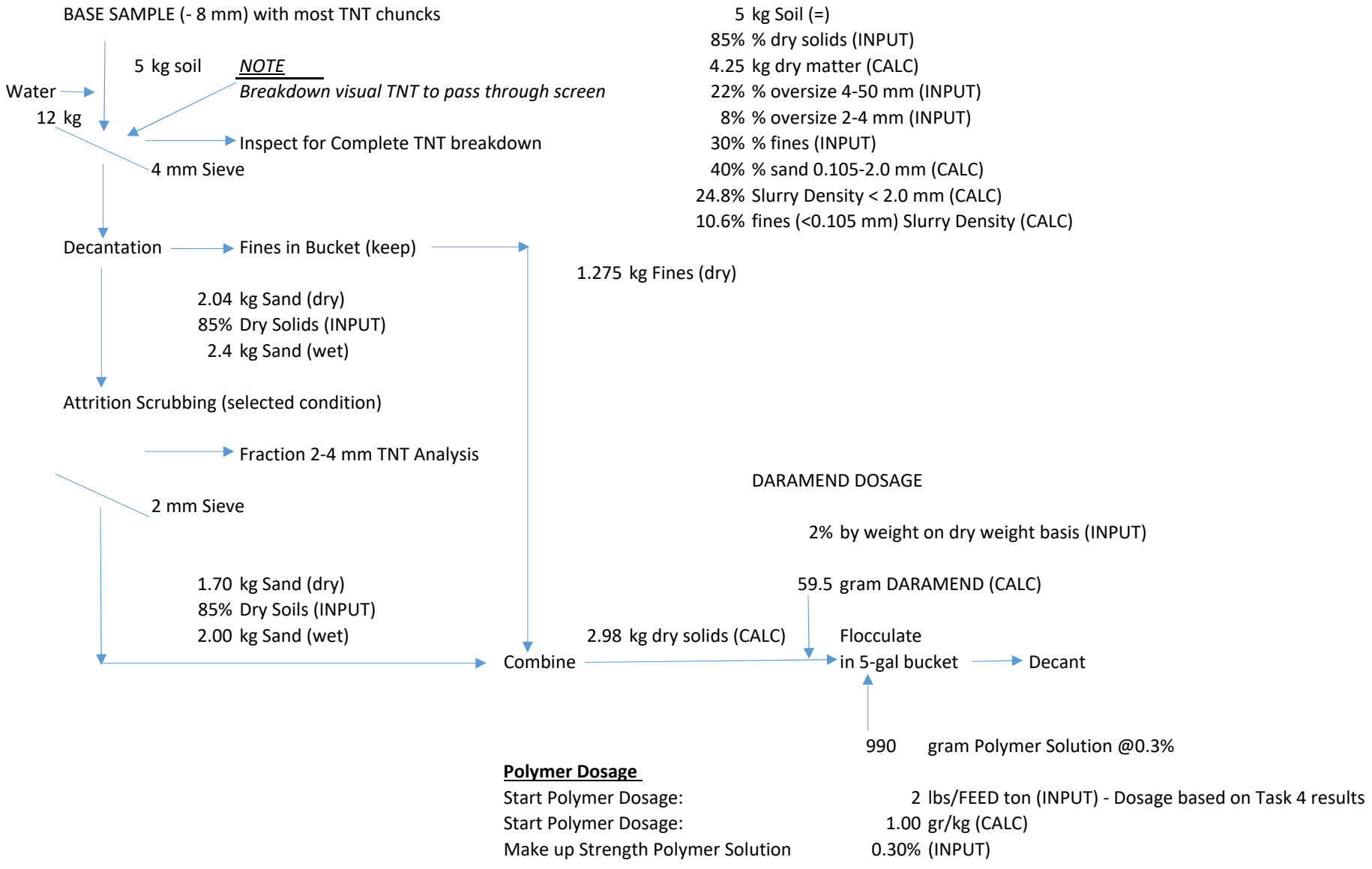
Oct 5 2017



Polymer Dosage

Start Polymer Dosage:	2	lbs/FEED ton (INPUT) - Dosage based on Task 4 results
Start Polymer Dosage:	1.00	gr/kg (CALC)
Make up Strength Polymer Solution	0.30%	(INPUT)

Attachment 4

ANALYTICAL REPORTS – PACE ANALYTICAL

DRAFT REPORT

Pace Analytical®
ECCS Mobile Lab Services

SUMMARY REPORT

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214 Carnegie Center, Suite 103

Princeton, NJ 08540

Project: Hercules Inc. - Kenvil Works Facility

Project Number: 2769

LAB #		K174202-01	K174202-02	K174202-03	K174202-04	K174204-01	K174204-02
MATRIX	Minimum	Soil	Soil	Soil	Soil	Water	Water
SAMPLE ID	Reporting Limit	UHC-01	UHC-01A	DHC-01	DHC-01A	UHC-OS-1"-2"	UHC-OS-5/8"-1' '
Explosive Compounds by EPA Method 8095 (Soil)							
Nitrobenzene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
2-Nitrotoluene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
3-Nitrotoluene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
4-Nitrotoluene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
Nitroglycerin	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
1,3-Dinitrobenzene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
2,6-Dinitrotoluene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
2,4-Dinitrotoluene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
1,3,5-Trinitrobenzene	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
2,4,6-Trinitrotoluene	100 ug/kg dry	12000000 [1]	13000000 [1]	5200000 [1]	7400000 [1]	-	-
PETN	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
RDX	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
4-Amino-2,6-dinitrotoluene	100 ug/kg dry	290000 [1]	290000 [1]	130000 [1]	200000 [1]	-	-
3,5-Dinitroaniline	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
2-Amino-4,6-dinitrotoluene	100 ug/kg dry	210000 [1] [4]	200000 [1]	<110000	120000 [1]	-	-
Tetryl	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
HMX	100 ug/kg dry	<110000	<110000	<110000	<110000	-	-
2,2´-Dinitrobiphenyl	134 [surr]	<110000 [2]	<110000 [2]	<110000 [2]	<110000 [2]	-	-
Explosive Compounds by EPA Method 8095 (Water)							
Nitrobenzene	0.040 ug/mL	-	-	-	-	<40	<40
2-Nitrotoluene	0.040 ug/mL	-	-	-	-	<40	<40
3-Nitrotoluene	0.040 ug/mL	-	-	-	-	<40	<40
4-Nitrotoluene	0.040 ug/mL	-	-	-	-	<40	<40
Nitroglycerin	0.040 ug/mL	-	-	-	-	<40	<40
1,3-Dinitrobenzene	0.040 ug/mL	-	-	-	-	<40	<40
2,6-Dinitrotoluene	0.040 ug/mL	-	-	-	-	<40	<40
2,4-Dinitrotoluene	0.040 ug/mL	-	-	-	-	<40	<40
1,3,5-Trinitrobenzene	0.040 ug/mL	-	-	-	-	<40	<40
2,4,6-Trinitrotoluene	0.040 ug/mL	-	-	-	-	450	120

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Project: Hercules Inc. - Kenvil Works Facility

Project Number: 2769

LAB #			K174202-01	K174202-02	K174202-03	K174202-04	K174204-01	K174204-02
MATRIX	Minimum		Soil	Soil	Soil	Soil	Water	Water
SAMPLE ID	Reporting Limit		UHC-01	UHC-01A	DHC-01	DHC-01A	UHC-OS-1"-2"	UHC-OS-5/8"-1' '
Explosive Compounds by EPA Method 8095 (continued)								
PETN	0.040	ug/mL	-	-	-	-	<40	<40
RDX	0.040	ug/mL	-	-	-	-	<40	<40
4-Amino-2,6-dinitrotoluene	0.040	ug/mL	-	-	-	-	<40	<40
3,5-Dinitroaniline	0.040	ug/mL	-	-	-	-	<40	<40
2-Amino-4,6-dinitrotoluene	0.040	ug/mL	-	-	-	-	<40	<40
Tetryl	0.040	ug/mL	-	-	-	-	<40	<40
HMX	0.040	ug/mL	-	-	-	-	<40	<40
Classical Chemistry Parameters (Soil)								
% Solids	0.00	% by Weight	92.1	91.8	93.8	93.7	-	-

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Project: Hercules Inc. - Kenvil Works Facility

Project Number: 2769

LAB #		K174204-03	K174204-04	K174205-01	K174205-02	K174205-03	K174205-04
MATRIX	Minimum	Water	Water	Water	Water	Water	Water
SAMPLE ID	Reporting Limit	UHC-OS-8MM-5/8"	ACETONE BLANK	DHC-OS-8MM-5/8"	DHC-OS-5/8"-1"	DHC-OS-5/8"-1"-A	DHC-OS-1"-2"
Explosive Compounds by EPA Method 8095 (Water)							
Nitrobenzene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
2-Nitrotoluene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
3-Nitrotoluene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
4-Nitrotoluene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
Nitroglycerin	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
1,3-Dinitrobenzene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
2,6-Dinitrotoluene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
2,4-Dinitrotoluene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
1,3,5-Trinitrobenzene	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
2,4,6-Trinitrotoluene	0.040 ug/mL	1000	<0.040	4100	88	89	29
PETN	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
RDX	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
4-Amino-2,6-dinitrotoluene	0.040 ug/mL	<40	<0.040	82	<40	<40	<40
3,5-Dinitroaniline	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
2-Amino-4,6-dinitrotoluene	0.040 ug/mL	<40	<0.040	54	<40	<40	<40
Tetryl	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40
HMX	0.040 ug/mL	<40	<0.040	<40	<40	<40	<40

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LAB #		K174208-01	K174208-02	K174208-03	K174208-04	K174208-05	K174209-01
MATRIX	Minimum	Water	Water	Water	Water	Water	Soil
SAMPLE ID	Reporting Limit	UHC-OS-5/8"-1" +24 HRS	UHC-OS-8MM-5 /8"+24 HRS	UHC-OS-8MM-5 /8"+24 HRS-A	UHC-4-8MM	UHC-2-4MM	UHC-4-8MM
Explosive Compounds by EPA Method 8095 (Soil)							
Nitrobenzene	100 ug/kg dry	-	-	-	-	-	<110000
2-Nitrotoluene	100 ug/kg dry	-	-	-	-	-	<110000
3-Nitrotoluene	100 ug/kg dry	-	-	-	-	-	<110000
4-Nitrotoluene	100 ug/kg dry	-	-	-	-	-	<110000
Nitroglycerin	100 ug/kg dry	-	-	-	-	-	<110000
1,3-Dinitrobenzene	100 ug/kg dry	-	-	-	-	-	<110000
2,6-Dinitrotoluene	100 ug/kg dry	-	-	-	-	-	<110000
2,4-Dinitrotoluene	100 ug/kg dry	-	-	-	-	-	<110000
1,3,5-Trinitrobenzene	100 ug/kg dry	-	-	-	-	-	<110000
2,4,6-Trinitrotoluene	100 ug/kg dry	-	-	-	-	-	2800000 [1]
PETN	100 ug/kg dry	-	-	-	-	-	<110000
RDX	100 ug/kg dry	-	-	-	-	-	<110000
4-Amino-2,6-dinitrotoluene	100 ug/kg dry	-	-	-	-	-	<110000
3,5-Dinitroaniline	100 ug/kg dry	-	-	-	-	-	<110000
2-Amino-4,6-dinitrotoluene	100 ug/kg dry	-	-	-	-	-	<110000
Tetryl	100 ug/kg dry	-	-	-	-	-	<110000
HMX	100 ug/kg dry	-	-	-	-	-	<110000
2,2´-Dinitrobiphenyl	134 [surr]	-	-	-	-	-	<110000
Explosive Compounds by EPA Method 8095 (Water)							
Nitrobenzene	0.040 ug/mL	<40	<40	<40	<40	<40	-
2-Nitrotoluene	0.040 ug/mL	<40	<40	<40	<40	<40	-
3-Nitrotoluene	0.040 ug/mL	<40	<40	<40	<40	<40	-
4-Nitrotoluene	0.040 ug/mL	<40	<40	<40	<40	<40	-
Nitroglycerin	0.040 ug/mL	<40	<40	<40	<40	<40	-
1,3-Dinitrobenzene	0.040 ug/mL	<40	<40	<40	<40	<40	-
2,6-Dinitrotoluene	0.040 ug/mL	<40	<40	<40	<40	<40	-
2,4-Dinitrotoluene	0.040 ug/mL	<40	<40	<40	<40	<40	-
1,3,5-Trinitrobenzene	0.040 ug/mL	<40	<40	<40	<40	<40	-
2,4,6-Trinitrotoluene	0.040 ug/mL	1100	240	6700	9600 [3]	8100 [3]	-

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LAB #			K174208-01	K174208-02	K174208-03	K174208-04	K174208-05	K174209-01
MATRIX	Minimum		Water	Water	Water	Water	Water	Soil
SAMPLE ID	Reporting Limit		UHC-OS-5/8"-1" +24 HRS	UHC-OS-8MM-5 /8"+24 HRS	UHC-OS-8MM-5 /8"+24 HRS-A	UHC-4-8MM	UHC-2-4MM	UHC-4-8MM
Explosive Compounds by EPA Method 8095 (continued)								
PETN	0.040	ug/mL	<40	<40	<40	<40	<40	-
RDX	0.040	ug/mL	<40	<40	<40	<40	<40	-
4-Amino-2,6-dinitrotoluene	0.040	ug/mL	<40	<40	<40	<40	<40	-
3,5-Dinitroaniline	0.040	ug/mL	<40	<40	<40	<40	<40	-
2-Amino-4,6-dinitrotoluene	0.040	ug/mL	<40	<40	<40	<40	<40	-
Tetryl	0.040	ug/mL	<40	<40	<40	<40	<40	-
HMX	0.040	ug/mL	<40 [5]	<40 [5]	<40 [5]	<40 [5]	<40 [5]	-
Classical Chemistry Parameters (Soil)								
% Solids	0.00	% by Weight	-	-	-	-	-	90.4

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LAB #			K174209-02	K174209-03	K174209-04	K174209-05	K174209-06	K174209-07
MATRIX	Minimum		Soil	Soil	Soil	Soil	Soil	Soil
SAMPLE ID	Reporting Limit		UHC-2-4MM	UHC-0.106-2MM	UHC-<0.106MM	DHC-4-8MM	DHC-2-4MM	DHC-0.106-2MM
Explosive Compounds by EPA Method 8095 (Soil)								
Nitrobenzene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
2-Nitrotoluene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
3-Nitrotoluene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
4-Nitrotoluene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
Nitroglycerin	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
1,3-Dinitrobenzene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
2,6-Dinitrotoluene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
2,4-Dinitrotoluene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
1,3,5-Trinitrobenzene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
2,4,6-Trinitrotoluene	100	ug/kg dry	7900000 [1]	11000000 [1]	24000000 [1]	6700000 [1]	6000000 [1]	2400000 [1]
PETN	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
RDX	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
4-Amino-2,6-dinitrotoluene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
3,5-Dinitroaniline	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
2-Amino-4,6-dinitrotoluene	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
Tetryl	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
HMX	100	ug/kg dry	<120000	<120000	<150000	<110000	<100000	<120000
2,2´-Dinitrobiphenyl	134	[surr]	<120000	<120000	<150000	<110000	<100000	<120000
Classical Chemistry Parameters (Soil)								
% Solids	0.00	% by Weight	85.6	82.9	68.7	92.9	98.9	85.0

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LAB #		K174209-08	K174211-01	K174211-02	K174211-03	K174211-04	-
MATRIX	Minimum	Soil	Soil	Soil	Soil	Soil	-
SAMPLE ID	Reporting Limit	DHC-0.106MM	UHC-SAND-2-4 MM	UHC-SAND-ATT RIT1	UHC-SAND-ATT RIT2	UHC-SAND-ATT RIT3	-
Explosive Compounds by EPA Method 8095 (Soil)							
Nitrobenzene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
2-Nitrotoluene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
3-Nitrotoluene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
4-Nitrotoluene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
Nitroglycerin	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
1,3-Dinitrobenzene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
2,6-Dinitrotoluene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
2,4-Dinitrotoluene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
1,3,5-Trinitrobenzene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
2,4,6-Trinitrotoluene	100 ug/kg dry	17000000 [1]	7100000 [1]	1600000 [1]	830000 [1]	2100000 [1]	-
PETN	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
RDX	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
4-Amino-2,6-dinitrotoluene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
3,5-Dinitroaniline	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
2-Amino-4,6-dinitrotoluene	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
Tetryl	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
HMX	100 ug/kg dry	<160000	<100000	<100000	<100000	<100000	-
2,2´-Dinitrobiphenyl	134 [surr]	<160000	<100000	<100000	<100000	<100000	-
Classical Chemistry Parameters (Soil)							
% Solids	0.00 % by Weight	64.1	99.5	99.4	99.8	98.8	-

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Special Notes

1 = Data reported from a dilution
2 = Diluted out.
3 = The concentration indicated is above the instrument calibration range. This value is an estimated concentration.
4 = Results may be biased high because of high continuing calibration verification (CCV).
5 = Resuts may be biased low because of low continuing calibration verification (CCV).
6 = The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.
7 = Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.

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Project: Hercules Inc. - Kenvil Works Facility

Project Number: 2769

LAB #			K174212-01	K174212-02	K174212-03	K174212-04	K174212-05	-
MATRIX	Minimum		Soil	Soil	Soil	Soil	Soil	-
SAMPLE ID	Reporting Limit		DHC-SAND	DHC-SAND-ATTRIT#1	DHC-SAND-ATTRIT#2	DHC-OS-2-8MM	DHC-OS-2-8MM-ATTR.1	-
Explosive Compounds by EPA Method 8095 (Soil)								
Nitrobenzene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
2-Nitrotoluene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
3-Nitrotoluene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
4-Nitrotoluene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
Nitroglycerin	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
1,3-Dinitrobenzene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
2,6-Dinitrotoluene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
2,4-Dinitrotoluene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
1,3,5-Trinitrobenzene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
2,4,6-Trinitrotoluene	100	ug/kg dry	2700000 [1]	860000 [1]	1400000 [1]	5900000 [1]	240000 [1]	-
PETN	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
RDX	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
4-Amino-2,6-dinitrotoluene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
3,5-Dinitroaniline	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
2-Amino-4,6-dinitrotoluene	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
Tetryl	100	ug/kg dry	<100000	<100000	<100000	<100000	<100000	-
HMX	100	ug/kg dry	<100000 [2]	<100000 [2]	<100000 [2]	<100000 [2]	<100000 [2]	-
2,2´-Dinitrobiphenyl	134	[surr]	<100000	<100000	<100000	<100000	<100000	-
Classical Chemistry Parameters (Soil)								
% Solids	0.00	% by Weight	99.6	99.7	99.7	99.2	99.2	-

Special Notes

1 = Data reported from a dilution

2 = Resuts may be biased low because of low continuing calibration verification (CCV).

3 = The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.

4 = Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.

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Project: Hercules Inc. - ART Treatibility

Project Number: 2769

LAB #			K174302-01	K174302-02	K174302-03	K174302-04	K174303-01	K174303-01RE1
MATRIX		Minimum	Soil	Soil	Soil	Soil	Water	Water
SAMPLE ID		Reporting Limit	UHC-DRUM4-8 mmCRUSHED	UHC-DRUM2-4 mmCRUSHED	UHC-PS-2mm-1/2"	UHC-PS-2mm-1/2"-AFTERATTRIT	UHC-DRUM-1/2"-2"	UHC-DRUM-1/2"-2"
Explosive Compounds by EPA Method 8095 (Soil)								
Nitrobenzene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
2-Nitrotoluene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
3-Nitrotoluene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
4-Nitrotoluene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
Nitroglycerin	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
1,3-Dinitrobenzene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
2,6-Dinitrotoluene	100	ug/kg dry	-	<110000	<110000	-	-	-
2,6-Dinitrotoluene [2C]	100	ug/kg dry	<100000	-	-	<100000	-	-
2,4-Dinitrotoluene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
1,3,5-Trinitrobenzene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
2,4,6-Trinitrotoluene	100	ug/kg dry	2700000 [1]	12000000 [1]	5500000 [1]	150000 [1]	-	-
PETN	100	ug/kg dry	<100000 [2]	-	<110000 [2]	<100000 [2]	-	-
PETN [2C]	100	ug/kg dry	-	<110000 [2]	-	-	-	-
RDX	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
4-Amino-2,6-dinitrotoluene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
3,5-Dinitroaniline	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
2-Amino-4,6-dinitrotoluene	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
Tetryl	100	ug/kg dry	<100000	<110000	<110000	<100000	-	-
HMX	100	ug/kg dry	<100000 [2]	<110000 [2]	<110000 [2]	<100000 [2]	-	-
2,2´-Dinitrobiphenyl	134	[surr]	<110000	<110000	<110000	<100000	-	-
Explosive Compounds by EPA Method 8095 (Water)								
Nitrobenzene	0.040	ug/mL	-	-	-	-	<40	<400
2-Nitrotoluene	0.040	ug/mL	-	-	-	-	<40	<400
3-Nitrotoluene	0.040	ug/mL	-	-	-	-	<40	<400
4-Nitrotoluene	0.040	ug/mL	-	-	-	-	<40	<400
Nitroglycerin	0.040	ug/mL	-	-	-	-	<40	<400
1,3-Dinitrobenzene	0.040	ug/mL	-	-	-	-	<40	<400
2,6-Dinitrotoluene	0.040	ug/mL	-	-	-	-	<40	<400

Pace Analytical®
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SUMMARY REPORT

2525 Advance Road
Madison, WI 53718
608.221.8700 Phone
608.221.4889 Fax

Kennedy Jenks Consultants

214 Carnegie Center, Suite 103

Princeton, NJ 08540

Project: Hercules Inc. - ART Treatibility

Project Number: 2769

LAB #			K174302-01	K174302-02	K174302-03	K174302-04	K174303-01	K174303-01RE1
MATRIX	Minimum		Soil	Soil	Soil	Soil	Water	Water
SAMPLE ID	Reporting Limit		UHC-DRUM4-8 mmCRUSHED	UHC-DRUM2-4 mmCRUSHED	UHC-PS-2mm-1/2"	UHC-PS-2mm-1/2"-AFTERATTRIT	UHC-DRUM-1/2"-2"	UHC-DRUM-1/2"-2"
Explosive Compounds by EPA Method 8095 (continued)								
2,4-Dinitrotoluene	0.040	ug/mL	-	-	-	-	<40	-
2,4-Dinitrotoluene [2C]	0.040	ug/mL	-	-	-	-	-	<400
1,3,5-Trinitrobenzene	0.040	ug/mL	-	-	-	-	<40	<400
2,4,6-Trinitrotoluene	0.040	ug/mL	-	-	-	-	2000	2100
PETN	0.040	ug/mL	-	-	-	-	<40 [2]	<400 [2]
RDX	0.040	ug/mL	-	-	-	-	<40	<400
4-Amino-2,6-dinitrotoluene	0.040	ug/mL	-	-	-	-	<40	<400
3,5-Dinitroaniline	0.040	ug/mL	-	-	-	-	<40	<400
2-Amino-4,6-dinitrotoluene [2C]	0.040	ug/mL	-	-	-	-	<40	<400
Tetryl	0.040	ug/mL	-	-	-	-	<40	<400
HMX	0.040	ug/mL	-	-	-	-	<40 [2]	<400 [2]
Classical Chemistry Parameters (Soil)								
% Solids	0.00	% by Weight	95.5	91.3	94.2	96.1	-	-

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Project: Hercules Inc. - ART Treatibility

Project Number: 2769

LAB #		K174303-02	K174303-02RE1	K174303-03	K174303-03RE1	K174303-04	K174303-04RE1
MATRIX	Minimum	Other	Other	Other	Other	Other	Other
SAMPLE ID	Reporting Limit	UHC-DRUM-8mm-1/2"	UHC-DRUM-8mm-1/2"	UHC-DRUM-4-8 mm	UHC-DRUM-4-8 mm	UHC-DRUM-4-8 mmCRUSHED	UHC-DRUM-4-8 mmCRUSHED
Explosive Compounds by EPA Method 8095 (Water)							
Nitrobenzene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
2-Nitrotoluene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
3-Nitrotoluene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
4-Nitrotoluene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
Nitroglycerin	0.040 ug/mL	<40	<400	<40	<400	<40	<400
1,3-Dinitrobenzene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
2,6-Dinitrotoluene	0.040 ug/mL	<40	<400	<40	<400	-	<400
2,6-Dinitrotoluene [2C]	0.040 ug/mL	-	-	-	-	<40	-
2,4-Dinitrotoluene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
1,3,5-Trinitrobenzene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
2,4,6-Trinitrotoluene	0.040 ug/mL	3300	3600	1100	1200	2300	2300
PETN	0.040 ug/mL	<40 [2]	<400 [2]	<40 [2]	<400 [2]	<40 [2]	<400 [2]
RDX	0.040 ug/mL	<40	<400	<40	<400	<40	<400
4-Amino-2,6-dinitrotoluene	0.040 ug/mL	<40	<400	<40	<400	<40	<400
3,5-Dinitroaniline	0.040 ug/mL	<40	<400	<40	<400	<40	<400
2-Amino-4,6-dinitrotoluene [2C]	0.040 ug/mL	<40	<400	<40	<400	<40	<400
Tetryl	0.040 ug/mL	<40	<400	<40	<400	<40	<400
HMX	0.040 ug/mL	<40 [2]	<400 [2]	<40 [2]	<400 [2]	<40 [2]	<400 [2]

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Princeton, NJ 08540

Project: Hercules Inc. - ART Treatibility

Project Number: 2769

LAB #		K174304-01	K174304-02	K174307-01	K174308-01	K174308-02	-
MATRIX	Minimum	Soil	Soil	Water	Soil	Soil	-
SAMPLE ID	Reporting Limit	UHC-PS-Biofeed	DHC-PS-2mm-1/2"	DHC-PS-1/2"-2"	DHC-PS-2mm-1/2"-AFTERATTRIT	DHC-PS-BIOFEED	-
Explosive Compounds by EPA Method 8095 (Soil)							
Nitrobenzene	100 ug/kg dry	-	-	-	<110000	-	-
Nitrobenzene [2C]	100 ug/kg dry	<1300000	<1100000	-	-	<1200000	-
2-Nitrotoluene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
3-Nitrotoluene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
4-Nitrotoluene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
Nitroglycerin [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
1,3-Dinitrobenzene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
2,6-Dinitrotoluene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
2,4-Dinitrotoluene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
1,3,5-Trinitrobenzene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
2,4,6-Trinitrotoluene [2C]	100 ug/kg dry	16000000 [1]	9500000 [1]	-	150000 [1]	5100000 [1]	-
PETN [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
RDX	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
4-Amino-2,6-dinitrotoluene	100 ug/kg dry	-	-	-	<110000	<1200000	-
4-Amino-2,6-dinitrotoluene [2C]	100 ug/kg dry	<1300000	<1100000	-	-	-	-
3,5-Dinitroaniline [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
2-Amino-4,6-dinitrotoluene	100 ug/kg dry	-	-	-	-	<1200000	-
2-Amino-4,6-dinitrotoluene [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	-	-
Tetryl [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
HMX [2C]	100 ug/kg dry	<1300000	<1100000	-	<110000	<1200000	-
2,2´-Dinitrobiphenyl	134 [surr]	-	-	-	<110000	-	-
2,2´-Dinitrobiphenyl [2C]	140 [surr]	<1300000	<1100000	-	-	<1200000	-
Explosive Compounds by EPA Method 8095 (Water)							
Nitrobenzene [2C]	0.040 ug/mL	-	-	<40	-	-	-
2-Nitrotoluene [2C]	0.040 ug/mL	-	-	<40	-	-	-
3-Nitrotoluene [2C]	0.040 ug/mL	-	-	<40	-	-	-
4-Nitrotoluene [2C]	0.040 ug/mL	-	-	<40	-	-	-
Nitroglycerin [2C]	0.040 ug/mL	-	-	<40	-	-	-

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Princeton, NJ 08540

Project: Hercules Inc. - ART Treatibility

Project Number: 2769

LAB #		K174304-01	K174304-02	K174307-01	K174308-01	K174308-02	-
MATRIX	Minimum	Soil	Soil	Water	Soil	Soil	-
SAMPLE ID	Reporting Limit	UHC-PS-Biofeed	DHC-PS-2mm-1/2"	DHC-PS-1/2"-2"	DHC-PS-2mm-1/2"-AFTERATTRIT	DHC-PS-BIOFEED	-
Explosive Compounds by EPA Method 8095 (continued)							
1,3-Dinitrobenzene [2C]	0.040 ug/mL	-	-	<40	-	-	-
2,6-Dinitrotoluene [2C]	0.040 ug/mL	-	-	<40	-	-	-
2,4-Dinitrotoluene [2C]	0.040 ug/mL	-	-	<40	-	-	-
1,3,5-Trinitrobenzene	0.040 ug/mL	-	-	<40	-	-	-
2,4,6-Trinitrotoluene [2C]	0.040 ug/mL	-	-	110	-	-	-
PETN [2C]	0.040 ug/mL	-	-	<40	-	-	-
RDX	0.040 ug/mL	-	-	<40	-	-	-
4-Amino-2,6-dinitrotoluene	0.040 ug/mL	-	-	<40	-	-	-
3,5-Dinitroaniline [2C]	0.040 ug/mL	-	-	<40	-	-	-
2-Amino-4,6-dinitrotoluene [2C]	0.040 ug/mL	-	-	<40	-	-	-
Tetryl [2C]	0.040 ug/mL	-	-	<40	-	-	-
HMX [2C]	0.040 ug/mL	-	-	<40	-	-	-
Classical Chemistry Parameters (Soil)							
% Solids	0.00 % by Weight	77.6	93.2	-	94.4	80.7	-

Special Notes

1 = Data reported from a dilution

2 = Resuts may be biased low because of low continuing calibration verification (CCV).

3 = The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.

4 = Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.

Attachment 5

Selected Polymer FBS C1082 - MSDS

Fort Bend Services, Inc.
Water & Waste Treatment Specialists

SAFETY DATA SHEET
FBS C1082

I. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: FBS C1082
CHEMICAL NAME: Cationic water-soluble polymer in emulsion
PRODUCT USE: Flocculation/Dewatering agent
SUPPLIER: Fort Bend Services Inc. Tel: 281-261-5199
13303 Redfish Lane Tel: 800-933-3678
Stafford, TX 77477 USA
EMERGENCY TELEPHONE:
CHEMTREC: 1-800-424-9300
IDENTIFICATION NO:

II. HAZARDS IDENTIFICATION

State of Matter: Viscous liquid, milky in color with aliphatic odor

Emergency overview
Caution – Slippery when wet!
May cause eye and skin irritation.
Eye wash fountains and safety showers must be readily accessible.

Potential health effects
Primary routes of exposure:
Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.
Chronic toxicity:
Carcinogenicity:
None of the components in this product are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
Reproductive toxicity:
Not toxic for reproductivity
Mutagenicity:
Not mutagenic

III. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number	Content (W/W)	Chemical Name
64742-47-8	20 – 30%	Distillates, petroleum hydrotreated light
69011-36-5	< 3.0%	Poly(oxy-1,2-ethanediyl), a-4-tridecyl-w-hydroxy-, branched

IV. FIRST AID MEASURES

INHALATION:
Remove to fresh air. No hazards which require special first aid measures.
INGESTION:
Rinse mouth with water. Do NOT induce vomiting. Get medical attention immediately.
SKIN CONTACT:
Wash affected areas thoroughly with soap and water. Seek medical attention if irritation persists.
EYE CONTACT:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open. Seek medical attention immediately.

V. FIRE-FIGHTING MEASURES

Flash point does not flash
Auto-ignition temperature does not ignite

SUITABLE EXTINGUISHING MEDIA:
Dry powder, foam, carbon dioxide, water, water spray
ADDITIONAL INFORMATION:
Avoid use of water jet. If water is used, restrict pedestrian and vehicular traffic in areas where slip hazard may exist. Contaminated extinguishing water must be disposed of in accordance with official regulations.
HAZARDS DURING FIRE-FIGHTING:
Spilled product is slippery underfoot. Extremely slippery when wet.
Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides, carbon oxides, ammonia

Hydrogen cyanide may be produced in the event of combustion in an oxygen deficient atmosphere.

PROTECTIVE EQUIPMENT FOR FIRE-FIGHTING:
Wear self-contained breathing apparatus and protective suit.

VI. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Use personal protective equipment.

ENVIRONMENTAL PRECAUTIONS:
Do not discharge into drains/surface waters/groundwater.

SPILL CLEAN UP METHODS:
Do not flush with water. Dike spill. Large spills clean up promptly by scoop or vacuum. Soak up residual material with an inert absorbent material. Keep in suitable, closed and labeled container(s) for disposal in accordance with local, state and federal regulations.

VII. HANDLING AND STORAGE

HANDLING:
Avoid contact with skin and eyes. Ensure there is adequate local/mechanical exhaust. Do not smoke.
Handle in accordance with good industrial hygiene and safety practices.

STORAGE:
Keep container tightly closed and dry; store in a cool and dry place (0 - 30°C). Avoid wet, damp or humid conditions, temperature extremes and ignition sources. Freezing will affect the physical condition and may damage the product.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENTS WITH OCCUPATIONAL EXPOSURE LIMITS:

Distillates (petroleum), hydrotreated light	ACGIH	TWA value 200 mg/m^3 Non-aerosol(total hydrocarbon vapor); Application restricted to conditions in which there are negligible aerosol exposures. Skin Designation Non-aerosol (total hydrocarbon vapor); The substance can be absorbed through the skin.

ENGINEERING CONTROLS: Ensure adequate ventilation. Use local exhaust if misting occurs. Natural ventilation is adequate in the absence of mists.

PROTECTIVE EQUIPMENT:

RESPIRATORY EQUIPMENT:	Not required except in case of aerosol formation or inadequate ventilation.
HAND PROTECTION:	PVC or other plastic material gloves
EYE PROTECTION:	Safety glasses with side-shields; do not wear contact lenses where product is used.
SKIN PROTECION:	Protective clothing
HYGIENE MEASURES:	Handle in accordance with good industrial hygiene and safety practice

IX. PHYSICAL AND CHEMICAL PROPERTIES

FORM:	Viscous liquid
ODOR:	Aliphatic
COLOR:	Milky white
pH:	4 - 6 (5 g/l)
SPECIFIC GRAVITY:	1.05
MELT/FREEZE POINT:	< 5° C
AUTOIGNITION TEMPERATURE:	Does not ignite
FLASH POINT:	Does not flash
VAPOR PRESSURE (mm Hg):	2.3 kPa @ 20°C
BULK VISCOSITY:	1200 (cps)
VISCOSITY:	>20.5 @ 40°c (mm^2/s)

X. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:
Avoid extreme temperatures.

SUBSTANCES TO AVOID:
Oxidizing agents may cause exothermic reactions.

HAZARDOUS REACTIONS:
Stable under normal conditions. Hazardous polymerization does not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides, carbon oxides, ammonia
Hydrogen cyanide may be produced in the event of combustion in an oxygen deficient atmosphere.

XI. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

ORAL:

Type of value:	LD50
Species:	rat
Value:	>5,000 mg/kg

SKIN:

Type of value:	LD50
Species:	rat
Value:	>5,000 mg/kg

INHALATION: This product is not expected to be toxic by inhalation.

IRRITATION/CORROSION

SKIN:	Slightly irritating
EYE:	May cause eye irritation with susceptible persons
SENSITIZATION:	Not sensitizing
CHRONIC TOXICITY:	No chronic effects.

Relevant information on the hazardous components:

Distillates, petroleum hydrotreated light

Acute oral toxicity:	LD50/oral/rat	> 5000 mg/kg OECD 401
Acute dermal toxicity:	LD50/dermal/rabbit	> 5000 mg/kg OECD 402
Acute inhalation toxicity:	LC50/inhalation/4 hr/rat	4951 mg/m^3 OECD 403
Skin corrosion/irritation:	Not irritating OECD 404	
Eye corrosion/irritation:	Not irritating OECD 405	
Sensitization:	Not expected to be sensitizing	

Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branched

Acute oral toxicity:	LD50/oral/rat	200 - 300 mg/kg
Acute dermal toxicity:	LD50/dermal/rabbit	> 2000 mg/kg
Acute inhalation toxicity:	No data available	
Skin corrosion/irritation:	Non-irritating	
Eye corrosion/irritation:	Causes severe irritation	
Sensitization:	Did not cause allergic skin reactions when tested in guinea pigs	

XII. ECOLOGICAL INFORMATION

Fish

Acute:

LC50 (96):	10 - 100 mg/L OECD 203

Aquatic invertebrates

Acute:

Daphnia /EC50 (48 h):	10 - 100 mg/L OECD 202

Algae: Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.

Environmental Fate

Hydrolysis: At natural pHs (>6) the polymer degrades due to hydrolysis to more than 70% in 28 days. The hydrolysis products are not harmful to aquatic organisms.

Degradation: Readily biodegradable

Bioaccumulation: Not expected to bioaccumulate

Relevant information on the hazardous components:

Distillates, petroleum, hydrotreated light

Acute toxicity to fish:	LC50/Oncorhynchus mykiss/96 hr	>1000 mg/L
Acute toxicity to invertebrates:	EC50/Daphnia magna/48 hr	>1000 mg/L
Acute toxicity to algae:	ICO/Pseudokirchneriella subcapitata/72 hr	>1000 mg/L
Chronic toxicity to fish:	NOEC/Oncorhynchus mykiss/28 day	>1000 mg/L
Chronic toxicity to invertebrates:	NOEC/Daphnia magna/21 day	>1000 mg/L
Toxicity to microorganisms:	EC50/Tetrahymena pyriformis/48 hr	>1000 mg/L

Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branched

Acute toxicity to fish:	LC50/Cyprinus carpio/96 hr	1 - 10 mg/L
Acute toxicity to invertebrates:	EC50/Daphnia/48 hr	1 - 10 mg/L
Acute toxicity to algae:	IC50/Desmodesmus subspicatus/72 hr	1 - 10 mg/L
Chronic toxicity to fish:	No data available	
Chronic toxicity to invertebrates:	No data available	
Toxicity to microorganisms:	EC10/activated sludge/17 hr	>1000 mg/L

XIII. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:

Dispose of in accordance with national, state and local regulations.

CONTAINER DISPOSAL:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

Not a hazardous waste under RCRA (40 CFR 261)

XIV. TRANSPORT INFORMATION

LAND TRANSPORT:

US DOT — Not classified as a dangerous good under transport regulations

SEA TRANSPORT:

IMDG — Not classified as a dangerous good under transport regulations

AIR TRANSPORT:

IATA/ICAO — Not classified as a dangerous good under transport regulations

XV. REGULATORY INFORMATION

SARA: No reporting requirements

EPCRA 311/312: Not hazardous

CALIFORNIA PROP. 65: The product contains the following substance(s) known to the State of California to cause cancer: Acrylamide

USA (TSCA): All components are listed or exempt from listing

CANADA (DSL): All components are listed or exempt from listing

STATE REGULATIONS

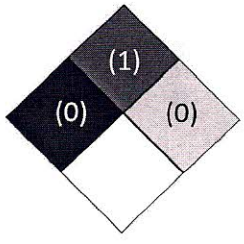
State RTK	CAS Number	Chemical Name
MA, NJ, PA	64742-47-8	Distillates, petroleum, hydrotreated light

XVI. OTHER INFORMATION

HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)

HEALTH	**0**
FLAMMABILITY	**1**
PHYSICAL	**0**
PERSONAL PROTECTION	

NATIONAL FIRE PROTECTION ASSN (NFPA)



GENERAL INFORMATION:

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER YOU EXPRESSLY UNDERSTAND AND AGREE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

Attachment 6

PROCEDURE STEPS FOR ACETONE EXTRACTION AND EXPRAY ANALYSIS OF OVERSIZE

KENVIL SITE - SUMMARY REPORT OF TESTING OF OVERSIZE EXTRACTION PROCEDURES FOR SEMI-QUANTITATIVE EXPRAY ANALYSIS

Prepared for:

Kennedy Jenks & Ashland Incorporated

ART Engineering LLC (ART) has completed the testing of soil and oversize extraction procedures to perform a fast turnaround semi-quantitative field EXPRAY analysis of TNT levels on soil and oversize samples.

Photos of the various testing steps are attached. Minor updates to the soil and oversize extraction procedures were made based on laboratory observations. An updated procedure is attached.

Conclusions

- The procedures as originally outlined in *"GENERAL OUTLINE OF PROCEDURE STEPS FOR EXPRAY ANALYSIS OF OVERSIZE, ART Engineering LLC, September 5, 2017***"** were found to work well.

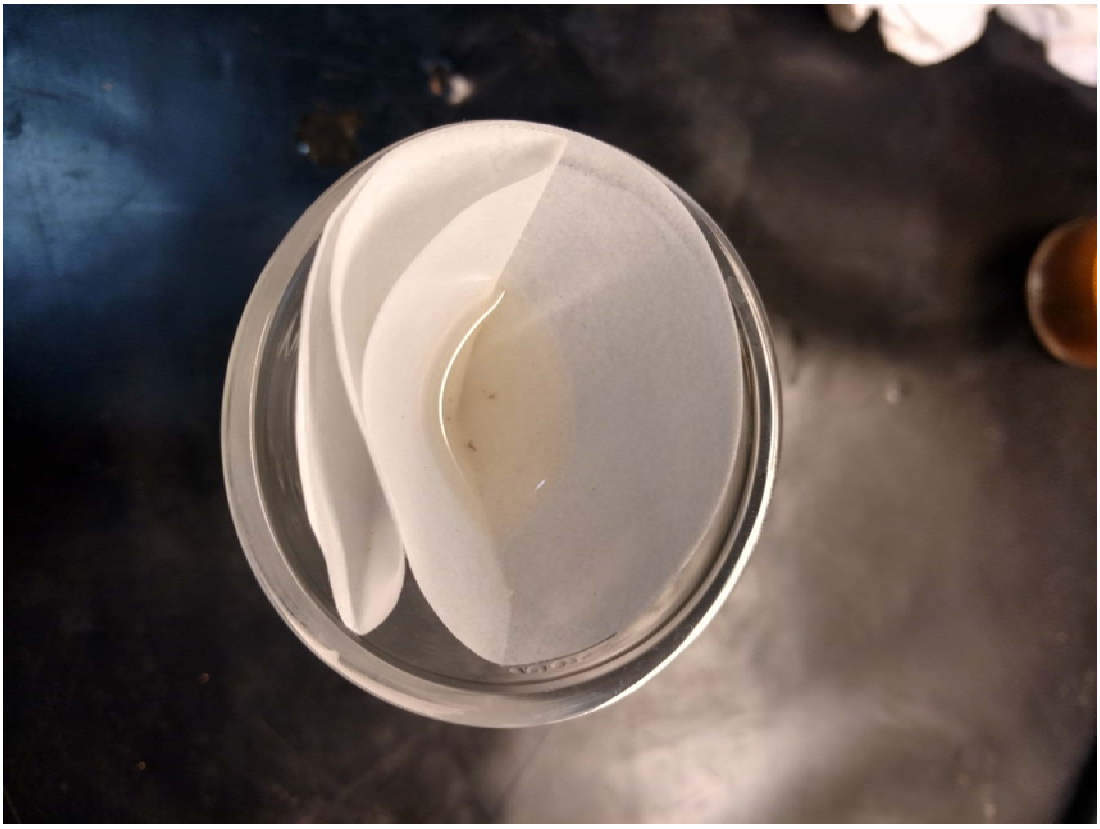
- The acetone extract was clear after 5 minutes settling time. The moisture content did not have any negative impact on the filterability of the extract. The extract was free of solids after filtration through 11 micron paper filter.

- ART recommends use of the updated extraction procedure (attached) for use during the upcoming field work.

Wet Soil Used for Extraction (30 gram)

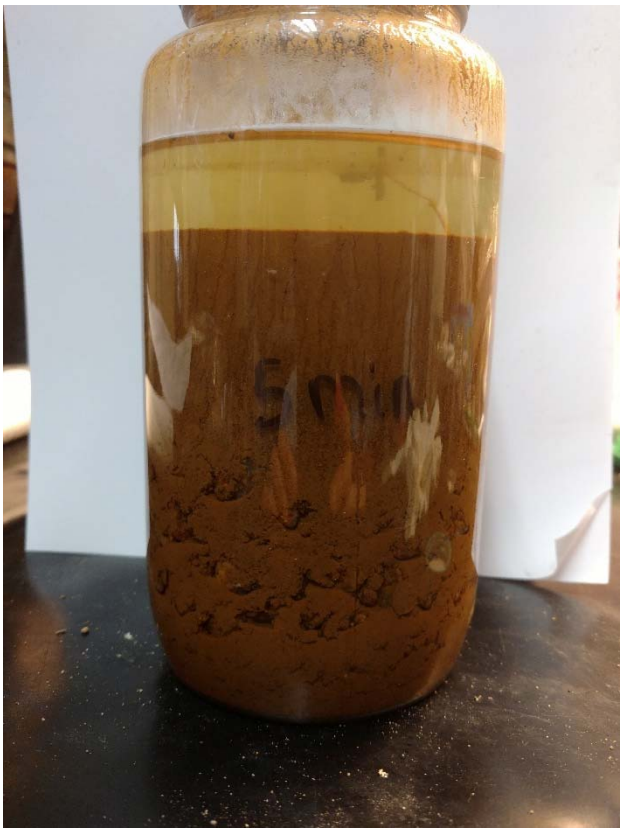
Extracted Soil (30 gram soil with 30 gram acetone) after 5 minutes settling

Wet Soil Extraction – Acetone Extract after Filtration

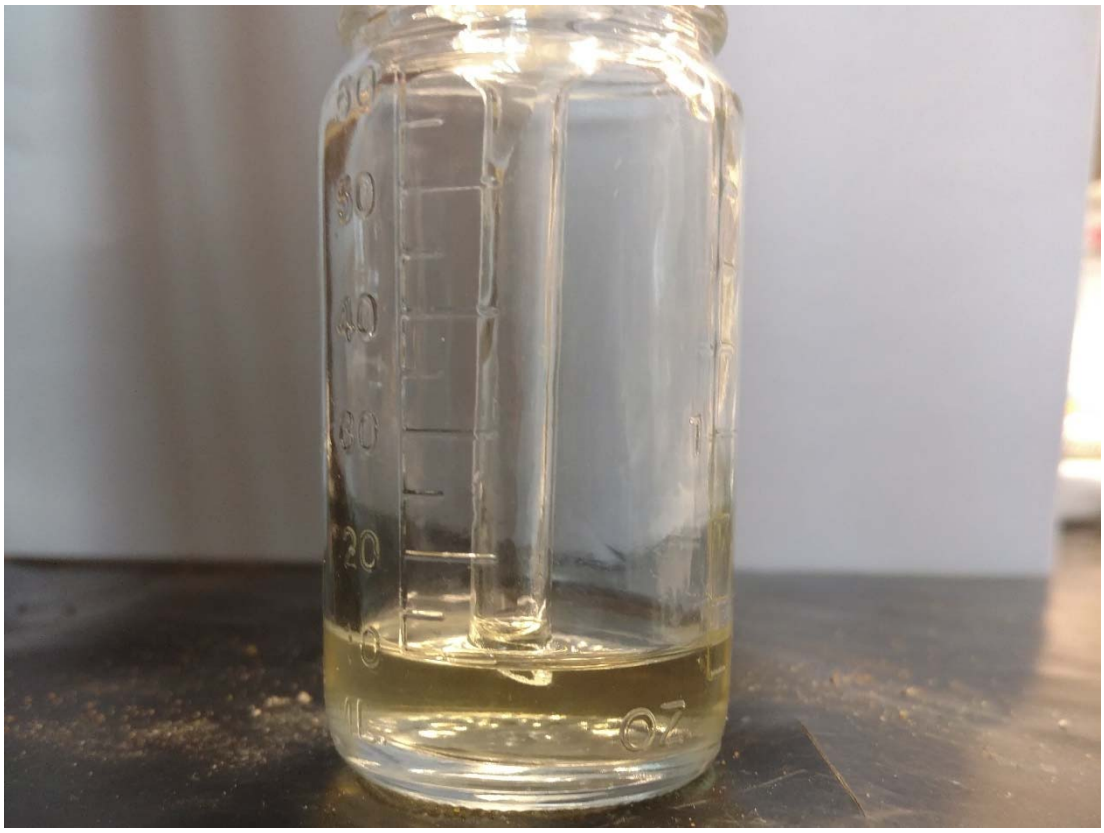


Wet Soil Extraction – Filter Top View

Oversize +4.75 mm with Moisture (1000 gram)



Wet Oversize Extraction 1000 gram Oversize + 250 gram Acetone after 5 minutes Settling



Wet Oversize Extraction – Acetone Extract after Filtration

Wet Oversize Extraction – Filter Top View

ART Engineering LLC
Sept 20 2017

OUTLINE OF PROCEDURE STEPS FOR EXPRAY ANALYSIS OF OVERSIZE

Updated 9/20/2017

Step 1: Extraction of Oversize

- Add approximately 1000 gram of Oversize into 1 Quart Glass Jar
- Note Net Weight (A) in Gram
- Add 250 Gram Acetone (Note Net Weight in Gram)
- Put lid on Glass Jar and intermittently shake for 10 minutes
- Allow solids to settle for 15 min.

Step 2: Prepare sample for EXPRAY analysis

- Open Jar and take approximately 10 ml liquid sample from the top of the jar with a glass pipet; empty pipet slowly through Whatman filter paper (11 micron) folded to fit glass funnel. Collect two drops of filtrate onto a 5.5 cm diameter Whatman filter
- Allow sample on Whatman filter to dry for 5 minutes; this will be the sample for EXPRAY analysis

Step 3: Analysis

- After Whatman filter sample is dry, spray sample with EXPRAY; compare the color to color standards (0 ppm, 25 ppm, 50 ppm, 100 ppm, 200 ppm, 400 ppm, 800 ppm, 1600 ppm) prepared fresh on same day.
- Compare to sample color to standards; multiply result by a factor of 4 to correct for ratio of 1 part soil to 0.25 parts of acetone

Notes:

1) Note same procedure can be used for analysis of soils; use 30 grams of soil and 30 grams of acetone; extract in 2 oz glass jar.
2) Prepare standards based on extraction of actual soils (sand fraction) with known concentration of TNT

Supplies (Updated):

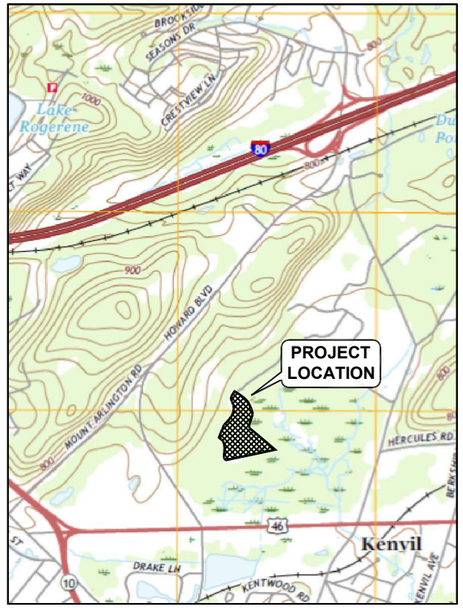
- 8 x 1 Quart of Acetone (Home depot – return not used acetone)
- 2 Cans of EXPRAY
- Set of 1 Quart Glass Jars with Teflon coated lid
- Set of 2 Oz Glass Jars with Teflon coated lid
- Set of 100 Whatman filters 100 mm diameter (11 micron openings)
- Set of 100 Whatman filters 55 mm diameter (2 micron openings)
- Couple of Glass funnels
- Set of 10 ml pipette with bulp
- Set of 200 Whatman filters 45 mm for EXPRAY analysis
- Set of Glass Droppers

Attachment 6

TNT Soil Bioremediation Project Preliminary Design Drawings

PRELIMINARY DESIGN DRAWINGS

TNT SOIL BIOREMEDIATION PROJECT



SOURCE: USGS 2016 STANHOPE QUADRANGLE
NEW JERSEY, 7.5-MINUTE SERIES

LOCATION MAP

0 1,000' 2,000' 3,000' 4,000' 5,000'

GRAPHIC SCALE (Feet)

TNT AREA REMEDIAL ACTION WORK PLAN

DATE ISSUED / DATE REVISED

NOVEMBER 2018

KENVIL WORKS FACILITY
MORRIS COUNTY, NEW JERSEY

HERCULES

Kennedy/Jenks Consultants
Engineers & Scientists
214 CARNEGIE CENTER, SUITE 103, PRINCETON, NJ 08540
NEW JERSEY CERTIFICATE OF AUTHORIZATION NO. 24GA28168300

ART Engineering, LLC
21340 Chrysalis Cay Loop
Land O'Lakes, FL 34637
Phone: (813) 929-4812

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

PROJECT SITE ADDRESS:
Kenvil Works Facility
100 Howard Boulevard
Kenvil, NJ 07848

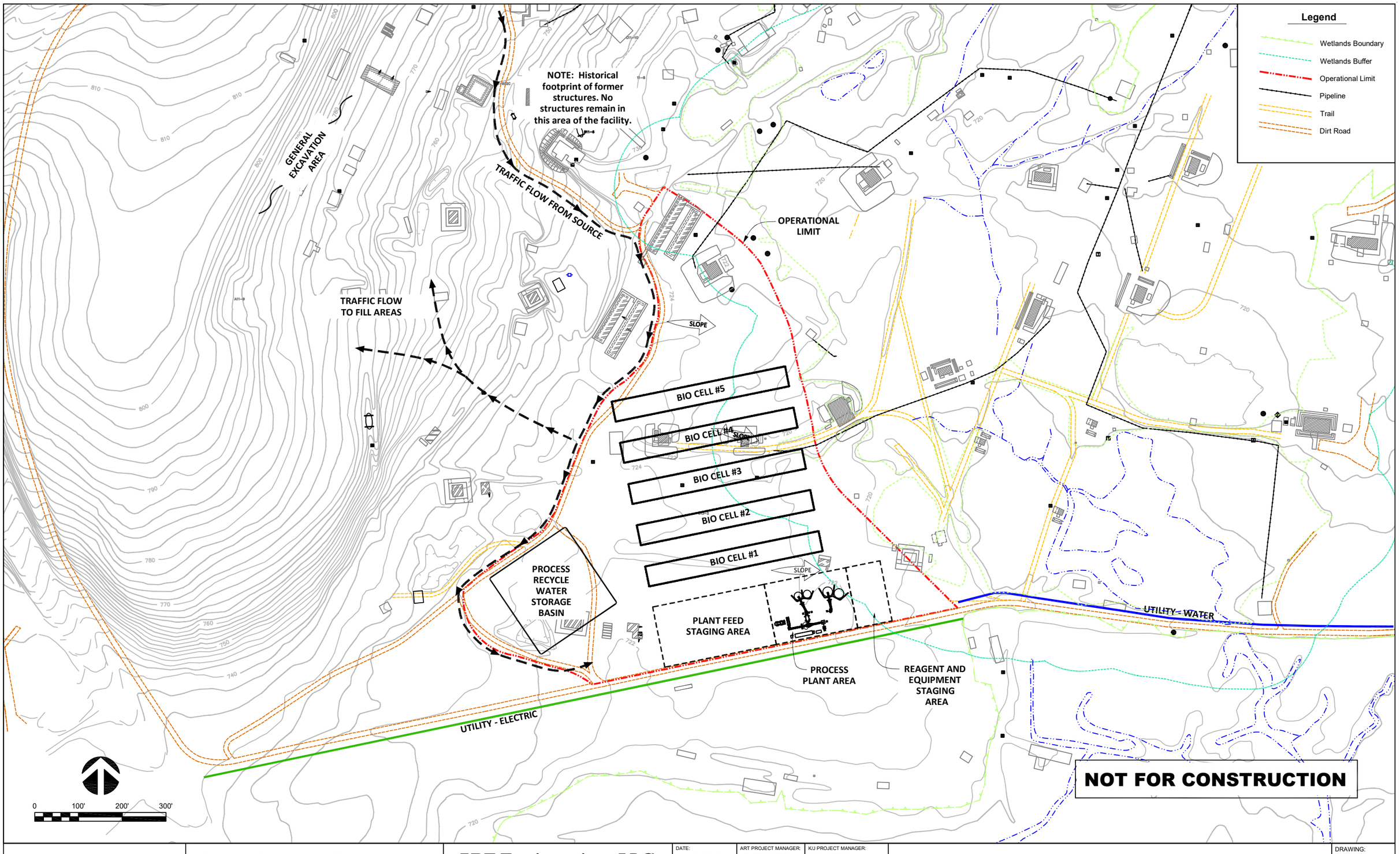
OWNER:
Ashland Global Holdings
Hercules LLC c/o Edward Meeks
Building 8145
Wilmington, Delaware 19808-1599

ENGINEER:
Kennedy/Jenks Consultants
214 Carnegie Center, Suite 103
Princeton, NJ 08540
Telephone: 609.285.2626
Contact: Scott Larew

INDEX TO DRAWINGS:

-	COVER SHEET / SITE LOCATION MAP
L1	GENERAL SITE LAYOUT, UTILITIES AND TRAFFIC PATTERN
L2	GENERAL SOIL PROCESS AREA LAYOUT
P1	PROCESS BLOCK FLOW DIAGRAM (BFD)
C1	GENERAL SOIL PROCESS AREA WITH SECONDARY CONTAINMENT - PLAN VIEW AND CROSS SECTIONS A-A', B-B' & C-C'
C2	GENERAL BIO CELL WITH SECONDARY CONTAINMENT PLAN VIEW AND CROSS SECTION D-D'
C3	BIO CELL #1 - #4 CROSS SECTION E-E'
C4	BIO CELL FEED WITH LONG BOOM EXCAVATOR
C5	BIO CELL LINER SYSTEM
M1	CONCEPTUAL PLANT LAYOUT - PLAN VIEW
M2	CONCEPTUAL PLANT LAYOUT - CROSS SECTIONS F-F' & G-G'
M3	CONCEPTUAL PLANT LAYOUT - CROSS SECTIONS H-H' & I-I'
M4	BIO-CELL CROSS SECTION WITH LONG BOOM EXCAVATOR

REVISION 1 - 11/1/201



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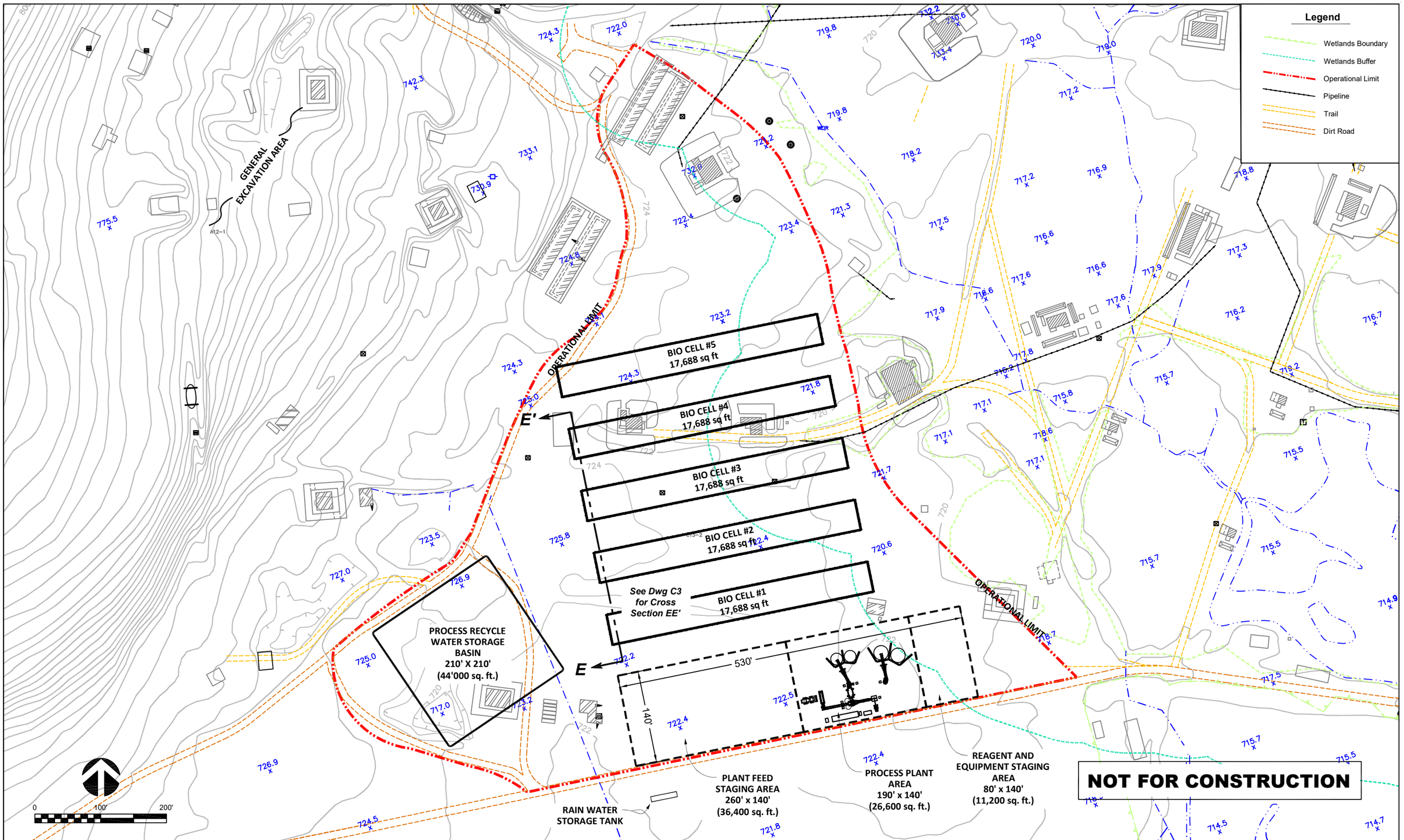
11/1/2018	C. SEWARD	S. LAREW
DRAWN:	LEAD DESIGN ENGINEER	PROCESS ENGINEER
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

General Site Layout, Utilities and Traffic Pattern
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: L1
REVISION 1



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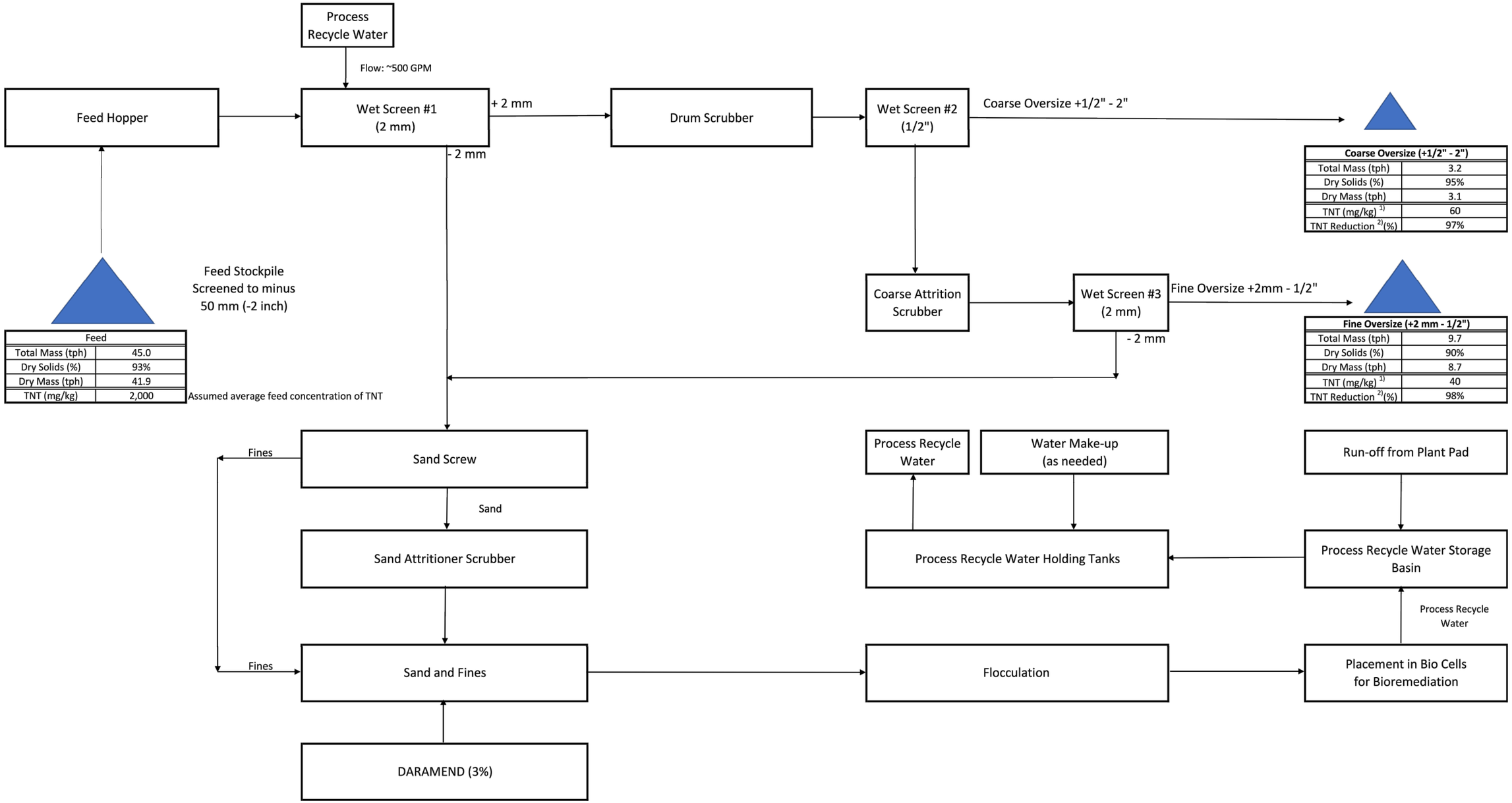
-	-	

General Soil Process Area Layout
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: L2
REVISION 1



Notes:

TNT = 2,4,6 Trinitrotoluene

1): Estimated results based on Process Verification Study

2): TNT Reduction Efficiencies are average values based on Results of the Process Verification Study, Oct 2017

3): Estimated results based on TNT Bioremediation Pilot Study Results, Summer/Fall 2015

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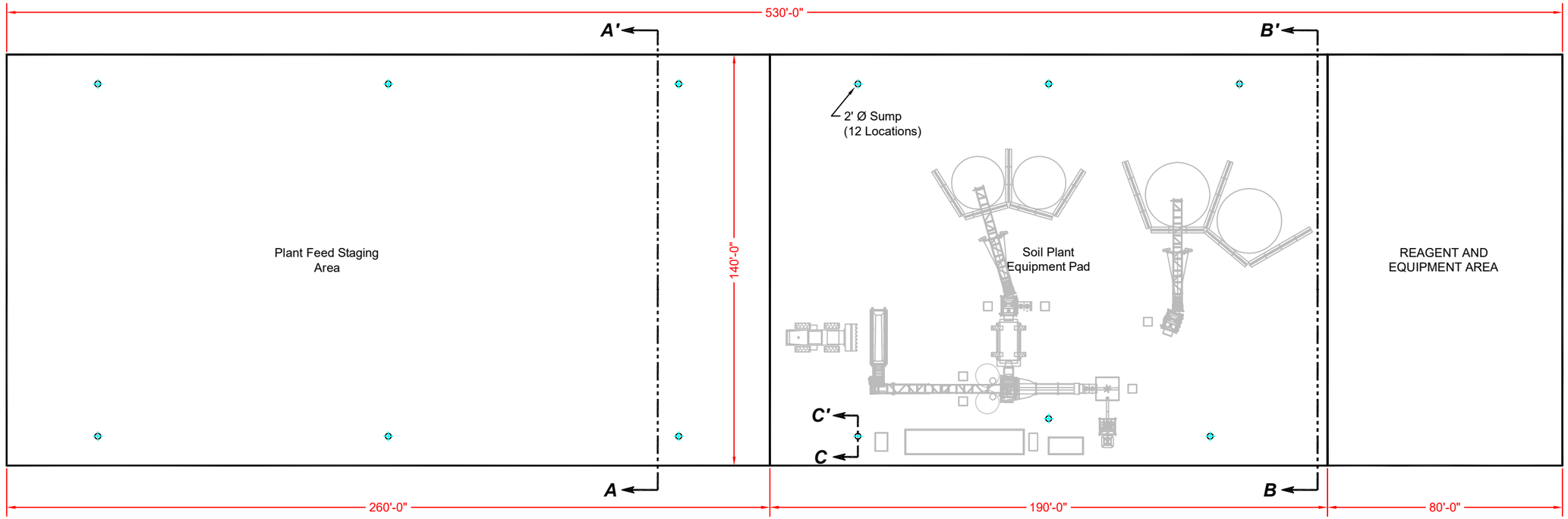
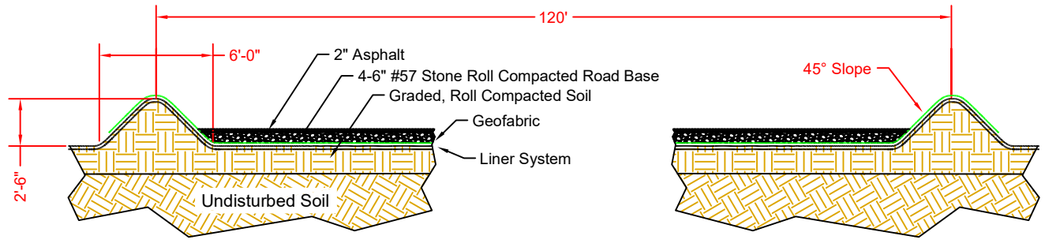
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

Process Block Flow Diagram (BFD)
TNT Soil Bioremediation Project - Kenvil Works Facility

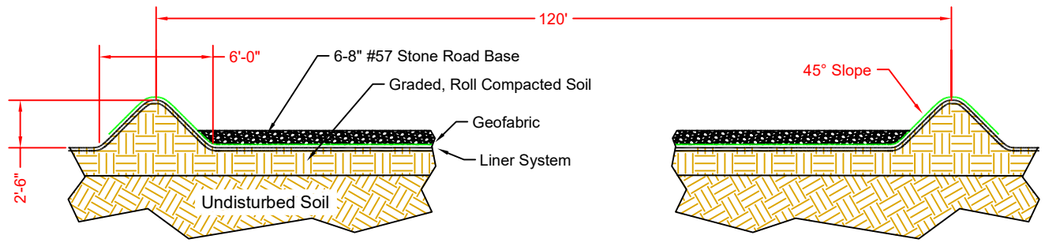
DRAWING: P1
REVISION 1



PLAN VIEW - SOIL PROCESS AREA

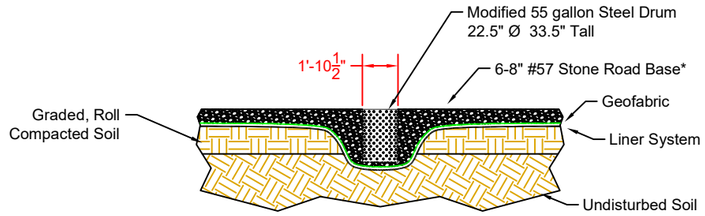


PLANT FEED STAGING AREA - CROSS SECTION AA '



SOIL PROCESS AREA - CROSS SECTION BB '

* Similar cross section for Plant Feed Staging Area with substitute of 4-6" stone and 2" of asphalt.



SOIL PROCESS AREA SUMP
CROSS SECTION ***CC'***

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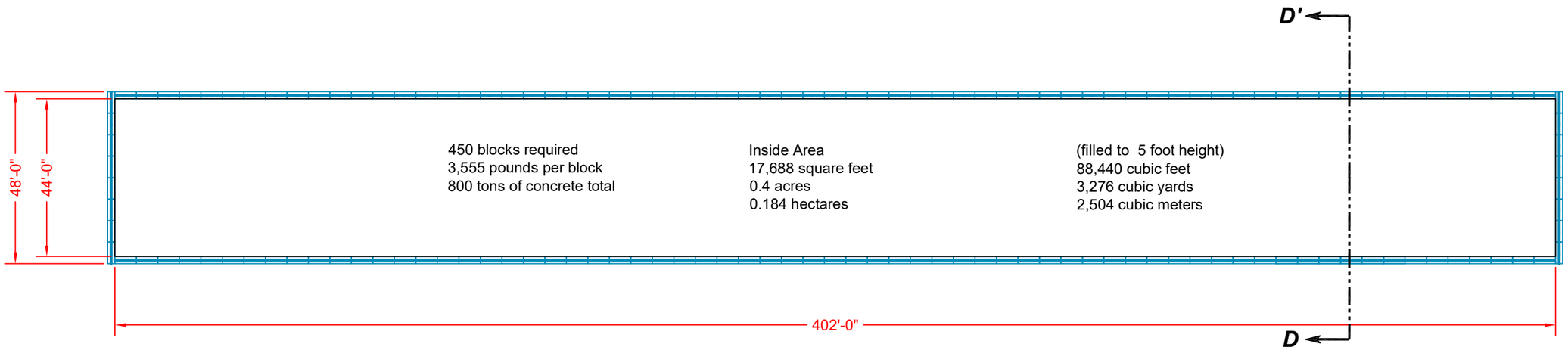
DRAWN:	LEAD DESIGN ENGINEER	PROCESS ENGINEER
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

General Soil Process Area with Secondary Containment - Plan View and Cross Sections

TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: C1
REVISION 1



BIO CELL - PLAN VIEW

BIO CELL - ELEVATION VIEW

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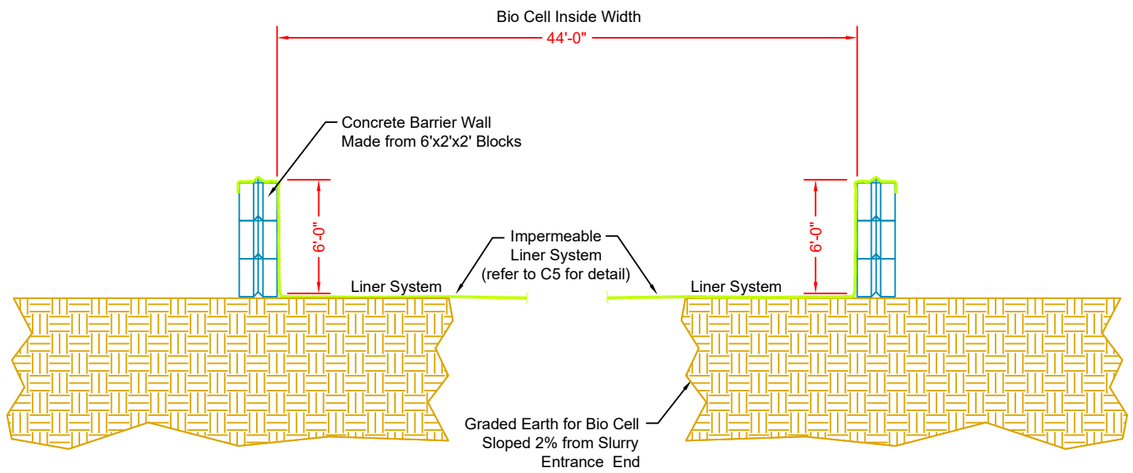

BIO CELL - CROSS SECTION ***DD'***

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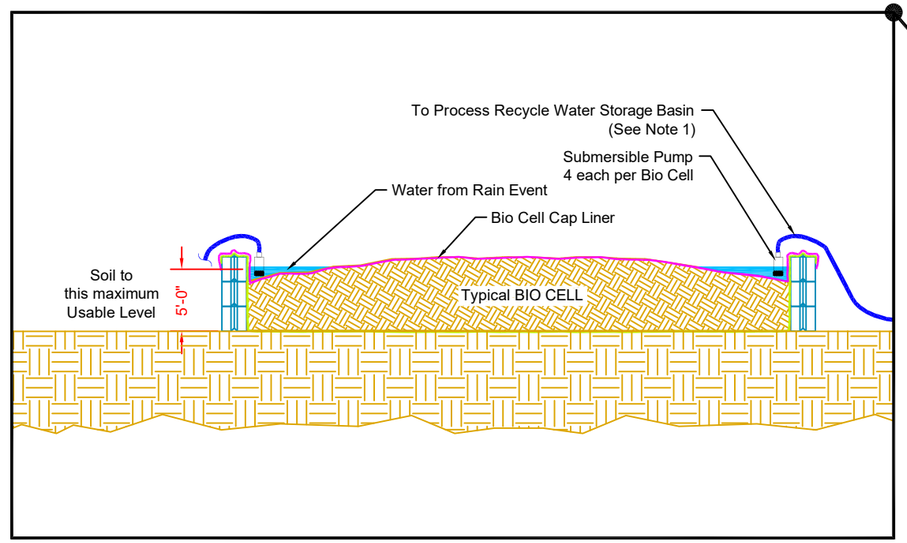
DRAWN:	LEAD DESIGN ENGINEER	PROCESS ENGINEER
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

General Bio Cell with Secondary Containment - Plan View and Cross Section

TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: C2

REVISION 1



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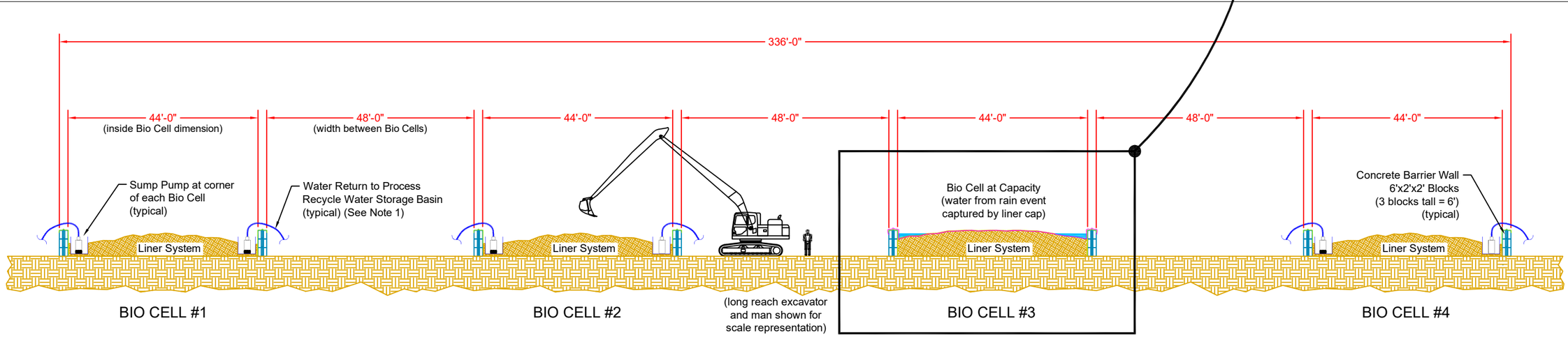

CROSS SECTION EE'
(See drawing L2 for location)

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NOTE 1: All Piping, Hoses and Electrical Lines to be Protected from Traffic

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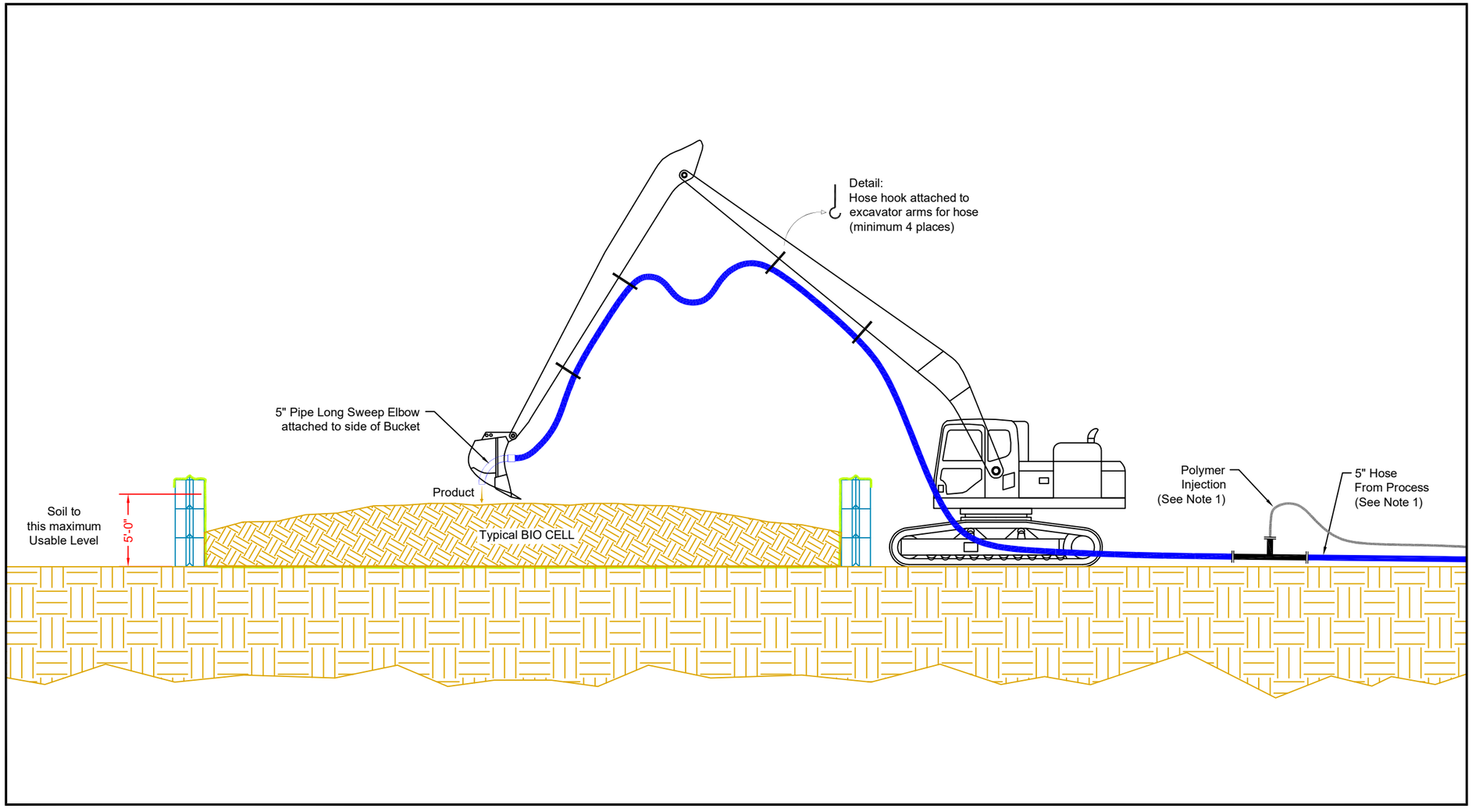
DRAWN:	LEAD DESIGN ENGINEER	PROCESS ENGINEER
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

Bio Cell #1 - #4 Cross Section
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: C3
REVISION 1



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NOTE 1: All Piping, Hoses and Electrical Lines to be Protected from Traffic

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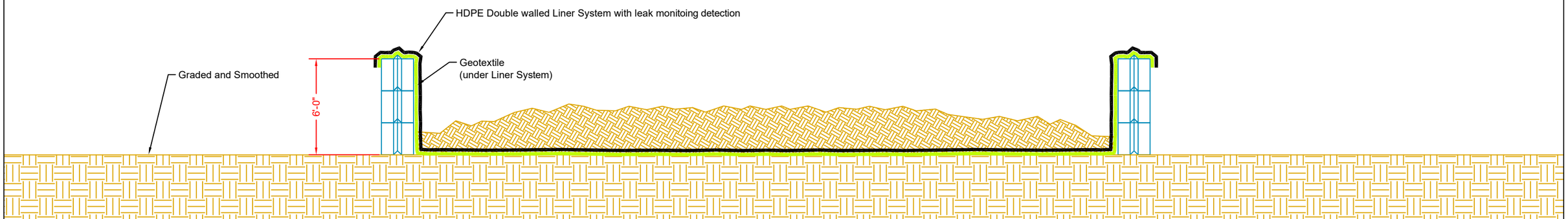
Bio Cell Feed with Long Boom Excavator
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: C4
REVISION 1

NOTE: HDPE Liner system to be permanently affixed to top of Concrete Barrier Wall



Typical BIO CELL

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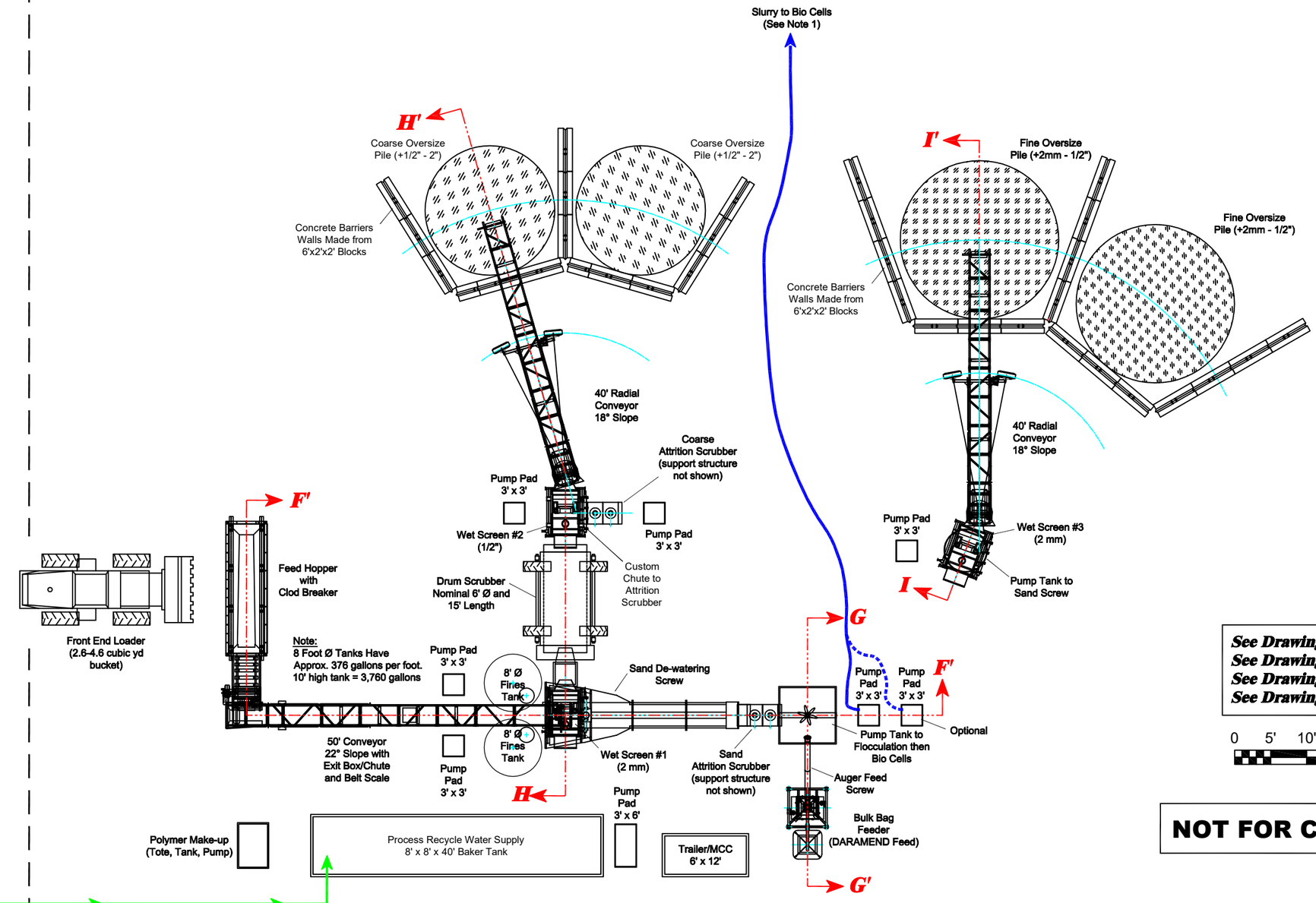
PLANT FEED STAGING AREA
260' X 140'
(36,400 sq. ft.)

PROCESS PLANT AREA
190' x 140'
(26,600 sq. ft.)

REAGENT AND EQUIPMENT AREA
80' X 140'
(11,200 sq. ft.)



See Drawing M2 for Cross Section F-F'
See Drawing M2 for Cross Section G-G'
See Drawing M3 for Cross Section H-H'
See Drawing M3 for Cross Section I-I'

0 5' 10' 15' 20' 30' 40'

SCALE

NOT FOR CONSTRUCTION

NOTE 1: All Piping, Hoses and Electrical Lines to be Protected from Traffic

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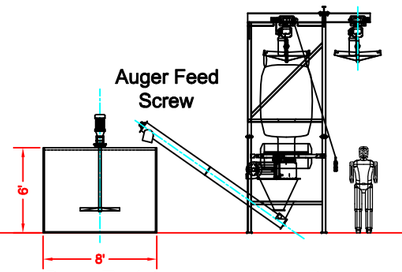
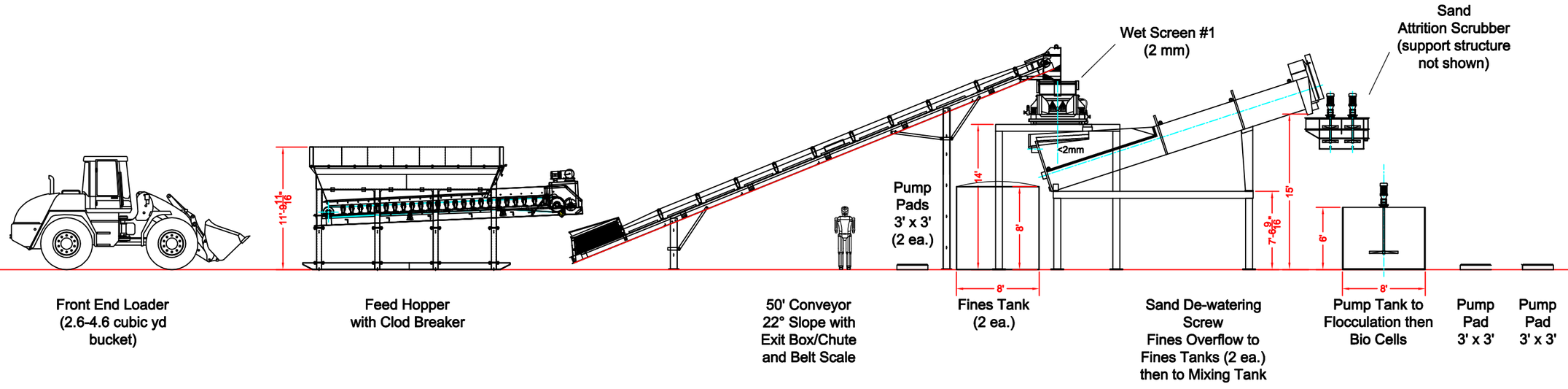
DRAWN:	LEAD DESIGN ENGINEER	PROCESS ENGINEER
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

Conceptual Plant Layout - Plan View
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: M1
REVISION 1



SECTION G-G'



SECTION F-F'

0 5' 10' 15' 20' 30' 40'

SCALE

NOT FOR CONSTRUCTION

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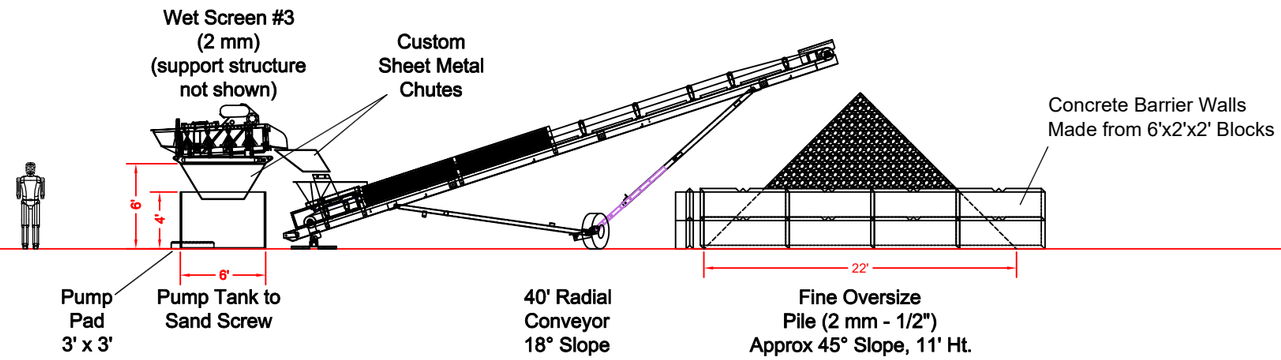
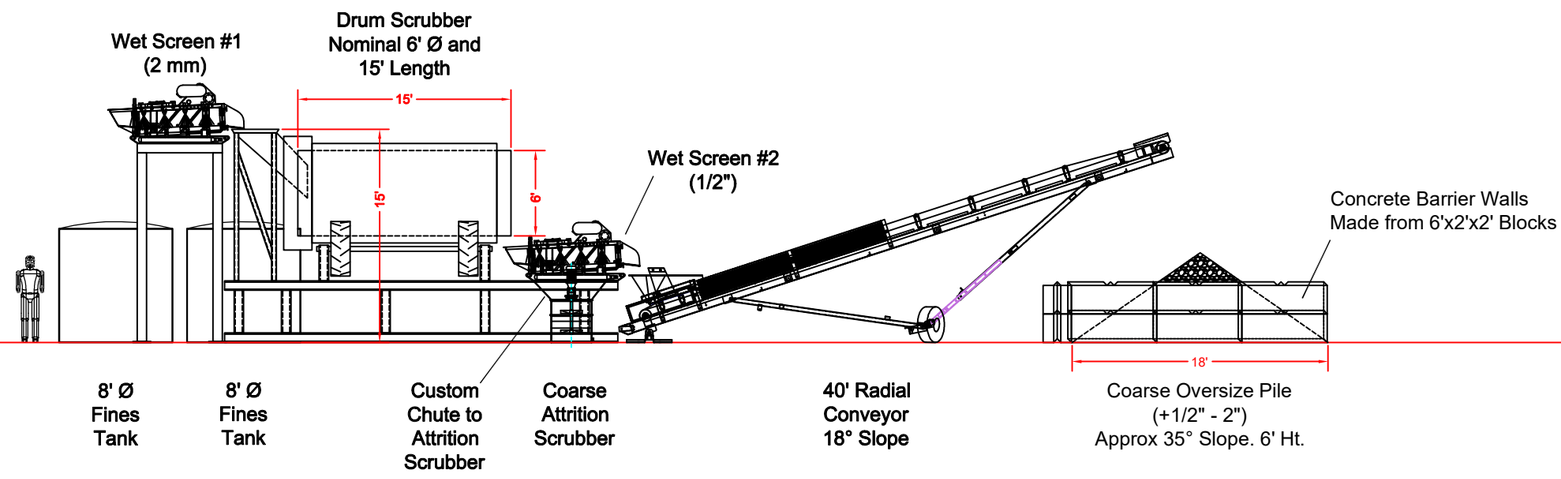
DRAWN:	LEAD DESIGN ENGINEER	PROCESS ENGINEER
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

Conceptual Plant Layout
Cross Sections F-F' & G-G'
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: M2
REVISION 1



SECTION I-I'



SECTION H-H'

0 5' 10' 15' 20' 30' 40'

SCALE

NOT FOR CONSTRUCTION

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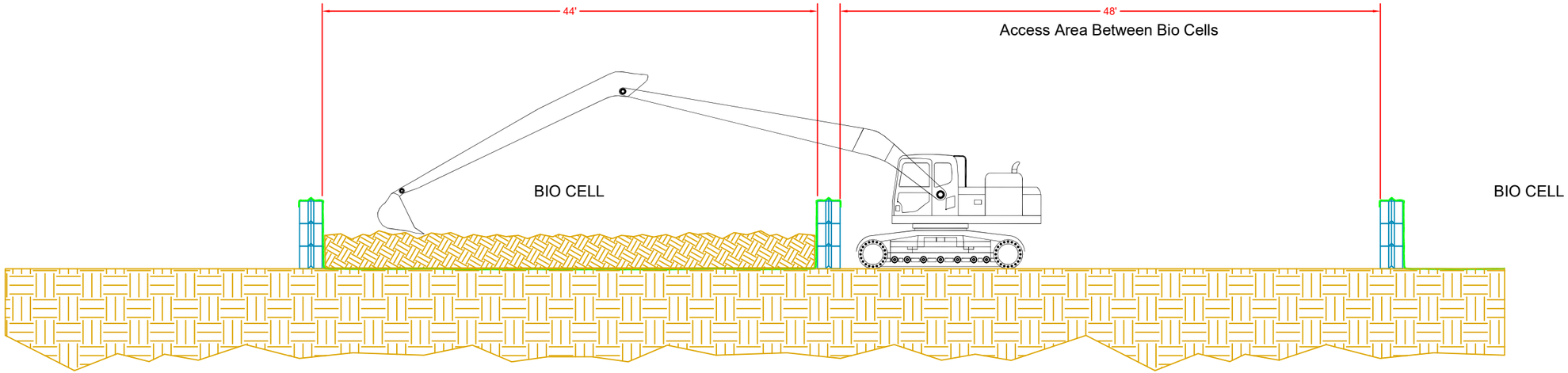
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

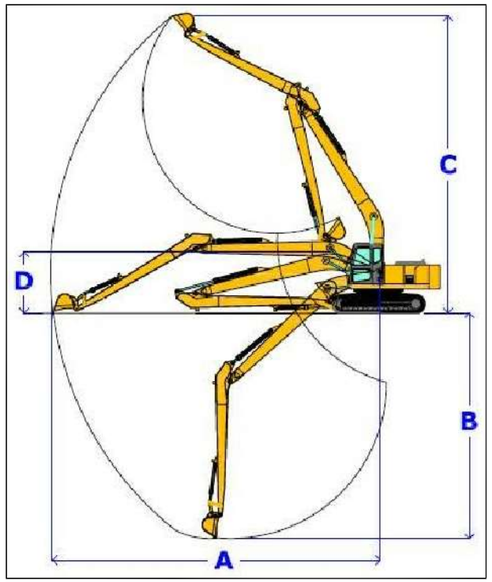
Conceptual Plant Layout
Cross Sections H-H' & I I'
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: M3
REVISION 1



0 5' 10' 15' 20' 30' 40'

SCALE



Excavator Operating Weight	Length		A Max. Reach		B Max. Depth		C Max. Height		D Boom Height		Approximate Bucket Capacity	
	m	ft	m	ft	m	ft	m	ft	m	ft	m^3	$Yard^3$
12-14 ton (26,400-30,800 lb)	12.0 13.0	39' 43'	12.00 13.00	39' 4" 42' 8"	8.30 9.00	27' 2" 29' 6"	10.50 10.90	34' 5" 35' 9"	2.10 2.10	6' 11" 6' 11"	0.4 0.3	0.52 0.39
15-16 ton (33,000-35,200)	14.0	46'	14.00	45' 11"	10.70	35' 0"	11.80	38' 8"	2.30	7' 6"	0.4	0.52
20-22 ton (44,000-48,400 lb)	15.5 16.5	50' 54'	15.50 16.50	50' 10" 54' 2"	11.46 12.16	37' 7" 39' 11"	13.78 14.40	45' 3" 47' 3"	2.50 2.50	8' 3" 8' 3"	0.50 0.40	0.66 0.52
23-27 ton (50,600-55,000 lb)	17.0 18.0	56' 59'	17.00 18.00	59' 9" 59' 0"	12.80 14.00	41' 11" 45' 11"	14.95 15.85	49' 0" 51' 9"	2.70 2.70	8' 11" 8' 11"	0.50 0.40	0.66 0.52
28-30 ton (61,600-66,000 lb)	18.0 19.0	59' 62'	18.00 19.00	59' 0" 62' 3"	13.80 14.00	45' 1" 45' 11"	15.20 15.50	49' 10" 50' 10"	3.10 3.10	10' 2" 10' 2"	0.60 0.50	0.79 0.66

NOT FOR CONSTRUCTION

HERCULES

Kennedy/Jenks Consultants
Engineers & Scientists
214 CARNEGIE CENTER, SUITE 103, PRINCETON, NJ 08540
NEW JERSEY CERTIFICATE OF AUTHORIZATION NO. 24GA28168300

ART Engineering, LLC
21340 Chrysalis Cay Loop
Land O'Lakes, FL 34637
Phone: (813) 929-4812

DATE:	ART PROJECT MANAGER:	K/J PROJECT MANAGER:
11/1/2018	C. SEWARD	S. LAREW
DRAWN:	LEAD DESIGN ENGINEER	PROCESS ENGINEER
D. KEYSER	CS & EG	E. GROENENDIJK
CAD FILE NAME:	PROJECT NUMBER:	CHECKED:
-	-	

Bio Cell Cross Section with Long boom Excavator
TNT Soil Bioremediation Project - Kenvil Works Facility

DRAWING: M4
REVISION 1

Attachment 7

Technical Consultation Summary Memorandum

January 24, 2019

Mr. Kevin Schick
Chief - Bureau of Environmental Evaluation & Risk Assessment
New Jersey Deparment of Environmental Protection
Site Remediation & Waste Management Program
P.O. Box 420
Mail Code 401-05W
Trenton, NJ 08625

Subject: Alliant Tech Systems (PI#000741) – Technical Consultation Summary

Dear Mr. Schick:

Thank you for taking the time to meet with us to discuss the Alliant Tech Systems (a.k.a. Hercules Kenvil Works) facility in Kenvil, New Jersey. On December 5, 2018, representatives of the New Jersey Department of Environmental Protection (NJDEP) and Hercules LLC (Hercules) met to discuss the proposed remediation of 2,4,6-trinitrotoluene (TNT) at Hercules Kenvil Works Facility located in Kenvil, Morris County, New Jersey (Program Interest No. 000741) (the Facility). Attending the meeting were:

- Kevin Schick – NJDEP
- Swati Toppin – NJDEP
- Paul Sanders – NJDEP
- Ed Meeks – Hercules
- Mark Foley – WSP (Licensed Site Remediation Professional)
- John Lucey – O'Brien & Gere
- Scott Larew – Kennedy/Jenks Consultants

The Technical Consultation Attendance Sheet is included as Attachment 1.

The meeting objective was to build consensus on the technical scope, regulatory approach, and site-specific cleanup goals associated with the proposed TNT Area remedy. Hercules provided an overview of the proposed remedy for TNT in soil and groundwater that included a summary of academic research, treatability studies, and field pilot studies that yielded Facility-specific data relative to the biodegradation of TNT and its metabolites. This data provided the technical basis for the proposed remedies.

The proposed remedy includes:

- Ex-situ soil preparation (grain size reduction) and bioremediation to reduce TNT source mass and achieve TNT concentrations between the NJDEP's Residential and Non-Residential Direct Contact Soil Remediation Standard (21 to 95 milligrams per kilogram [mg/kg]) after a single treatment season.
- Bioremediation amendment will be mixed with the soil at the base of the excavation (in accordance with NJPDES permit conditions); then excavations will be backfilled with bioremediated material.

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- Pilot study data indicates that TNT continues to biodegrade in-situ following backfilling. TNT concentration reductions to at or below 1 mg/kg and less are anticipated.
- Long-term monitoring of TNT and its metabolites in soil to demonstrate bioremediation effectiveness
- Long-term monitoring of TNT and its metabolites in groundwater to demonstrate decreasing trends in concentration and plume extent

Hercules requested NJDEP's guidance on the establishment of a site-specific impact to groundwater soil remediation standard (SSIGWSRS) to guide remedial planning and remedial action work plan preparation. The discussion of the SSIGWSRS addressed two factors, the means of developing the value, and the utility of the value in the regulatory and remedial processes.

Method of SSIGWSRS Development

Hercules discussed the results of efforts to develop a SSIGWSRS for TNT using the standard NJDEP tools (i.e., synthetic precipitate leachate procedure (SPLP) spreadsheets, and SESOIL/AT123D modeling) and associated NJDEP guidance documents. NJDEP acknowledged the inherent variability associated with characterizing a solid (crystalline TNT) in a solid matrix (soil), and the influences of that variability on the SPLP method for developing a SSIGWSRS. Hercules indicated that they were unable to establish a predictable relationship between TNT concentrations in soil and associated SPLP leachate, and outlined steps taken in coordination with the analytical laboratory to reduce variability during the preparation and analysis.

NJDEP spoke to the SESOIL/AT123D model framework and the types of constituents the model is intended to assess. Specifically, NJDEP indicated that the model was developed to address highly mobile constituents (i.e., volatile organic compounds [VOCs]) that rapidly flush from soil and migrate through the vadose zone to groundwater. When discussing the potential use of the model to estimate TNT migration over time, NJDEP indicated that while TNT is soluble, its physiochemical properties cause it to move through the vadose zone and into groundwater at a rate well below that of VOCs and the range of rates contemplated during development of the model. NJDEP and Hercules agreed that the SESOIL/AT123D model is not the appropriate tool for developing a SSIGSWSRS for TNT.

Role of SSIGWSRS in Remedial Process

NJDEP understood Hercules' proactive effort to address the impact to groundwater pathway and remediation standard, and indicated that the involvement of their IGW technical staff may be premature given where the project is in the remedial process. NJDEP also noted the reduced reliance on a SSIGWSRS in instances where groundwater contamination already exists, such as this case. The parties agreed that the study results to date justify the proposed remedy, and are sufficient to support development of a remedial action work plan. Following active remediation of soil and monitoring of concentration trends in groundwater, Hercules will consult with NJDEP regarding development of a post-remediation site-specific impact to groundwater standard in the future.

As discussed, Hercules is working with Mark Romanell to resolve comments on the May 2016 Remedial Investigation Report – Groundwater, and move the CEA through the approval process. Hercules will provide milestone updates to the meeting attendees as the remedial action planning and implementation process proceeds.

Sincerely,

Mark Foley
Practice Leader

Technical Consultation
Attendance Sheet

Site Name: Hercules Kenvil	PI# 00741	Date: December 5, 2018
Meeting Location: NJDEP – 401 E. State Street, Trenton		
LSRP Name/#: Mark Foley		

Attendees

NAME	AFFILIATION	TELEPHONE	EMAIL
Kevin Schick	NJDEP/SRWMP/BEERA	(609) 984-1825	Kevin.schick@dep.nj.gov
Paul Sanders	NJDEP/SRWMP/BEERA	(609) 292-9998	Paul.sanders@dep.nj.gov
Swati Toppin	NJDEP/SRWMP/BEERA	(609) 777-1950	Swati.toppin@dep.nj.gov
John Lucey	OBG	302-562-2505	john.lucey@OBG.com
Ed Meeks	Ashland	302-995-3433	ed.meeks@ashland.com
Scott Larew	Kennedy/Jenks	609.661.3920	scott.larew@kennedyjenks.com
MARK FOLEY	WSP/LSR	609-512-3676	MARK.FOLEY@WSP.COM

From:	Foley, Mark
To:	Edward Meeks; John Lucey; Scott Larew
Subject:	FW: PI #000741 - Hercules Kenvil (Alliant Tech Systems) - TNT Technical Consultation Summary Memorandum
Date:	Friday, January 25, 2019 6:12:06 PM
Attachments:	image002.png image001.png 000741_Hercules-Kenvil_NJDEP Tech Consultation_Summary Memo_FINAL_01.24.2019.pdf

Ed, John, and Scott,

Please see note below from NJDEP regarding our technical consult meeting.

Ed, you will want to keep a record of this in your files along with the memo (attached).

Thanks
Mark

Mark Foley
Practice Leader
Water & Environment

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WSP | Parsons Brinckerhoff is now WSP.

From: Schick, Kevin <Kevin.Schick@dep.nj.gov>
Sent: Friday, January 25, 2019 6:08 PM
To: Foley, Mark <Mark.Foley@wsp.com>
Cc: Toppin, Swati <Swati.Toppin@dep.nj.gov>; Sanders, Paul <Paul.Sanders@dep.nj.gov>
Subject: RE: PI #000741 - Hercules Kenvil (Alliant Tech Systems) - TNT Technical Consultation Summary Memorandum

Hello Mark,

The Hercules Kenvil (Alliant Tech. Systems) TNT Technical Consultation summary has been reviewed by the NJDEP attendees and has been found to be acceptable without any modification. The summary has been inserted into NJEMS for future reference.
Thank you.

Kevin Schick
NJDEP/Site Remediation & Waste Management Program
Chief - Bureau of Environmental Evaluation & Risk Assessment
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